

## User guide

Thank you for purchasing this Samsung product.  
To receive more complete service, please register your  
product at

[www.samsung.com](http://www.samsung.com)

Model \_\_\_\_\_ Serial No. \_\_\_\_\_

To directly go to the page that provides instructions on  
how to use the manual for visually impaired users, select  
the Learn Menu Screen link below.

"Learn Menu Screen" Link

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# Guide

Learn how to use various features.

## Connections

You can watch live broadcasts by connecting a coaxial cable to your TV and can get access to the network by using a LAN cable or wireless access point. Using various connectors, you can also connect external devices.

### Connection Guide

You can view detailed information about external devices that can be connected to the TV.

 >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) [Try Now](#)

It shows you how to connect various external devices, such as video devices, game consoles, and PCs using pictures. If you select the connection method and an external device, the connection details appear.

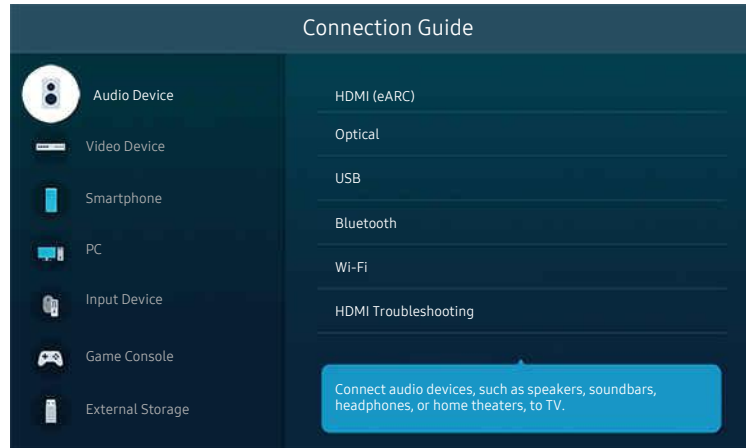
- [Audio Device: HDMI \(eARC/ARC\), Optical/Audio Out, USB, Bluetooth, Wi-Fi](#)
- [Video Device: HDMI](#)
- [Smartphone: Screen Sharing \(Smart View\), Screen Sharing \(Tap View\), Samsung DeX, SmartThings, Camera Sharing, Apple AirPlay, NFC on TV](#)
- [PC: HDMI, Screen Sharing \(Wireless\), Easy Connection to Screen, Apple AirPlay](#)
- [Input Device: Remote Control, USB Keyboard, USB Mouse, USB Gamepad, USB Camera, Bluetooth Device](#)
- [Game Console: HDMI](#)

- **External Storage: USB Flash Drive, Hard Disk Drive (HDD)**

 The connection method and available external devices may differ depending on the model.

 Some functions may not be supported depending on the model or geographical area.

 Using **HDMI Troubleshooting**, you can check the connection to HDMI cable and external devices (takes approximately 2 minutes).



 The image on your TV may differ from the image above depending on the model and geographical area.

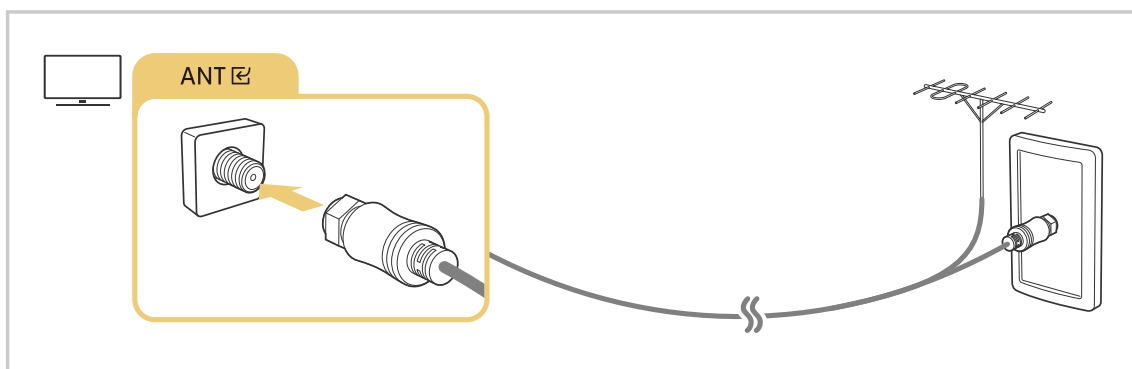
## Connecting an Antenna

**You can connect a coaxial cable to your TV.**

 An antenna connection is not necessary if you connect a cable box or satellite box.

- Do not use excessive force when connecting the antenna cable; excessive force may cause deformation of the port.
- To transport the product, first remove the antenna cable to prevent damage to the port.

 The port on your TV may differ from the following figure depending on the product model and region.



## Connecting to the network

You can get access to the network through your TV.

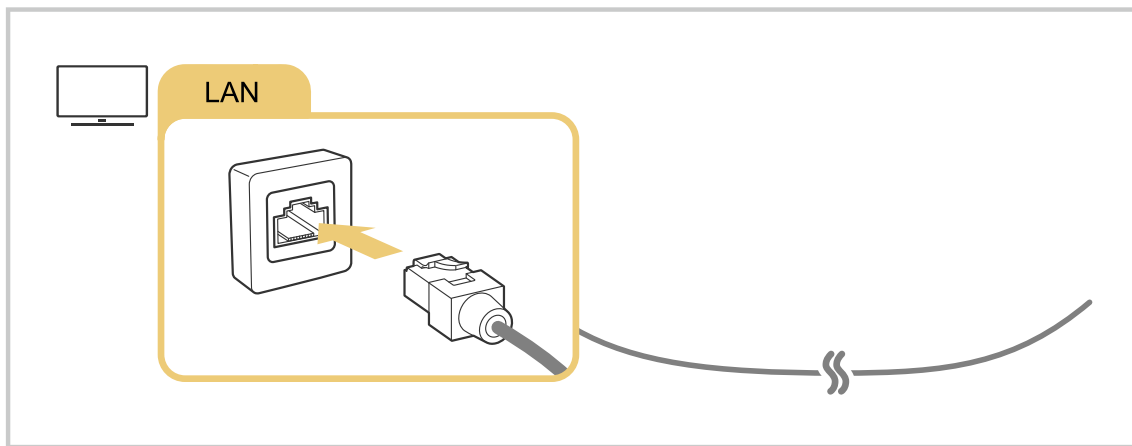
 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **Network** > **Open Network Settings** [Try Now](#)

Configure network settings to connect to an available network.

### Establishing a wired network connection

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **Network** > **Open Network Settings** > **Wired**

If you connect a LAN cable, the TV automatically accesses the network.

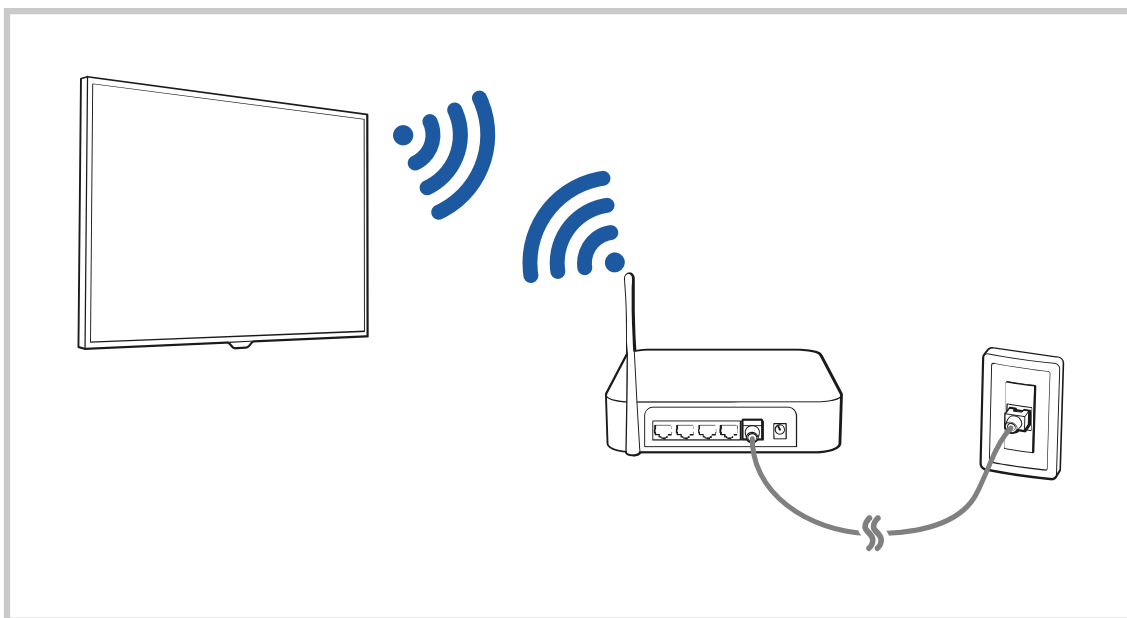


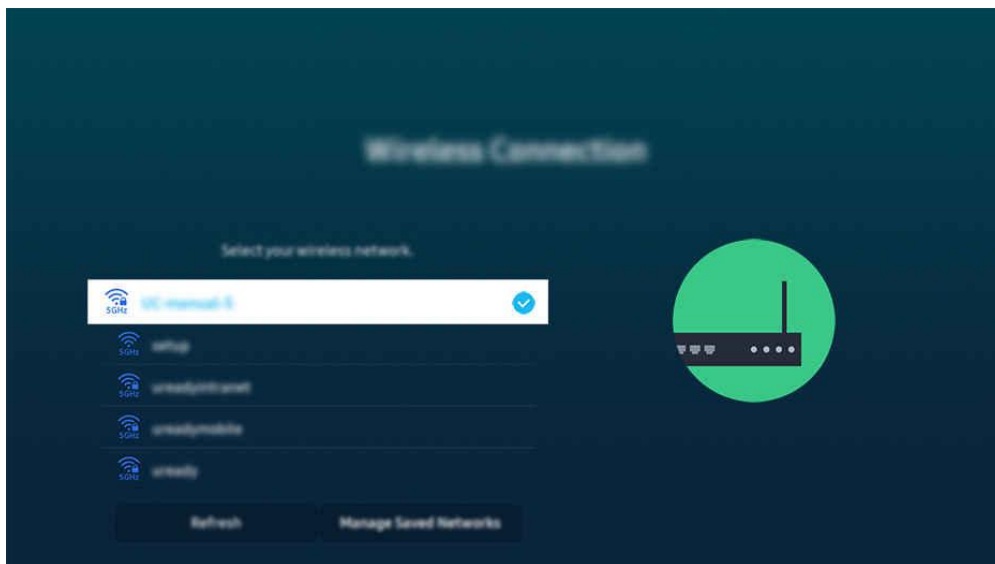
-  If the TV does not automatically connect to the network, refer to "[Wired network connection failed.](#)" in "Troubleshooting."
-  To connect a LAN cable, use a CAT 7 (\*STP type) cable for the connection. (100/10 Mbps)
  - \* Shielded Twisted Pair
-  The TV will not be able to connect to the network if your network speed is below 10 Mbps.
-  This function may not be supported depending on the model.
-  Wired networks are not supported by some models.

## Establishing a wireless network connection

🏠 > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Open Network Settings](#) > [Wireless](#)

Make sure that you have the wireless access point's name (SSID) and password settings before attempting to connect. The network name (SSID) and security key are available on the wireless access point's configuration screen. See the wireless access point's user manual for more information.





-  The image on your TV may differ from the image above depending on the model and geographical area.
-  If no wireless access point is found, select [Add Network](#) at the bottom of the list and enter the network name (SSID).
-  If your wireless access point has a WPS or PBC button, select [Use WPS](#) at the bottom of the list, and then push the WPS or PBC button on your access point within 2 minutes. The TV will connect automatically.
-  To view or delete previously connected network names (SSIDs), move the focus to [Manage Saved Networks](#), and then press the Select button.
-  To disconnect Wi-Fi, select [Disconnect](#) in  >  >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Network Status](#). [Try Now](#)

## Checking the network connection status

 >  >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Network Status](#) [Try Now](#)

View the current network status.

## Resetting Your Network

 >  >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Reset Network](#) [Try Now](#)

Restore the network settings to the factory default.

## Turning on the TV with a mobile device

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Expert Settings](#) > [Power On with Mobile](#) [Try Now](#)

You can turn on the TV using a mobile device connected to the same network as the TV.

 This function is available with a mobile device connected to the TV through the SmartThings app or the Apple AirPlay function.

Apple AirPlay may not be supported depending on the model or geographical area.

## Connecting an IP control device to the TV

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Expert Settings](#) > [IP Remote](#) [Try Now](#)

You can connect an IP control device to the TV remotely to manage your IP device.

 To use this function, [Power On with Mobile](#) must be turned on.

 Turning this feature on may allow other IP control devices to control your TV. We recommend turning this feature on only if an authorized third-party custom controller is installed and configured specifically for a Samsung TV and if your Wi-Fi network is password protected.

 This function may not be supported depending on the model.

## Allowing to connect a wireless network

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Expert Settings](#) > [Wi-Fi](#) [Try Now](#)

You can enable the connection to Wi-Fi.

 To connect a wireless network, the function must be active.

## Changing the name of the TV

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Device Name](#) [Try Now](#)

You can change the name of the TV on the network. Select [User Input](#) at the bottom of the list and change the name.

# Displaying your mobile device screen on the TV

You can watch the screen of your mobile device on the TV screen through Smart View, Apple AirPlay or Tap View.

When you start screen sharing with a mobile device ([Smart View](#) / [Apple AirPlay](#) / [Tap View](#)), the TV screen switches to the [Multi View](#) or mobile device's screen. Watch multiple contents at the same time with the [Multi View](#) screen.

 This function may not be supported depending on the model.

 For more information, refer to "[Using Multi View.](#)"

## Using Screen Sharing (Smart View)

For information on how to share the screen with your mobile device, refer to  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Smartphone](#) > [Screen Sharing \(Smart View\)](#). [Try Now](#)

- To turn off Screen Sharing (Smart View), disconnect the mobile device or press the  button on the remote control.
- Using the Smart View menu on your mobile device, you can change the settings such as aspect ratio.

## Using Apple AirPlay

Use AirPlay if you are an iPhone or iPad user. For more information, refer to  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Smartphone](#) > [Apple AirPlay](#). [Try Now](#)

 This function may not be supported depending on the model or geographical area.

 To use [Apple AirPlay](#), make sure  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Apple AirPlay Settings](#) is enabled.

## Using Screen Sharing (Tap View)

By tapping the mobile device on your TV, you can watch [Multi View](#) or mobile device's screen through the TV screen. When you tap a mobile device on your TV while running a music app on your mobile device, the TV screen switches to the [Music Wall](#) screen.

 This function may not be supported depending on the model.

 This function is only available in Samsung mobile devices with Android 8.1 or higher.

1. Enable [Tap View](#), [Tap Sound](#) on your mobile device.

 For more information about configuration, refer to 'Enabling Tap View'.

2. Turn on the screen of your mobile device.

3. Tap your mobile device on the TV. The TV screen switches to [Multi View](#), [Music Wall](#), or mobile device's screen.

 Be sure to tap away from the TV screen and bezel corners. It may scratch or break the TV or mobile device screen.

 We recommend using your mobile device with the cover in place and lightly tap it on any external edge of the TV.

 When you perform Tap View in [Ambient](#) mode or [Art](#) mode (only in The Frame models), only the mobile device's screen appears on the TV.

4. Watch the [Multi View](#), [Music Wall](#), or mobile device's screen on the TV screen.

 [Music Wall](#) screen is a function that allows you to enjoy music along with visual video effects that change according to the genre and beat of the music.

 The displayed TV screen may differ depending on the model.

 This function enables Screen/Sound Mirroring by detecting vibrations generated when you tap the mobile device on the TV.

## Enabling Tap View

Enable [Tap View](#) in the SmartThings app.

 Depending on the SmartThings app version, you may need to register the TV with your mobile device.

 This function may not be supported depending on the model.

1. Launch the SmartThings app on your mobile device.
2. Select Settings (≡ > ⚙) in SmartThings app on your mobile device.
3. Set [Tap View](#), [Tap Sound](#) to on.

 Upon connection for the first time, select [Allow](#) on a pop-up window of the TV.

## Connection Cables for External Devices

You can view detailed information about the connection cables for external devices that can be connected to the TV.

| Cable name               | Image                                                                               | Description                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HDMI to HDMI             |    | Each cable simultaneously transmits digital video and audio signals from an external device to the HDMI port on the TV.<br><br>Cables are divided into various types according to the types of input or output ports on external devices. |
| HDMI to MINI HDMI        |    |                                                                                                                                                                                                                                           |
| HDMI to Micro HDMI       |   |                                                                                                                                                                                                                                           |
| HDMI to USB Type-C       |  |                                                                                                                                                                                                                                           |
| HDMI to DisplayPort      |  |                                                                                                                                                                                                                                           |
| Mini DisplayPort to HDMI |  |                                                                                                                                                                                                                                           |

| Cable name  | Image                                                                               | Description                                                                                                                                                                                                                        |
|-------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVI to HDMI |    | DVI to HDMI cables can transmit only digital video signals and not audio signals. We recommend that you use HDMI to HDMI cables.                                                                                                   |
| Optical     |    | Optical cables are used to transmit audio signals to external speakers with low signal loss.<br>Optical cables can't transmit video signals.                                                                                       |
| Component   |    | Component cables transmit analogue signals.<br>The video signal is separated and transmitted to the red, green, and blue terminals to provide HD (1080i) pictures. The audio signal is transmitted to the red and white terminals. |
| Composite   |  | Composite cables transmit analogue signals.<br>The video signal is transmitted to the yellow terminal, and the audio signal is transmitted to the red and white terminals.                                                         |

 Available connection cables may differ depending on the model or geographical area.

# Switching between external devices connected to the TV

You can switch between TV programs and the content of external devices.

🏠 > ≡ (left directional button) > 📶 **Connected Devices**

When you select a connected external device on the **Sources** screen, the output of the selected device is displayed on the TV's screen.

✎ To control a device (Blu-ray player, game console, etc.) that supports universal remote control with the TV's remote control, connect the device to an HDMI port on the TV, and then turn on the device. The output displayed on the TV is automatically switched to the output of the device or you can configure universal remote control for the device automatically. For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup.](#)"

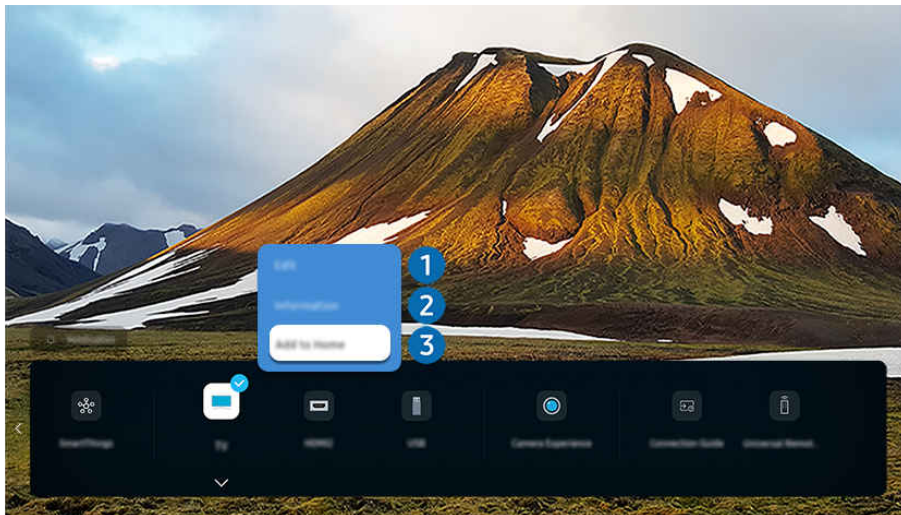
✎ When a USB device is connected to the USB port, a pop-up message appears that lets you switch easily to the media content listed on the device.

✎ This function may not be supported depending on the device and geographical area.

## Editing the name and icon of an external device

🏠 > ≡ (left directional button) > 📶 **Connected Devices**

You can change the port name for a connected external device or add it to the Home Screen.



✎ The image on your TV may differ from the image above depending on the model and geographical area.

1. Move the focus to a connected external device.
2. Press the down directional button. The following functions become available:

✎ Available functions may differ depending on the port type.

### 1 Edit

You can rename the input ports and change the device icons.

### 2 Information

You can view detailed information about an external device.

### 3 Add to Home

You can add the port of an external device to the Home Screen for quick switching.

## Using additional functions

You can use the [SmartThings](#) feature.

- [SmartThings](#)

It allows the TV to connect and control the detected various devices in the same space.

 For more information about [SmartThings](#), refer to "[Using SmartThings](#)."

 This function may not be supported depending on the model or geographical area.

You can use the following features on the [Sources](#) screen.

- [Camera Experience](#)

Connect a USB camera, or use the SmartThings app on your mobile phone to connect a camera.

Connect a camera to use video call, home workout, and other new features.

 For details on how to connect, refer to [Camera Sharing](#) (  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Smartphone](#) > [Camera Sharing](#) ).

 This function may not be supported depending on the model.

- [Connection Guide](#)

Displays device connection instructions.

 For more information, refer to "[Connection Guide](#)."

- [Universal Remote Setup](#)

Lets you register external devices to your Samsung remote control and control them using the Remote.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup](#)."

# Connection Notes

When connecting an external device, note the following:

-  The number of connectors, and their names and locations may differ with the model.
-  Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors, and their names and locations may differ with the manufacturer.

## Connection notes for HDMI

- The following types of HDMI cables are recommended:
  - High Speed HDMI Cable
  - High Speed HDMI Cable with Ethernet
  - Premium High Speed HDMI Cable
  - Premium High Speed HDMI Cable with Ethernet
  - Ultra High Speed HDMI Cable
- Use an HDMI cable with a thickness of 0.66 inches (17 mm) or less.
- Using a non-certified HDMI cable may result a blank screen or a connection error.
- Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.
- This TV does not support HDMI Ethernet Channel. Ethernet is a Local Area Network (LAN) built with coaxial cables standardized by the IEEE.
- Use a cable shorter than 10 feet (3 m) to get the best UHD viewing quality.
- Many computer graphics adapters do not have HDMI ports, but have DVI or DisplayPort ports instead. If your PC does not support HDMI video out, connect your PC with a DVI to HDMI or HDMI to DisplayPort cable.
- When the TV is connected to an external device, such as a DVD/BD player or a set-top box via HDMI, power sync mode will be automatically activated. In the power sync mode, the TV continues to detect and connect external devices via HDMI cable. This function can be deactivated by removing the HDMI cable of the connected device.
  -  This function may not be supported depending on the model.

## Connection notes for audio devices

- To obtain better TV audio quality, connect a soundbar or A/V receiver to the TV.
- If you connect an external audio device using an optical cable, the **Sound Output** setting automatically changes to the connected device. However, to make this happen, you must turn on the external audio device before connecting the optical cable. To manually change the **Sound Output** setting, do one of the following

 This function may not be supported depending on the model.

- Use the Select button to select **Receiver (Optical)** on the **Sound Output** menu. (🏠 > ≡ (left directional button) > ⚙️ **Settings** > **Sound Output** > Select button to toggle between sound output modes) [Try Now](#)
- Select **Receiver (Optical)** on the **Sound Output** menu. (🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **Sound** > **Sound Output**) [Try Now](#)

 Refer to the soundbar's user manual when connecting it to the TV.

