



EK-GN120

User Manual

About this manual

This device provides high quality mobile communication and entertainment using Samsung's high standards and technological expertise. This user manual is specially designed to detail the device's functions and features.

- Please read this manual before using the device to ensure safe and proper use.
- Descriptions are based on the device's default settings.
- Images and screenshots may differ in appearance from the actual product.
- Content may differ from the final product, or from software provided by service providers or carriers, and is subject to change without prior notice. For the latest version of the manual, refer to the Samsung website, www.samsung.com.
- Content (high quality content) that requires high CPU and RAM usage will affect the overall performance of the device. Applications related to the content may not work properly depending on the device's specifications and the environment that it is used in.
- Available features and additional services may vary by device, software, or service provider.
- Applications and their functions may vary by country, region, or hardware specifications. Samsung is not liable for performance issues caused by applications from any provider other than Samsung.
- Samsung is not liable for performance issues or incompatibilities caused by edited registry settings or modified operating system software. Attempting to customise the operating system may cause the device or applications to work improperly.
- Software, sound sources, wallpapers, images, and other media provided with this device are licensed for limited use. Extracting and using these materials for commercial or other purposes is an infringement of copyright laws. Users are entirely responsible for illegal use of media.
- You may incur additional charges for data services, such as messaging, uploading and downloading, auto-syncing, or using location services. To avoid additional charges, select an appropriate data tariff plan. For details, contact your service provider.

- Default applications that come with the device are subject to updates and may no longer be supported without prior notice. If you have questions about an application provided with the device, contact a Samsung Service Centre. For user-installed applications, contact service providers.
- Modifying the device's operating system or installing softwares from unofficial sources may result in device malfunctions and data corruption or loss. These actions are violations of your Samsung licence agreement and will void your warranty.

Instructional icons



Warning: situations that could cause injury to yourself or others



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



Note: notes, usage tips, or additional information

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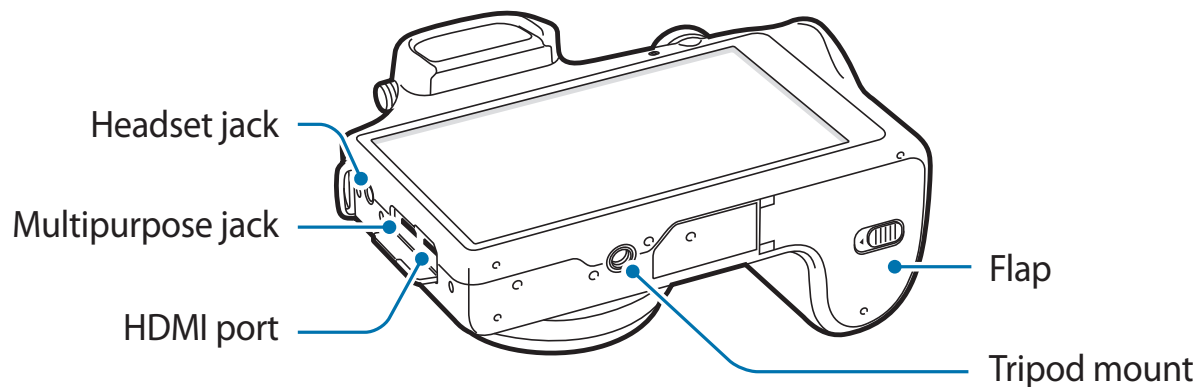
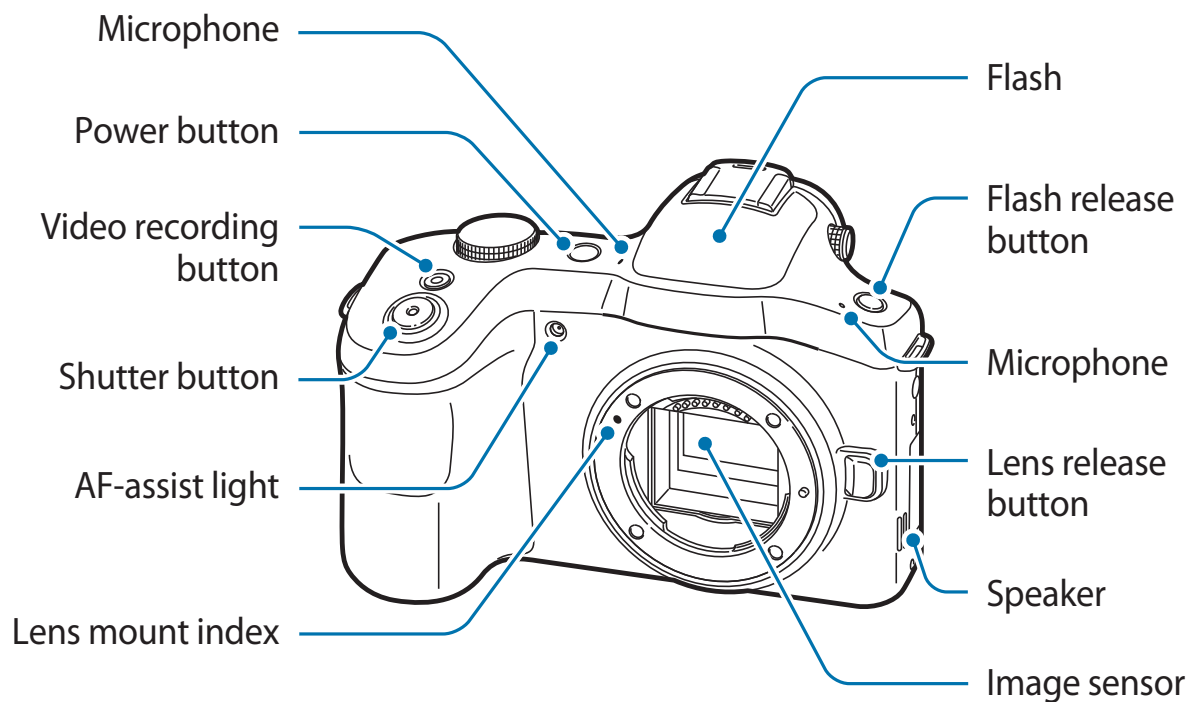
Troubleshooting

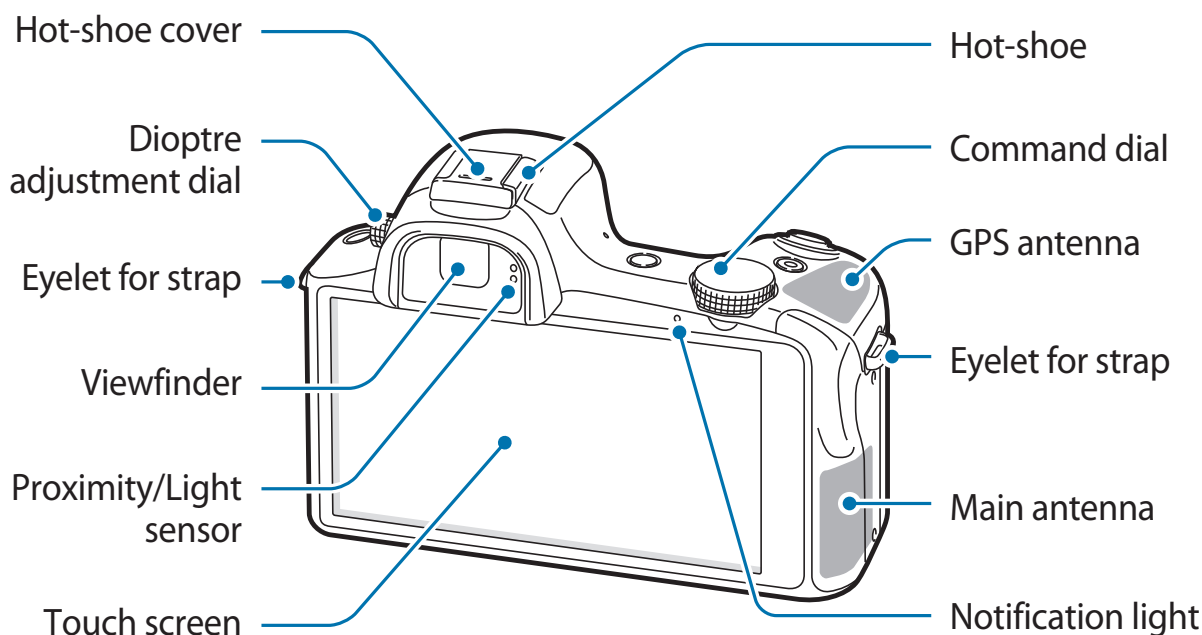
Cleaning the device

Concepts in Photography

Getting started

Device layout





The microphone at the top of the device is active only when you use the voice search or take videos.

You can attach Samsung-approved, optional accessories to the hot-shoe, such as an external flash or microphone.



- Do not cover the antenna area with your hands or other objects, except when you are taking photos or videos. This may cause connectivity problems or drain the battery.
- Do not use a screen protector. This causes sensor malfunctions.
- Do not allow water to contact the touch screen. The touch screen may malfunction in humid conditions or when exposed to water.



Do not use the device if it is cracked or broken. Broken glass or acrylic could cause injury to your hands and face. Take the device to a Samsung Service Centre to have it repaired.

Buttons

Button	Function
 Power	• Press and hold to turn the device on or off. • Press and hold for 6-8 seconds to reset the device if it has fatal errors or hang-ups, or freezes. • Press to lock or unlock the device. The device goes into lock mode when the touch screen turns off.
 Shutter	• On the Home screen, press to turn the camera on. • In the camera application, half-press to focus on the subject. When the subject is in focus, the focus frame turns green. • In the camera application, press to take the photo.
 Video recording	• On the Home screen, press to turn the camera on. • In the camera application, press to start or stop taking a video.
 Flash release	• Press to pop the flash up.

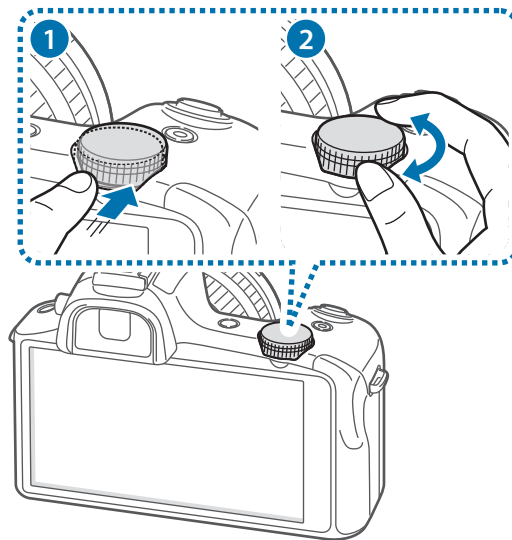
Diopetre adjustment dial

If the image is not shown clearly through the viewfinder, scroll the Diopetre adjustment dial to improve the view.

Command dial

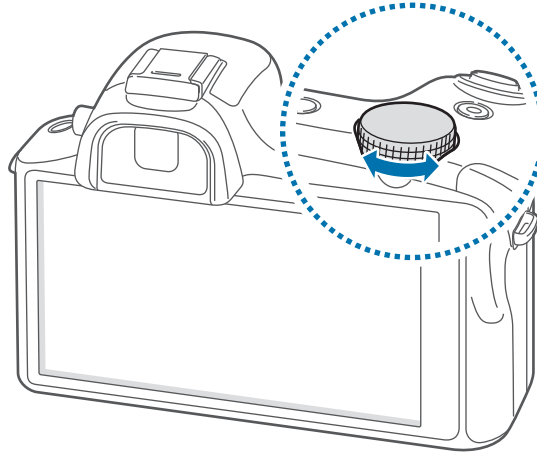
When using the camera application

- On the preview screen, rotate the Command dial to change shooting modes. Press the Command dial to confirm the selection.
- In expert mode, press and hold the Command dial to adjust the shutter speed, aperture value, exposure value, or ISO sensitivity. Rotate the Command dial to move to a desired option and press it to select the option. Rotate it to adjust a value, and then press it to confirm the change.