- An unusual noise coming from a connected audio device while you are using it, may indicate a problem with the audio device itself. If this occurs, ask for assistance from the audio device's manufacturer.
- Digital audio is only available with 5.1 channel broadcasts.

## Connection notes for computers

- For the resolutions supported by the TV, refer to "[Read Before Connecting a Computer \(Supported Resolutions\)](#)."
- If you want to connect your PC and TV wirelessly, both of them must be connected to each other on the same network.
- When sharing content with other network-based devices, such as those in an IP (Internet Protocol) storage system, sharing may not be supported due to the network's configuration, quality, or functionality, for example, if the network has a NAS (Network-Attached Storage) device.

## Connection notes for mobile devices

- To use the Smart View function, the mobile device must support a mirroring function, such as Screen Mirroring or Smart View. To check whether your mobile device supports the mirroring function, refer to the mobile device's user manual.
- The Screen Sharing (Smart View) feature may not operate smoothly in a 2.4 GHz environment. For better experience, 5.0 GHz is recommended. 5 GHz may not be available depending on the model.
- To use Wi-Fi Direct, the mobile device must support the Wi-Fi Direct function. To check whether your mobile device supports Wi-Fi Direct, refer to the mobile device's user manual.

 This function may not be supported depending on the model or geographical area.

- The mobile device and your Smart TV must be connected to each other on the same network.
- Use AirPlay if you are an iPhone or iPad user. For more information, refer to  >  (left directional button) > [Connected Devices](#) > [Connection Guide](#) > [Smartphone](#) > [Apple AirPlay](#). [Try Now](#)

 This function may not be supported depending on the model or geographical area.

- The video or audio may stop intermittently, depending on network conditions.
- When sharing content with other network-based devices, such as those in an IP (Internet Protocol) storage system, sharing may not be supported due to the network's configuration, quality, or functionality, for example, if the network has a NAS (Network-Attached Storage) device.

## Connection notes for Portrait Mode

- If you connect the Auto Rotating Accessory (sold separately) to the TV, you can use the TV in Portrait Mode.
- To use the computer or console, connected via HDMI to the TV, in Portrait Mode, you need to change the device setting. Change the screen to Portrait Mode from the computer or console.

 Portrait Mode is supported when a computer that uses Windows 10 or later or a console that supports Portrait Mode is connected.

 This function may not be supported depending on the model.

# Remote Control and Peripherals

You can control TV operations with your Samsung Smart Remote. Pair external devices, such as a keyboard, for ease of use.

## About the Samsung Smart Remote (QLED TV / The Frame / The Serif / S8\*D/ S9\*D/S8\*C/S9\*C/CU8/DU8/DU9/DUX1 Series / CU77\*\*/DU75\*\*/DU77\*\* model)

Learn about the buttons on the Samsung Smart Remote.

| Button                                                                                                                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Power)                                                                                                 | <p>Press to turn the TV on or off.</p> <p>When watching TV through The Frame model, press to switch to <a href="#">Art</a> mode. In <a href="#">Art</a> mode, press to switch to the <a href="#">Home</a> screen. Press and hold to turn off the TV completely.</p> <p> For more information, refer to "<a href="#">Using Art Mode.</a>"</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| MIC / LED                                                                                                                                                                                 | <p>Used as MIC when using voice recognition with the remote control. When charging the remote control via the USB port, the LED is lit if charging is in progress. When charging is complete, the LED is turned off.</p> <ul style="list-style-type: none"><li>Do not impact the MIC hole or use a sharp object to poke into the hole.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  /  (Voice Assistant) | <p>Runs Voice Assistant. Press and hold the button, say a command, and then release the button to run Voice Assistant.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  (Settings - Number - Color button)                                                                    | <p>You can access Setting menu / virtual numeric pad / Color buttons / Option pad / SmartThings directly.</p> <ul style="list-style-type: none"><li>Accessing the SmartThings app using this button may not be supported, depending on the model.</li><li>Use this button to access additional options that are specific to the feature in use.</li><li>Press to bring up the virtual numeric pad on the screen. Use the numeric keypad to enter numeric values. Select numbers and then select <a href="#">Done</a> or <a href="#">Enter Number</a> to enter a numeric value. Use to change the channel, enter a PIN, ZIP code and etc.</li></ul> <p> If the Color Button appears with a number strip on the screen, select the Color Button and then select a specific color by using the directional button (up, down, left, right).</p> |
| Directional button (up, down, left, right)                                                                                                                                                | <p>Use to navigate the menu or move the focus to highlight items on the Home Screen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Select                                                                                                                                                                                    | <p>Selects or runs a focused item. When pressed while you are watching a broadcast program, detailed program information appears.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  (Return)                                                                                              | <p>Press to return to the previous menu. When pressed for 1 second or more, the running function is terminated. When pressed while you are watching a program, the previous channel appears.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  (Smart Hub)                                                                                           | <p>Press to switch to the Home Screen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Button                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Play/pause) | <p>When pressed, the playback controls appear. Using these controls, you can control the media content that is playing.</p> <p>To use Game Bar, press and hold the button in <a href="#">Game Mode</a>.</p> <p> Game Bar may not be supported depending on the model or geographical area.</p>                              |
| +/- (Volume)                                                                                   | <p>Move the button up or down to adjust the volume. To mute the sound, press the button. When pressed for 2 seconds or more, the <a href="#">Accessibility Shortcuts</a> appears.</p> <p>  may not be present, depending on the model.</p> |
| ^/▼ (Channel)                                                                                  | <p>Move the button up or down to change the channel. To see the <a href="#">Guide</a> screen, press the button. When pressed for 1 second or more, the <a href="#">Channel List</a> screen appears.</p> <p>Press and hold the button up or down to quickly change the channel.</p>                                                                                                                           |
| Launch app button                                                                              | <p>Launch the app indicated by the button.</p> <p> Available apps may differ depending on the geographical area or contents provider.</p>                                                                                                                                                                                   |

-  Use the Samsung Smart Remote less than 20 feet (6 m) from the TV. The usable distance may vary with the wireless environmental conditions.
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.
-  To use the Samsung Smart Remote to control a compatible external device that does not support HDMI-CEC (Anynet+), you must configure universal remote control for the device. For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup](#)."
-  To use the Samsung Smart Remote to control a compatible external device that does support HDMI-CEC (Anynet+), connect the device to an HDMI port on the TV using an HDMI cable. For more information, refer to "[Using Anynet+ \(HDMI-CEC\)](#)."

## About the Remote Control (CU6/DU6/CU7/DU7/BEC/BED Series)(except for CU77\*\*/DU75\*\*/DU77\*\* model)

Learn about the buttons on the Remote Control.

| Button                                                                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Power)                             | Press to turn the TV on or off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  (Settings - Number - Option button) | <p>You can access Setting menu / virtual numeric pad / Option pad / SmartThings directly.</p> <ul style="list-style-type: none"><li>• Accessing the SmartThings app using this button may not be supported, depending on the model.</li><li>• Use this button to access additional options that are specific to the feature in use.</li><li>• Press to bring up the virtual numeric pad on the screen. Use the numeric keypad to enter numeric values. Select numbers and then select <b>Done</b> or <b>Enter Number</b> to enter a numeric value. Use to change the channel, enter a PIN, ZIP code and etc.</li></ul> |
|  (Color button)                      | When pressed, colored buttons appear on the screen. Use this button to access additional options that are specific to the feature in use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Directional button (up, down, left, right)                                                                            | Use to navigate the menu or move the focus to highlight items on the Home Screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Select                                                                                                                | Selects or runs a focused item. When pressed while you are watching a broadcast program, detailed program information appears.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  (Return)                           | Press to return to the previous menu. When pressed for 1 second or more, the running function is terminated. When pressed while you are watching a program, the previous channel appears.                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  (Smart Hub)                       | Press to switch to the Home Screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Button                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Play/pause) | When pressed, the playback controls appear. Using these controls, you can control the media content that is playing.                                                                                                                                                                                                                                                                              |
| +/- (Volume)                                                                                   | Move the button up or down to adjust the volume. To mute the sound, press the button. When pressed for 2 seconds or more, the <a href="#">Accessibility Shortcuts</a> appears.<br>  may not be present, depending on the model. |
| ^/∨ (Channel)                                                                                  | Move the button up or down to change the channel. To see the <a href="#">Guide</a> screen, press the button. When pressed for 1 second or more, the <a href="#">Channel List</a> screen appears.<br>Press and hold the button up or down to quickly change the channel.                                                                                                                           |
| Launch app button                                                                              | Launch the app indicated by the button.<br> Available apps may differ depending on the geographical area or contents provider.<br> This function may not be supported depending on the model or geographical area.              |

 The images, buttons, and functions of the Remote Control may differ with the model or geographical area.

 To use the Remote Control to control a compatible external device that does not support HDMI-CEC (Anynet+), you must configure universal remote control for the device. For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup.](#)"

 To use the Remote Control to control a compatible external device that does support HDMI-CEC (Anynet+), connect the device to an HDMI port on the TV using an HDMI cable. For more information, refer to "[Using Anynet+ \(HDMI-CEC\).](#)"

## About the Samsung Smart Remote (The Terrace)

Learn about the buttons on the Samsung Smart Remote.

| Button                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Power)                            | <p>Press to turn the TV on or off. Press and hold to turn off the TV completely.</p> <p>To activate the Samsung Smart Remote, press  on it. (This is required only when using it for the first time.)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MIC                                                                                                                  | <p>Used as MIC when using voice recognition with the remote control.</p> <ul style="list-style-type: none"> <li>Do not impact the MIC hole or use a sharp object to poke into the hole.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| LED                                                                                                                  | <p>When charging the remote control via the USB port, the LED is lit if charging is in progress. When charging is complete, the LED is turned off.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  (Voice Assistant)                  | <p>Runs Voice Assistant. Press and hold the button, say a command, and then release the button to run Voice Assistant.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  (Settings - Number - Color button) | <p>You can access Setting menu / virtual numeric pad / Color buttons / Option pad / SmartThings directly.</p> <ul style="list-style-type: none"> <li>Accessing the SmartThings app using this button may not be supported, depending on the model.</li> <li>Use this button to access additional options that are specific to the feature in use.</li> <li>Press to bring up the virtual numeric pad on the screen. Use the numeric keypad to enter numeric values. Select numbers and then select <b>Done</b> or <b>Enter Number</b> to enter a numeric value. Use to change the channel, enter a PIN, ZIP code and etc.</li> </ul> <p> If the Color Button appears with a number strip on the screen, select the Color Button and then select a specific color by using the directional button (up, down, left, right).</p> |
| Directional button (up, down, left, right)                                                                           | <p>Use to navigate the menu or move the focus to highlight items on the Home Screen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Select                                                                                                               | <p>Selects or runs a focused item. When pressed while you are watching a broadcast program, detailed program information appears.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  (Return)                         | <p>Press to return to the previous menu. When pressed for 1 second or more, the running function is terminated. When pressed while you are watching a program, the previous channel appears.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  (Smart Hub)                      | <p>Press to switch to the Home Screen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Button                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  (Play/pause) | <p>When pressed, the playback controls appear. Using these controls, you can control the media content that is playing.</p> <p>To use Game Bar, press and hold the button in <a href="#">Game Mode</a>.</p> <p> Game Bar may not be supported depending on the model or geographical area.</p> |
| +/- (Volume)                                                                                   | <p>Move the button up or down to adjust the volume. To mute the sound, press the button. When pressed for 2 seconds or more, the <a href="#">Accessibility Shortcuts</a> appears.</p>                                                                                                                                                                                           |
| ^/v (Channel)                                                                                  | <p>Move the button up or down to change the channel. To see the <a href="#">Guide</a> screen, press the button. When pressed for 1 second or more, the <a href="#">Channel List</a> screen appears.</p> <p>Press and hold the button up or down to quickly change the channel.</p>                                                                                              |
| Launch app button                                                                              | <p>Launch the app indicated by the button.</p> <p> Available apps may differ depending on the geographical area or contents provider.</p>                                                                                                                                                      |

 Use the Samsung Smart Remote less than 20 feet (6 m) from the TV. The usable distance may vary with the wireless environmental conditions.

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

 To use the Samsung Smart Remote to control a compatible external device that does not support HDMI-CEC (Anynet+), you must configure universal remote control for the device. For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup](#)."

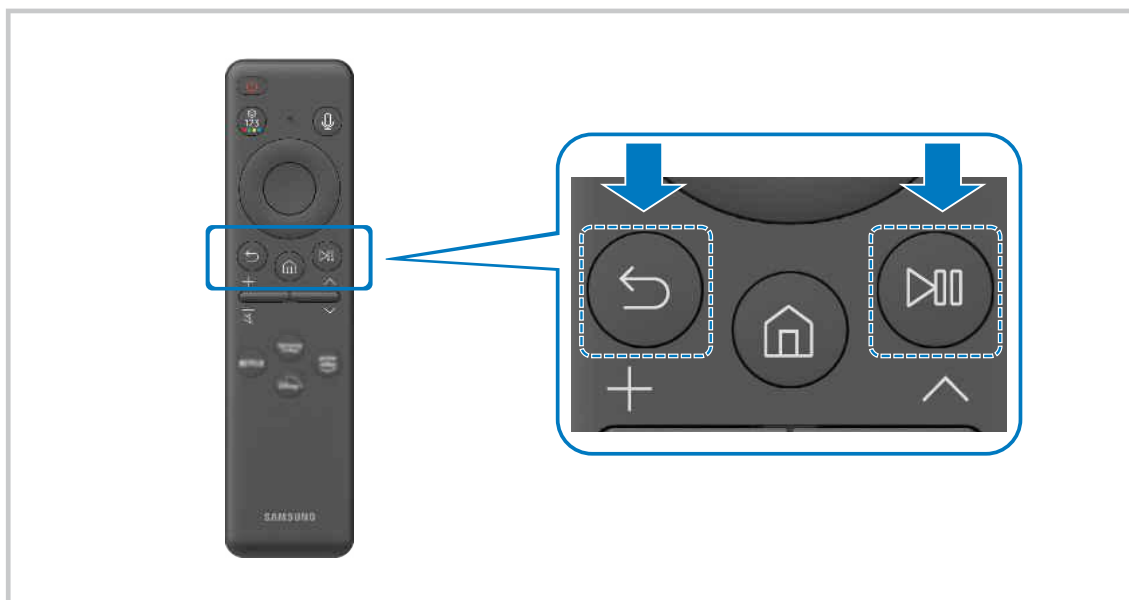
 To use the Samsung Smart Remote to control a compatible external device that does support HDMI-CEC (Anynet+), connect the device to an HDMI port on the TV using an HDMI cable. For more information, refer to "[Using Anynet+ \(HDMI-CEC\)](#)."

## Connecting the Samsung Smart Remote to the TV

Connect the Samsung Smart Remote to your TV to operate the TV.

When you turn on the TV for the first time, the Samsung Smart Remote pairs to the TV automatically. If the Samsung Smart Remote does not pair to the TV automatically, point it at the front of the TV, and then press and hold the  and  buttons simultaneously for 3 seconds or more.

 This function may not be supported depending on the model or geographical area.



# Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup

Control the TV and connected external devices with a Samsung remote control.

 >  (left directional button) >  **Connected Devices** > **Universal Remote Setup**

You can control all external devices connected to the TV using a single Samsung remote. Run the **Universal Remote Setup** menu to register external devices.

-  This function may not be supported depending on the model or geographical area.
-  You can also use the **Anynet+ (HDMI-CEC)** function to operate external Samsung devices with your TV's remote control without any additional setup. For more information, refer to "[Using Anynet+ \(HDMI-CEC\)](#)."
-  Specific external devices connected to the TV may not support the universal remote feature.
-  Do not place any obstacles in front of an external device and TV's logo. It may cause improper transmitted signals from the remote control.
-  If you have difficulty controlling external devices with the Universal Remote, try adjusting the positions of the external devices.
-  This function may not operate properly depending on the TV installation environment and the features of external devices.

## Learn how to use Samsung Smart Remote

You can learn how to use Samsung Smart Remote.

 >  (left directional button) >  **Settings** > **Support** > **Remote Control Guide**

Find details on how to use the Samsung Smart Remote.

Press the menu to use a variety of functions of the Samsung Smart Remote.

-  This function may not be supported depending on the model.

## Learn how to use Game Controller

You can learn how to use Game Controller.

 >  (left directional button) >  **Settings** > **Support** > **Game Controller Guide**

Find details on how to use the Game Controller.

Press the menu to learn more about the functions of each Game Controller button.

-  This function may not be supported depending on the model.
-  Button layouts may vary between controllers.

## Using Anynet+ (HDMI-CEC)

Control an external device connected via Anynet+ (HDMI-CEC) with the remote control.

You can use the TV's remote control to control external devices that are connected to the TV by an HDMI cable and that support Anynet+ (HDMI-CEC). Note that you can only set up and operate Anynet+ (HDMI-CEC) with the remote control.

### Connecting an external device through Anynet+ and using their menus

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **External Device Manager** > **Anynet+ (HDMI-CEC)** 

1. Set **Anynet+ (HDMI-CEC)** to **On**.
2. Connect an HDMI-CEC-compliant device to the TV.
3. Turn on the connected external device.

The device is automatically connected to the TV. After the connection process is finished, you can access the menu of the connected device using your TV remote and control the device.

 The connecting process can take up to 2 minutes to complete.

### Read before connecting an Anynet+ (HDMI-CEC) device

-  Anynet+ (HDMI-CEC)-enabled devices must be connected to the TV with an HDMI cable. Note that some HDMI cables may not support Anynet+ (HDMI-CEC).
-  You can configure the TV's Universal Remote to control third-party cable boxes, Blu-ray players, and home theaters that do not support HDMI-CEC. For more information, refer to "[Controlling External Devices with a Samsung Remote Control - Using the Universal Remote Setup](#)."
-  Anynet+ cannot be used to control external devices that do not support HDMI-CEC.
-  The TV remote control may not work under certain circumstances. If this occurs, set up the device as an Anynet+ (HDMI-CEC)-enabled device again.
-  Anynet+ (HDMI-CEC) works only with external devices that support HDMI-CEC, and when those devices are either in standby mode or turned on.
-  Anynet+ (HDMI-CEC) can control up to 12 compliant external devices (up to 3 of the same type) except for home theaters. Anynet+ (HDMI-CEC) can control only one home theater system.
-  To listen to 5.1 channel audio from an external device, connect the device to the TV via an HDMI cable and connect a 5.1 home theater system directly to the external device's digital audio output connector.
-  If an external device has been set up for both Anynet+ and a universal remote control, the device can be controlled only with the universal remote control.

# Controlling the TV with a Keyboard, Mouse, or Gamepad

Connecting a keyboard, mouse, or gamepad to make it easier to control the TV.

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Input Device Manager](#) [Try Now](#) [Try Now](#)

You can connect a keyboard, mouse, or gamepad to control the TV easily.

## Connecting a USB keyboard, mouse, or gamepad

Plug the keyboard, mouse or gamepad cable into the USB port.

 This function may not be supported by some apps or external devices.

 XInput USB gamepads are supported.

 For more information, refer to [Input Device](#) in [Connection Guide](#) ( >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Input Device](#))

## Connecting a Bluetooth keyboard, mouse, or gamepad

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Bluetooth devices](#) [Try Now](#)

 If your device was not detected, position the keyboard close to the TV, and then select [Refresh](#). The TV scans for available devices again.

 This function may not be supported by some apps or external devices.

 A maximum of four gamepads can be connected, regardless of connection method (e.g., USB or Bluetooth).

- When using two BT audio devices, it is best to use USB gamepads.
- When using one BT audio device, up to two BT gamepads can be connected.

 For more information, refer to the Bluetooth device's user manual.

 This function may not be supported depending on the model or geographical area.

## Using the keyboard and mouse

| Button              | Description                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directional keys    | Use to navigate the menu, or move the focus to highlight items on the Home Screen.                                                                                                                                                                                                                                                                                                                               |
| Enter key           | Selects or runs a focused item                                                                                                                                                                                                                                                                                                                                                                                   |
| ESC key             | Returns to the previous screen                                                                                                                                                                                                                                                                                                                                                                                   |
| Number keys         | Enter numbers                                                                                                                                                                                                                                                                                                                                                                                                    |
| F1 key              | Turns on or off the TV                                                                                                                                                                                                                                                                                                                                                                                           |
| F2 key              | Displays the Settings menu / numeric keypad / Option pad / SmartThings app<br>Each time you press this button, Settings menu / virtual numeric pad / Option pad / SmartThings app are displayed alternately.                                                                                                                                                                                                     |
| F3 key              | Plays/pauses                                                                                                                                                                                                                                                                                                                                                                                                     |
| F4 key              | Displays the <a href="#">Settings</a> screen                                                                                                                                                                                                                                                                                                                                                                     |
| F5 key              | Displays the Home Screen                                                                                                                                                                                                                                                                                                                                                                                         |
| F6 key              | Displays the Sources screen                                                                                                                                                                                                                                                                                                                                                                                      |
| F7 key              | Displays the <a href="#">Channel List</a>                                                                                                                                                                                                                                                                                                                                                                        |
| F8 key              | Mutes the sound                                                                                                                                                                                                                                                                                                                                                                                                  |
| F9 / F10 key        | Adjusts the volume                                                                                                                                                                                                                                                                                                                                                                                               |
| F11 / F12 key       | Changes the channel                                                                                                                                                                                                                                                                                                                                                                                              |
| Page Up / Page Down | Scrolls a webpage displayed by the <a href="#">Internet</a> app.                                                                                                                                                                                                                                                                                                                                                 |
| Left-click          | Selects and runs an item.<br> This function is not available in some apps.<br> You can click a menu or link to start a function as you do on a PC.                                                                                         |
| Right-click         | Calling up shortcut buttons, such as  /  /+/-/^/√<br>Easily access a menu by right-clicking on the mouse and selecting the menu from among the displayed shortcut buttons. Displayed shortcut buttons may differ, depending on the screen. |

 The key operation may differ depending on some apps or the keyboard.

## Using the Gamepad

Check the supported gamepads. [Try Now](#)

 This function may not be supported depending on the model or geographical area.

| Manufacturer | Controllers                             | Connection | Force feedback |
|--------------|-----------------------------------------|------------|----------------|
| Microsoft    | Xbox Series X/S controller              | BT         | O              |
|              | Xbox One S controller                   | BT         | O              |
|              |                                         | USB        | O              |
|              | Xbox 360 controller                     | USB        | O              |
|              | Xbox Elite Wireless Controller Series 2 | BT         | O              |
|              | Xbox Adaptive controller                | BT         | -              |
|              |                                         | USB        | -              |
| Sony         | Dualsense Edge                          | BT         | O              |
|              |                                         | USB        | O              |
|              | Dualsense                               | BT         | O              |
|              |                                         | USB        | O              |
|              | DualShock 4                             | BT         | O              |
|              |                                         | USB        | O              |
| Google       | Stadia controller                       | USB        | Not support    |
|              |                                         | Wi-Fi      | Not support    |
| Amazon       | Luna controller                         | BT         | O              |
|              |                                         | USB        | O              |
|              |                                         | Wi-Fi      | Not support    |
| Joytron      | CYVOX DX                                | USB        | O              |
| Logitech     | F710                                    | USB        | O              |
|              | F510                                    | USB        | O              |
|              | F310                                    | USB        | -              |
| PowerA       | MOGA XP5-X Plus Bluetooth controller    | BT         | -              |
|              |                                         | USB        | -              |
| Nvidia       | Shield controller                       | BT         | O              |
|              |                                         | USB        | Not support    |
| Nintendo     | Nintendo Switch Pro                     | BT         | O              |
|              |                                         | USB        | O              |
|              | Nintendo Joy-Con (L/R)                  | BT         | O              |

 Some keys are not available on this product depending on controller.

 Force feedback :

"Not support" (This product can't support force feedback.)

"-" (Controllers don't have force feedback function.)

\* Tizen TVs will support only XInput mode for the supported gamepads.

\* Xbox controllers may require firmware updates.

 Controller audio output (3.5 mm port) is not available on this product.

 Other controllers may or may not work for cloud gaming.

## Using the controller

| Button                                                           | Description                                                                                                                                                                                       |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Left joystick and dpad                                           | 4 way navigation                                                                                                                                                                                  |
| Right joystick                                                   | <ul style="list-style-type: none"> <li>Up / Down : Volume control (Up / Down)</li> <li>Left / Right : Channel control (Up / Down) on TV screen</li> <li>Select (press): Mute the sound</li> </ul> |
| A button or X button (Sony Only)                                 | Enter (OK)                                                                                                                                                                                        |
| B button or O button (Sony Only)                                 | Return (Cancel)                                                                                                                                                                                   |
| Pressing and holding the B button or O button (Sony Only)        | Exit                                                                                                                                                                                              |
| Home button                                                      | Gaming hub homepage (Gaming hub supported countries)<br>Smart hub homepage                                                                                                                        |
| Pressing and holding the Home button                             | (During cloud game play) Quick panel                                                                                                                                                              |
| Option button on the left                                        | Game Bar (when Game Mode is turned on and an external source is connected)                                                                                                                        |
| X button or □ button (Sony Only)                                 | Numeric buttons (123)                                                                                                                                                                             |
| Pressing and holding the left and right joysticks simultaneously | Power Off (Turning power on is not possible)<br>On The Frame models, the TV goes into <a href="#">Art</a> mode.                                                                                   |

 The button operation may differ depending on some apps or the controller.

 If you connect controller to this product by Wi-Fi solution, you cannot use UI navigation function.

\* Gaming Hub and Cloud game may not be supported depending on the country.

## Setting up the input devices

🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **Connection** > **External Device Manager** > **Input Device Manager** [Try Now](#)

- **Keyboard Settings** [Try Now](#)

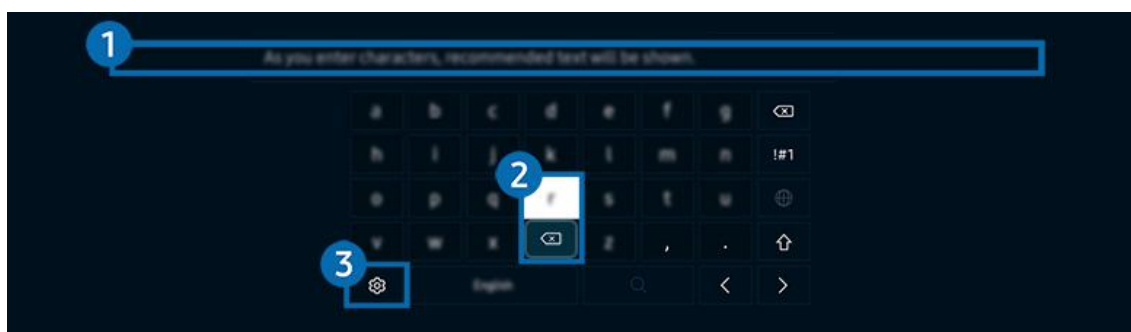
You can set up the keyboard with the [Keyboard Language](#) and [Keyboard Type](#) functions.

- **Mouse Settings** [Try Now](#)

You can set up the mouse with the [Mouse Pointer Size](#), [Primary Button](#) and [Pointer Speed](#) functions.

## Entering Text using the On-Screen Virtual Keyboard

Use the virtual keyboard to enter text on your TV.



 The image on your TV may differ from the image above depending on the model and geographical area.

### **1** Recommended text

When you type a word you want to use as a search term, this function displays related suggestions from which you can choose one.

## 2 Editing Buttons

By selecting any of pop-up Editing Buttons after entering characters on the virtual keyboard, you can quickly perform the editing function.

 This function is only available when the [Show Editing Buttons](#) feature is turned on.

## 3 Settings

Select  on the virtual keyboard screen. The following options are available:

 The options available may differ depending on the function running currently.

- [Recommended text](#)
  - [Recommended text](#)
  - [Reset Recommended Text Memory](#)
  - [Show Editing Buttons](#)
- [Keypad Language](#)
  - [Keypad Layout](#)

## Entering Text using the remote control's microphone and the on-screen virtual keyboard

When the virtual keyboard is on the screen, press and hold the button  on the Samsung Smart Remote, speak into the microphone on the Samsung Smart Remote, and then release the button. What you say appears on the screen as text.

 Entering text with your voice may not be supported for some functions.

 This function may not be supported depending on the model or geographical area.

 The Samsung Smart Remote may not be supported depending on the model or geographical area.

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

# Smart Features

You can enjoy various apps with Smart Hub.

## Using Smart Hub

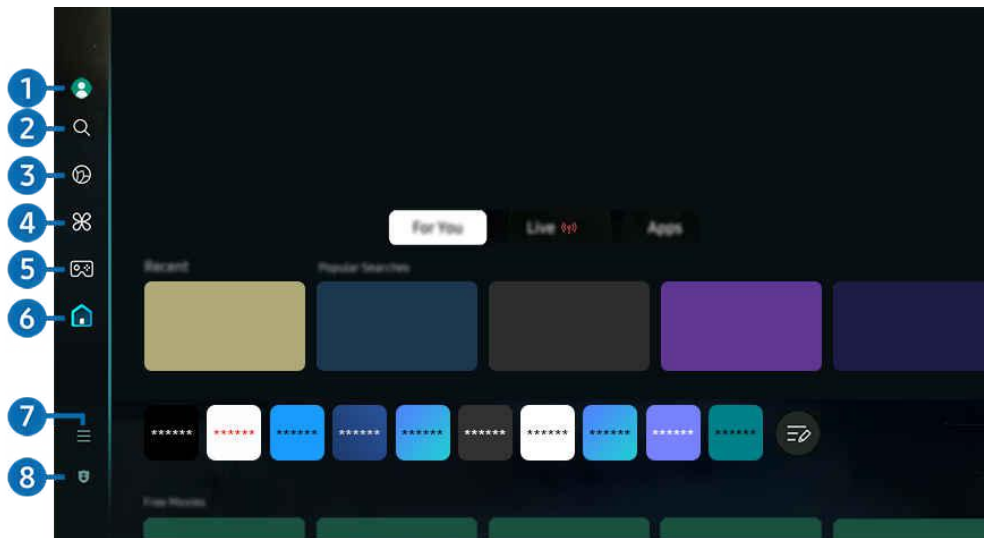
[View descriptions of Smart Hub's basic functions.](#)

From Smart Hub, you can use the Internet search function, install and use various apps, view photos and videos, or listen to music and perform more functions.

-  Some Smart Hub services are paid services.
-  To use smart functions, you should connect to a network, agree to the terms and conditions, and log in with your Samsung account.
-  Some Smart Hub features may not be supported depending on the service provider, language, or geographical area.
-  Smart Hub service outages can be caused by disruptions in your network service.

## Displaying the Home Screen

Press the  button.



 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Samsung Account

Go to the [Samsung Account](#) screen to create a new account or sign out of your account.

 For more information, refer to "[Using a Samsung account.](#)"

### 2 Search

Search for channels, programs, movies, and apps offered by Smart Hub.

 To use the Search service, make sure the TV is connected to a network.

 This function may not be supported depending on the model or geographical area.

### 3 Ambient

When the TV is not being used, set your TV to display content that you desire such as the Time or Weather.

To return to TV mode from [Ambient](#) mode, press  > the left directional button >  [Home](#). Press the  button to turn off the TV.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Using Ambient Mode.](#)"

## Art

When you are not watching TV or when the TV is turned off, you can use the [Art](#) mode function to edit image contents such as artworks and photos, or to display the content.

 This function is supported only in The Frame.

 For more information, refer to "[Using Art Mode.](#)"

## 4 Daily+

Offers a variety of practical apps, including a home workout app, video chat app and remote medical service app, allowing you to conveniently experience different lifestyles at home.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[About the Daily+ Home screen.](#)"

## 5 Game

Play games from the TV screen by connecting a Controller to the TV. Configure settings to optimize the Controller and audio device for playing games.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Using Samsung Gaming Hub.](#)"

## 6 Home

View a variety of TV programs. Install various apps offered by Smart Hub, such as video, music and sports apps, and use the apps from the TV.

 For more information, refer to "[Using the Home Function.](#)"

## 7 Menu

Manage external devices connected to the TV, and configure settings for various functions available on the TV.

 For more information, refer to "[About the Menu Home Screen.](#)"

## 8 Privacy Choices

From your TV, easily manage the privacy policy regarding services related to Smart Hub and verify how personal information is protected.

 To use Smart Hub, you must agree to the Smart Hub service agreement and the collection and use of personal information. Without giving consent, you cannot use the additional features and services. You can view the entire text of the [Terms & Privacy](#) by navigating to  >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Terms & Privacy](#). [Try Now](#)

 If you want to stop using Smart Hub, you can cancel the agreement. To cancel the Smart Hub service agreement, select [Reset Smart Hub](#) ( >  >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Reset Smart Hub](#)). [Try Now](#)

 This function may not be supported depending on the model or geographical area.

## Launching Smart Hub automatically

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Start with Smart Hub Home](#) 

Enabling [Start with Smart Hub Home](#) automatically launches Smart Hub when the TV is turned on. Navigate to this option to enable or disable the feature.

## Launching the last used app automatically

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Autorun Last App](#) 

If [Autorun Last App](#) is set to on, the last used app is automatically run when you turn on the TV. You can turn this function on or off. Press the Select button at the current menu.

 This function may not be supported depending on the app.

 This function may not be supported depending on the model.

## Automatic Mirroring from Multi View

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Autorun Multi View Mirroring](#)

If you screen mirror your mobile device, the Multi View automatically displays the device screen. Navigate to this option to enable or disable the feature.

 This function may not be supported depending on the model or geographical area.

## Automatic casting in Multi View

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Autorun Multi View Casting](#) [Try Now](#)

Casting YouTube content from the mobile device automatically displays the content on Multi View.

 It is available on the screen for any broadcast, external device, or app that supports Multi View.

 This function may not be supported depending on the model.

## Launching Multi View automatically When rotating

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Autorun Multi View When Rotating](#)

Multi View runs automatically when you rotate the screen to portrait mode.

 This function may not be supported depending on the model.

 This function is activated when the Auto Rotating Accessory (sold separately) is connected.

## Testing Smart Hub connections

 >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Smart Hub Connection Test](#) [Try Now](#)

## Resetting Smart Hub

 >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Reset Smart Hub](#) [Try Now](#)

 You can reset the Smart Hub settings. To reset Smart Hub, enter the PIN. The default PIN is "0000." You can set the PIN in

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Change PIN](#). [Try Now](#)

 The default PIN may differ depending on the geographical area.

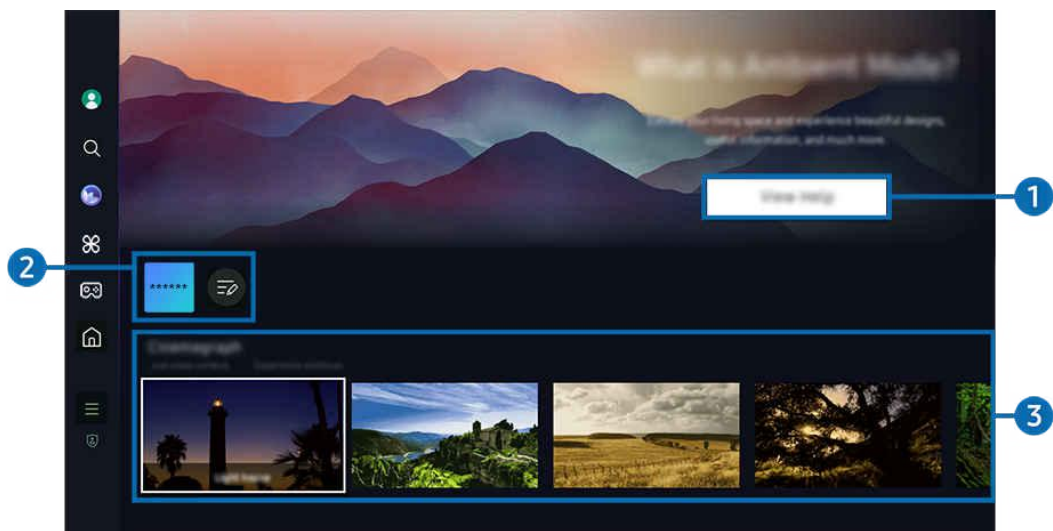
# Using Ambient Mode

Learn about the functions available in Ambient mode.

 > left directional button >  **Ambient** [Try Now](#)

Set your TV to display a photo or content you desire when the TV is not used.

-  This function may not be supported depending on the model.
-  On The Frame models, the **Ambient** mode is integrated in the **Art** mode.
-  Press the  button in **Ambient** mode screen to enter to **Ambient** Home.
-  In **Ambient** mode, some functions may not be supported.



-  The image on your TV may differ from the image above depending on the model and geographical area.

## 1 Getting to Know Ambient Mode

Press **View Help** to briefly view information about **Ambient** mode, including functions.

## 2 NFT app List

You can download images from the NFT apps and use them in **Ambient** mode. You can move the app to another location by selecting **List Edit** located at the end of the list.

-  Supported NFT apps may vary, depending on the region.
-  Whenever a new NFT app is released, you can display a wider variety of NFT artworks.

### 3 Function and content preview

Select a preferred content and a preferred background and set them as your **Ambient** mode. While in **Ambient** mode, press the Select button and then the Up directional button on the remote control to view the content details.

 You can use the SmartThings app on a Mobile Device to select a desired content and change the settings. Indicates content perfectly suited for the time of the day.

 Available content categories may differ depending on the model or geographical area.

- **Changing art work**

Change the artwork to display in **Ambient** mode. Press the Select button on the remote control to move the focus to an artwork. Use the left or right directional button to move to the desired art work, and then press Select button on the remote control.

- **View Details**

View detailed information about the selected image.

- **Favorite**

Add or delete specific images in **Favorite** by pressing the Select button and then the Up directional button on the remote control. To view items that are set as **Favorites**, navigate to **Ambient** > **Favorite**.

-  **Favorite**: The item is not set as favorite
-  **Favorite**: The item is set as favorite

- **Edit**

Customize the settings to suit your preferences.

 Available functions may not be supported depending on the model or content.

- **Weather Filter**

You can add a weather effect to content.

- **Time Filter**

You can select any background time format for content.

- **Color**

Changes the color of the content.

- **Vibes**

Selects a mood that matches the content.

- **Backgrounds**

Changes the background of the content.

- **Shadow Effects**

Applies a shadow effect that you select to the content.

- **Filter**

You can select an image filter effect to content.

- **BGM Mode**

You can add a background music to content.

- **Screen Settings**

You can adjust the settings such as content brightness, saturation, and color tone.

- **Brightness**

Adjusts the brightness of the content.

- **Saturation**

Adjusts the saturation of the content.

- **Color Tone**

Adjusts the colors of the content.

- **Red Tone / Green Tone / Blue Tone**

Adjusts the red, green, blue contrast.

## Selecting Content Category

 Available content categories may differ depending on the model or geographical area.

- **Promoted by NFT Apps**

Browse a variety of new and adventurous content with an app that provides NFT works.

- **Favorite**

While in **Ambient** mode, press the Select button on the remote control and press ♥ **Favorite** to save the displayed content to **Favorite**.

- **Special Edition**

Allows you to enjoy creative artwork and interior design content created by the world's finest artists and designers.

- **Cinemagraph**

Adds a looping animation to a specific part of the photo to make it more attention-grabbing.

- **My Album**

Allows you to set a photo stored in your mobile device or Samsung Cloud as the wallpaper of the Ambient mode screen.

 To import photos from your mobile device or Samsung Cloud, use the SmartThings app on your mobile device.

 For more information about how to configure the photo settings, select **How to Select Photos**.

- [Q Collection](#)

Provides content that is dedicated to Samsung QLED.

- [Mood](#)

Enjoy a range of options to create the right ambience to suit your mood.

- [Relaxation](#)

Relax with a selection of calming content inspired by nature to soothe your mood.

- [Décor](#)

Allows you to select content with a sensible and beautiful design.

- [Info](#)

Allows you to select essential real-time information, such as weather, temperature, time, and news.

- [Artwork](#)

Allows you to select content such as world famous photos and artwork.

- [Background Theme](#)

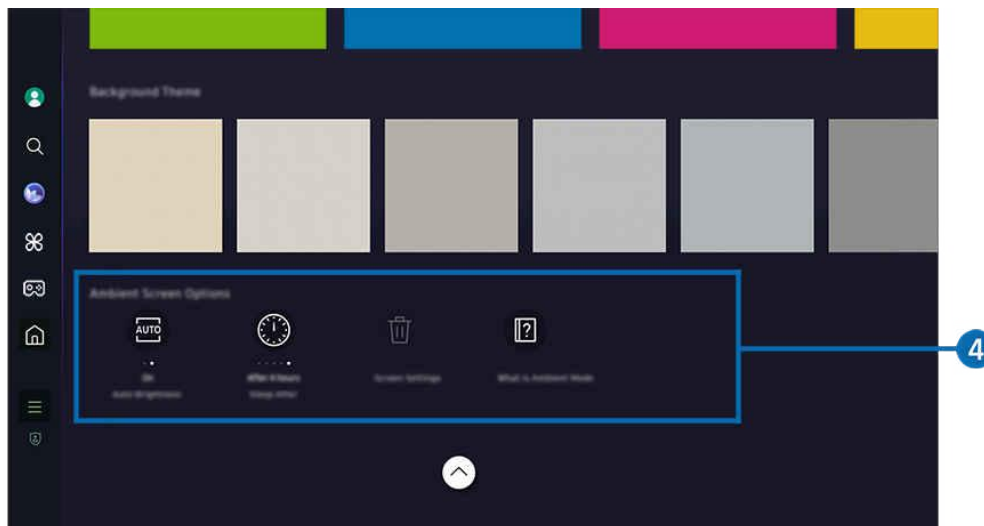
Allows you to select a background theme provided by Samsung.

 Take a picture of a wall using the SmartThings app on your mobile device to create a custom background theme. When you use this function, there may be a delay in image transmission and optimization depending on network conditions.

 A created [Background Theme](#) can be set as the background for content. To set it as the background for content, press the Select button on the remote control while in [Ambient](#) mode, and select [Edit](#)

- [Routine](#)

Enjoy a range of routines, each displaying content to suit each part of your day or create your very own routines via the SmartThings app.



The image on your TV may differ from the image above depending on the model and geographical area.

#### 4 Ambient Screen Options

Following **Ambient** mode options are configurable:

This menu can be found at the bottom of the **Ambient** home. To configure the option settings, scroll down to the far bottom.

Available options may vary depending on the model.

- **Auto Brightness**

Changes the auto brightness setting for **Ambient** mode.

When this function is set to **Off**, the brightness level of the TV screen is not automatically adjusted in response to the surrounding light level.

- **Sleep After**

Sets the time when the **Ambient** mode screen turns off automatically.

If there is no remote control input for the set time, the screen goes off.

- **Reset My Album**

Reset photos saved in **My Album**.

- **What is Ambient?**

Briefly view information about **Ambient** mode, including functions.

### Entering the TV viewing screen from Ambient Mode

To access the TV screen from **Ambient** mode, press either the or button to redirect to the **Ambient** mode Home Screen, press the left directional button on the remote control, and then select either or **Home**.

If the TV is off and the button is pressed, the **Home** screen appears.

# Using Art Mode

Learn about the functions available in Art Mode.

 > left directional button >  **Art**

 This function is supported only in The Frame.

You can use **Art** mode function to display image content such as artworks or photos when you are not watching TV in full screen mode.

- Press the  button while using the TV, the TV switches to **Art** mode.
- Press the  button in **Art** mode to enter to **Home** screen.
- Press the  button in **Art** mode to enter to **Art** Home.
- To turn off the TV completely, press and hold the  button on the remote control, or press the TV Controller button of the TV.

Configure operation settings for the power button on the remote control in  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Power and Energy Saving** > **Power Button Option**. This feature is set to **Art/TV** by default.

If you briefly press the power button on the remote control, switches to Art mode or TV mode. If you set this feature to **On/Off**, the TV turns on or off.

 This function may not be supported depending on the model.

 If you use a remote control other than the Samsung Smart Remote, the TV may not be turned off completely.

- In **Art** mode, the brightness and color tone of your TV are automatically adjusted depending on the ambient, and the TV can be automatically turned off.

 The TV is set by default so that the screen turns off automatically when the ambient light dims in **Art** mode.

- Configure the motion sensor settings by using **Art Mode Options** ( > left directional button >  **Art** > **Art Mode Options**) at the bottom of the **Art** home displayed on the TV or using the mobile SmartThings app. The TV may automatically turn on or off by detecting user motions and other visual changes.

 This function may not be supported depending on the model or geographical area.

- While in **Art** mode, use the SmartThings app on your mobile device to save photos on the device to the TV.

 This function may not be supported depending on the TV model or mobile device.

 Supported features may differ depending on the version of the SmartThings app.

## About the Art Home screen

 > left directional button >  **Art**



 The image on your TV may differ from the image above depending on the model and geographical area.

### **1** List of image categories

From the displayed list of categories, select an image and press the Select button to view details about the image. Select [Preview](#) to preview the image in full screen for 30 seconds. If you like the image, you can keep it as an artwork by purchasing it or subscribing to the [Membership](#).

If you select a saved image, the TV goes into [Art](#) mode. In [Art](#) mode, press the Select button on the remote control to use the following menu options:

 Available content categories may differ depending on the model or geographical area.

- **Changing art work**

Change the artwork to display in [Art](#) mode. Press the Select button on the remote control to move the focus to an artwork. Use the left or right directional button to move to the desired art work, and then press Select button on the remote control.

- **[View Details](#)**

View detailed information about the selected image.

- **Favorite**

Add or delete specific images in **Favorite** by pressing Select on the remote control. To view items that are set as **Favorites**, navigate to **My Art Store > Favorite**.

-  **Favorite**: The item is not set as favorite
-  **Favorite**: The item is set as favorite

- **Mat**

Customize the border style and color to suit your preferences. To save changes, select the desired mat style and color, and press either the Select or  button.

 Supported border styles may differ if the image aspect ratio is not 16:9 or the image resolution is lower than the recommended resolution.