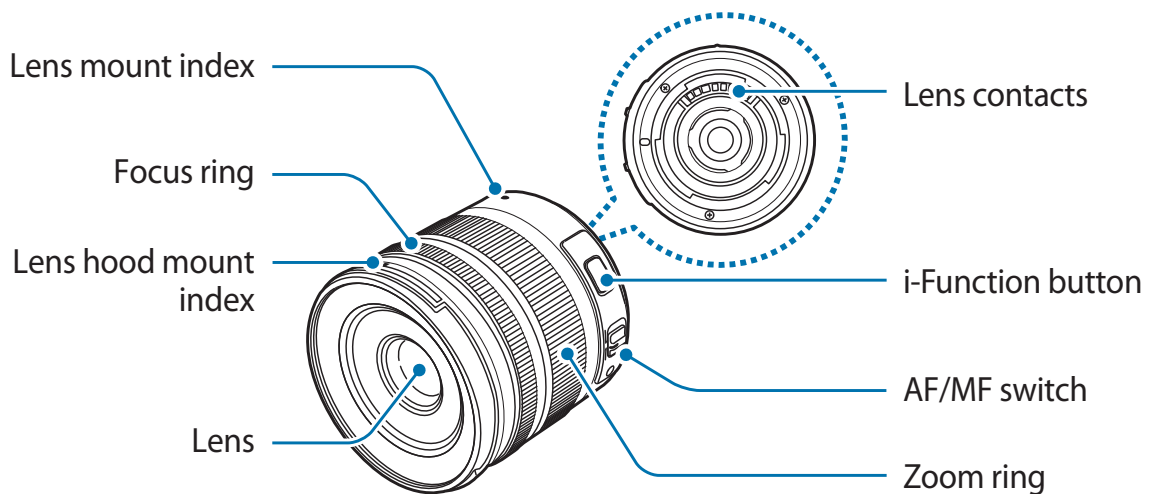


When not using the camera application

Rotate the Command dial to adjust the device volume or to adjust the sound volume when playing music or videos.



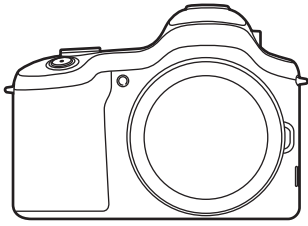
Lens layout



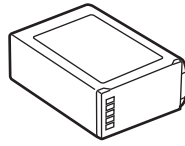
- When purchasing optional lenses, check with a Samsung Service Centre to ensure compatibility.
- Refer to the corresponding lens instructions for more details.
- This manual uses a SAMSUNG 18-55 mm F3.5-5.6 OIS III lens as an example.

Package contents

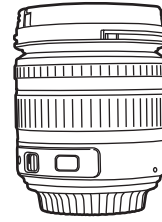
Check the product box for the following items:



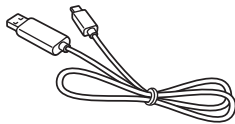
Device
(including the body cap
and hot-shoe cover)



Battery



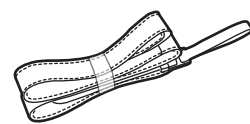
Lens
(including the lens hood
and caps)



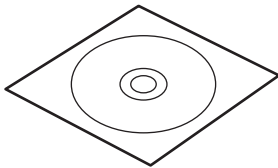
USB cable



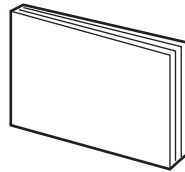
USB power adaptor



Shoulder strap



Adobe Photoshop
Lightroom DVD-ROM



Quick start guide / Handbook
/ Lens leaflet / Warranty card



- The illustrations may differ from the actual items.
- The items supplied with the device and any available accessories may vary depending on the region or service provider.
- The supplied items are designed only for this device and may not be compatible with other devices.
- Appearances and specifications are subject to change without prior notice.
- You can purchase additional accessories from your local Samsung retailer. Make sure they are compatible with the device before purchase.
- Other accessories may not be compatible with your device.
- Use only Samsung-approved accessories. Malfunctions caused by using unapproved accessories are not covered by the warranty service.
- Availability of all accessories is subject to change depending entirely on manufacturing companies. For more information about available accessories, refer to the Samsung website.
- Some TVs may not be compatible with the device due to differing HDMI specifications.

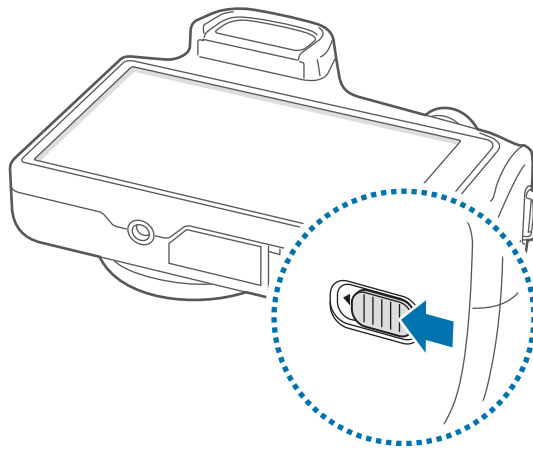
Installing the SIM or USIM card and battery

Insert the SIM or USIM card provided by the mobile telephone service provider, and the included battery.

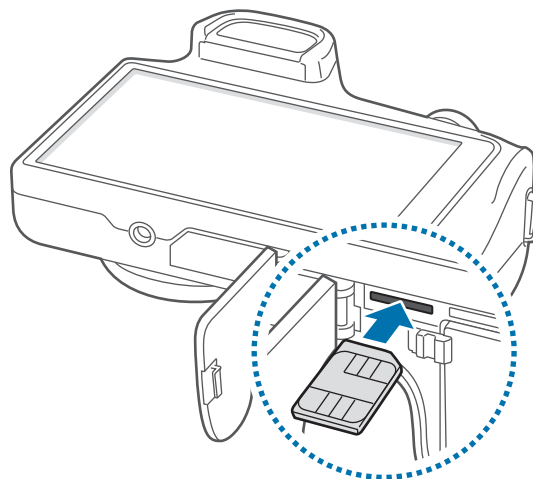


- Only microSIM cards work with the device.
- Some LTE services may not be available depending on the service provider. For details about service availability, contact your service provider.

1 Slide the latch and open the flap.



2 Insert the SIM or USIM card with the gold-coloured contacts facing upwards.

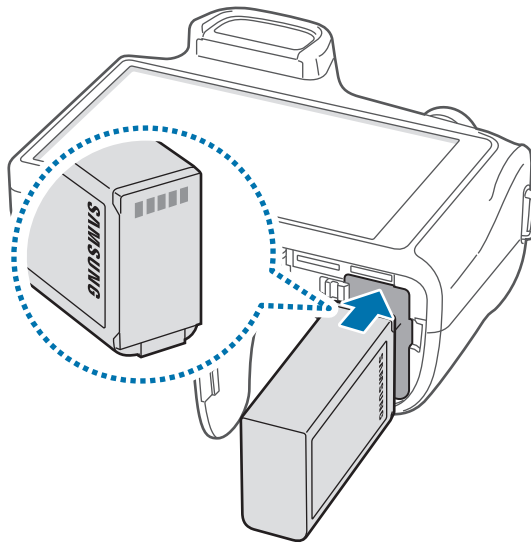


3 Push the SIM or USIM card into the slot until it locks in place.



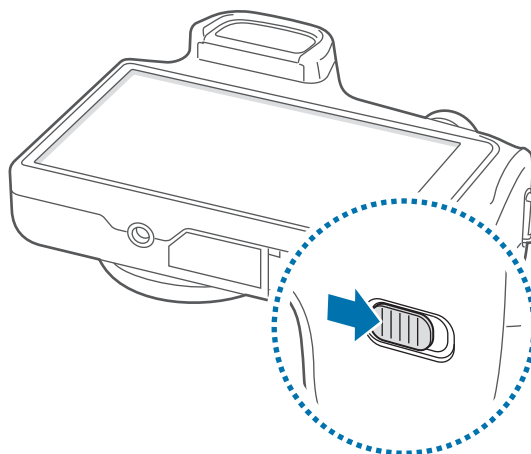
- Do not insert a memory card into the SIM card slot. If a memory card happens to be lodged in the SIM card slot, take the device to a Samsung Service Centre to remove the memory card.
- Use caution not to lose or let others use the SIM or USIM card. Samsung is not responsible for any damages or inconveniences caused by lost or stolen cards.

4 Insert the battery.



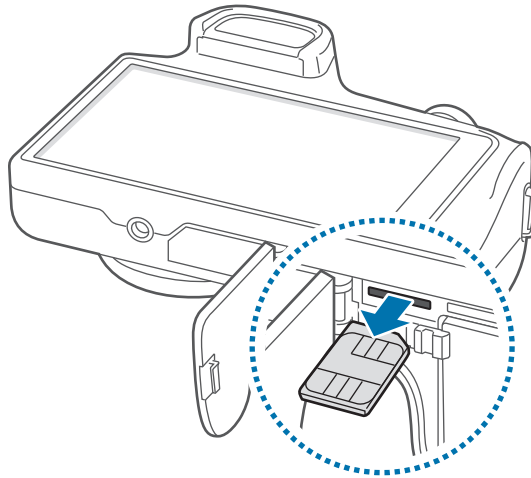
Make sure to properly align the battery's gold-coloured contacts when inserting the battery.

5 Replace the flap and slide the latch.



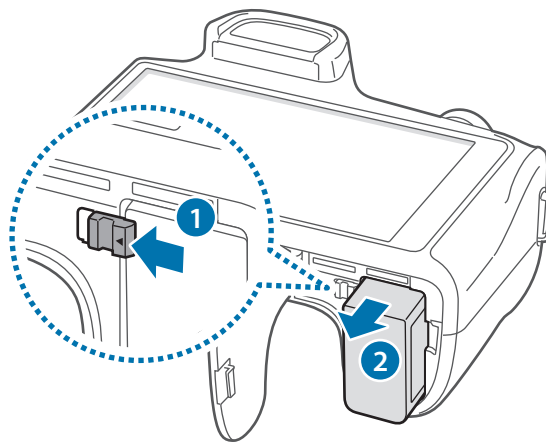
Removing the SIM or USIM card

Push the SIM or USIM card until it disengages from the device, and then pull it out.



Removing the battery

Slide the battery lock to release the battery, and then pull it out.



Charging the battery

Use the charger to charge the battery before using it for the first time. A computer can be also used to charge the device by connecting them via the USB cable.



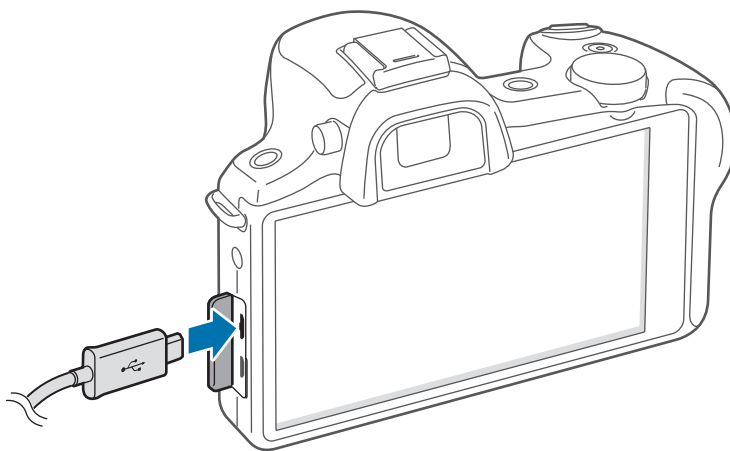
Use only Samsung-approved chargers, batteries, and cables. Unapproved chargers or cables can cause the battery to explode or damage the device.



- When the battery power is low, the device emits a warning tone and displays a low battery power message.
- If the battery is completely discharged, the device cannot be turned on immediately when the charger is connected. Allow a depleted battery to charge for a few minutes before turning on the device.

Charging with the charger

Connect the USB cable to the USB power adaptor and then plug the end of the USB cable into the multipurpose jack.



Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty.



- The device can be used while it is charging, but it may take longer to fully charge the battery.
- If the device receives an unstable power supply while charging, the touch screen may not function. If this happens, unplug the charger from the device.
- While charging, the device may heat up. This is normal and should not affect the device's lifespan or performance. If the battery gets hotter than usual, the charger may stop charging.
- If the device is not charging properly, take the device and the charger to a Samsung Service Centre.

After fully charging, disconnect the device from the charger. First unplug the charger from the device, and then unplug it from the electric socket.



Do not remove the battery before removing the charger. This may damage the device.



To save energy, unplug the charger when not in use. The charger does not have a power switch, so you must unplug the charger from the electric socket when not in use to avoid wasting power. The device should remain close to the electric socket while charging.

Checking the battery charge status

When you charge the battery while the device is off, the following icons will show the current battery charge status:



Charging



Fully charged

Reducing the battery consumption

Your device provides options that help you save battery power. By customising these options and deactivating features in the background, you can use the device longer between charges:

- When you are not using the device, switch to sleep mode by pressing the Power button.
- Close unnecessary applications with the task manager.
- Deactivate the Bluetooth feature.
- Deactivate the Wi-Fi feature.
- Deactivate auto-syncing of applications.
- Decrease the backlight time.
- Decrease the brightness of the display.
- Deactivate the fast power-on feature.
- Activate the automatic power-off feature. (p. 159)
- Activate the smart network feature. (p. 147)

Inserting a memory card

Your device accepts memory cards with maximum capacities of 64 GB. Depending on the memory card manufacturer and type, some memory cards may not be compatible with your device.