 Recommended resolution: 1920 x 1080 (for 32LS03C models) or 3840 x 2160 (for 43-inch and larger models)

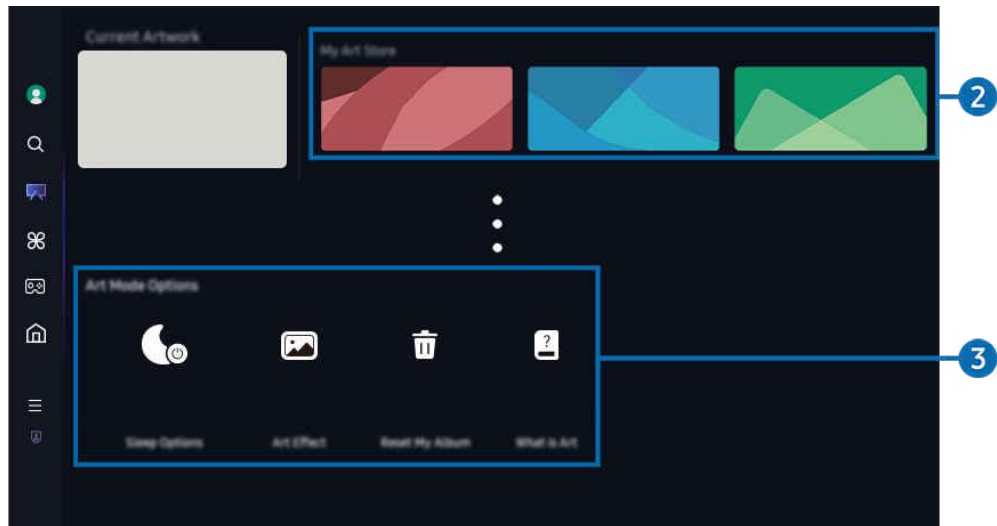
- **Screen Settings**

Customize the **Art** mode screen settings to suit your preferences.

- **Brightness**  
Adjust the screen brightness. Press the Select button to save the change.
- **Color Tone**  
Adjust the image colors. Press the Select button to save the change.
- **Brightness Reset**  
Reset the screen brightness to the default value.

- **Recents**

Manage recently displayed images.



 The image on your TV may differ from the image above depending on the model and geographical area.

## 2 My Art Store

- **Favorites**

Manage images saved in **Favorite**.

- **Display All / Resume Play**

Play images in **Favorite** as a slideshow.

- **Delete**

Select and delete multiple images in **Favorite** simultaneously.

- **Membership**

If you sign up for **Membership**, you can use artwork without any restrictions. You can also replace it with new artwork periodically to suit your preference.

Follow the on-screen instructions to proceed with the payment.

 If you subscribe to a membership during your free trial period, your account is immediately switched to a membership account regardless of the remaining trial period, and you can use a variety of artworks without any restrictions.

- **Payment Info**

View artwork purchase details, and easily purchase artworks by entering required payment information.

 For details about payment information, visit Samsung Checkout (sbox.samsungcheckout.com).

- **History**

View the content you recently viewed in **Art** mode, in order.

### 3 Art Mode Options

Configure options related to the **Art** mode screen.

 This menu can be found at the bottom of the **Art** home. To configure the option settings, scroll down to the far bottom.

- **Sleep Options**

- **Sleep After**

The TV automatically turns off if no motion is detected around the TV for a specified period of time. Press the Select button to specify a time period.

- **Motion Detector**

Set the **Motion Detector** for the motion sensor. Press the Select button to set the sensitivity level.

 **Motion Detector** may not be supported depending on the model or geographical area.

- **Night Mode**

The TV automatically turns off if no light is detected around the TV. This mode detects lights around the TV to automatically turn on or off the TV depending on the presence of light. Press the Select button to turn the mode on or off.

- **Art Effect**

The **Art Effect** is turned on by default. This displays content as close as possible to the original artwork.

If you turn off the effect, content is displayed in the customized picture quality.

- **Reset My Album**

Reset your album and delete all records.

- **What is Art?**

Briefly view information about **Art** mode, including functions.

#### Import images from USB memory

1. Connect the USB memory device storing images to the TV.
2. The USB memory is automatically recognized, and the screen displays a list of image, music, and video files that are stored in the USB memory.

 An alternative way to run the USB memory is to navigate to  >  (left directional button) >  **Connected Devices** and select the USB memory.

3. Navigate to the folder that contains the image file you want to save to the TV, and then select **Options** > **Send to Art Mode**.
4. Select the image and press **Send**. The image, stored in the USB memory, is saved under **Art** mode.

 Recommended resolutions (16:9): 1920 x 1080 (32-inch model), 3840 x 2160 (43-inch or larger models)

## Using Art mode with the SmartThings app

You can download the SmartThings app from Google Play Store, Samsung Apps, or the App Store.

If the TV is not registered in your SmartThings app, press + (Add Device) and register the TV before using the mode.

 The features or terminology may vary depending on the version of the SmartThings app.

 On tablet devices, **Art** mode features may not be supported by the SmartThings app.

Once you have installed the SmartThings app on your mobile device, you can use the following functions:

- Selecting an image under **Art** mode.
- Saving photos from a mobile device to the TV: Use the Add picture function to save photos on a mobile device to the TV.
  - **Add Picture** > select 2 to 3 images > **Create Mat**: Combine the 2 to 3 images to create a single image.
  - **My Album** > select content, such as **Dynamic Filter** or **Auto Gallery**, and then press Select Photo to set the content as mobile photos.
- Subscribing to **Art** mode **Membership**.
- Applying border styles and colors to images.
-  (more) > **Sleep Options**
  - Setting the brightness for **Art** mode.
  - Setting **Sleep After**: When no motion is detected for the time specified in **Art** mode, the TV turns off automatically.
  - Setting **Motion Detector**: Set the sensor sensitivity so that the TV turns on or off automatically when motion is detected in **Art** mode.

 **Motion Detector** may not be supported depending on the model or geographical area.
  - Setting **Night Mode**: This mode detects lights around the TV to automatically turn on or off the TV depending on the presence of light.

## Precautions when using Art mode

 Motion Sensor may not be supported depending on the model or geographical area.

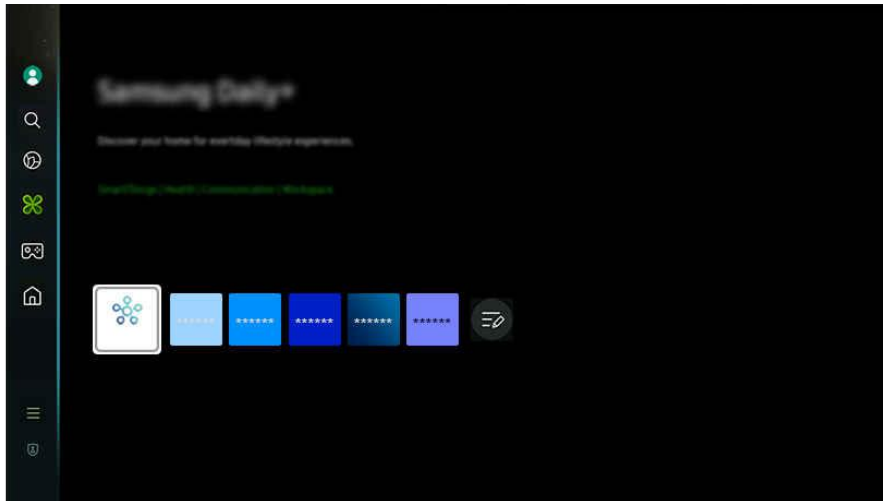
- The motion sensor is located at the bottom of the TV. Do not block the sensor at the front of the TV. The motion sensor as well as the brightness and color tone of the screen can be affected.
- **Art** mode uses algorithms to minimize image burn-in that can be caused by displaying still images on the screen for long periods of time.
- The performance of the sensor may vary depending on the TV installation and operating environment.
  - The screen brightness and color tone may be affected depending on the color of the floor on which the TV stands.
  - In an environment where special light sources other than standard light sources (halogen, fluorescent) are used, the sensor's motion recognition performance may vary depending on the positions, types, and number of the light sources.
  - If the area around the TV is too dark or bright, the screen brightness may be limited or the sensor may not work normally.
  - If the TV is installed too high or too low, the sensor may not work normally.
  - The motion sensor may sense motion from a flashing LED, a pet, a car moving outside the window, or other occurrence and start operating.
- Depending on the **Auto Power Off** function settings, the TV may turn off when there is no user input in **Art** mode, such as inputs from the remote control ( >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Power and Energy Saving** > **Auto Power Off**). [Try Now](#)
- The following functions are disabled in **Art** mode.
  -  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Sleep Timer** [Try Now](#)
  -  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Off Timer** [Try Now](#)
  -  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Power and Energy Saving** > **Screen Saver** [Try Now](#)

## About the Daily+ Home screen

Offers a variety of practical apps, including a home workout app, video chat app and remote medical service app, allowing you to conveniently experience different lifestyles at home.

 > left directional button >  **Daily+**

 This function may not be supported depending on the model or geographical area.



 The image on your TV may differ from the image above depending on the model and geographical area.

- **SmartThings**

It allows the TV to connect and control the detected various devices in the same space.

 For more information about **SmartThings**, refer to "[Using SmartThings](#)."

 This function may not be supported depending on the model or geographical area.

- **Workspace**

Use the TV to access your PC via remote PC or Screen Sharing (Wireless).

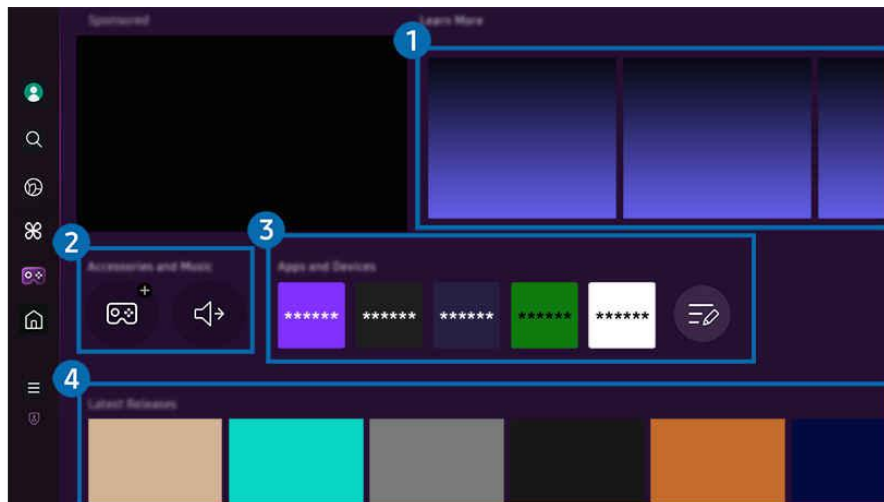
 For more information, refer to "[Using Workspace](#)."

# Using Samsung Gaming Hub

Gamestream a wide variety of games right on your TV through Samsung Gaming Hub. Connect your controller through Bluetooth or USB.

 > left directional button >  **Games**

 This function may not be supported depending on the model or geographical area.



 The image on your TV may differ from the image above depending on the model and geographical area.

## 1 Learn More

Provides information about Samsung Gaming Hub and details on how to use devices.

## 2 Accessories and Music / Accessories

### • Controllers

Select a Controller to connect to the TV.

 For more information about supported controllers, refer to "[Using the Gamepad](#)."

### • Audio

Select an Audio Device (e.g. Gaming Headset) to connect to the TV.

### • Music Player

Manage the music to play while playing a game.

 This function may not be supported depending on the model or geographical area.

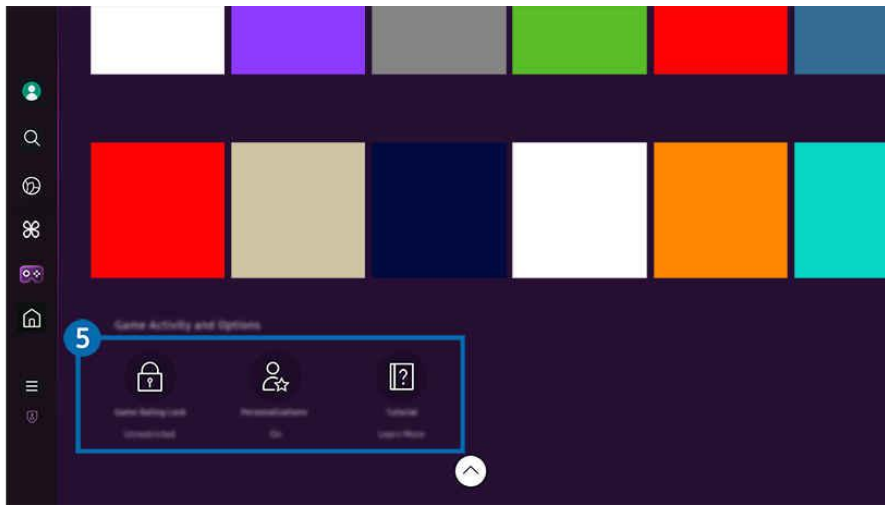
## 3 Apps and Devices

Install or remove apps or devices that are required to play games.

#### 4 Game list

Purchase games or subscribe to service offered by the Samsung Gaming Hub. Select a game to view the game details.

 Installation of related apps is required to run some games.



 The image on your TV may differ from the image above depending on the model and geographical area.

#### 5 Game Activity and Options

 This menu is provided at the very bottom of the Samsung Gaming Hub screen. To configure [Game Activity and Options](#), scroll down to the very bottom.

- [Game Rating Lock](#)

Set the age limit for playing games.

 The age limit is only supported to cloud game browsing domain in Gaming Hub.

- [Personalization](#)

Tailored content is recommended, according to the games recently played by the user and the content the user is interested in.

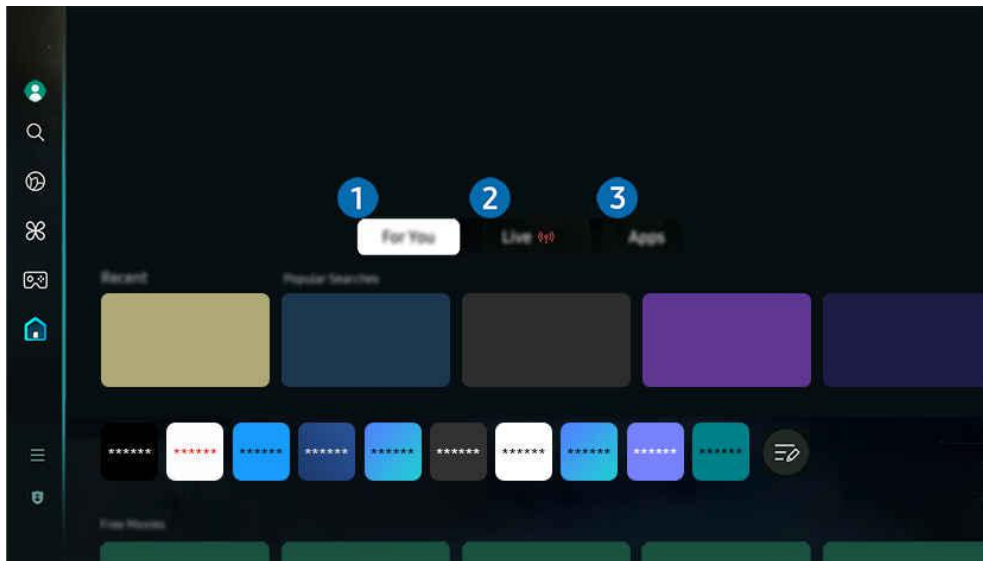
- [Tutorial](#)

Provides information about the Samsung Gaming Hub and details on how to use devices.

## Using the Home Function

View a variety of TV programs. Install various apps offered by Smart Hub, such as video, music and sports apps, and use the apps from the TV.

 > left directional button >  Home



 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 For You

The app makes personalized recommendations based on the user's viewing experience. View currently popular content, or add frequently used apps to the Home screen.

 For more information about [For You](#), refer to "[About the For You Home Screen.](#)"

### 2 Live

Watch TV programs currently on the air. Access the [Guide](#) screen to check the broadcast schedules and set up scheduled viewing for the programs you want.

 For more information about [Live](#), refer to "[About the Live Home Screen.](#)"

### 3 Apps

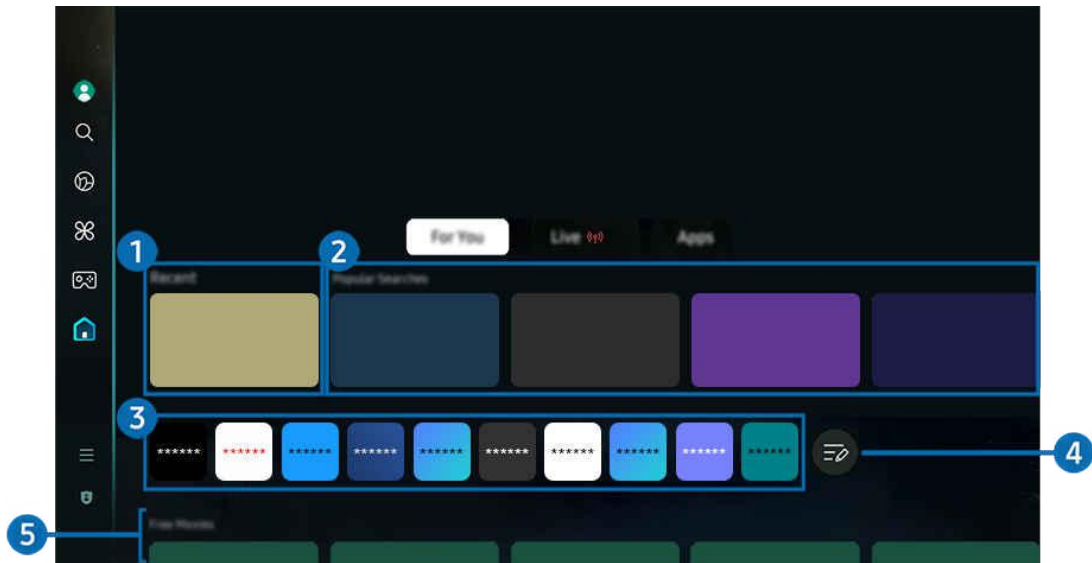
Install a variety of apps offered by Smart Hub, such as video, music, sports and game apps, and use the apps from the TV.

 For more information about [Apps](#), refer to "[About the Apps Home Screen.](#)"

# About the For You Home Screen

This screen makes personalized recommendations based on the user's viewing experience.

 > left directional button >  Home > For You



 The image on your TV may differ from the image above depending on the model and geographical area.

## 1 Recent

Access your last watched TV program, app or last used input source.

## 2 Recommended for You / On Now

 The name of this function may appear differently depending on the model or geographical area.

 This function may not be supported depending on the model or geographical area.

 This function may not be supported, depending on the input signal and settings.

- **Recommended for You**

Recommends content that are currently popular in many OTT services.

- **On Now**

Display a list of TV programs or Samsung TV Plus content items currently being aired.

## 3 App List

Add frequently used apps or delete apps on the Home screen, to suit your preferences.

#### 4 List Edit

- **Moving an item on the Home Screen**

From the end of the list, select **List Edit**. Move the focus to the app to relocate, and press the down directional button on the remote control. Select **Move** from the option menu. Use the left or right button to reposition the app and then press Select. This repositions the app on the Home Screen.

Alternatively, move the focus to the app to relocate, press and hold the Select button, and then select **Move**.

- **Removing an item on the Home Screen**

From the end of the list, select **List Edit**. Move the focus to the app to remove, and press the down directional button on the remote control. Select **Remove** from the option menu. This removes the app from the Home Screen list.

Alternatively, move the focus to the app to delete, press and hold the Select button, and then select **Remove**.

 To add a deleted app back to the list or add a downloaded new app to the Home screen, refer to "[Managing installed apps](#)."

## 5 Universal Guide

**Universal Guide** is a function that allows you to search for and enjoy various content, such as TV shows, dramas, and movies, in one place. **Universal Guide** can recommend content tailored to your preferences.

You can use this feature on your mobile device with the Samsung SmartThings app.

-  To access Universal Guide, press the down directional button on the remote control in Home Screen.
-  To enjoy the content from these apps on your TV, the contents must be installed on the TV.
-  When you watch some paid content, you may need to make a payment using their associated app.
-  Some content may be restricted depending on your network conditions and your subscriptions to paid channels.
-  Parental control is necessary when children use this service.
-  Images may look blurry depending on the service provider's circumstances.
-  This function may not be supported depending on the model or geographical area.
-  All YouTube 8K content recommended and provided through the Home screen of 8K TV is attributed to YouTube.

The picture quality of YouTube 8K Content can be affected by a variety of factors, including location, Internet bandwidth used at home, and Internet access speed.

Depending on your Internet connection environment, it may be temporarily played at a resolution rather than an 8K resolution.

The recommended connection speed for receiving 8K image quality (8K resolution) is at least 80 Mbps.

The loading time it takes to start watching YouTube 8K Content may vary depending on the Internet bandwidth or Internet access speed you are using at that time.

In the future, depending on the operation policy of Samsung and YouTube services, whether YouTube 8K content is recommended through the Home screen may vary.

This function may not be supported depending on the model or geographical area.

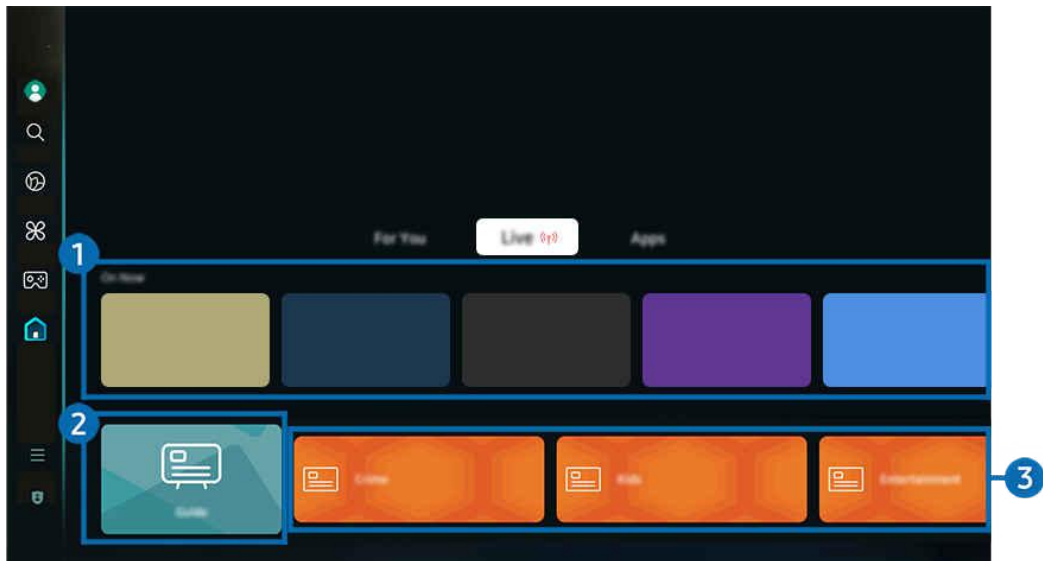
### Media Options

-  This menu can be found at the bottom of the For You home. To configure the option settings, scroll down to the far bottom.
-  This function may not be supported depending on the model or geographical area.
- **Preferences:** Select a preferred service to receive content recommendations to suit your preference.
- **Continue Watching:** Choose content providers for **Continue Watching**. You can continue watching different shows in one place from all the **Continue Watching**-supported content providers listed below.
- **Parental Lock:** Redirect to the Parental Lock menu. Turn all parental control settings on or off.
- **Auto Play Sound:** When you browse and preview content, you can set the sound to come out or not automatically.

## About the Live Home Screen

View TV programs currently on the air. Access the Guide screen to check the broadcast schedules and set up scheduled viewing for the programs you want.

 > left directional button >  Home > Live 



 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 On Now

Display a list of TV programs or Samsung TV Plus content items currently being aired.

 This function may not be supported, depending on the input signal and settings.

### 2 Guide

See the program schedules of different channels on a single screen. Use [Guide](#) to view the daily program schedule for each broadcaster. You can also find out detailed information about programs, watch a specific program, or schedule the recording of a program.

 For more information about [Guide](#), refer to "[Using the Guide](#)."

### 3 Genre

Select a genre to sort and display specific channels to suit your preferences.

 This function may not be supported depending on the model or geographical area.

## About the Apps Home Screen

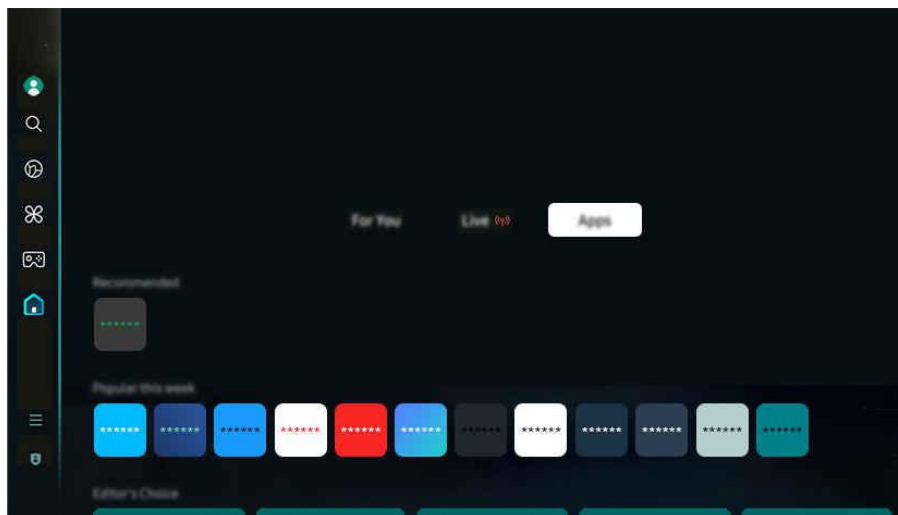
Download and run various apps from Smart Hub.

 > left directional button >  Home > Apps

You can enjoy a wide range of content, including video, music, sports and game apps by installing the corresponding apps on your TV.

 To use this feature, the TV must be connected to the network.

 When Smart Hub is launched for the first time, the default apps are automatically installed. The default apps may differ depending on the model or geographical area.



 The image on your TV may differ from the image above depending on the model and geographical area.

## Installing an app

1. Move to the app you want to install, and then press the Select button. The detailed information screen appears.
2. Select **Install**. When the installation is complete, the **Open** menu appears.
3. Select **Open** to run the app immediately.

 You can view installed apps on the **Settings** screen.

 If the TV's internal memory is insufficient, you can install some specific apps on a USB device.

 You can run an app installed on a USB device only when the USB device is connected to the TV. If the USB device is disconnected while an app is running, the app is terminated.

 You cannot run an app installed on a USB device on a PC or another TV.

## Launching an app

You can run the app desired from **Downloaded App**.

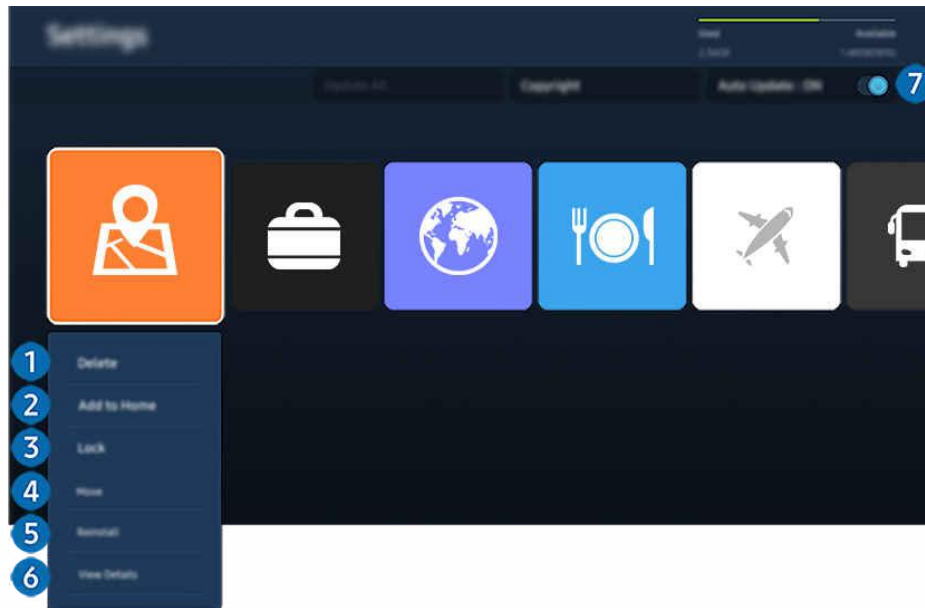
The icons below appear within the selected app's icon and indicate the following:

-  : The app is installed on a USB device.
-  : The app has a password.
-  : The app needs to be updated.
-  : The app supports the mirroring function.

## Managing installed apps

To manage installed apps, access [App Settings](#).

 [App Settings](#) can be found at the bottom of the [Apps](#) screen. To access [App Settings](#), scroll down to the bottom.



 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Removing an app

1. Select an app to delete.
2. Select [Delete](#).

The selected app is deleted.

 Ensure that the related app data is also removed when you remove an app.

 Standard apps cannot be uninstalled.

### 2 Adding apps to the Home Screen

1. Select an app to add.
2. Select [Add to Home](#).
3. After the Home Screen appears, move the selected app to the desired location.
4. Press the Select button.

The selected app is added to the Home Screen.

 If the selected app is already added to the Home Screen, this function is disabled.

### 3 Locking and unlocking apps

1. Select an app to lock or unlock.
2. Select [Lock/Unlock](#).

The selected app is locked or unlocked.

 To lock or unlock an app, enter the PIN. The default PIN is "0000." You can set the PIN in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Change PIN](#). [Try Now](#)

 The default PIN may differ depending on the geographical area.

### 4 Moving apps

1. Select an app to move.
2. Select [Move](#).
3. Move the app to the desired location.
4. Press the Select button.

The selected app is moved.

 This function may not be supported depending on the model or geographical area.

### 5 Reinstalling an app

1. Select the app to install again.
2. Select [Reinstall](#).

Reinstallation starts.

### 6 Checking the app information details

1. Select the app to check.
2. Select [View Details](#).

The app information screen appears.

 You can rate an app on the [View Details](#) screen.

### 7 Automatically updating apps

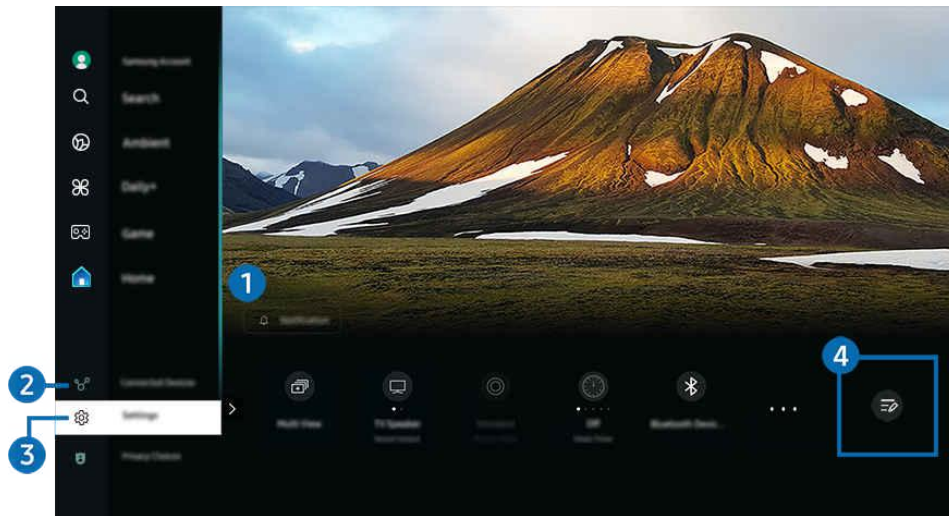
To automatically update the installed apps, set [Auto Update](#) to **ON**.

 Automatic update is enabled only when the TV is connected to the network.

## About the Menu Home Screen

Manage external devices connected to the TV, and configure settings for various functions available on the TV.

 > left directional button >  **Menu**



 The image on your TV may differ from the image above depending on the model and geographical area.

### **Notification**

You can view a list of notifications for all events that occur on your TV. A notification appears on the screen when it is time to schedule viewing, schedule recording, etc.

If you move the focus to **Notification**, and then press the Select button, a notification window appears on the right and the following functions are available:

-  **Delete All**

You can delete all your notifications.

-  **Settings**

You can select services you want to be notified about.

When you select **Allow sound**, notifications are displayed with a notification sound.

## 2 Connected Devices

Select an external device that is connected to the TV.

 For more information, refer to "[Switching between external devices connected to the TV.](#)"

## 3 Settings

Move the focus to the **Settings** menu to display quick setting options below the menu. Quick Settings can be used to quickly configure frequently used features.

 The **Settings** items may not be supported depending on the model or geographical area.

- **All Settings**

Displays the **Settings** menu for configuring specific settings.

- **Sound Output**

You can select which speakers the TV uses for audio output. To change the audio output, press the Select button.

- **Brightness**

Easily configure the screen settings: **Brightness**, **Contrast**, **Sharpness**, **Color** and **Tint (G/R)**.

- **Picture Mode**

Change the picture mode for the optimal viewing experience. Press the Select button to change the **Picture Mode**.

- **Sound Mode**

You can select a sound mode to optimize your listening experience. To change the sound mode, press the Select button. To make fine adjustments, press the down directional button, and then select **Equalizer Setup**.

- **Intelligent Mode**

Improves your viewing experience by recognizing your content, usage patterns and the environment around your TV.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Using Intelligent Mode.](#)"

- **Bluetooth devices**

Connect your TV to Bluetooth devices. This can be done by selecting **Bluetooth devices** to automatically search for Bluetooth devices.

 Connecting Bluetooth devices may not be supported depending on the model or geographical area.

- **Wi-Fi / LAN**

Check your network connection. To check your network connection or change the connection settings, press the down directional button, and select either [Network Status](#) or [Network Settings](#).

 This function may not be supported depending on the model or geographical area.

- **Multi View**

While watching the TV, you can simultaneously view multiple screens that are split.

 For more information, refer to "[Using Multi View](#)."

 This function may not be supported depending on the model or geographical area.

- **Sleep Timer**

You can turn off the TV automatically at a specific time. To change the sleep time, press the Select button. To set the specific time at which the TV turns off automatically, press the down directional button, and then select [Set Up Off Timer](#).

- **Game Mode**

You can set the [Game Mode](#) to optimize the TV screen for better gaming performance. To turn [Game Mode](#) on or off, press the Select button. To set the detailed options, press the down directional button, and then select [Go to Game Mode Settings](#).

 This function is only available when an external input source is being used.

 For more information, refer to "[Setting the Viewing Environment for External Devices](#)."

 This function may not be supported depending on the model or geographical area.

- **Caption**

You can watch TV broadcasts with captions. To activate or deactivate the [Caption](#) function, press the Select button. To run [Accessibility Shortcuts](#), press the down directional button, and then select [Accessibility Shortcuts](#).

- **Digital Output Audio Format**

You can select an output format for digital audio. Note that the [Dolby Digital+](#) option is only available via HDMI (eARC) for external devices that support the [Dolby Digital+](#) format.

- **Picture Clarity**

You can optimize pictures that contain a lot of motions. To turn this function on or off, press the Select button. To set the detailed options, press the down directional button, and then select **Picture Clarity Settings**.

- **Color Tone**

You can select a color tone suitable for your viewing preferences. To change to a color tone that you want, press the Select button.

- **Energy Saving Solution**

Reduce power consumption by adjusting brightness settings.

 This function may not be supported depending on the model or geographical area.

- **Power and Energy Saving**

Display the **Power and Energy Saving** menu. Reduce energy consumption by changing your power preferences and other energy-saving options.

 This function may not be supported depending on the model or geographical area.

- **Auracast**

You can listen to the TV's audio by connecting to a Bluetooth audio device that supports **Auracast**.

 This function may not be supported depending on the model or geographical area.

 Some models support the **Auracast** feature. For more information about **Auracast**, refer to "Using Auracast."

- **Support**

Displays the **Support** settings menu.

 These functions may not be supported depending on the model or geographical area.

#### **4 List Edit**

From the end of the **Settings** list, select **List Edit**. You can change the location of functions in the **Settings** screen.

 An alternative way to move a function is to move the focus to the function to move and then press and hold the Select button.

## Using a Samsung account

Create and manage your own Samsung account.

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Samsung Account](#) [Try Now](#) [Try Now](#)

-  You can view the entire text of the Terms & Policy in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Terms & Privacy](#) after logging in to your Samsung account.
-  Follow the instructions on your TV screen to create or log in to a Samsung account.
-  Samsung account can be used on TV, mobile device, and website with one ID.
-  In the U.S.A., only users over 13 can sign in.

## Signing in to a Samsung account

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Samsung Account](#) > [Sign In](#)

## Creating a new account

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Samsung Account](#) > [Create Account](#)

## Managing your Samsung account

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Samsung Account](#) > [My Account](#)

When you sign in to your Samsung account, you can use the following functions:

- [Edit Profile](#)

You can edit your account information.

-  To protect personal information, enter [Edit Profile](#) and then [Sign-in Method](#) is set to [Select your ID and input password \(high security\)](#).
-  If you want the TV to log you into your account automatically whenever you turn on the TV, click [Stay Signed In](#).
-  When the TV is used by multiple people, turn off [Stay Signed In](#) to protect personal information.

- **PIN Setting**

Set or change your PIN.

- **Payment Info**

You can view or manage your payment information.

- **Back up**

You can back up the TV settings to your Cloud storage. When resetting or replacing the TV, you can also restore its settings with the backed-up settings.

- **Product Registration**

You can register the current TV or see the registered information. You can easily receive services after product registration.



You can see the registered information or delete it at the Samsung account website (<https://account.samsung.com>).

- **Security and Privacy**

You can read the Privacy Policy for Samsung accounts or change custom service settings.

- **Sync Internet**

Once you sign in to your Samsung account and configure the **Sync Internet** settings, you can share the favorites and website bookmarks that you registered on other devices.

- **About Samsung account**

You can view the user agreement and privacy policy.



For more information about the terms and conditions, special terms, select **View Details**.

- **Remove Account**

You can delete an account from the TV. Although you have deleted your Samsung account from the TV, you are not unsubscribed.



To unsubscribe from your Samsung account, visit the Samsung accounts website (<https://account.samsung.com>).

- **Sign Out**

When multiple people share the TV, you can sign out of your account to prevent others from using it.



To sign out of your **Samsung Account** (🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Samsung Account**), move the focus to your account's icon, and then press the Select button. When a pop-up window appears, select **Sign Out**.

## Using Workspace

Use the remote function to connect to and use a Windows PC, Mac, or mobile device from the TV.

 > left directional button >  **Daily+** > **Workspace** [Try Now](#)

Connect a Windows PC, Mac, or mobile device to the TV to easily use the device.

 For easy computer use, connect a keyboard and a mouse to your TV in advance.

## Using Screen Sharing (Windows PC) / AirPlay (Mac)

 > left directional button >  **Daily+** > **Workspace** > **Windows PC** > **Screen Sharing**

 > left directional button >  **Daily+** > **Workspace** > **Mac** > **Screen Mirroring**

Follow the instructions on the screen to adjust the PC settings and wirelessly connect the TV to the PC.

 This function is only available for PCs that support wireless screen sharing.

 This function may not be supported depending on the model or geographical area.

 Connection via Windows OS is available in Windows 10 and later versions only.

 Connection via Mac OS is available in AirPlay.

## Using Easy Connection to Screen

 > left directional button >  **Daily+** > **Workspace** > **Windows PC** > **Easy Connection**

You can easily use remote access function after installing **Easy Connection to Screen** on your PC.

Follow the instructions on the screen to download and install the **Easy Connection to Screen** PC app. Then you can easily connect a remote PC.

1. Download the **Easy Connection to Screen** PC app from <http://smsng.co/easy> and then install it on your PC.
2. Log in to the same Samsung account for both TV and PC.
3. When the PC is turned on and connected via the network, **Workspace's** Home Screen displays the PC.

 The Easy Connection to Screen PC app is available in Windows 10 and later versions only.

 Depending on the network environment including the firewall configuration, router type, and wireless signal strength, connection problems may occur, such as low speed, disconnection, or limited connection.

## Connecting a Remote PC

 > left directional button >  [Daily+](#) > [Workspace](#) > [Windows PC](#) > [Manual Connection](#) [Try Now](#)

 > left directional button >  [Daily+](#) > [Workspace](#) > [Mac](#) > [Remote Login](#) [Try Now](#)

Provides **Remote Desktop Connection (RDP)** for remotely connecting to a PC running on Windows and **Virtual Network Computing (VNC)** for a PC running on Mac. To remotely connect to a PC, you must enter the IP address of the remote PC or select a saved profile. Enter a correct username and password. If there is any computer that can be accessed via the same network, the found IP is displayed.

 To register a frequently used PC, move the focus to  [Manage User Profiles](#), and then press the Select button. When a pop-up window appears, select [Add](#), and then enter the PC information.

 When your PC enters in power saving mode, connection is not available. It is recommended to cancel the power saving mode.

 It is recommended to connect the wired network because the screen or sound may be interrupted depending on the network condition.

### 1. Configure your computer's settings to use the [Workspace](#) function.

 Connection to Windows via the RDP protocol is available in Windows 10 Professional or higher.

 Remote connection to a PC running on Mac via the VNC protocol is only supported for Mac OS X 10.5 or later.

- Windows OS:

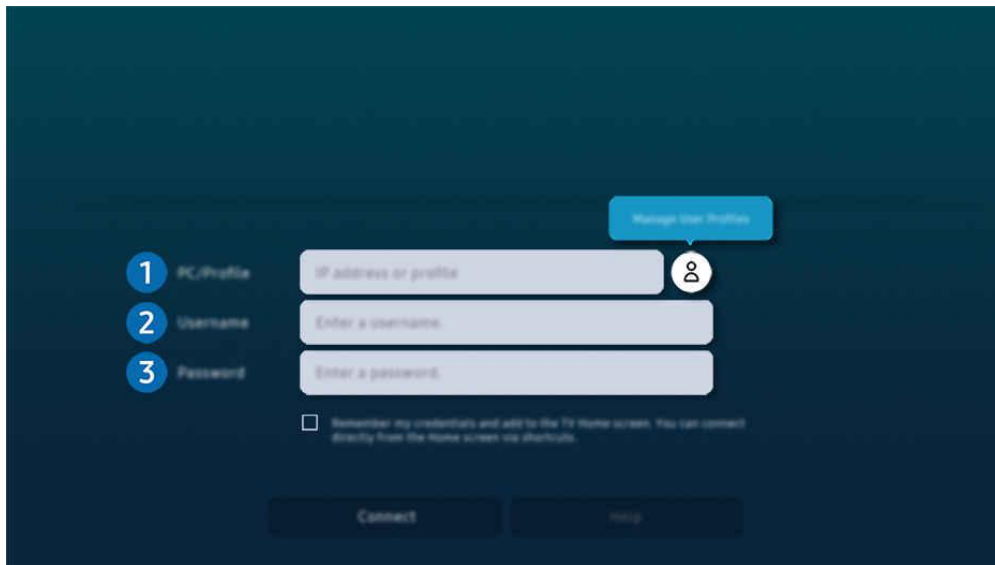
- 1) Right-click the **My PC** icon on Desktop or Windows Explorer and then click **Properties**.
- 2) Click **Remote Desktop** and select **Activate Remote Desktop**.

- Mac OS:

- 1) Select **Menu** > **System** > **Preferences** and then click **Sharing**.
- 2) Select the **Screen Sharing** and **Remote Login** check box.
- 3) Run the resolution changing app downloaded from App Store and then change the resolution to 1440 x 900 or lower.

 If you do not change the resolution in Mac OS, the previous image may appear while connecting a remote computer.

2. Enter the required settings to connect the computer remotely.

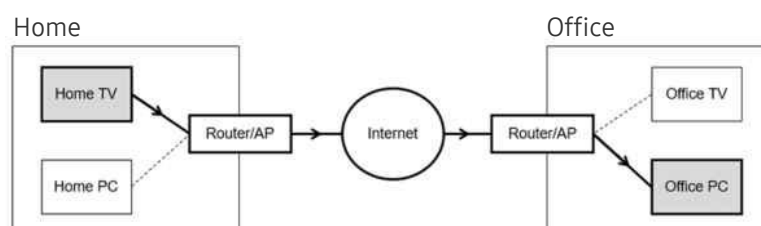


 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 PC/Profile

Enter the IP address or profile of the PC you want to connect to.

- In case of Windows, when the computer to connect is within the same network (router/AP), run “cmd” command in **Settings > Network and Internet > View Network Properties** or in **Start > Run**, and then run “ipconfig” to check the IPv4 address of the computer.
- In case of Mac, you can check the IP address in **Settings > Remote Access**.
- When the TV and computer are not within the same network, it is required to know the public IP and configure the router and AP. Check whether the router connected to the computer supports port forwarding. When the company provides additional security features such as firewall, seek help from a security officer.



## 2 Username

Enter the Username of the computer. How to check the Username:

- Windows OS: **Control Panel > User Account Control**
- Mac OS: **System Preferences > Users & Groups**

## 3 Password

Enter the password for the login account.

 For use of PIN, do not enter PIN but the specified password of the computer.

## Playing Multimedia Content on a Remote PC

When you move the mouse cursor to the top of the screen after accessing a remote computer, the top bar appears. When the sharing folder icon is clicked in the top bar, the folders shared on Windows or Mac OS appear. You can play back any media content in a folder.

 For more information, refer to "[Playing pictures/video/music.](#)"

To use this function, the folder sharing option on the computer to access must have been enabled as shown below:

- Windows OS:
  1. Run Windows Explorer and then move to the folder to share.
  2. Right-click the folder and then click **Properties**.
  3. After the **Properties** window appears, click the **Sharing** tab and then click **Advanced Sharing**.
  4. After the **Advanced Sharing** window appears, select the **Share this folder** check box.
- Mac OS:
  1. Select **Menu > System Preferences** and then click **Sharing**.
  2. Select the **File Sharing** check box.
  3. To add a folder to share, click the **Add+** button at the bottom.
  4. Select a folder and then click **Add+**.

 It is recommended to connect the wired network because the screen or sound may be interrupted depending on the network condition.

 When playing a video file via a remote computer, the screen or sound breaking may be encountered.

## Controlling your Galaxy device with the keyboard and mouse

 > left directional button >  [Daily+](#) > [Workspace](#) > [Multi Control](#)

Control nearby Galaxy devices with the mouse and keyboard connected to the product.

-  To connect to nearby devices, turn on [Multi Control](#), Wi-Fi and Bluetooth on the devices, and ensure that the devices are connected to the same wireless network and logged in with the same Samsung account.
-  This function may not be supported depending on the model or geographical area.

## Using Samsung DeX

Run [Samsung DeX](#) on your mobile device to connect the software to the TV.