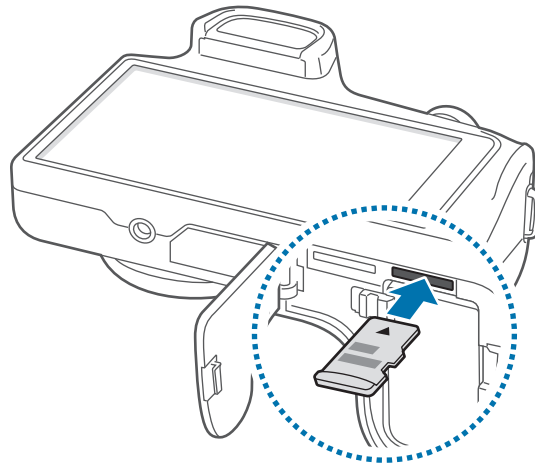


- Some memory cards may not be fully compatible with the device. Using an incompatible card may damage the device or the memory card, or corrupt the data stored in it.
- Use caution to insert the memory card right-side up.



- The device supports only the FAT file system for memory cards. When inserting a card formatted in a different file system, the device asks to reformat the memory card.
- Frequent writing and erasing of data shortens the lifespan of memory cards.
- When inserting a memory card into the device, the memory card's file directory appears in the **SD memory card** folder under the internal memory.

- 1 Slide the latch and open the flap.
- 2 Insert a memory card with the gold-coloured contacts facing downwards.
- 3 Push the memory card into the slot until it locks in place.



- 4 Replace the flap and slide the latch.

Removing the memory card

Before removing the memory card, first unmount it for safe removal. On the Home screen, tap **Apps** → **Settings** → **More** → **Storage** → **Unmount SD card**.

- 1 Slide the latch and open the flap.
- 2 Push the memory card until it disengages from the device, and then pull it out.
- 3 Replace the flap and slide the latch.



Do not remove the memory card while the device is transferring or accessing information. Doing so can cause data to be lost or corrupted or damage to the memory card or device. Samsung is not responsible for losses that result from the misuse of damaged memory cards, including the loss of data.

Formatting the memory card

A memory card formatted on a computer, memory card reader, or other device may not be compatible with this device. Format the memory card on this device.

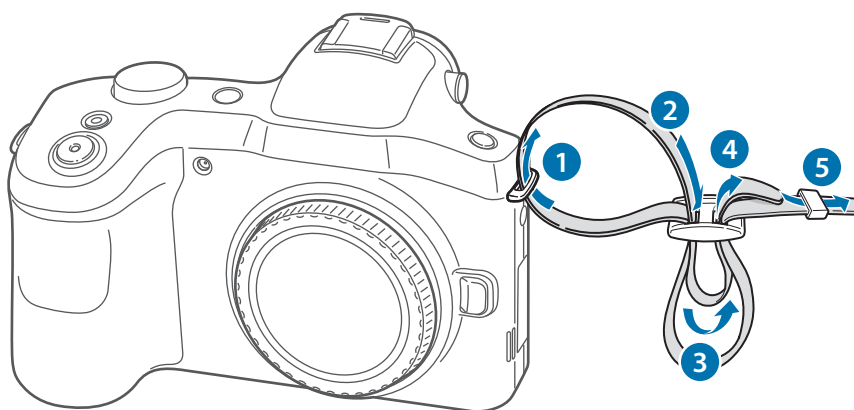
On the Home screen, tap **Apps** → **Settings** → **More** → **Storage** → **Format SD card** → **Format SD card** → **Erase everything**.



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

Attaching a strap

Attach the strap to the eyelets on both sides of the device.



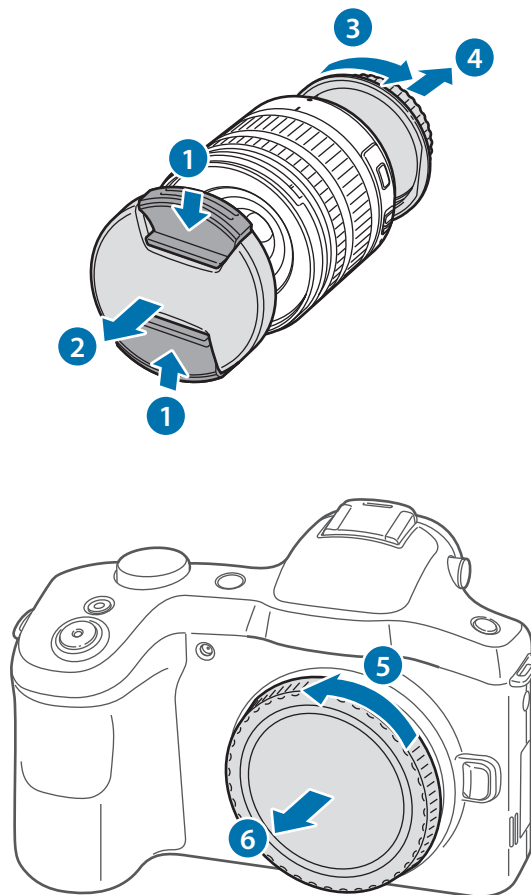
Do not swing your device by the strap. This may cause injury to yourself or others or damage to your device.

Attaching and removing a lens



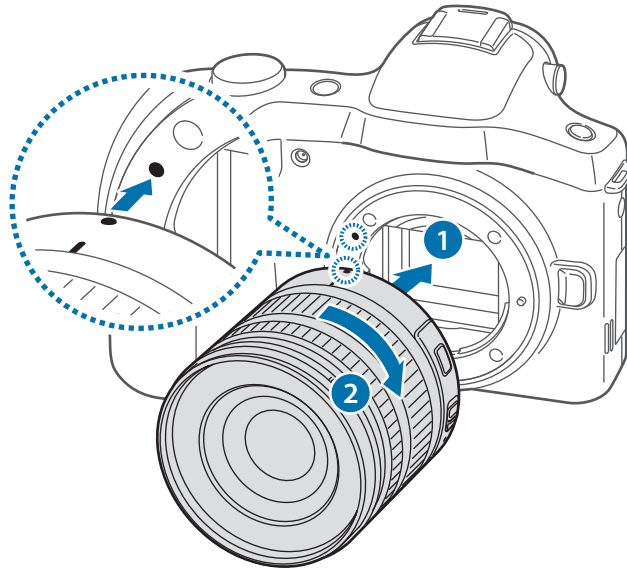
- Use only Samsung-approved lenses. Samsung is not responsible for damage caused by using another manufacturer's lenses.
- Do not attach or remove lenses in dusty, dirty areas. Dust and foreign particles can damage the lens or the device.
- Do not touch the inside of the device mount. Dust and foreign particles may affect shooting results or cause a malfunction if they enter the device or the lens.
- When not using a lens, attach the body cap.

Before attaching a lens, remove the lens cap, lens mount cover, and body cap.

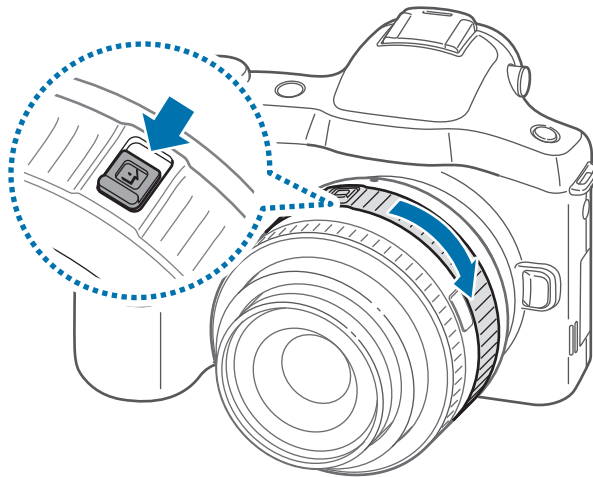


Attaching the lens

To attach the lens, align the red mark on the lens with the red mark on the device. Then, rotate the lens as shown in the illustration until it locks into place.

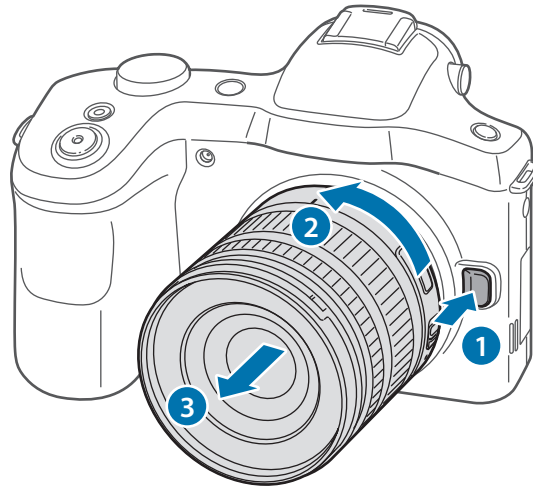


- If you attach a lens with the zoom lock switch, unlock it by rotating the zoom ring anticlockwise. When the lens is locked, you cannot take photos or videos.
- To lock the lens, pull and hold the zoom lock switch away from the device and rotate the zoom ring as shown in the illustration.



Removing the lens

To remove the lens, turn off the device, press and hold the lens release button, and then rotate the lens as shown in the illustration.

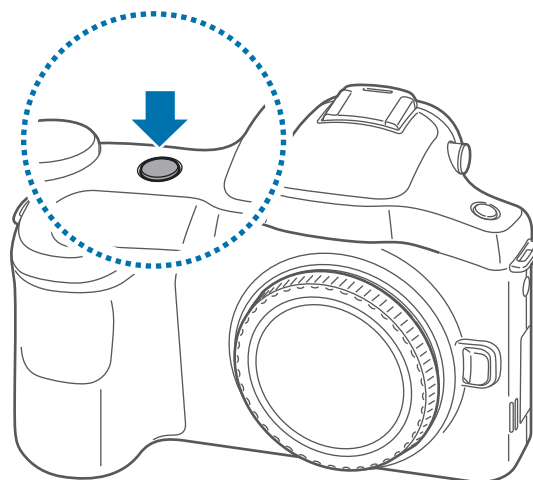


After removing the lens from the device, attach the lens caps or store the lens with the mount up, to protect the lens surface and electrical contacts from scratches.

Turning the device on and off

When turning on the device for the first time, follow the on-screen instructions to set up your device.

Press and hold the Power button for a few seconds to turn on the device. To access the Home screen from the Camera preview screen, drag the screen to the left.





- Follow all posted warnings and directions from authorised personnel in areas where the use of wireless devices is restricted, such as aeroplanes and hospitals.
- Press and hold the Power button and tap **Flight mode** to disable the wireless features.

To turn off the device, press and hold the Power button, and then tap **Power off**.

Adjusting the volume

Rotate the Command dial to adjust the device volume or to adjust the sound volume when playing music or videos.

Switching to silent mode

Use one of the following methods:

- Press and hold the Power button, and then tap **Mute** or **Vibrate**.
- Open the notifications panel at the top of the screen, and then tap **Sound** or **Vibrate**.

Basics

Indicator icons

The icons displayed at the top of the screen provide information about the status of the device. The icons listed in the table below are most common.

Icon	Meaning
	No signal
	Signal strength
	Roaming (outside of normal service area)
	UMTS network connected
	HSDPA network connected
	HSPA+ network connected
	LTE network connected
	Wi-Fi connected
	Bluetooth feature activated
	GPS activated
	Synced with the web
	Connected to computer
	No SIM or USIM card
	New text or multimedia message
	Alarm activated
	Silent mode activated
	Vibration mode activated
	Flight mode activated
	Error occurred or caution required
	Battery power level

Using the touch screen

Use only fingers to use the touch screen.

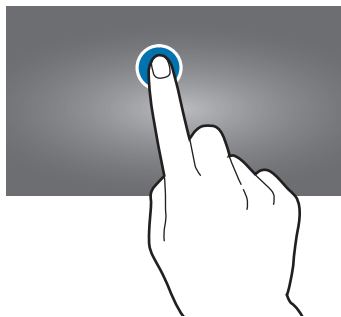


- Do not allow the touch screen to come into contact with other electrical devices. Electrostatic discharges can cause the touch screen to malfunction.
- Do not allow the touch screen to contact water. The touch screen may malfunction in humid conditions or when exposed to water.
- To avoid damaging the touch screen, do not tap it with anything sharp or apply excessive pressure to it with your fingertips.
- Leaving the touch screen idle for extended periods may result in afterimages (screen burn-in) or ghosting. Turn off the touch screen when you do not use the device.

Finger gestures

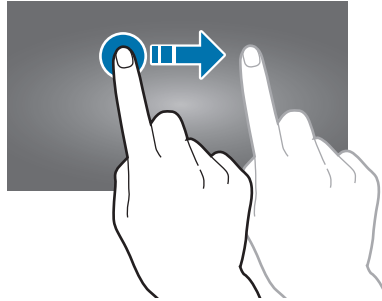
Tapping

To open an application, to select a menu item, to press an on-screen button, or to enter a character using the on-screen keyboard, tap it with a finger.