Follow the on-screen instructions to connect [Samsung DeX](#). Some models may not be searched when connecting the TV from a mobile device through [Samsung DeX](#). If that is the case, follow the instructions shown on the mobile device screen to connect the software.

-  This function is available only on mobile devices that support the wireless Samsung DeX.

## Using Microsoft 365

You can read or create a document after accessing the Microsoft 365 website.

-  Run the site in full-screen mode.
-  URL modification is impossible in the Microsoft 365 page.

## Adding the Web Service

Select the [Add Web Service](#) icon. Use the bookmarking function of the [Workspace](#) browser, you can add or delete the web service link to or from [Workspace](#).

-  To add the web service, you must be signed in to your Samsung account.
-  The number of web services that can be added to [Workspace](#) is limited.
-  [Workspace](#) browser not share data with Internet. (Web browser outside from [Workspace](#))

## Using Web Service

You can access the web service by selecting the web service icon added to [Workspace](#).

-  The screen on the webpage may differ from that of a computer.
-  You can copy or paste any text. Some image formats are supported.
-  For easy and secured login in Web Service, [Workspace Pass](#) is additionally supported as well as [Samsung Pass](#).

Setting [Samsung Pass](#) or [Workspace Pass](#).

Set [Samsung Pass](#) or [Workspace Pass](#) to Use in  > left directional button >  [Daily+](#) > [Workspace](#) > Run the [Workspace](#) browser (Additionally select [Microsoft 365](#) or [Add Web Service](#)) > [Internet Menu](#) > [Settings](#) > [General](#).

[Workspace Pass](#) allows you to easily manage the web service ID and password without biometric authentication on mobile devices. For this purpose, you must be signed in to your Samsung account. The password is encrypted to be safely stored on your TV.

However, the log in to [Workspace Pass](#) may not work depending on the site policy.

[Workspace Pass](#) only working on [Workspace](#).

-  To securely access the web service, you can use the [Workspace](#) browser's automatic shutdown or clear the history logs.
-  Before accessing the web service, refer to "[Read Before Using the Internet Function](#)."
-  [Workspace](#) browser not share data with Internet. (Web browser outside from [Workspace](#))

The web service supports the following keyboard shortcuts:

- F1: Returns to [Workspace](#)'s Home Screen.
- F5: Refresh.
- F8: Mutes the sound.
- F9/F10: Adjusts the volume.
- F11: Switches between full screen or default screen.

## Using the User guide

Read the manual embedded in your TV.

### Launching the User guide

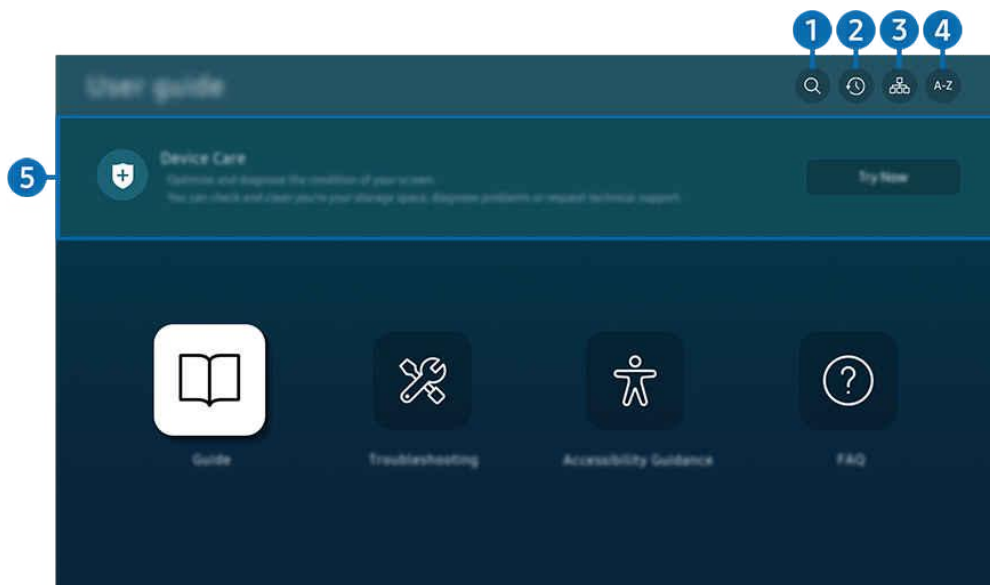
 >  (left directional button) >  **Settings** > **Support** > **Open User guide**

You can view the embedded User guide that contains information about your TV's key features.

 You can download a copy of the User guide from Samsung's website to view or print on your PC or mobile device (<https://www.samsung.com>).

 Some menu screens cannot be accessed from the User guide.

### Using the buttons in the User guide



 The image on your TV may differ from the image above depending on the model and geographical area.

#### 1 (Search)

Select an item from the search results to load the corresponding page.

#### 2 (Recently Viewed Topics)

Select a topic from the list of recently viewed topics.

#### 3 (Sitemap)

It displays the lists for each item in User guide.

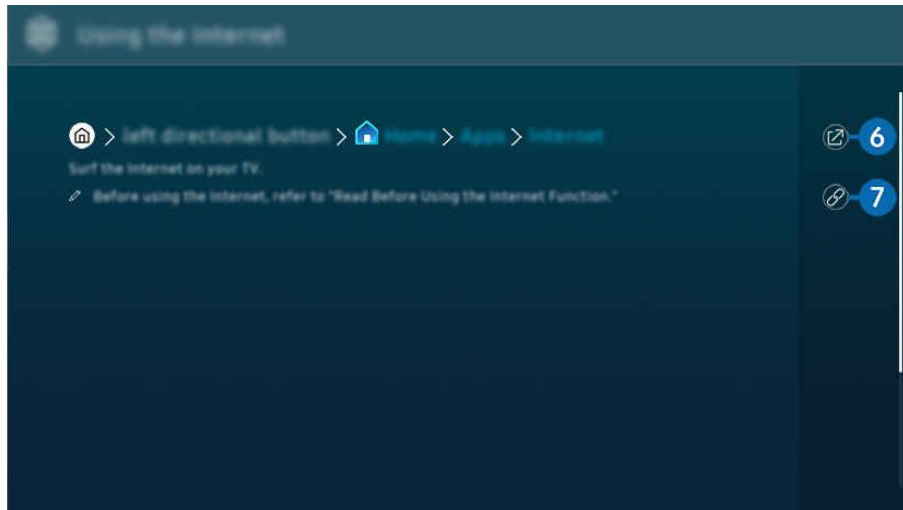
#### 4 A-Z (Index)

Select a keyword to navigate to the relevant page.

 This function may not be supported depending on the model or geographical area.

#### 5 Device Care

Optimize and diagnose the condition of your TV. You can check and clean your storage space, diagnose problems or request technical support.



 Words in blue (e.g., [Internet](#)) indicate a menu item.

 The image on your TV may differ from the image above depending on the model and geographical area.

#### 6 (Try Now)

Allows you to access the corresponding menu item and try out the feature right away.

#### 7 (Link)

Access an underlined topic referred to on an User guide page immediately.

# Using the Internet

Surf the Internet on your TV.

 > left directional button >  Home > Apps > Internet

When you run **Internet**, you can see recently viewed websites or featured recommendations. When you select a desired website, you can get immediate access to it.

-  This function may not be supported depending on the model or geographical area.
-  You can use the **Internet** function more easily after connecting a keyboard and mouse.
-  You can scroll webpages with the directional button on the Samsung Smart Remote or Remote Control.
-  The webpages may differ from those on a PC.
-  Before using the **Internet**, refer to "Read Before Using the Internet Function."
-  The **Internet** app has an embedded **Samsung Pass Settings** ( > left directional button >  Home > Apps > Internet > Internet Menu > Settings > Samsung Pass).

With **Samsung Pass**, you can log into the website easily and securely. When you visit the website again, you can log in with **Samsung Pass** Biometrics Authentication on your mobile device without entering your ID and password.

However, this **Samsung Pass** login may not work depending on the website policy. For this purpose, you must have been logged in the mobile device with a Samsung account registered in **Samsung Pass**.

## Using SmartThings

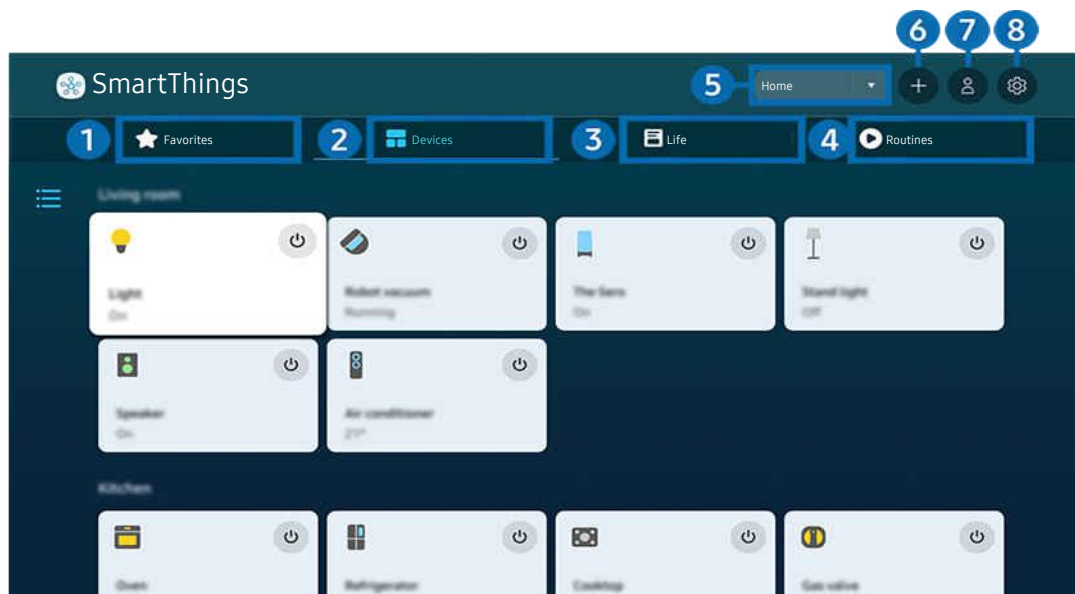
It allows the TV to connect and control the detected various devices in the same space.

🏠 > ≡ (left directional button) > 📶 [Connected Devices](#) > ⚙️ [SmartThings](#) [Try Now](#) [Try Now](#)

🏠 > left directional button > 🌿 [Daily+](#) > ⚙️ [SmartThings](#) [Try Now](#) [Try Now](#)

You can control the devices registered to the SmartThings cloud and devices directly connected to this product with a remote control.

- ✎ This function may not be supported depending on the product or model.
- ✎ Functions that can be controlled by remote control may not work depending on the location of the device. In this case, move the location of the device.
- ✎ Power consumption may increase as SmartThings will operate when the TV is a low power or standby mode.



- ✎ The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Favorites

View devices or features that have been set as favorites from the [Devices/Life/Routines](#) tab.

## 2 Devices

View devices connected to SmartThings, and use the remote control to select and control any of the connected devices. In [Map View](#), you can check the status of registered devices.

If you log in with the same account used for the mobile SmartThings app, you can view devices, registered through SmartThings, more intuitively from [Map View](#).

### List of devices compatible with the TV

| Type                                        | Description Detail                                                                                                                                                                                                                                                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Devices for IR remote control (IR Sniffing) | Air conditioner, air purifier, robot vacuum cleaner, electric fan, humidifier                                                                                                                                                                                                             |
| Bluetooth devices                           | Bluetooth speaker, headset, Soundbar, keyboard, mouse, game pad                                                                                                                                                                                                                           |
| SmartThings devices                         | For details on SmartThings devices, access <a href="https://www.smartthings.com/products">https://www.smartthings.com/products</a> .<br> SmartThings devices can also be controlled from the mobile app. |

 For a detailed list of supported devices, visit [www.samsung.com](http://www.samsung.com).

 This function may not be available depending on the external device.

 From the [Devices](#) tab, navigate to Menu(☰) and select the desired [Map View](#)(/).

## 3 Life

Displays recommended Life services that can be viewed or controlled from SmartThings.

 Only Life services supported by the TV are displayed.

## 4 Routines

View or run scenes created from the Routines tab in the mobile SmartThings app.

## 5 Location or Device near TV

- Place

Displays all places connected via the SmartThings app.

- **Devices near TV**

Displays all the detected devices that can be connected and controlled.

You can run the control options after selecting a desired device.

 Available options may differ depending on the device.

## 6 Add Device

Displays the list of devices that can be registered on your TV. You can register any by selecting a device.

## 7 Samsung Account

Go to the Samsung account screen to create a new account or sign out of your account.

 If you are signed out of your Samsung account, select **Sign In** to sign in.

## 8 Settings

Edit devices connected to **SmartThings**, or configure notification settings for the devices. You can also turn on the **Sensors** or the SmartThings hub feature.

## SmartThings Quick access

Control most used devices by accessing the  **Connected Devices** menu, without having to access **SmartThings**.

 >  (left directional button) >  **Connected Devices**

## Use the SmartThings Hub features

Use the SmartThings Hub features on various Samsung products to connect IoT devices (e.g., light bulbs, plugs, or sensors) that are supported by SmartThings.

 >  (left directional button) >  **Connected Devices** > **SmartThings** > **Settings** > **SmartThings Hub**

 CU6/DU6/CU7/DU7/CU8/DU8/DU9/DUX1/BEC/BED/The Serif Series, 32LS03C/32LS03D model: SmartThings Dongle required to connect Zigbee/Thread.

 Make sure to log in to the same Samsung account on your TV as your mobile SmartThings app.

 This function may not be supported depending on the connected device type.

## Register and manage devices via SmartThings [Try Now](#)

### Registering peripheral devices on the TV

1. When there is a device detected near the TV, a registration pop-up appears on the TV screen.
  -  When there is no device detected, the pop-up may not appear.
  -  To connect a Bluetooth device, make sure that the device has been paired.
2. Select **Register** to register the device.
  -  To register an appliance, make sure that it uses IR and is detectable in the area around the TV. Supported devices and options may differ depending on the model.
  -  Select **Close**. Then the device registration pop-up does not appear.

You can register a device in  >  (left directional button) >  **Connected Devices** >  **SmartThings** > **Add Device**.
  -   >  (left directional button) >  **Connected Devices** >  **SmartThings**, you can see available options for each device. [Try Now](#)
  - Supportable options may differ depending on the device.

### Registering a TV / Smart Appliance / IoT device from the mobile app

Use the mobile SmartThings app to register your TV, smart appliances or various IoT devices. Some IoT devices can only be registered using this mobile app. In the mobile app, tap the + (Add Device) to register a device.

Connect a doorbell to your TV, to receive a notification of the doorbell video and speak with the visitor while watching TV.

-  Only WWST (Works with SmartThings) certified doorbells are supported. Supported options may vary, depending on the device.

## Use the screen's sensors via SmartThings [Try Now](#)

When you activate the sensor, you can see the sensor device on the SmartThings Device tab. You can create various IoT scenarios with TV without purchasing a separate IoT sensor.

 >  (left directional button) >  [Connected Devices](#) > [SmartThings](#) > [Settings](#) > [Sensors](#)

-  Each sensor can be activated with user consent.
-  Each sensor may not be supported depending on the model.
-  The sound sensor is supported when the microphone switch at the bottom of the TV is turned on. The TV microphone may not be supported, depending on the model or geographical area.

## Control SmartThings with Bixby [Try Now](#)

With Bixby on the product, you can control devices connected to SmartThings, as well as the TV, using voice commands.

-  This function may not be supported depending on the connected device type.

## Control the display device from the mobile SmartThings app [Try Now](#)

From the mobile SmartThings App, use the TV remote control functionality, such as On/Off, Channel, Volume, and four directional buttons. You can also use [Search](#), [Apps](#), [Ambient](#) mode, Mobile Cam, and other functions from the mobile app.

[Routines](#) in the mobile SmartThings app allows you to automatically run apps installed on the TV.

With [Routines](#), you can turn on the TV at your desired time and automatically run frequently used apps.

# Playing pictures/video/music

Play media content stored on your TV, USB devices, mobile devices, cameras, PCs, etc.

 >  (left directional button) >  **Connected Devices** > Connected Device 

You can play media content saved on storage devices, such as USB devices, mobile devices, and cameras on the TV.

 You cannot play media content if the content or the storage device is not supported by the TV. For more information, refer to "Read Before Playing Photo, Video, or Music Files."

 Backup important files before connecting a USB device. Samsung is not responsible for damaged or lost files.

You can use the following functions on the media content list screen of a storage device.

- **Filter By**

Filters the media content by type of media.

- **Sort By**

Sorts the content list.

 This function may not be supported depending on the type of external device.

- **Options**

Deletes or plays the selected media content in the media content list. When you select **Refresh**, the content list is reloaded.

 You can delete only the recorded content. To delete content, change the **Filter By** option to **Recorded**.

 **Recorded** may not be supported depending on the geographical area.

## Playing multimedia content on a PC or mobile device

1. Select a device with media content in  >  (left directional button) >  **Connected Devices** > Sources. The media content list in the device appears.
2. Select a media content item from the list.

The selected content is played.

-  The content may not be played depending on the encoding method or file format. Furthermore, several functions may be restricted.
-  Content on devices connected to the TV via your network may not play smoothly due to network communication problems. If this occurs, use a USB device.

## Playing multimedia content on a USB device

1. Connect a USB device to the USB port.
2. There is a content list browser shown directly.
  -  If a USB device that contains the content you want to play is already connected to the TV, select the USB device in the  >  (left directional button) >  **Connected Devices** > Sources screen.
3. Select a content item to play from the list.

The selected content is played.

## Listening to your mobile device sound through the TV speaker using Sound Mirroring

Enjoy listening to music in your living space. Visualizations are generated on your TV that alter and respond to the frequency of your music.

1. Search for and connect to your TV from the  (Bluetooth) device list on your mobile device.
2. Select media content to play on your mobile device.

The selected media is played through the TV speaker.

-  This function may not be supported depending on the model.
-  In some models, the image of the played content may differ depending on the mode.
-  If the TV and the soundbar are connected wirelessly, the operation may be restricted.
-  Sound Mirroring entry path may be different in some models. (🏠) > left directional button >  Home > Apps > Mobile Connection > Sound Mirroring)

## Buttons and functions available while playing multimedia content

Press the Select button while playing any video, photo, or recorded content. The following buttons appear.

-  The provided buttons and functions may not be supported depending on the model or geographical area.
-  The available buttons and functions may differ with the content you are viewing or playing.

- **Pause, Play**

Pauses or plays the multimedia content.

- **Jump Backward, Jump Forward**

Press the up directional button to move the focus to the playback control bar, and then select the left or right directional button in the playback control bar to move backward or forward by 10 seconds in the video.

- Move to a specific playback section, move up the focus on the playback bar, and then select one of the five thumbnails.

 This function may not be supported depending on the file format.

- Stop

Stop the contents being played.

- **Previous / Next**

Displays the previous or the next multimedia content file.

If video playback time is 3 seconds or shorter and you press the  button, the video starts from the beginning.

- **Rewind / Fast Forward**

Rewinds or fast forwards the multimedia content. To increase the rewind or fast forward speed up to 3 times faster than normal, select the button repeatedly. To return to normal speed, select the  option or press the  button.

You can use the following functions when the video is paused. Note that with the video paused, the TV does not play audio.

- **Slow Rewind** or **Slow Forward**: Allows you to play a video slowly backward or forward by selecting the  or  option. There are 3 playback speeds. To change the playback speed, press the option repeatedly. To return to normal speed, select the  option or press the  button.

- **360 Mode**

Provides a 360-degree view for videos and photos.

 This function may not be supported depending on the file format.

 Video files using the mjpeg codec do not support a 360-degree view.

 When a video or photo does not support a 360-degree view, applying 360 rotation to it may cause the screen to look distorted.

 Videos may be interrupted if 360 rotation is applied during double speed playback.

 Videos that support a 360-degree view may be interrupted if 360 rotation is simultaneously applied with other functions during playback.

 This function may not be supported for some resolutions.

 This function may not be supported depending on the model.

- **360 Auto Rotation**

Automatically adjusts the video's viewing angle by analyzing the amount of image changes during playback of a video file that provides a 360-degree view. When this function is started, the rotation starts in a short time.

When **360 Auto Rotation** is focused, press the Select button to change to the following modes:

-  General
-  Dynamic
-  Natural

 This function is only available when **360 Mode** is selected.

 When **360 Auto Rotation** is activated, automatic adjustment is followed. The adjustment position may differ depending on the image.

 The video's viewing angle is manually adjusted in General mode.

 This function may not be supported depending on the file format.

 Video files that use the mjpeg codec do not support a 360-degree view.

 When a video does not support a 360-degree view, applying 360 rotation to it may cause the screen to look distorted.

 Videos may be interrupted if 360 rotation is applied during double speed playback.

 Videos that support a 360-degree view may be interrupted if 360 rotation is simultaneously applied with other functions during playback.

 This function may not be supported for some resolutions.

 This function may not be supported depending on the model.

- **Repeat**

Plays the current multimedia content repeatedly or all multimedia content files in the same folder repeatedly.

- **Shuffle**

Plays music files in random order.

- **Picture Off**

Plays music files with the screen off.

- **Screen Fit**

Fits a photo to the screen.

- **Rotate left / Rotate right**

Rotates a photo left or right.

- **Zoom**

Zooms in a photo.

- **Background Music**

Pauses or resumes the background music while the TV displays photos.

 This function is available after enabling the **Background Music** option.

- **Options**

 The available options may differ with the model and content.

| Function                | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Slideshow Speed</b>  | Sets the slideshow speed.<br> If there is only one image file in the USB device, the slide show is not played.                                                                                                                                                                                                                                        |
| <b>Slideshow Effect</b> | Applies transition effects to the slide show.<br> If there is only one image file in the USB device, the slide show is not played.                                                                                                                                                                                                                    |
| <b>Background Music</b> | Plays background music as you set in the pop-up window while the TV displays photos.<br> The music files must be saved in the same USB device as the photo files.<br> To pause the background music, select <b>Background Music</b> on the playback screen bottom. |
| <b>Subtitles</b>        | You can set the detailed subtitle options, such as the language, sync, size, and color.<br> If subtitles are not displayed correctly, check the encoding setting.                                                                                                                                                                                     |
| <b>Rotate</b>           | Rotates the video.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Audio Language</b>   | Changes the audio language.<br> This function is only available if the video supports multi-track sound.                                                                                                                                                                                                                                              |
| <b>Information</b>      | Displays detailed information about the current multimedia content.                                                                                                                                                                                                                                                                                                                                                                      |

# Using Multi View

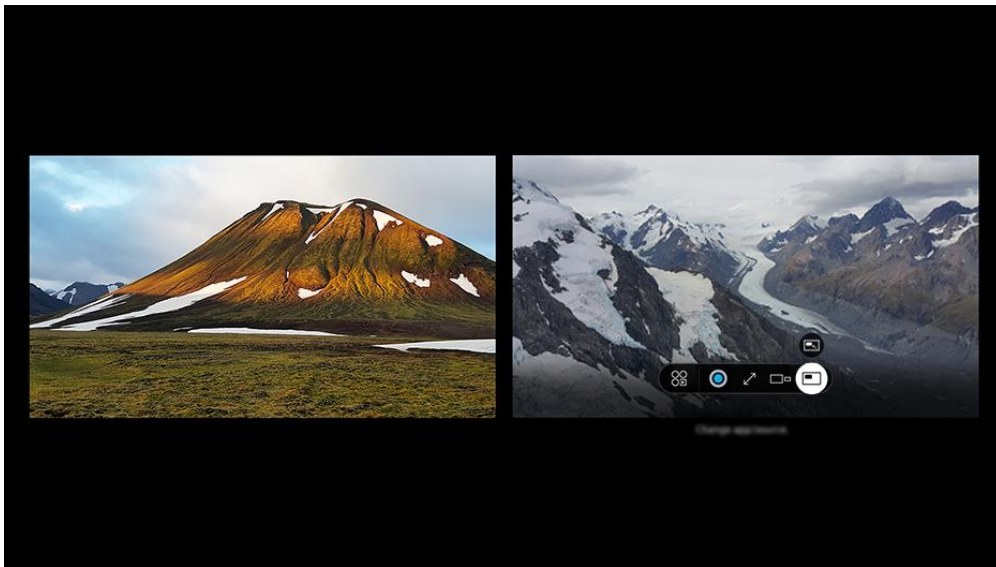
You can view multiple content items through Multi View.