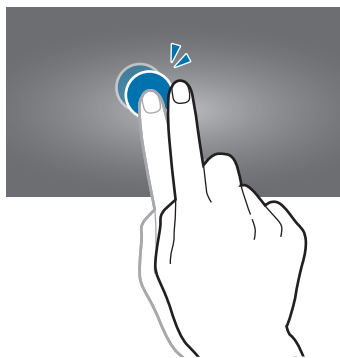
Dragging

To move an icon, thumbnail, or preview to a new location, tap and hold it and drag it to the target position.



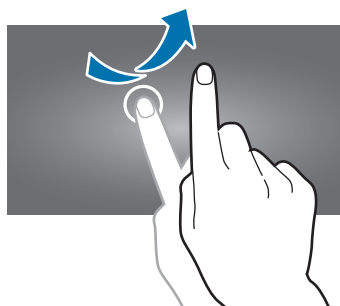
Double-tapping

Double-tap on a webpage, map, or image to zoom in a part. Double-tap again to return.



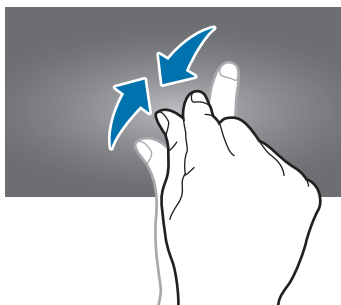
Flicking

Flick left or right on the Home screen or the Applications screen to see another panel. Flick up or down to scroll through a webpage or a list, such as contacts.



Pinching

Spread two fingers apart on a webpage, map, or image to zoom in a part. Pinch to zoom out.



Control motions

Simple motions allow easy control of the device.

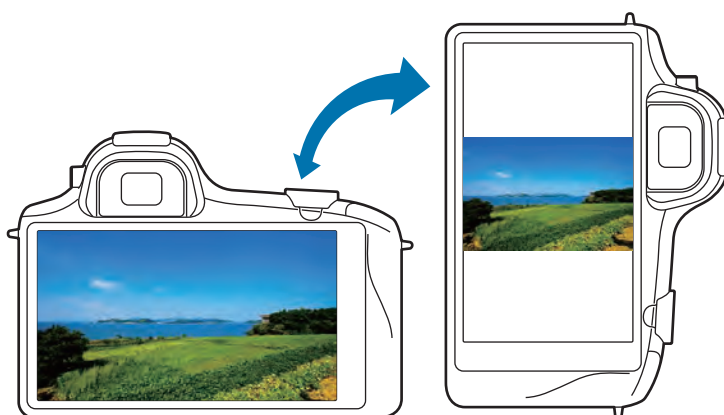
Before using motions, make sure the motion feature is activated. On the Home screen, tap **Apps** → **Settings** → **My device** → **Motions and gestures** → **Motion**, and then drag the **Motion** switch to the right.



Excessive shaking or impact to the device may result in unintended inputs. Control motions properly.

Rotating the screen

Many applications allow display in either portrait or landscape orientation. Rotating the device causes the display to automatically adjust to fit the new screen orientation.



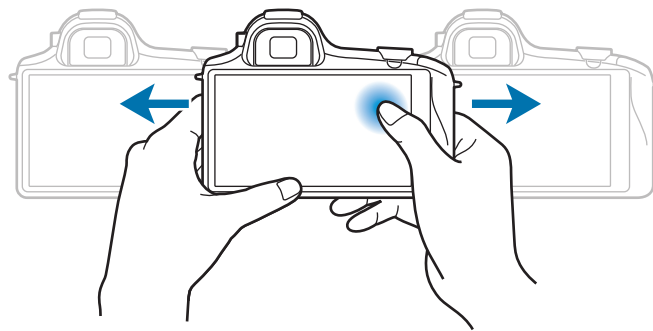
To prevent the display from rotating automatically, open the notifications panel and deselect **Screen rotation**.



- Some applications do not allow screen rotation.
- Some applications display a different screen depending on the orientation. The calculator turns into a scientific calculator when rotated to landscape.

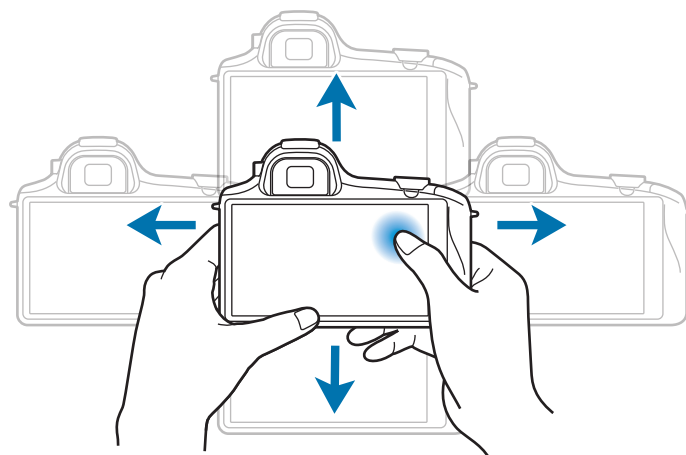
Panning to move

Tap and hold an item, and then move the device to the left or right to move the item to another panel on the Home screen or the Applications screen.



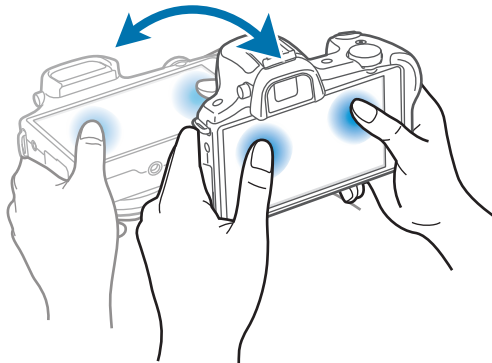
Panning to browse

When an image is zoomed in, tap and hold a point on the screen, and then move the device in any direction to browse the image.



Tilting

Tap and hold two points on the screen, and then tilt the device back and forth to zoom in or out.



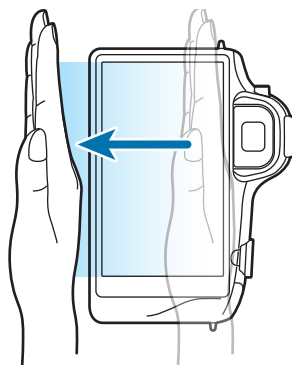
Palm motions

Use palm motions to control the device by touching the screen.

Before using motions, make sure the palm motion feature is activated. On the Home screen, tap **Apps** → **Settings** → **My device** → **Motions and gestures** → **Palm motion**, and then drag the **Palm motion** switch to the right.

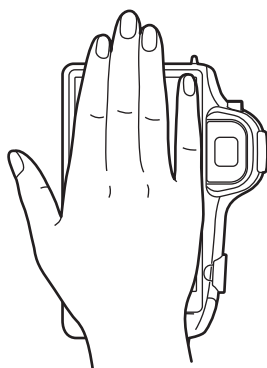
Sweeping

Sweep your hand across the screen to capture a screenshot. The image is saved in **Gallery** → **Screenshots**. It is not possible to capture a screenshot while using some applications.



Covering

Cover the screen with a palm to pause media playback.



Notifications

Notification icons appear on the status bar at the top of the screen to report new messages, calendar events, device status, and more. Drag down from the status bar to open the notifications panel. Scroll the list to see additional alerts. To close the notifications panel, drag up the bar that is at the bottom of the screen.

Quick setting panel

From the quick setting panel, you can view your device's current settings. Drag down from the status bar, tap  to open the quick setting panel, and then use the following options:

- **Wi-Fi:** Activate or deactivate the Wi-Fi feature.
- **GPS:** Activate or deactivate the GPS feature.
- **Sound:** Activate or deactivate silent mode. You can vibrate or mute your device in silent mode.
- **Screen rotation:** Allow or prevent the interface from rotating when you rotate the device.
- **Bluetooth:** Activate or deactivate the Bluetooth feature.

- **Mobile data:** Activate or deactivate the data connection.
- **Blocking mode:** Activate or deactivate blocking mode. In blocking mode, the device will block notifications. To select which notifications will be blocked, tap **Settings** → **My device** → **Blocking mode**.
- **Screen Mirroring:** Activate or deactivate the screen mirroring feature.
- **Wi-Fi hotspot:** Activate or deactivate the Wi-Fi tethering feature.
- **Driving mode:** Activate or deactivate driving mode.
- **Sync:** Activate or deactivate auto-syncing of applications.
- **Flight mode:** Activate or deactivate flight mode.



The available options may vary depending on the region or service provider.

To rearrange the options on the quick setting panel, open the quick setting panel, tap , and then tap and drag an item to another location.

Home screen

The Home screen is the starting point to access all of the device's features. It displays indicator icons, widgets, shortcuts to applications, and others.

The Home screen can have multiple panels. To view other panels, scroll left or right.

Rearranging items

Adding an application icon

On the Home screen, tap **Apps**, tap and hold an application icon, and then drag it into a panel preview.

Adding an item

Customise the Home screen by adding widgets, folders, or panels.

Tap and hold the empty area on the Home screen, and then select one of the following categories:

- **Apps and widgets:** Add widgets or applications to the Home screen.
- **Folder:** Create a new folder.
- **Page:** Add a new panel to the Home screen.

Moving an item

Tap and hold an item and drag it to a new location. To move it to another panel, drag it to the side of the screen.

Removing an item

Tap and hold an item, and drag it to the rubbish bin that appears at the top of the Home screen. When the rubbish bin turns red, release the item.

Rearranging panels

Adding a new panel

Tap  → Edit page → .

Moving a panel

Tap  → Edit page, tap and hold a panel preview, and then drag it to a new location.

Removing a panel

Tap  → Edit page, tap and hold a panel preview, and then drag it to the rubbish bin at the top of the screen.

Setting wallpaper

Set an image or photo stored in the device as wallpaper for the Home screen.

On the Home screen, tap  → **Set wallpaper** → **Home screen**, and then select one of the following:

- **Gallery:** See photos taken by the device's camera or images downloaded from the Internet.
- **Live wallpapers:** See animated images.
- **Wallpapers:** See wallpaper images.

Then, select an image and tap **Set wallpaper**. Or, select an image, resize it by dragging the frame, and then tap **Done**.

Using widgets

Widgets are small applications that provide convenient functions and information on your Home screen. To use them, add widgets from the widgets panel to the Home screen.



- Some widgets connect to web services. Using a web-based widget may result in additional charges.
- The widgets available may vary depending on the region or service provider.

On the Home screen, tap **Apps** → **Widgets**. Scroll left or right on the widgets panel, and then tap and hold a widget to add it to the Home screen.

Using applications

This device can run many different types of applications, ranging from media to Internet applications.

Opening an application

On the Home screen or the Applications screen, select an application icon to open it.

Opening from recently-used applications

Tap and hold  to open the list of recently-used applications.

Select an application icon to open.

Closing an application

Close applications not in use to save battery power and maintain device performance.

Tap and hold , tap **Task manager**, and then tap **End** next to an application to close it. To close all running applications, tap **End all**. Alternatively, tap and hold , and then tap **Close all**.

Applications screen

The Applications screen displays icons for all applications, including any new applications installed.

On the Home screen, tap **Apps** to open the Applications screen.

To view other panels, scroll left or right.

Rearranging applications

Tap  → **Edit**, tap and hold an application, and then drag it to a new location. To move it to another panel, drag it to the side of the screen.

Organising with folders

Put related applications together in a folder for convenience.

Tap  → **Edit**, tap and hold an application, and then drag it to **Create folder**. Enter a folder name and then tap **OK**. Put applications into the new folder by dragging, and then tap **Save** to save the arrangement.

Rearranging panels

Pinch on the screen, tap and hold a panel preview, and then drag it to a new location.

Installing applications

Use application stores, such as **Samsung Apps**, to download and install applications.

Uninstalling applications

Tap  → **Uninstall**, and then select an application to uninstall it.



Default applications that come with the device cannot be uninstalled.

Sharing applications

Share downloaded applications with other users via email, Bluetooth, or other methods.

Tap  → **Share app**, select applications, tap **Done**, and then select a sharing method. The next steps vary depending on the method selected.

Help

Access help information to learn how to use the device and applications or configure important settings.

Tap **Help** on the Applications screen. Tap  and select a category to view help information.

Entering text

Use the Samsung keyboard or the voice input feature to enter text.



Text entry is not supported in some languages. To enter text, you must change the input language to one of the supported languages.

Changing the keyboard type

Tap any text field, open the notifications panel, tap **Choose input method**, and then select the type of keyboard to use.