 >  (left directional button) >  **Settings** >  **Multi View** 

 This function may not be supported depending on the model.

To start **Multi View**, navigate to  >  (left directional button) >  **Settings** >  **Multi View**. Next, Select the item you want from the Add View list. Or select **Make My Own** to configure a custom layout and screen. You can add or delete a screen in the current **Multi View** screen by pressing the down directional key on the Samsung Smart Remote.

 With 8K models (QN7\*\*C/QN7\*\*D series or higher), you can configure a view with 3-5 screens.



 The image on your TV may differ from the image above depending on the model and geographical area.

When **Multi View** is running, press the Select button to configure the following menus.

 This function and the provided options for each menu icon may not be available depending on the model and region.

-  **App/Source**

You can select from the content list displayed above.

- **Content**

You can view the currently displayed app or source.

 After selecting a content item, you can control the screen or change the app and source.

-  **Maximize**  
View the selected screen in full screen mode.
-  **Return to Multi View**  
Reduce the maximized screen to the original size, and return to the **Multi View**.
-  **Screen Size**  
Selects the desired size of **Multi View**.
-  **Screen Position**  
Selects a position of the **Multi View** screen.
-  **Picture-in-Picture**  
Selects the position of a small screen on the full screen. The focusing left or right screen appears as small window.
-  **Double Audio**  
You will hear the sound of both screens at the same time by adjusting the ratio of each screens sound.
-  **Bluetooth Speaker**  
You can hear the sound by connecting the Bluetooth speaker.
-  **Full Screen**  
**Multi View** is ended and then the full screen appears.
-  **Delete**  
You can delete the selected screen.

To close **Multi View**, press and hold the  button or press the  button on the Samsung Smart Remote.

-  This function operates only by TV broadcasts, external devices, or apps that support **Multi View**.
-  While running **Multi View**, app casting from your mobile device is run on **Multi View**. This function is not available in some apps.
-  In some models, you can view the image on the camera connected to the SmartThings app of your mobile device.
-  Q-Symphony is not supported by **Multi View**.
-  When an external device that connects to a receiver or Soundbar is used in **Multi View**, sound outputs from the TV speaker, not from the receiver or Soundbar.

## Using Bixby

Set Voice Assistant to Bixby. Speak into the microphone on your Samsung Smart Remote or TV to control your TV.

-  This function is available only if Voice Assistant is set to Bixby. (🏠 > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Voice Assistant](#)) [Try Now](#)
-  Bixby is available only when the TV is connected to the network.
-  To use Bixby, you must register and sign in to your Samsung account. Some functions may not be supported if you are not signed in to your Samsung account.
-  Bixby only supports some languages, and the supported functions may differ depending on the geographical area.
-  Bixby may not be supported depending on the model or geographical area.
-  The microphone on TV is not supported depending on the model or geographical area.

## Starting Bixby with voice

You can immediately start a conversation with Bixby by saying "Hi, Bixby." Say "Hi, Bixby", and the Bixby icon at the bottom of the TV screen is activated in Listen mode. Continue speaking.

-  For best results, you need to be within 10 feet (3-4 m) of your TV. If Bixby does not answer, refer to "[I spoke "Hi, Bixby/Alexa" but Bixby/Alexa does not answer."](#) in "[Troubleshooting](#)."
-  These functions may not be supported depending on the model or geographical area.

## Starting Bixby using buttons on the Samsung Smart Remote

You can have conversation with Bixby using the Samsung Smart Remote buttons. Press and hold the  button on your Samsung Smart Remote, say a command, and then release the  button.

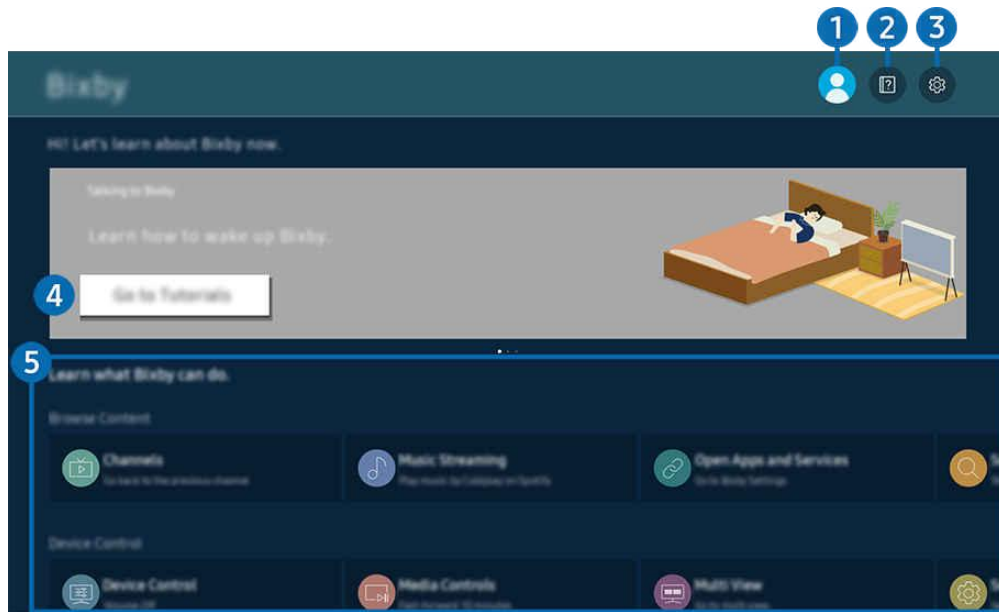
For details on how to use Bixby, press the  button once:

- When you press the  button, the  icon appears at the bottom right of the screen. Press the Select button to go to the [Discover Bixby](#) screen.



 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## Learning about the Discover Bixby Screen



The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Account

Log out after going to the [Samsung Account](#) screen.

If you are signed out of your Samsung account, select [Account](#) to sign in.

### 2 Tutorials

View tutorials related to the [Bixby](#).

### 3 Settings

You can change the settings for using Bixby.

These functions may not be supported depending on the model or geographical area.

These functions can be set in [Bixby Settings](#) ( > (left directional button) > [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Bixby Settings](#)). [Try Now](#)

#### • [Voice Wake-up](#)

Configure settings on how to wake up Bixby with your voice. You can configure the following settings: [Hands-free wake-up](#), [Using your voice with a Soundbar's microphone](#), [Wake-up phrase](#), [Talk to Bixby without wake-up](#), and [Wake-Up Sensitivity](#). ( > [Bixby Settings](#) > [Voice Wake-up](#)).

From [Voice Wake-Up](#), set [Hands-free wake-up](#) to operate at all times, and say "Hi, Bixby" when the TV is off. You can use [Daily Board](#) which provides a variety of daily information, even when you are not watching TV.

For more information about [Daily Board](#), refer to "[Using Daily Board](#)."

The [Voice Wake-up](#) function may not be supported depending on the model or geographical area.

This function can be used only when the microphone switch at the bottom of the TV is active. The microphone on TV is not supported depending on the model or geographical area.

 For best results, you need to be within 10 feet (3-4 m) of your TV. If Bixby does not answer, refer to "I spoke 'Hi, Bixby/Alexa' but Bixby/Alexa does not answer." in "Troubleshooting."

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

- **Language and voice style**

You can change Bixby's language and voice style.

 The languages of the TV and other apps will not change.

 Bixby only supports some languages.

 This function may not be supported in Bixby depending on the language selected.

- **Bixby Feedback**

Play a sound when Bixby starts and stops listening.

 This function may not be supported depending on the model.

- **Preferred Services**

Bixby will prioritize your preferred services for certain commands, but you can use any service by including its name in your command.

 This function may not be supported depending on the model.

- **Privacy**

You can permit or prohibit Bixby from utilizing your personal information when you are using Bixby services.

- **About Bixby**

Displays the detailed terms and conditions.

#### **4 Recommended commands**

Displays recommended commands you can use to control the TV with Bixby given the current context.

If you do not want to see the recommended commands, set **Voice Hint** to **Off** (🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **General & Privacy** > **Voice** > **Voice Hint**). [Try Now](#)

#### **5 All Services**

You can learn the voice commands that let you use Bixby in various situations. Use the directional buttons to move to the desired command, and then press the Select button. You can operate the TV with various voice commands.

## Read Before Using Bixby

- The supported voice interaction languages and features may differ depending on the geographical area.
- If the language set differs from the language of your country, some features are not available.
- Bixby is available only when the TV is connected to the network.
- Even if the TV is connected to the network, there may be no response due to a Bixby server error.
- The existing functional specifications may be changed if Bixby is updated.
- Bixby is available only on TVs that support it and come with remote controls that have a microphone.
- Symbols including "-" and special characters are not supported. Consequently, if a word or sentence contains numeric values or symbols, the function may not operate properly.
- Searched results may not provide complete results.
- You may be required to pay for some apps. Consequently, you may encounter a service application or contract.
- To change the current channel by saying channel names as voice commands, you must finish [Find Your Service Provider](#). [Find Your Service Provider](#) can be set in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Service Provider Info & Settings](#). [Try Now](#)

If the settings for the service provider are not configured yet, configure them in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Factory data reset](#). [Try Now](#)



Service provider settings in initial setup may not be supported on geographical area.

- To use the voice text input function and the search function, you must consent to provisions allowing third parties to collect and use your voice data.
- To use the Bixby function, you must:
  - Agree to Smart Hub's Terms of Use.
  - Agree to a guidance regarding the collection and use of personal information for the Smart Hub service.
  - Consent to the collection and use of personal information for the voice interaction-based service.

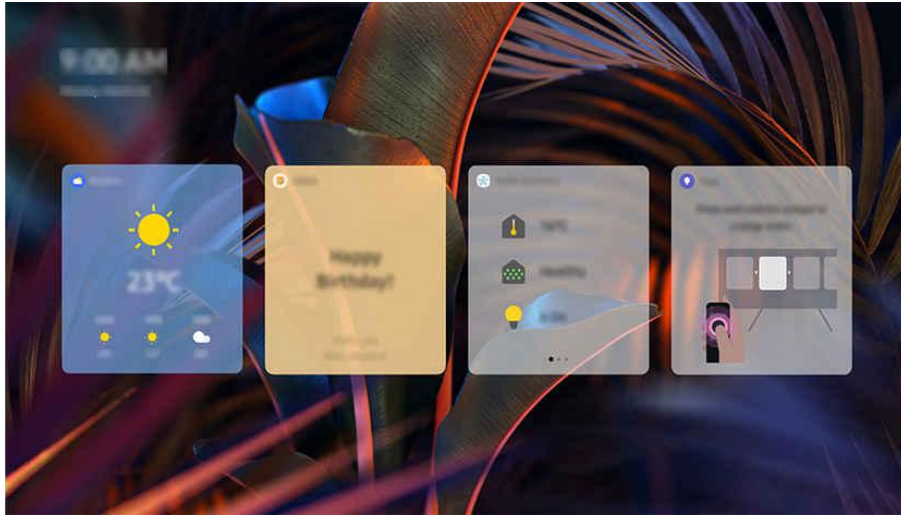
## Provisions for using Bixby

- The voice interaction rate differs with the volume/tone, pronunciation, and ambient sound environment (TV sound and ambient noise).

## Using Daily Board

Even when the TV is off, easily access useful daily information through the smart screen, which switches on when a user is detected or when it is activated by voice.

 This function may not be supported depending on the model or geographical area.



 The image on your TV may differ from the image above depending on the model and geographical area.

## Starting Bixby with voice

When the TV is off, say "Hi, Bixby." You can use [Daily Board](#) which provides a variety of daily information, even when you are not watching TV.

 For best results, you need to be within 10 feet (3-4 m) of your TV. If Bixby does not answer, refer to "I spoke 'Hi, Bixby/Alexa' but Bixby/Alexa does not answer." in "Troubleshooting."

## Starting Daily Board through user detection

Turn on [Daily Board](#) to automatically display the [Daily Board](#) screen if a user is detected in the vicinity, even when the TV is off.

[Daily Board](#) can be turned on in  >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Daily Board](#) [Try Now](#)

 Users are detected by sensing sound and movement around the TV.

 Users may not be detected properly, depending on the environment in which the TV is used. If this happens, say "Hi, Bixby" to activate Bixby and then activate [Daily Board](#). ( > [Bixby Settings](#) > [Voice Wake-up](#) > [Hands-free wake-up](#) > [Always](#))

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

 If [Night Mode](#) is turned on in [Daily Board](#) > [Edit](#) > [Settings](#), users are not detected when it is dark around them.

 When [Sleep Mode](#) is turned on in [Daily Board](#) > [Edit](#) > [Settings](#) > [User Detection](#), users are not detected during a set time period.

## Information provided in Daily Board

Weather, notes, SmartThings (Home Status, Camera, Energy), music, and many other forms of useful daily information is provided as widgets.

Use [Settings](#) > [Widgets](#) to configure settings so that only specific widgets are displayed.

 Supported widgets may vary depending on the model, region, and environment where the service is used.

- [Weather](#)

View weather forecast by hour or day of the week.

- [Notes](#)

Send messages from the mobile SmartThings app to the TV when it is off.

 To use this widget, first you should register the TV from the mobile SmartThings app.

 Mobile SmartThings app > Select the TV as the device > Recommend tab > Daily Board > Create and send messages

- [Home Status](#)

View details about the events that occurred on your devices registered in SmartThings.

 To use this widget, first you should register the intended device from the mobile SmartThings app.

- [Camera](#)

Monitor the status of IoT cameras registered in SmartThings.

 This widget may not be supported depending on the camera model.

- [Energy](#)

View the energy consumptions of your devices registered in SmartThings.

 This information can be obtained from the Energy service provided under the Life tab in SmartThings.

 This function may not be supported depending on the model or geographical area.

- [Music](#)

Play music from a user-specified music service provider.

 This function may not be supported depending on the model or geographical area.

 This function is available only when [Voice Assistant](#) is set to [Bixby](#).

 If you are not logged in to the music service, one-minute playback for trial is only possible.

- [Tips](#)

Access the user guide on how to use [Daily Board](#).

## Changing the Settings of Daily Board

On the [Daily Board](#) screen, use the [Edit](#) menu to change settings.

- [Wallpapers](#)

Choose a background theme from [Edit](#) > [Wallpapers](#).

- [Timeout](#)

Adjust the off timer time from [Edit](#) > [Settings](#) > [Timeout](#).

- [Auto Loop](#)

Adjust the page transition time from [Edit](#) > [Settings](#) > [Auto Loop](#).

- [User Detection](#)

Navigate to [Edit](#) > [Settings](#) and configure [User Detection](#) On/Off, [Sensitivity](#) or [Sleep Mode](#) settings. [Sleep Mode](#) disables the [User Detection](#) feature during a set time period.

- [Night Mode](#)

Navigate to [Edit](#) > [Settings](#) and enable [Night Mode](#) to prevent the [Daily Board](#) from turning on when the surrounding is dark, even if a user is detected.

# Using the Game Bar

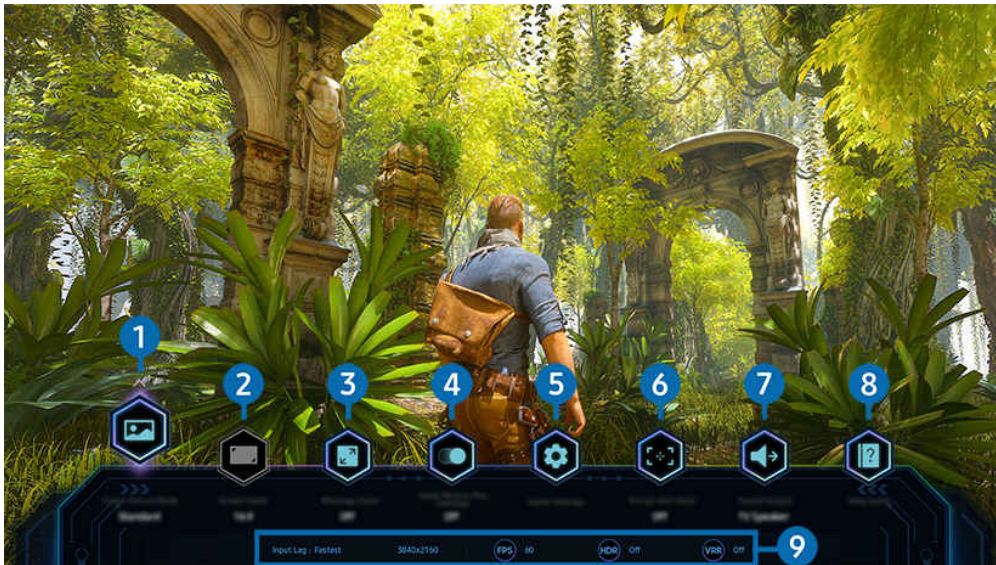
Control the Game Settings Monitoring and Game Enhancer Settings easily by using the Game Bar.

 This function may not be supported depending on the model.

## Starting the Game Bar

When **Game Mode** (🏠) > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **Connection** > **Game Mode Settings** > **Game Mode** is **On** or **Auto**, press and hold the 🎮 button on your Samsung Smart Remote to start the Game Bar. [Try Now](#)

## Learning about the Game Bar



 The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Game Genre

Specify the Game Picture Mode according to the current game genre. To customize the picture quality, select **Custom 1** or **Custom 2**.

## 2 Screen Ratio

You can change the screen ratio from 16:9 (previous setting) to Ultra wide (21:9 or 32:9).

-  You have to set the resolution from your PC only once at first time.
-  The Game Bar's Screen Ratio can be changed only when the Ultra Wide resolution is supported in a game or PC. Whether or not to support the screen ratio of 21:9 and 32:9 depends on the title of the game so be sure to consult the game company.

## 3 Minimap Zoom

Use the directional buttons and Select button on the remote control to zoom in on specific areas of the game screen and adjust the zoom rate.



- For the Minimap supported resolution, refer to the table below.

| Game Bar Screen Ratio | Resolution set in PC                                 |
|-----------------------|------------------------------------------------------|
| 16:9                  | 3840 x 2160 (60/*120 Hz)                             |
| 21:9                  | 2560 x 1080 (60/*120 Hz)<br>3840 x 1600 (60/*120 Hz) |
| 32:9                  | 3840 x 1080 (60/*120 Hz)                             |

-  \*: The refresh rate may not be supported depending on the model.

#### 4 Game Motion Plus

Turn on this function to obtain a softer and clearer picture quality when playing a role-playing game (RPG) or adventure game which involves many dynamic scenes.

#### 5 More settings

Configure specific settings to suit your preferences.

#### 6 Virtual Aim Point

You can see the virtual aim point on the screen.

#### 7 Sound Output

Change the sound output device. (e.g. TV Speaker, Soundbar, Bluetooth headset, etc.)

#### 8 Help Guide

View details on how to use each menu item.

#### 9 Current status display

- **Input Lag**: Shows the status of game input lag.
- **Resolution**: Shows the resolution of the currently running game.
- **FPS**: Shows the number of frames per second in real time. If **VRR** is active, the frame rate changes.
- **HDR**: Shown as **On** when an HDR game is running.
- **VRR**: Shows the variable refresh rate.

### Using FreeSync

The FreeSync feature allows you to play seamless games without video interruption or delay. To use the FreeSync feature, activate the FreeSync feature from the external device.

- Models that support FreeSync Premium Pro
  - QN900D, QN8\*\*D, QN95D, QN90D, QN8\*D, QNX1D, Q8\*D (except for 50-inch model), S95D
  - QN900C, QN8\*\*C, QN7\*\*C, QN95C, QN90C, QN85C, Q8\*C (except for 50-inch model), Q7\*C, S95C

 For the FreeSync supported resolution, refer to "[Supported Resolutions for FreeSync \(VRR\)](#)."

## Setting the Super Ultra Wide Game View

Set your PC Screen resolution to match the selected Screen Ratio in the Game Bar before activating the **Super Ultra Wide Game**.

If the TV is connected to a computer and **Game Mode** is set to either **ON** or **Auto**, the wide screen (**21:9** or **32:9**) is activated from the **Game Bar**.

-  This function may not be supported depending on the model.
-  Check if the game supports Ultra Wide resolution (**21:9** or **32:9**).
-  If you set the resolution on your PC for the first time, you can change the Screen Ratio through the **Game Bar** on your TV.

| Game Bar Screen Ratio | Resolution set in PC  |
|-----------------------|-----------------------|
| 21:9                  | 3840 x 1600 (60 Hz)   |
|                       | *3840 x 1600 (120 Hz) |
|                       | 2560 x 1080 (60 Hz)   |
|                       | 2560 x 1080 (120 Hz)  |
| 32:9                  | 3840 x 1080 (60 Hz)   |
|                       | 3840 x 1080 (120 Hz)  |

-  \*: The resolution may not be supported depending on the model.
-  The supportable resolutions may differ depending on the model or HDMI port connected to the PC.
-  After setting the resolution, check if the PC's Window or Mac screen changes when you change the Screen Ratio on the **Game Bar** of your TV.
-  This function may not be supported depending on the OS or device.
-  If the connected external device is a gaming device, the function does not work even if you change the name of Source to "PC."

 While you are playing a game, the screen ratio cannot be changed. Before running a game, first Select the desired screen ratio on the Game Bar and then run the game.

For some games, you need to match the game resolution with the selected screen ratio in the Game Bar.

## Changing the Super Ultra Wide Screen position

When playing a game at the Super Ultra Wide resolution, you can adjust the game screen position to the height of your eyes.

At the Super Ultra Wide resolution, use the  $\wedge/\vee$  (channel) buttons to move the screen position to the top, center, or bottom.

## Configuring 144 Hz / 165 Hz / 240 Hz game settings

If the TV is a model that supports 144 Hz / 165 Hz / 240 Hz, you can play 144 Hz / 165 Hz / 240 Hz games.