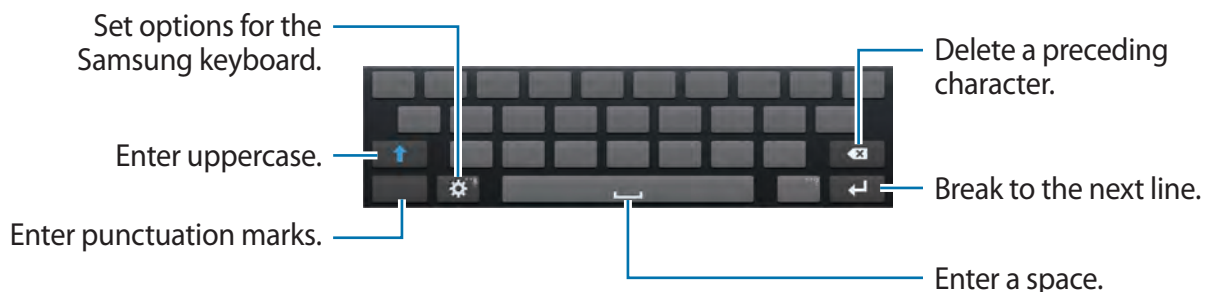
Using the Samsung keyboard

Changing the keyboard layout

Tap  → **Portrait keyboard types**, and then tap **Qwerty keyboard** or **3x4 keyboard**.



On the 3x4 keyboard, a key has three or four characters. To enter a character, tap repeatedly the key corresponding to the character.



Entering uppercase

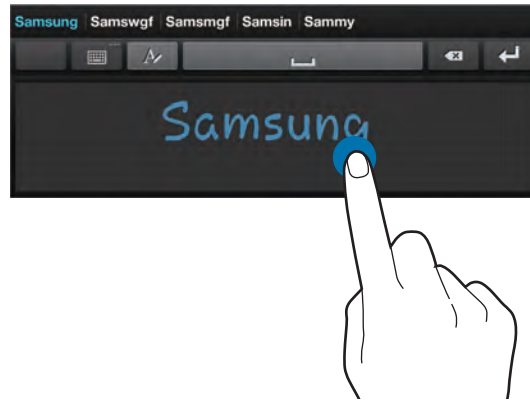
Tap  before entering a character. For all caps, tap it twice.

Changing language keyboards

Add languages to the keyboard, and then slide the space key left or right to change language keyboards.

Handwriting

Tap and hold , tap , and then write a word with a finger. Suggested words appear as characters are entered. Select a suggested word.



Use handwriting gestures to perform actions, such as editing or deleting characters and inserting spaces. To view the gesture guides, tap and hold , and then tap  → **Gesture guide**.

Entering text by voice

Activate the voice input feature and then speak into the microphone. The device displays what you speak.

To change the language or add languages for the voice recognition, tap the current language.

Copying and pasting

Tap and hold over text, drag  or  to select more or less text, and then tap **Copy** to copy or **Cut** to cut. The selected text is copied to the clipboard.

To paste it into a text entry field, tap and hold at the point where it should be inserted, and then tap **Paste**.

Connecting to a Wi-Fi network

Connect the device to a Wi-Fi network to use the Internet or share media files with other devices. (p. 145)

Turning Wi-Fi on and off

Open the notifications panel, and then tap **Wi-Fi** to turn it on or off.



- Your device uses a non-harmonised frequency and is intended for use in all European countries. The WLAN can be operated in the EU without restriction indoors, but cannot be operated outdoors.
- Turn off Wi-Fi to save the battery when not in use.

Joining Wi-Fi networks

On the Applications screen, tap **Settings** → **Connections** → **Wi-Fi**, and then drag the **Wi-Fi** switch to the right.

Select a network from the list of detected Wi-Fi networks, enter a password if necessary, and then tap **Connect**. Networks that require a password appear with a lock icon. After the device connects to a Wi-Fi network, the device will automatically connect to it any time it is available.

Adding Wi-Fi networks

If the desired network does not appear in the networks list, tap **Add Wi-Fi network** at the bottom of the networks list. Enter the network name in **Network SSID**, select the security type and enter the password if it is not an open network, and then tap **Connect**.

Forgetting Wi-Fi networks

Any network that has ever been used, including the current network, can be forgotten so the device will not automatically connect to it. Select the network in the networks list, and then tap **Forget**.

Setting up accounts

Google applications, such as **Play Store**, require a Google account, and **Samsung Apps** requires a Samsung account. Create Google and Samsung accounts to have the best experience with the device.

Adding accounts

Follow the instructions that appear when opening a Google application without signing in to set up a Google account.

To sign in with or sign up for a Google account, on the Applications screen, tap **Settings** → **Accounts** → **Add account** → **Google**. After that, tap **New** to sign up, or tap **Existing**, and then follow on-screen instructions to complete the account setup. More than one Google account can be used on the device.

Set up a Samsung account as well.

Removing accounts

On the Applications screen, tap **Settings** → **Accounts**, select an account name under **My accounts**, select the account to remove, and then tap **Remove account**.

Transferring files

Move audio, video, image, or other types of files from the device to the computer, or vice versa.



The following file formats are supported by some applications. Some file formats are not supported depending on the version of the device's software or the computer operating system.

- Music: mp3, m4a, 3ga, aac, ogg, oga, wav, wma, amr, awb, flac, mid, midi, xmf, mxmf, imy, rtttl, rtx, and ota
- Image: bmp, gif, jpg, and png
- Video: 3gp, mp4, avi, wmv, flv, and mkv
- Document: doc, docx, dot, dotx, xls, xlsx, xltx, csv, ppt, pptx, pps, ppsx, pot, potx, pdf, hwp, txt, asc, and rtf

Connecting with Samsung Kies

Samsung Kies is a computer application that manages media libraries, contacts, and calendars, and syncs them with Samsung devices. Download the latest Samsung Kies from the Samsung website.

- 1 Connect the device to the computer using the USB cable.
Samsung Kies launches on the computer automatically. If Samsung Kies does not launch, double-click the Samsung Kies icon on the computer.
- 2 Transfer files between your device and the computer.
Refer to the Samsung Kies help for more information.

Connecting with Windows Media Player

Ensure that Windows Media Player is installed on the computer.

- 1 Connect the device to the computer using the USB cable.
- 2 Open Windows Media Player and sync music files.

Connecting as a media device

- 1 Connect the device to the computer using the USB cable.
- 2 Open the notifications panel, and then tap **Connected as a media device** → **Media device (MTP)**.
Tap **Camera (PTP)** if your computer does not support Media Transfer Protocol (MTP) or not have any appropriate driver installed.
- 3 Transfer files between your device and the computer.

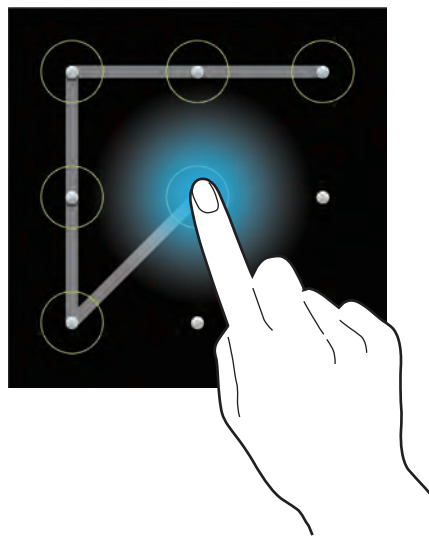
Securing the device

Prevent others from using or accessing personal data and information stored in the device by using the security features. The device requires an unlock code whenever unlocking it.

Setting a pattern

On the Applications screen, tap **Settings** → **My device** → **Lock screen** → **Screen lock** → **Pattern**.

Draw a pattern by connecting four dots or more, and then draw the pattern again to verify it. Set a backup unlock PIN to unlock the screen when you forget the pattern.



Setting a PIN

On the Applications screen, tap **Settings** → **My device** → **Lock screen** → **Screen lock** → **PIN**.

Enter at least four numbers, and then enter the password again to verify it.

Setting a password

On the Applications screen, tap **Settings** → **My device** → **Lock screen** → **Screen lock** → **Password**.

Enter at least four characters including numbers and symbols, and then enter the password again to verify it.

Unlocking the device

Turn on the screen by pressing the Power button and enter the unlock code.



If the unlock code is forgotten, take the device to a Samsung Service Centre to reset it.

Upgrading the device

The device can be upgraded to the latest software.



This feature may not be available depending on the region or service provider.

Upgrading with Samsung Kies

Launch Samsung Kies and connect the device to the computer. Samsung Kies automatically recognises the device and shows available updates in a dialogue box, if any. Click the Update button in the dialogue box to start upgrading. Refer to the Samsung Kies help for details on how to upgrade.



- Do not turn off the computer or disconnect the USB cable while the device is upgrading.
- While upgrading the device, do not connect other media devices to the computer. Doing so may interfere with the update process.

Upgrading over the air

The device can be directly upgraded to the latest software by the firmware over-the-air (FOTA) service.

On the Applications screen, tap **Settings** → **More** → **About device** → **Software update** → **Update**.

Camera: Basic functions

Launching Camera

Use this application to take photos or videos.

Tap **Camera** on the Applications screen. Alternatively, press the Shutter button or the Video recording button.

Use **Gallery** to view photos and videos taken with the device. (p. 97)

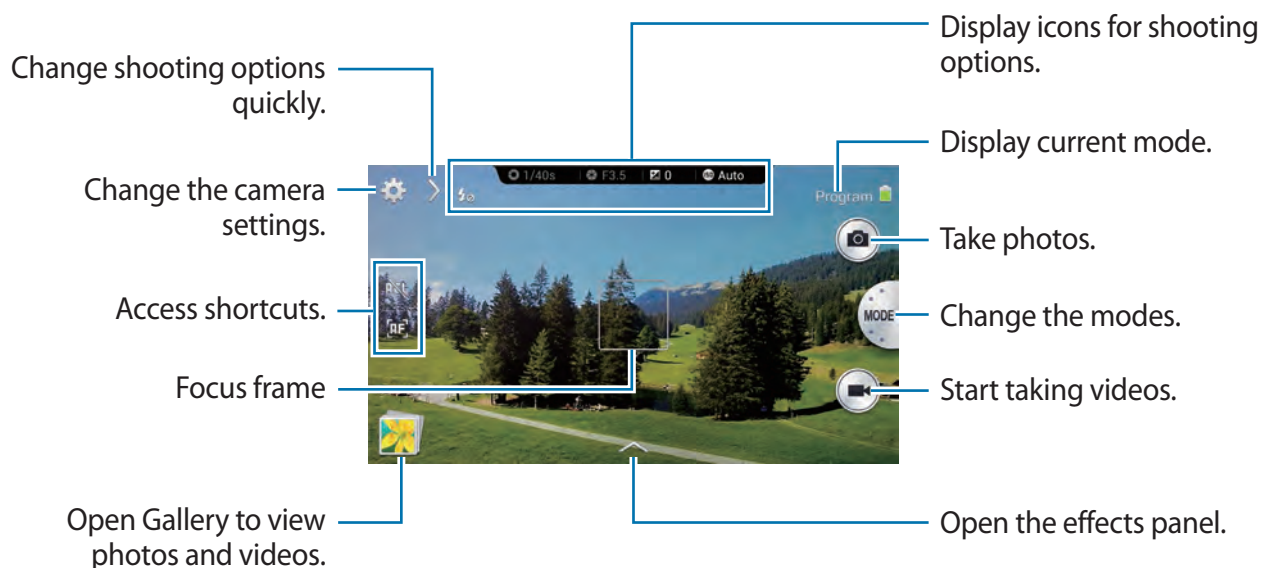


- The camera automatically shuts off when unused.
- Make sure that the lens is clean. Otherwise, the device may not work properly in some modes that require high resolutions.

Camera etiquette

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

Learning the preview screen



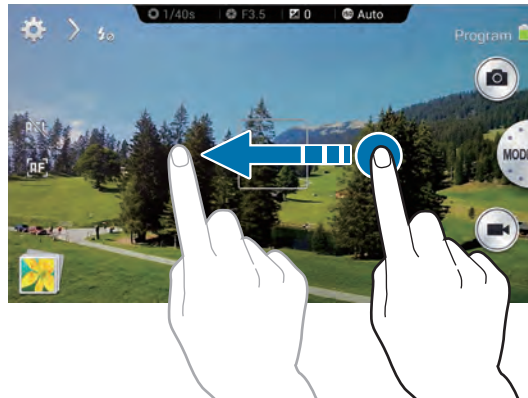
Learning icons

The icons displayed on the preview screen provide information about current shooting options and settings. The icons listed in the table below are the most common.

Icon	Meaning
	Shutter speed
	Aperture value
	Exposure value
	ISO sensitivity
	Timer
	Flash
	Macro
	Metering
	White balance
	Continuous shooting
	Bracket mode
	Voice recognition
	Geotagging
	Share shot
	Buddy photo share
	ChatON photo share
	Remote viewfinder

Closing Camera

On the preview screen, drag your finger to the left to close the camera application and return to the Home screen.



Taking photos

Half-press the Shutter button to focus on the subject. When the subject is in focus, the focus frame turns green. Press the Shutter button to take the photo.

Or, tap the image on the preview screen where the camera should focus. When the subject is in focus, the focus frame turns green. Tap  to take the photo.

Taking videos

Press the Video recording button to take a video. To stop recording, press the Video recording button again.

Or, tap  to take a video and tap  to stop recording.

While recording, tap where you want to focus to change the focus. To set the camera to focus automatically, tap .



- You can take videos up to 25 minutes at one time.
- When using a memory card with a slow writing speed, the device may not be able to save the video properly. It may stop recording, or recorded video frames may become corrupted.
- Memory cards with slow writing speeds do not support high-resolution video. To record high-resolution video, use memory cards with faster writing speeds (micro SDHC Class10 or higher).
- The video frame size may appear smaller depending on video resolution and frame rate.
- If you set the image stabiliser option, the image stabiliser sound may be recorded.
- If you adjust the lens while taking a video, the zoom sound or other lens sounds may be recorded.
- Do not remove or replace the lens while taking a video. Doing this will interrupt the recording.
- When using an optional video lens, the auto focus noise is not recorded.
- You can record an audio with an external microphone.
- If you change the shooting angle of the camera suddenly while taking a video, the camera may not be able to record images accurately.
- The camera supports the continuous AF, touch AF, manual focus, and face detection AF functions when taking a video.

Viewing photos and videos

To view taken photos or videos, tap the gallery icon. Scroll left or right to view the next or previous image. (p. 97)

Taking photos or videos with voice commands

Use the voice recognition to take photos or videos with voice commands.

Tap  → .

Say a shooting command, such as Smile, Cheese, or Record video.

To check more voice commands for controlling the camera, tap  → .

Taking photos or videos with filter effects

Use the filter effects to take unique photos or videos.

Tap  and select a filter effect. The available options vary by mode.

- **No effect:** Do not apply an effect.
- **Vignette:** This applies the retro-looking colours, high contrast, and strong vignette effect of Lomo cameras.
- **Greyscale:** This makes the image black and white.
- **Sepia:** This red-shifts the background scenery.
- **Vintage:** This gives the image a vintage look and feel.
- **Turquoise:** This applies a soft turquoise colour effect.
- **Rainbow:** This applies a rainbow colour effect.

- **Comic:** This makes the image look like a comic book drawing.
- **Gothic noir:** This makes the image look like a black and white comic strip.
- **FishEye:** This blackens the edges of the frame and distorts objects to imitate the visual effect of a fisheye lens.

Changing shooting options quickly

Tap  to change shooting options quickly. The available options vary by mode.

- : Configure settings for Camera.
- : Activate or deactivate the flash.
- : Use this to set delayed-time shots.
- : Activate or deactivate the photo suggestion feature. (p. 110)
- : Select a folder for saving photos or videos. To create a new folder, tap .
- : Activate or deactivate the voice recognition to take photos or videos.
- : Activate or deactivate the sharing options.

Reducing camera shake

Use the Optical Image Stabiliser (OIS) option to reduce or eliminate blurriness from camera shake.

If the lens has an OIS switch, set the switch to ON to use the OIS function.

Tap  →  → **OIS (anti-shake)**, and select an option.



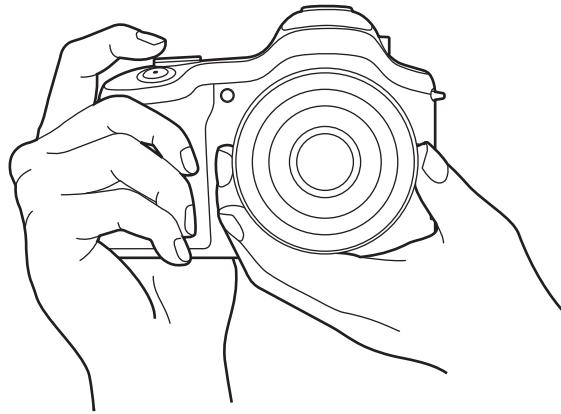
Before correction



After correction

Tips for taking clearer photos

Holding the camera correctly



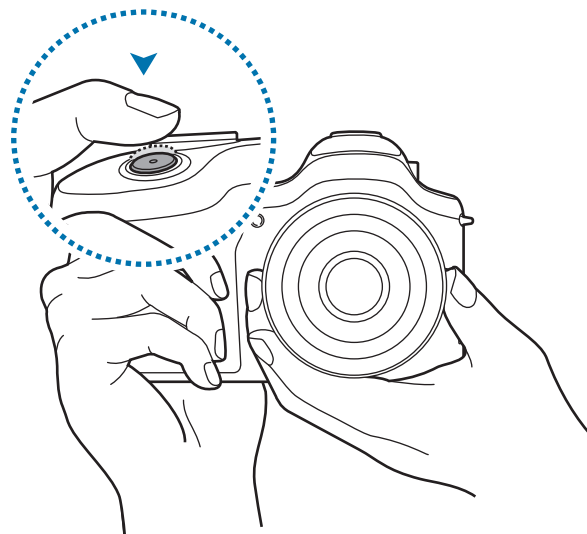
Make sure not to block the screen, lens, flash, or microphone.



Make sure not to expose the lens to direct sunlight. This may discolour the image sensor, or cause it to malfunction.

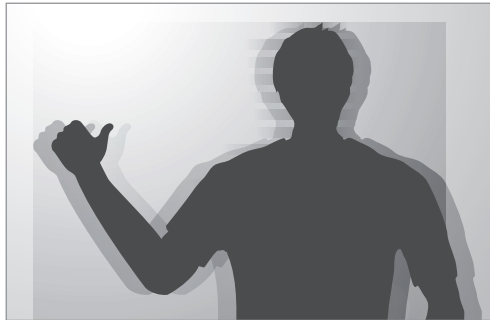
Half-pressing the Shutter button

Press the Shutter button halfway down to adjust the focus. The camera adjusts the focus, exposure, and white balance automatically, and the focus frame turns green. The focus frame turns red if not focused.



Reducing camera shake

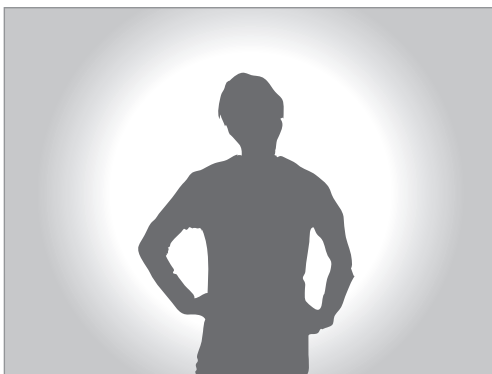
Set the Optical Image Stabiliser (OIS) option to reduce camera shake optically. (p. 52)



Keeping the subject in focus

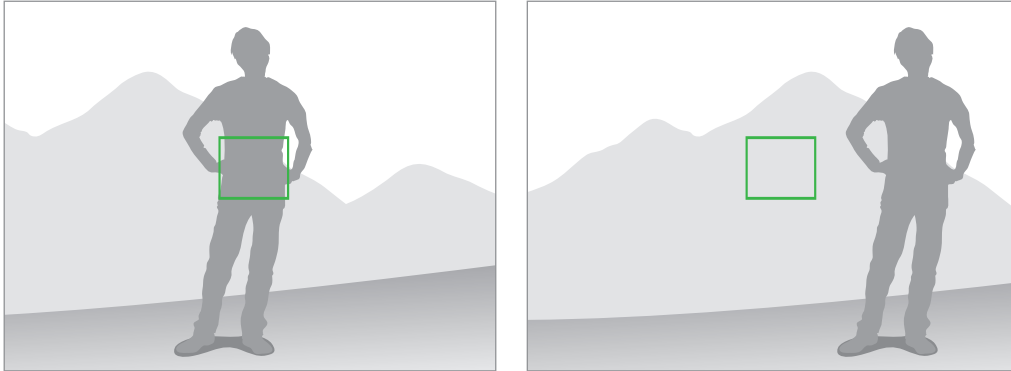
Focusing on the subject may be difficult in the following conditions:

- When the contrast between the subject and background is low. For example, the subject is wearing clothing that is similar in colour to the background.
- The light behind the subject is too bright.
- The subject is shiny or reflective.
- The subject includes horizontal patterns, such as blinds.
- The subject is not positioned in the centre of the frame.



Using the focus lock

Half-press the Shutter button to focus. When the subject is focused, you can change the composition. When you are ready, press the Shutter button to take the photo.



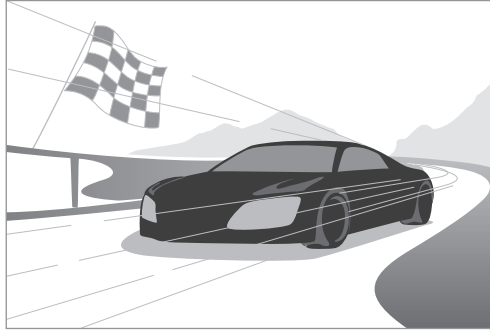
When taking photos in low-light conditions

- Turn the flash on to take photos in low-light conditions. (p. 83)
- Adjust the ISO sensitivity. (p. 77)



When subjects are moving rapidly

Use the continuous shooting option to take photos of moving subjects. (p. 63, p. 81)



To take several photos continuously, use memory cards with faster writing speeds (micro SDHC Class10 or higher).

Camera: Shooting modes

Auto

Use this to take photos with scene modes selected automatically by the camera. In this mode, the camera recognises surrounding conditions and automatically adjusts factors that contribute to exposure, including the shutter speed, aperture value, metering, and white balance. As the camera controls most of the functions, some shooting options are limited. This mode is useful for capturing quick snapshots with the least amount of adjustment.

Tap **MODE** → **Auto**.



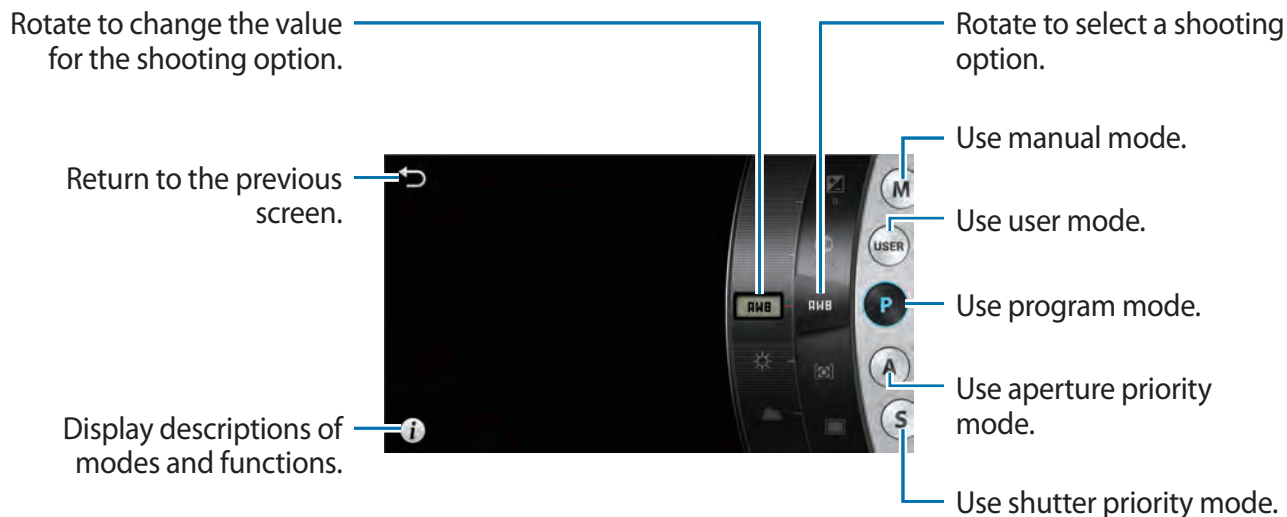
To display an icon for a scene mode at the top right of the preview screen when you half-press the Shutter button, tap  →  →  → **Detection display** → **On**.



- The camera may detect different scenes, even the same subjects, depending on external factors, such as camera shake, lighting, and distance to the subject.
- If the camera does not recognise an appropriate scene mode, it uses the default settings for this mode.
- Even if it detects a face, the camera may not select a portrait mode depending on the subject's position or lighting.
- In this mode, the camera consumes more battery power due to constant changing of settings when selecting appropriate modes.

Expert

Use this to take photos and videos with manual adjustment of various shooting options, including the shutter speed, aperture value, exposure value, and ISO sensitivity.



Program mode

In this mode, the camera automatically adjusts the shutter speed and aperture value so that an optimal exposure value can be achieved. This mode is useful when you want to capture shots of constant exposure while being able to adjust other settings.

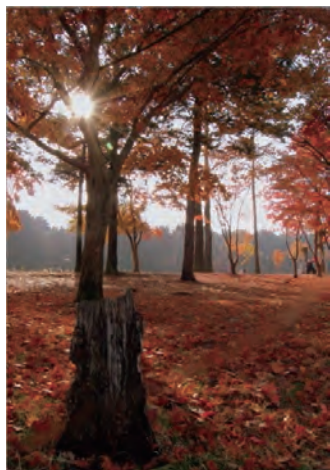
Tap **MODE** → **Expert** → **P**, and set the desired shooting options.



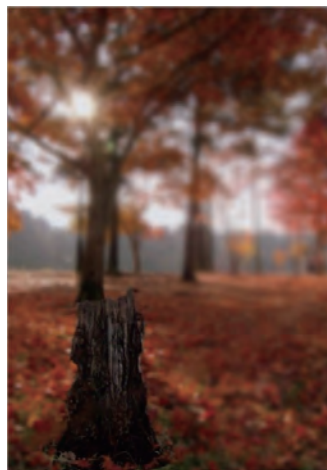
Aperture priority mode

In this mode, the camera automatically calculates shutter speed according to the aperture value you choose. You can adjust the depth of field (DOF) by changing the aperture value. This mode is useful for taking portraits and landscape shots.

Tap **MODE** → **Expert** → **A**, and set the desired shooting options.



Large depth of field



Small depth of field



In low-light settings, you may need to increase the ISO sensitivity to prevent blurry photos.

Shutter priority mode

In this mode, the camera automatically adjusts the aperture value according to the shutter speed you choose. This mode is useful for taking photos of fast-moving subjects or for creating tracer effects in a photo.

Tap **MODE** → **Expert** → **S**, and set the desired shooting options.



Slow shutter speed



Fast shutter speed



To compensate for the reduced amount of light allowed by fast shutter speeds, adjust the aperture and let in more light. If your photos are still too dark, increase the ISO sensitivity.

Manual mode

This mode lets you adjust the shutter speed and aperture value manually. In this mode, you can fully control the exposure of your photos. This mode is useful in controlled shooting environments, such as a studio, or when it is necessary to fine-tune camera settings. This mode is also recommended for shooting night scenes or fireworks.

Tap **MODE** → **Expert** → **M**, and set the desired shooting options.



- If you set a high ISO sensitivity or open the shutter for a long time, image noise may increase.
- Use a tripod and shutter release to prevent your camera from shaking.
- The longer you open the shutter, the longer it takes to save a photo. Do not turn the camera off while the camera saves a photo.

Using the bulb feature

Use this feature to shoot night scenes or the night sky. While you are pressing the Shutter button, the shutter is left open so you can create moving light effects.

In manual mode, set the shutter speed to **Bulb**.

User mode

Use this to create and save your own shooting mode by adjusting settings.

Tap **MODE** → **Expert** → **P / A / S / M**, and set the desired shooting options. Then, tap  →  → **Save as User mode** to save the current settings.

To access user mode, tap **MODE** → **Expert** → **USER**.

Adjusting major shooting options

In expert mode, you can adjust the shutter speed, aperture value, exposure value, or ISO sensitivity with the Command dial and the i-Function button.

Using the Command dial

Press and hold the Command dial. Rotate it to move to a desired option and press it to select the option. Rotate it to adjust a value, and then press it to confirm the change.

Using the i-Function button

Press the i-Function button on the lens repeatedly to select an option, and then rotate the focus ring on the lens or the Command dial on the camera to adjust the value.

Using the auto exposure lock

When you cannot achieve an appropriate exposure because of a strong colour contrast, lock the exposure, and then take a photo.

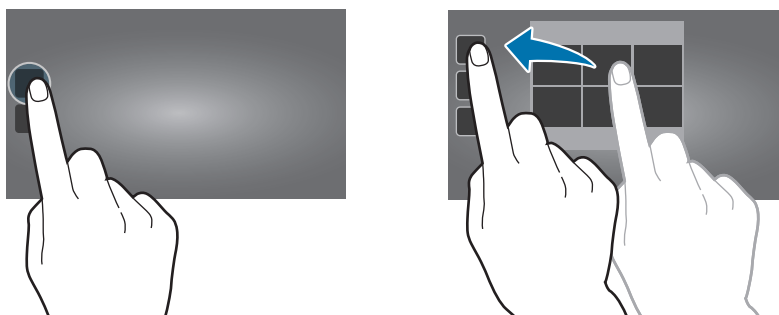
To lock the exposure value, adjust the photo's exposure, and tap  to lock the exposure. Aim the lens where you desire, and then press the Shutter button.

Shortcuts

Add or remove shortcuts for easy access to the camera's various options.

Tap and hold  or another shortcut icon.

Tap and hold an option and drag it to the desired location.  cannot be moved.



Smart

Use this to take photos with predefined settings for various scenes.

Smart suggest

Use this to take photos with one of the smart modes that the camera automatically suggests.

Tap **MODE** → **Smart** → **Smart suggest**.

Half-press the Shutter button, select a mode from the suggested list, and then press the Shutter button to take a photo. If you do not select a mode from the suggested list, the camera will take a photo in Auto mode.

Beauty face

Use this to take photos with lightened faces for gentler images.

Tap **MODE** → **Smart** → **Beauty face**.

Press the Shutter button to take a photo, and the camera automatically adjusts the photo, and then saves it.

Best photo

Use this to take multiple photos in a short time, and then choose the best photos among them.

Tap **MODE** → **Smart** → **Best photo**.

Press the Shutter button to take multiple photos. When **Gallery** opens, tap and hold thumbnails of photos to save, and then tap **Save**.

Continuous shot

Use this to take a series of photos of moving subjects.

Tap **MODE** → **Smart** → **Continuous shot**.

While holding the camera steady, press and hold the Shutter button to take several photos continuously.



To take several photos continuously, use memory cards with faster writing speeds (micro SDHC Class10 or higher).

Golf shot

Use this to take consecutive photos of a golf-swing to analyse technique.

Tap **MODE** → **Smart** → **Golf shot**.

Press the Shutter button. When the camera detects a golf-swing, it takes multiple photos.



- This feature is not available in portrait orientation.
- Using a tripod is recommended.

Best face

Use this to take multiple group shots at the same time and combine them to create the best possible image.

Tap **MODE** → **Smart** → **Best face**.

Press the Shutter button to take multiple photos. To get the best shot, hold the camera steady and remain still while taking photos. When **Gallery** opens, tap the yellow frame on each face, and choose the best individual face for the subject. After choosing a face for each individual, tap **Save** to merge the images into a single photo, and save it.



Color bracket

Use this to take three photos with different colour effects continuously.

Tap **MODE** → **Smart** → **Color bracket**.

Kids shot

Use this to play a funny sound to get a baby's attention when shooting.

Tap **MODE** → **Smart** → **Kids shot**.

Press the Shutter button. The camera emits the attention sound and takes multiple photos when it detects a smiling face.

To change the attention sound, tap ▶ → ⚙️ → 📷 → **Attention sound**.

Vignette+

Use this to highlight the centre by darkening the screen edges.

Tap **MODE** → **Smart** → **Vignette+**.



Landscape

Use this to take photos of blue skies and landscapes with richer colours.

Tap **MODE** → **Smart** → **Landscape**.



Dawn

Use this to take photos of the dawn sky in subtle colours.

Tap **MODE** → **Smart** → **Dawn**.

Snow

Use this to take brighter photos of snow scenery.

Tap **MODE** → **Smart** → **Snow**.

Macro

Use this to take photos of very close subjects.

Tap **MODE** → **Smart** → **Macro**.



Hold the camera steady to prevent blurry photos.

Food

Use this to take photos of food in more colourful tones.

Tap **MODE** → **Smart** → **Food**.

Party/Indoor

Use this to take crisp indoor photos.

Tap **MODE** → **Smart** → **Party/Indoor**.

Action freeze

Use this to take photos of subjects moving at high speed.

Tap **MODE** → **Smart** → **Action freeze**.



Use in bright daylight is recommended.

Rich tone

Use this to take photos without losing details in bright and dark areas. The camera automatically takes several photos with various exposure values, and then merges them into one photo.

Tap **MODE** → **Smart** → **Rich tone**.

While holding the camera steady, press the Shutter button to take multiple photos.



Without effect



With effect



- This feature may be affected by camera shake, lighting, movement of the subject, and shooting environment.
- The flash is disabled in this feature.
- When taking a photo of moving subjects, an afterimage may appear.
- Using a tripod is recommended.

Panorama

Use this to take wide panoramic photos.

Tap **MODE** → **Smart** → **Panorama**.

Press the Shutter button to take a photo, and then move the camera in one direction. When the blue frame aligns with the preview screen, the camera automatically takes another shot in the panoramic sequence. To stop shooting, press the Shutter button again. Photos are automatically combined into one panoramic image.





- Avoid the following for best results:
 - Moving the camera too quickly or too slowly.
 - Moving the camera too little to take the next photo.
 - Moving the camera at irregular speeds.
 - Shaking the camera.
 - Changing the camera direction while taking a photo.
 - Taking photos in low-light conditions.
 - Taking photos of moving subjects.
 - Taking photos where the brightness or colour of the light changes.
 - Taking photos of a subject in front of unrecognisable backgrounds, such as empty skies or plain walls.
- Photos are automatically saved, and shooting is stopped under following conditions:
 - Changing the distance from the subject while shooting.
 - Moving the camera too quickly.
 - Not moving the camera.
- The camera may stop taking photos due to composition or movement within the scene.
- The camera may not take the last scene entirely if you stop moving the camera at the exact position where you want the scene to end. To take the entire scene, move the camera slightly beyond the position you want the scene to end.

Waterfall

Use this to take photos of waterfalls.

Tap **MODE** → **Smart** → **Waterfall**.



The image may appear blurry due to the slow shutter speed when the camera takes photos. Make sure to use a tripod.

Animated photo

Use this to create a photo in which selected objects move by freezing or animating moving objects automatically detected by the camera.

Tap **MODE** → **Smart** → **Animated photo**.

Press the Shutter button to take a photo. Tap **Animate** or **Freeze**, and then rub the screen to animate or freeze the detected moving objects. Tap **Trim** to adjust the range to trim, or **Direction** to change the direction of the animation. Then, tap **Save** to save the file.

Multi exposure

Use this to take multiple shots and create one photo by overlapping them.

Tap **MODE** → **Smart** → **Multi exposure**.

To set the number of shots, tap ▶ → ⚙️ → 📷 → **Multi exposure**.

To set the camera to save all photos or only the final result, tap ▶ → ⚙️ → 📷 → **Save source**.



Drama

Use this to take a series of photos and combine them to create an image that shows trails of the movement.

Tap **MODE** → **Smart** → **Drama**.

While holding the camera steady, press the Shutter button to take several photos continuously. Tap **Save** to save the file.



To get the best shot, follow these tips. The camera may not take photos properly in other shooting conditions.

- Hold the camera steady and remain still while taking photos.
- Take photos of a subject that is moving in one direction.
- Take photos with backgrounds that are free of moving objects.
- Avoid taking photos of a subject and background with similar colours.
- Avoid taking photos of a subject that is too close or too far away to fit within the screen or that is too long such as a bus or a train.

Eraser

Use this to erase the movements of moving objects in the background.

Tap **MODE** → **Smart** → **Eraser**.

Press the Shutter button to take a series of photos. The camera erases traces of movement from a moving object. To restore the original photo, tap **Show moving objects**, tap the highlighted area, and then tap **Save**.



- Hold the camera steady and remain still while taking photos.
- Avoid taking photos of a subject and background with similar colours.
- When taking photos of a subject that is moving very little or moving a great deal, the camera may not recognise all of the movements.
- If there are multiple subjects moving in the background, the camera may not recognise all of the movement.

Sound & shot

Use this to take a photo with sound.

Tap **MODE** → **Smart** → **Sound & shot**.

The camera records a few seconds of audio before taking a photo.

To record sound after taking a photo, tap  →  →  → **Sound effect** → **Post-shot**.



While taking photos in this mode, sound is recorded by the internal microphone.

Miniature

Use this to apply a miniature effect by making the centre clear and blurring the top and bottom of the image.

Tap **MODE** → **Smart** → **Miniature**.



Creative shot

Use this to apply an appropriate filter to a scene automatically detected by the camera.

Tap **MODE** → **Smart** → **Creative shot**.

Interval

Use this to set the interval and number of shots to take over time.

Tap **MODE** → **Smart** → **Interval**.

Silhouette

Use this to take photos of dark shapes against a light background.

Tap **MODE** → **Smart** → **Silhouette**.



To maximise the silhouette effect, take photos at a location that is bright.

Sunset

Use this to take photos of the sunset.

Tap **MODE** → **Smart** → **Sunset**.

Night

Use this to take photos in low-light conditions, without using the flash.

Tap **MODE** → **Smart** → **Night**.

While holding the camera steady, press the Shutter button to take multiple photos. Photos are automatically merged into a single photo.



The image may appear blurry due to the slow shutter speed when the camera takes photos. Make sure to use a tripod.

Fireworks

Use this to take photos of fireworks.

Tap **MODE** → **Smart** → **Fireworks**.



The image may appear blurry due to the slow shutter speed when the camera takes photos. Make sure to use a tripod.

Light trace

Use this to take photos of the light trailing in low-light conditions.

Tap **MODE** → **Smart** → **Light trace**.



The image may appear blurry due to the slow shutter speed when the camera takes photos. Make sure to use a tripod.

My mode

Use this to register your favourite shooting modes and select them conveniently. You can register up to 10 modes.

Tap **MODE** → **My mode** → **Add**, and then select your favourite shooting modes. After completing your selection, tap **Done** to save it.

Camera: Shooting options and settings

Customising shooting options

Various shooting options are provided with your camera. With them, you can take more customised photos and videos.

Tap  to access shooting options. Depending on the mode selected, you may tap  → . Select an option, and then save it.



- Available options may differ depending on the shooting mode, the lens you are using, and the shooting conditions.
- Depending on the option selected, some settings may not be available.

EV (brightness)

The camera automatically sets the exposure by measuring the levels of light from the photo's composition and the position of a subject. If the exposure set by the camera is higher or lower than you expected, you can adjust the exposure value manually.

Tap  →  → **EV (brightness)**, and select an option.



Darker (-)



Neutral (0)



Brighter (+)



- When taking a photo, if the appropriate exposure value cannot be decided, use the bracket set option to take multiple photos with different exposure values.
- Taking photos with higher exposure values may result in blurry photos, due to slower shutter speed.

ISO (sensitivity)

The ISO sensitivity value represents the sensitivity of the camera to light.

The higher the ISO sensitivity, the more sensitive the camera is to light. Consequently, by selecting a higher ISO sensitivity, you can take photos in dim or dark places at faster shutter speeds. However, this may increase electronic noise and result in a grainy photo.

Tap  →  → **ISO (sensitivity)**, and select an option.

Examples



ISO 100



ISO 400



ISO 800



ISO 3200



- Increase the ISO sensitivity in places where flash use is prohibited. You can take a clear photo by setting a high ISO sensitivity without having to secure more light.
- Use the noise reduction feature to reduce the visual noise that can appear on photos of a high ISO sensitivity. (p. 92)

WB (light source)

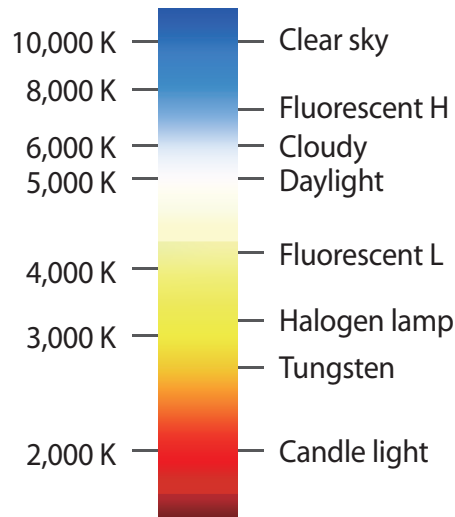
The white balance represents the light source that influences on the colour of a photo.

The colour of a photo depends on the type and quality of the light source. If you want the colour of your photo to be realistic, select an appropriate lighting condition to calibrate the white balance, or adjust the colour temperature manually. You can also adjust colour for the preset light sources so that the colours of the photo match the actual scene under mixed lighting conditions.

Tap  →  → **WB (light source)**, and select an option.

- **Auto:** Use automatic settings depending on the lighting conditions.
- **Daylight:** Use this for sunny days. This option results in photos closest to the natural colours of the scene.
- **Cloudy:** Use this for cloudy days or in shadows. Photos taken on cloudy days tend to be more bluish than on sunny days. This option offsets that effect.
- **Fluorescent_H:** Use this under daylight fluorescent or 3-way fluorescent lights.
- **Fluorescent_L:** Use this under white fluorescent lights.
- **Fluorescent_D:** Use this under a daylight fluorescent lamp.
- **Tungsten:** Use this under incandescent bulbs or halogen lamps. Incandescent tungsten bulbs tend to have a reddish hue. This option offsets that effect.
- **Flash WB:** Use this when using a flash.
- **Custom set:** Use this to set a custom white balance. Tap , aim the lens at a piece of white surface, and then press the Shutter button.

- **K:** Use this to manually adjust the colour temperature of the light source. Colour temperature is a measurement in degrees Kelvin that indicates the specific type of light source. As the colour temperature increases, the colour distribution becomes cooler. Alternatively, as the colour temperature decreases, the colour distribution becomes warmer. Tap , and then tap +/- to adjust the colour temperature.



Examples



Auto WB



Daylight



Fluorescent daylight



Tungsten

Customising preset white balance options

Adjust the colour for the preset light sources.

Tap  next to a white balance option. Tap the arrows or tap an area on the screen to adjust the value on the coordinates.

- **G:** Green
- **A:** Amber
- **M:** Magenta
- **B:** Blue

Metering

The metering mode refers to the method the camera measures the quantity of light.

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

Tap  →  → **Metering**, and select an option.

- **Multi:** The camera calculates the amount of light in multiple areas. When light is sufficient or insufficient, the camera adjusts the exposure by averaging the overall brightness of the scene. This mode is suitable for general photos.
- **Spot:** The camera calculates the amount of light in the centre. When you take a photo in conditions where there is a strong backlight behind a subject, the camera adjusts the exposure to shoot a subject correctly.
- **Centre-weighted:** The camera calculates a broader area than the camera does in spot mode. It sums up the amount of light in the centre portion of the shot (60–80 %) and that of the rest of the shot (20–40 %).

Drive

Use this option to set the shooting method. Continuous or burst shots are recommended for shooting the rapid motion of fast moving subjects, such as racing cars.

Tap  →  → **Drive**, and select an option.

- **Single shot:** Use this to take a single photo.
- **Continuous normal:** Use this to take five photos per second continuously while you are pressing the Shutter button.
- **Continuous high:** Use this to take about eight photos per second continuously while you are pressing the Shutter button.
- **Burst (10fps) / Burst (15fps) / Burst (30fps):** Use this to take 30 photos continuously when you press the Shutter button once.
- **AE BKT:** Use the auto exposure bracketing option to take three consecutive photos with different exposure values (one a step lighter, the original, and one a step darker). Use a tripod to prevent blurry photos. You can adjust the interval range in **Bracket set.** (p. 91)
- **WB BKT:** Use the white balance bracketing option to take three consecutive photos with different white balance settings (the original and two more with different white balance settings). The original photo is taken when you press the Shutter button. The other two are automatically adjusted to the white balance you have set. You can adjust the interval range in **Bracket set.** (p. 91)



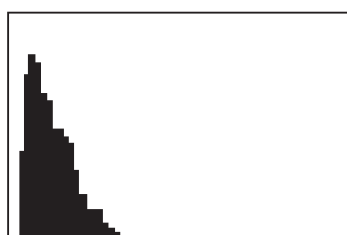
- Saving photos may take longer depending on memory card capacity and performance when taking photos continuously.
- Using a tripod is recommended when taking photos continuously.

Display

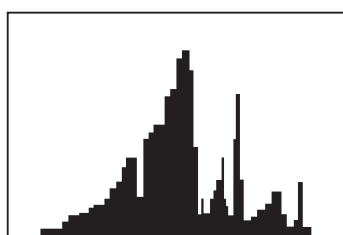
Use this option to add or remove shooting information from the screen.

Tap  →  → **Display**, and select an option.

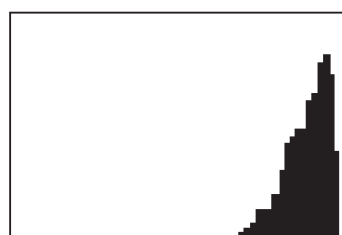
- **Normal:** The camera displays basic shooting information on the screen.
- **Histogram:** The camera displays the histogram on the screen. A histogram is a graph that shows the brightness distribution of a photo. A histogram inclined to the left indicates a dark photo. A histogram inclined to the right indicates a bright photo. The height of the graph is related to colour information. The graph gets higher if a specific colour is more common.



Insufficient exposure

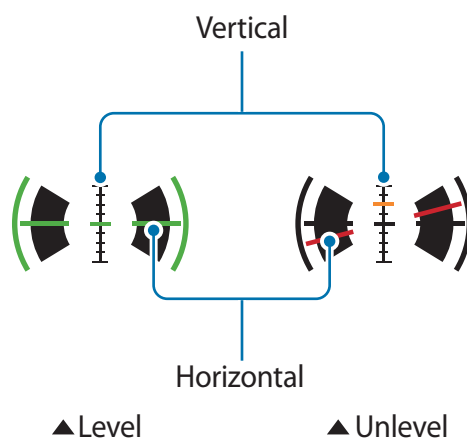


Balanced exposure



Excessive exposure

- **Horizontal level:** The camera displays the level gauge on the screen. The level gauge helps you align the camera with the horizontal and vertical lines on the screen.



- **Distance scale:** The camera displays the distance scale on the screen. The distance scale indicates the distance between a subject and the camera. This function is available only when you attach a lens that supports the distance scale function.

Save as User mode

Use this to save the current settings as your own shooting mode.

Tap  →  → **Save as User mode**.

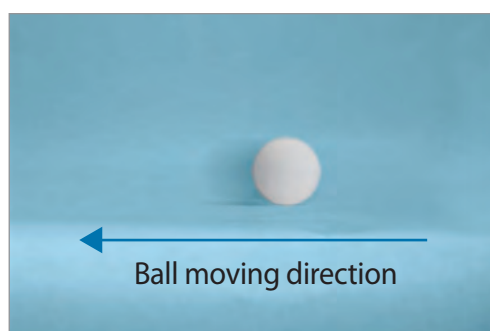
Flash

To take a realistic photo of a subject, the amount of light should be constant. When the light source varies, you can use a flash and supply a constant amount of light.

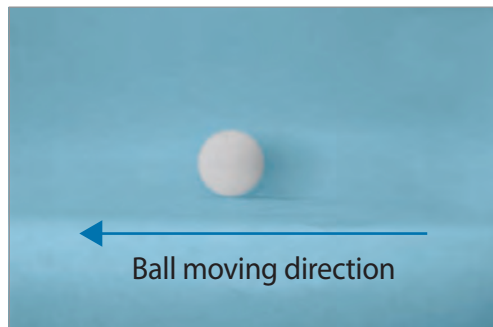
In auto mode, the flash pops up automatically when you half-press the Shutter button or tap the screen in low-light conditions.

Press the Flash release button to pop the flash up, tap  →  → **Flash**, and then select an option.

- **Off:** Use this to turn the flash off.
- **Smart flash:** Use this to automatically adjust the brightness of the flash according to the amount of light in the surrounding environment.
- **Auto flash:** Use this to automatically use the flash. The flash fires when the subject or background is dark.
- **Auto + Red-eye:** Use this to automatically use the flash and reduce red-eyes.
- **Fill in:** Use this to always use the flash.
- **Fill in + Red-eye:** Use this to always use the flash and reduce red-eyes.
- **1st Curtain:** Use this to fire the flash immediately after the shutter opens. The camera takes a photo of a subject earlier in an action sequence clearly.



- **2nd Curtain:** Use this to fire the flash just before the shutter closes. The camera takes a photo of a subject later in an action sequence clearly.



- Keep the flash retracted when not in use to avoid damage.
- Forcing the flash to open may cause damage to the camera.
- Use only Samsung-approved flashes. Using incompatible flashes may damage your camera.



- There is an interval between two bursts of the flash. Do not move until the flash fires a second time.
- If you select **Off**, the flash does not fire even when an external flash is attached.
- If light from the flash is reflected, or if a substantial amount of dust is in the air, tiny spots may appear in the photo.
- If you attach an intensity-adjustable external flash to the camera, the intensity settings of the flash will be applied.
- If the subject is too close when you use the flash, some light may be blocked, resulting in a dark photo. Ensure that the subject is within the recommended range, which varies by lenses.
- When a lens hood is attached, the light from the flash can be blocked by the hood. Remove the hood to use the flash.

Adjusting the flash intensity

When the flash is on, adjust the flash intensity.

Tap  next to an option, and then drag the slider or tap  or  to adjust the intensity.