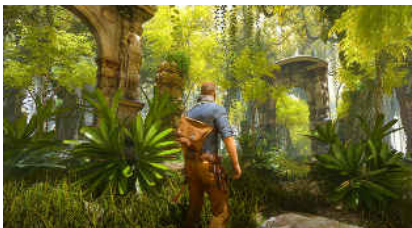
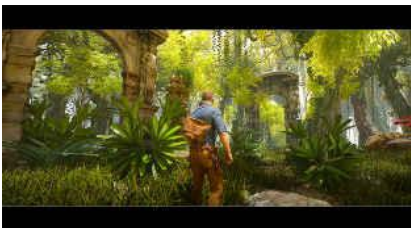
- Models that support 144 Hz: S95D, S90D, QN95D, QN90D (except for 98-inch models), QN900C, QN95C, S95C, S90C (except for 83-inch model), QN90C (43/50 inches only), S89CB
- Models that support 165 Hz: QN800D, QN850D
- Models that support 240 Hz: QN900D
- Resolutions that support 144 Hz / 165 Hz / 240 Hz are as follows:

| Game Bar Screen Ratio | Resolution set in PC                                                                                                         |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------|
| 16:9                  | 1920 x 1080p @ 144 / 1920 x 1080p @ 165 / 1920 x 1080p @ 240<br>3840 x 2160p @ 144 / 3840 x 2160p @ 165 / 3840 x 2160p @ 240 |
| 21:9                  | 2560 x 1080p @ 144 / 2560 x 1080p @ 165 / 2560 x 1080p @ 240<br>3840 x 1600p @ 144 / 3840 x 1600p @ 165 / 3840 x 1600p @ 240 |
| 32:9                  | 3840 x 1080p @ 144 / 3840 x 1080p @ 165 / 3840 x 1080p @ 240                                                                 |

## Troubleshooting of the game screen and audio problems

After changing the Screen Ratio on the [Game Bar](#), if the game screen and sound are not output properly, try to solve the problems as shown below.

- Check to see if the game supports Ultra Wide or your PC supports the Ultra Wide resolution.
- Restart the game after exiting it.
- Select the same resolution as that of the [Game Bar](#).
- When the Screen Ratio changes properly, the screen appears as shown below.

| 16:9                                                                                | 21:9                                                                                 | 32:9                                                                                  |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |

## Using Auracast

You can listen to the TV's audio by connecting to a Bluetooth audio device that supports Auracast.

-  This feature is supported in the QN800C/QN800D series or higher only.
-  This feature may not be supported depending on the models of the mobile device and Bluetooth audio device.

### Using Auracast

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Expert Settings** > **Auracast**

You can connect a Bluetooth device that supports **Auracast** to the TV.

Connect a Bluetooth audio device to the TV via the mobile device that is connected to the Bluetooth audio device. This can be done by using the Broadcast menu in the Bluetooth settings in the mobile device.

-  The location of the Broadcast menu may differ depending on the mobile device model.
-  This feature is supported in the QN800C/QN800D series or higher only.
-  This feature can connect the TV to two or more Bluetooth devices that support **Auracast**, simultaneously.
-  This feature cannot connect the TV to a Bluetooth audio device that supports **Auracast** and a Bluetooth audio device that does not support **Auracast** simultaneously.
-  The **Auracast** feature may not be supported depending on the mobile device model.
-  Audio volume can be adjusted from the mobile device that is connected to the audio device.
-  When this feature is turned on, audio cannot be played from the Bluetooth audio device that is already connected to the TV and does not support **Auracast**.
-  If **Auracast** is turned on and you change the audio output device to the previously connected Bluetooth audio device, **Auracast** automatically turns off.
-  To turn on **Auracast**, change the audio output device to the TV speakers.
-  While **Auracast** is in use, other devices that support wireless connection cannot be used together.  
(e.g., Bluetooth Speaker, Wi-Fi Speaker, Headset, Soundbar, Gamepad, Keyboard, Mouse, Sound Mirroring, etc.)

### Using a password

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Expert Settings** > **Auracast** > **Use Password**

If you set a password, you should enter the password when you connect an audio device to the TV via a mobile device, before using **Auracast**.

### Changing your password

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Expert Settings** > **Auracast** > **Reset Password**

Change the password you use when connecting to **Auracast**.

# TV Viewing and Recording

Use a variety of convenience features offered by your Samsung TV while watching TV. You can also edit your list of channels and create a list of favorite channels.

## Using the Guide

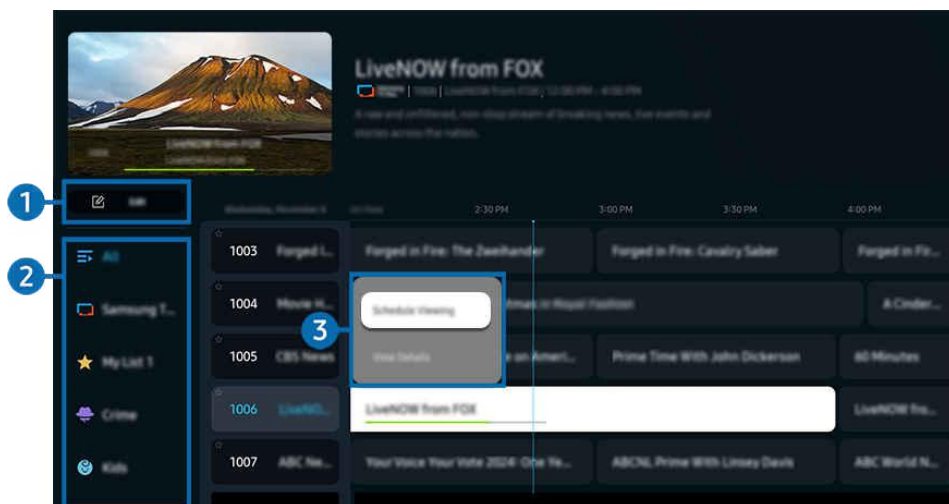
See the program schedules of different channels on a single screen.

Press the  $\wedge/\vee$  (channel) button to access the [Guide](#).

In the [Guide](#), you can see the daily program schedules for each station, see program information, choose a program to watch, and set up a schedule viewing or recording.

- The Record function may not be supported depending on the model geographical area.
- To access information or additional features provided in the [Guide](#) from analog channels, you must set Service Provider during the initial configuration stage.
- To view [Guide](#), you must first configure [Clock](#) ( > (left directional button) > [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)). [Try Now](#)
- For details on how to use the remote control, refer to the image guide at the top right.

## About the Guide screen



- The image on your TV may differ from the image above depending on the model and geographical area.

### 1 Edit Channels

Edit channels stored on the TV.

- For more information, refer to "[Using the channel edit function.](#)"

### 2 Channel Filter

View channels and programs classified by type.

### 3 Additional options related to broadcast programs

Navigate to the desired program and press and hold the Select button to access the following options:

 These functions may not be supported depending on the model or geographical area.

- [Schedule Viewing](#)

You can schedule the viewing of a broadcast scheduled program.

- [Cancel Scheduled Viewing](#)

You can cancel scheduled viewings.

- [View Details](#)

You can see detailed information about the selected program. The information may differ or may not be provided depending on the broadcast signal.

- [Record](#)

You can make a recording of a current program.

- [Stop](#)

You can stop the recording function that is currently running.

- [Edit Recording Time](#)

You can change the start and end times of scheduled program recordings.

- [Schedule Recording](#)

You can schedule recording of a broadcast scheduled program.

- [Cancel Scheduled Recording](#)

You can cancel scheduled recordings.

## Using additional features from the Guide

From the [Guide](#), press either the  or  button to use additional features.

 These functions may not be supported depending on the model or geographical area.

- [Channel Filter](#)

You can view channels and programs categorized by the types defined in [Channel List](#).

- [Schedule Manager](#)

You can see the [Recording & Schedule Manager](#) or [Schedule Manager](#) screen.

 For more information about [Schedule Recording](#), refer to "[Recording Programs](#)."

 For more information about [Schedule Viewing](#), refer to "[Setting Up Schedule Viewing](#)."

- [Antenna Type](#)

You can change the type of broadcast signals the TV receives.

# Recording Programs

Record a current or upcoming program using a USB device instead of a video recorder.

-  Connect a USB device to use the TV's recording features. Carefully read all related precautions before using a recording feature. For more information, refer to "Before Using the Recording and Timeshift Functions."
-  You can record only the programs that are received through an antenna.
-  The  appears next to the programs and channels scheduled for recording.
-  This function may not be supported depending on the model or geographical area.

## The Instant and Timer Recording options from the Guide

- **Record**
  1. Select a program that is currently being broadcast and press the Select button.
  2. Select **Record** from the pop-up menu to start recording.
- **Schedule Recording**
  1. Select a program scheduled to be broadcast, and press the Select button.
  2. Select **Schedule Recording** from the pop-up menu to schedule recording.

## Recording while watching a broadcast

- **Record**
  1. On the remote control, press the  or  button.
  2. Use the directional buttons to navigate to the control pad.
  3. Select **Record** to start recording.

 Or press the  button while watching a broadcast.
- **Schedule Recording**
  1. Press the Select button while watching a broadcast to load the program details window.
  2. Use the left or right directional button to navigate to a program scheduled to be broadcast, and press the Select button.
  3. Select **Schedule Recording** to schedule the recording of the program.

## Using the recording schedule management screen

1. On the remote control, press the  or  button.
2. Use the directional buttons to navigate to the control pad.
3. Select either [Schedule Manager](#) or [Recordings](#) to access the [Recording & Schedule Manager](#) screen.

The following options are available on the [Recording & Schedule Manager](#) screen:

 Displayed menu options may vary depending on the model.

- [Recordings](#)

### Watch Recordings.

-  Buttons shown on the display will vary depending on the file being played back. For more information about playback controls, refer to "[Getting to know Recording and Timeshift controls and options.](#)"
-  From the list, select a recording you wish to watch. The selected recording will start to play.
-  Move the focus to a recording to display [Play](#), [Delete](#), and [View Details](#) options on the right-side menu.

- **Schedule Recording**

Navigate to **Schedules** and press **Schedule Recording**. Add, edit, or cancel a program recording schedule.

 Specify the **Antenna, Channel, Repeat, Date, Start Time**, and **End Time** settings and then select **Save** to schedule a recording of a specific program at a specific time on a specific date.

 Up to thirty **Schedule Viewing** and **Schedule Recording** events may be created.

 Ensure that the TV's **Clock**( >  >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Clock**) setting is correct. **Try Now**.

- **Edit**

Configure the **Start Time** and **End Time** settings of a scheduled recording. If a scheduled recording event has been created after selecting a program from **Guide**, **Start Time** and **End Time** can be set as up to ten minutes before and ten minutes after, respectively.

- **Delete**

Remove a scheduled recording.

- **View Details**

See detailed information about a scheduled recording.

- **Settings**

- **Start Recording Early**

Change this setting so that the recording starts slightly earlier than the program start time shown in the Guide.

- **Continue Recording After**

Change this setting so that the recording ends slightly later than the program end time shown in the Guide.

## Setting Up Schedule Viewing

Configure the TV to show a specific channel or program at a specific time and date.

-  This function may not be supported depending on the model or geographical area.
-  The  appears next to programs that have been configured for a scheduled viewing.
-  To set up a schedule viewing, you must first set the TV's clock (  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)) and set the time. [Try Now](#)

### Using the schedule viewing options from the guide screen

On the [Guide](#) screen, select a program you would like to view, press the Select button, and then select [Schedule Viewing](#) in the pop-up menu that appears.

### Using the schedule viewing options while watching a program

1. Press the Select button while watching TV.
2. The Program Info window appears.
3. Select a program that will be broadcast using the left or right directional buttons.
4. Press the Select button, and then select [Schedule Viewing](#) to schedule viewing of that program.

## Using the viewing schedule management screen

1. On the remote control, press the  or  button.
2. Use the directional buttons to navigate to the control pad.
3. Select either [Schedule Manager](#) or [Recordings](#) to access the [Recording & Schedule Manager](#) screen.

 Displayed menu options may vary depending on the model.

- [Schedule Viewing](#)

Navigate to [Schedules](#) and press [Schedule Viewing](#). Add, edit, or cancel a program viewing schedule.

 Up to thirty [Schedule Recording](#) and [Schedule Viewing](#) events may be created.

 Ensure that the TV's [Clock](#) ( >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)) setting is correct. [Try Now](#)

- [Edit](#)

You can set the start time of a scheduled viewing. If you choose a program from the [Guide](#), the [Start Time](#) can be set to up to 10 minutes before the program.

- [Delete](#)

You can delete scheduled viewings.

- [View Details](#)

You can view detailed information about scheduled viewings.

# Using Timeshift

Watch scenes you missed and rewind to specific points of the program using Time Shift.

To activate Timeshift while watching a broadcast, press either the  or  button, and then use the directional buttons on the remote control to select **Timeshift** or press the  button. [Try Now](#)

Save the current broadcast program you are watching to a USB device to pause at specific scenes, view missed scenes, or rewind to specific points in the timeline.

 When the Timeshift function is running, some functions are not available in  >  (left directional button) >  **Settings**  
> **All Settings** > **Broadcasting**.

 To use Timeshift, you must connect a USB device for recording.

 Read all precautions before using the Timeshift function. For more information, refer to "[Before Using the Recording and Timeshift Functions](#)."

 This function may not be supported depending on the model or geographical area.

## Getting to know Recording and Timeshift controls and options

These are the controls and options available while recording broadcasts and using Timeshift.

Press the down directional button to display the control pad with the following options:

 This function may not be supported depending on the model or geographical area.

 The available buttons and functions may differ with the functions.

- **Pause / Play**

You can use the following functions when the video is paused. Note that with the video paused, the TV does not play audio.

- **Slow Rewind** or **Slow Forward**: Use  or  button to slow rewind or slow forward. Available speeds are 1/8, 1/4 and 1/2. Press the corresponding repeatedly to quickly increase the speed in slow mode by up to 3 times. To resume playback at normal speed, select  button.

 While using **Slow Rewind**, you will be able to see the time difference between the recorded broadcast's current time and the rewind time.

- **Jump Backward / Jump Forward**

Press the up directional button to move the focus to the playback control bar, and then select the left or right directional button in the playback control bar to move backward or forward by 10 seconds in the video.

 When the Jump Backward function is activated, you can view the difference between the current recording time and the current rewind time.

- [Rewind / Fast Forward](#)

Use  or  button to rewind or fast forward.

 This function is not available while you are watching a program that is currently being broadcast.

- [Stop Recording / Stop Timeshift](#)

Ends the recording or Timeshift function.

- [Record](#)

You can switch from the Timeshift function to the recording function. When switching to the recording function, you can include the content recorded by the Timeshift function in the new recording.

 This function is only available when the Timeshift function is running.

- [Edit Recording Time](#)

You can set for what period of time the program will be recorded.

 This function is only available when a program is being recorded.

- [Go to Live TV](#)

While using Timeshift to view a previous scene, select [Go to Live TV](#) to return to live TV.

- [Info](#)

Loads a window containing information about the program being recorded or Time Shift has been activated for.

- [Schedule Viewing / Schedule Recording](#)

Add a viewing or recording schedule.

# Using the Channel List

Change the channel or check programs on other digital channels.

Use the [Channel List](#) screen to change channels or see what programs are being broadcast on other digital channels.

## Accessing the channel list

Press and hold the  $\wedge/\vee$  (Channel) button to open the [Channel List](#).

## Using the functions on the channel list screen

The [Channel List](#) screen icons indicate the following:

- ★: A favorite channel.

The following options are accessible from the top left of the [Channel List](#) screen.

- [Air / Cable](#)

Select [Air](#) or [Cable](#) as your preferred channel method.

 Depending on the incoming broadcast signal, this option may not be supported.

Press the left button while in the [Channel List](#) screen to access the following options:

- [Edit Channels](#)

Edit the channels stored on your TV.

- [All Channels](#)

Displays all saved channels.

 The channels received to the currently selected [Air](#) or [Cable](#) are displayed.

- [Samsung TV Plus](#)

While the TV is connected to the Internet, you can watch popular programs or highlights for each theme through a virtual channel at any time. As with regular channels, the TV provides the daily program schedules for [Samsung TV Plus](#).

 This function may not be supported depending on the model or geographical area.

- [Genre](#)

Select a genre to sort and display specific channels to suit your preferences.

 This function may not be supported depending on the model or geographical area.

- [Favorites](#)

Displays favorite channels from [Favorites](#), [My List 1](#) through [My List 4](#).

 It displays only the [Favorites](#) that includes the favorite channel.

# Using the channel edit function

Edit the channels stored on your TV.

## Accessing the channel edit screen

- Display the [Guide](#) screen, and press [Edit Channels](#) on the left of the screen to access the edit-channel screen.
- Display the [Channel List](#) screen, and press [Edit Channels](#) on the bottom of the screen to access the edit-channel screen.

## Using the channel edit functions

The [Edit Channels](#) screen icons indicate the following:

- ★: A favorite channel.

Select a channel from the [Edit Channels](#) screen to access the following options:

- [Delete / Restore](#)

Remove or recover a registered channel.

Once a channel is removed, it will not appear on [Channel List](#). On the [Edit Channels](#) screen, the removed channel will appear in grey. A recovered channel will once again be visible on [Channel List](#).

- [Rename Channel](#)

From [Edit Channels](#), select the channel you wish to rename and then select [Rename Channel](#).

 Only one channel can be renamed at a time.

 Available for analog channels only.

- [Save and Exit](#)

Save the changes made under [Edit Channels](#) and exit.

# Using a Personal Favorites List

Create frequently watched channels as favorite channels.

On the [Edit Channels](#) and [Channel List](#) screens, the ★ icon appears next to favorite channels.

## Creating a Favorites List

1. Access the [Edit Channels](#) screen.

 For details on how to access the channel edit screen, refer to "[Accessing the channel edit screen.](#)"

2. Press the left directional button on the remote control to select the desired [Favorites](#).
3. Press the right directional button to select [Add Channels](#).
4. Select the desired channel in the list on the screen.
5. Press [Add](#) to add the selected channel to the favorites list.

Select [Favorites](#), [My List 1](#) - [My List 4](#) on the [Edit Channels](#) screen and the following functions are available.

 Up to five Favorites can be created, which allows each member of the family to create their own favorites list.

- [Add Channels](#)

In the channel list, select one or more channels to add in the favorite list and then select [Add Channels](#).

- [Remove](#)

Removes one or more channels from a favorites list.

- [Change order](#)

Changes the order of one or more channels selected in a favorites list.

- [Rename Favorites](#)

Renames a My list.

- [Save and Exit](#)

Saves and closes the [Edit Channels](#) screen.

# TV-Viewing Support Functions

Use the functions that are available while watching TV.

## Scanning for available channels

 >  (left directional button) >  **Settings** > **All Settings** > **Broadcasting** > **Auto Program**

**Try Now**



Do not use this function if your TV is connected to a cable box or satellite box.



If the TV has saved channels, **Auto Program** deletes the existing list, and then saves the newly scanned channels.

## Using Program Rating Lock

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Parental Settings** > **Program Rating Lock Settings** **Try Now**

This function is useful for controlling what programs children can watch on the TV based on their ratings. **Program Rating Lock Settings** does not, however, block programs originating from external sources, such as Blu-ray players, DVD players, or USB files.

Every time you access **Program Rating Lock Settings**, you must enter the security PIN. You must also enter this PIN to watch a blocked program. The default PIN is "0000." To change the PIN, go to  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Change PIN**. **Try Now**



**Program Rating Lock Settings** may not be supported depending on your input signal.



For more information about how to set your password, refer to "[Setting up a password.](#)"



The default PIN may differ depending on the geographical area.



For more information about the rating system of different countries, refer to "[Blocking programs based on their TV Rating.](#)"

## Watching blocked / restricted programs

To watch a blocked program, enter the PIN when requested.

When initially showing a restricted program or movie, the screen is blank because the **Program Rating Lock Settings** blocks it. Enter the PIN to unblock the program when a message appears requesting the code.

## Enable Data Service

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Data Service](#) [Try Now](#)

Access services from entertainment providers, online providers, and CE manufactures through [Data Service](#).

 This function may not be supported depending on the model or geographical area.

 Some channels may not include the [Data Service](#).

You can use the following functions:

- [Data Service](#) [Try Now](#)  
Enable or disable data services.
- [Do Not Track](#) [Try Now](#)  
Ask apps and services not to track your browsing activity.
- [Private Browsing](#) [Try Now](#)  
Enable Private Browsing to stop the browser from saving your Internet history.
- [Delete Browsing Data](#) [Try Now](#)  
Delete all saved cookies.

If you want this function enabled or disabled, use the [Data Service](#) menu item to turn it on or off.

 An application on broadcast channel may malfunction temporarily depending on the circumstances of the broadcast station or application provider.

## Configuring advanced broadcasting audio settings

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Audio Options](#) [Try Now](#)

[Audio Options](#) functions differently for analog and digital channels.

 These functions may not be supported depending on the model or geographical area.

- [Preferred Language](#)  
This is the language you will hear while watching TV if the language is included in the broadcast signal.
- [Multi-Track Sound](#)  
You can select the multi-track sound function depending on broadcasting signal.
- [Preferred Object Audio](#)  
Configure the audio properties of the broadcast to your preferred configuration.

## Setting the functions for the service provider

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Service Provider](#)  
[Try Now](#)

Enable or disable the broadcast service provider feature.

 This function may not be supported depending on the model or geographical area.

## Viewing broadcast service provider info

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Service Provider Info & Settings](#) [Try Now](#)

Find out who the current broadcast service provider is and look up related information.

 These settings can be configured only for available Service Provider.

## Using Secure Channel Viewing

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Secure Channel Viewing](#)

Provides you with warnings about insecure channels.

 This function may not be supported depending on the model or geographical area.

## Checking digital channel signal info and strength

 >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Broadcast Signal](#)

 If your TV is attached to a separate, over-the-air antenna, you can use the signal strength information to adjust the antenna for increased signal strength and improved HD channel reception.

 This function is only available for digital channels.

 This function may not be supported depending on the geographical area.

# Picture and Sound

You can change the settings for the picture and the sound according to your preference.

## Using Intelligent Mode

Let the TV analyze the surrounding and the content you are watching so that it can provide an upgraded viewing experience.

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Intelligent Mode Settings** > **Intelligent Mode** [Try Now](#)

In **Intelligent Mode**, the TV recognizes and analyzes the surroundings, noise, the content, and your usage patterns to provide the best viewing experience. You can turn the options below on or off. Create your preferred viewing environment.

 This function may not be supported depending on the model.

- **Adaptive Picture** [Try Now](#)

- **Optimized**

Optimizes brightness and provides the best picture quality in real time, based on the lighting condition and the content you're viewing.

- **EyeComfort**

**EyeComfort** syncs the sunrise/sunset times and ambient light intensity. After sunset, the mode provides warmer colors and lower brightness. The sunrise and sunset times can manually be changed.

 This function may not be supported by some models, modes or apps. (e.g., **Ambient Mode**, **Art Mode**, and **Game Mode**).

 To use **EyeComfort**, first you need to set the current time. Configure the **Clock**( >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Clock**) setting. [Try Now](#)

 The sunrise/sunset time sync function provided in **EyeComfort** may work differently, depending on the area and network connection.

- **AI Customization**

AI recognizes the type of content currently being viewed (e.g., Sports Games, Movies, General) and automatically switches to the customized picture quality settings.

Using **AI Customization Mode Settings**, users can customize the picture quality for each content type.

 Some models, modes or apps may not support this feature.

 To use **AI Customization**, first you need to set picture quality preferences for each content type. ( >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Intelligent Mode Settings** > **AI Customization Mode Settings**)

 Settings that can be adjusted by **AI Customization** may differ, depending on the region.

- **EyeComfort Mode Settings**

 This function is available only when **Adaptive Picture** is set to **EyeComfort**.

- **EyeComfort Mode Duration**

Set the sunrise and sunset time automatically. Or you can manually select the schedule.

- **Start Time**

Set the Start Time manually.

 This function is available only when **EyeComfort Mode Duration** is set to **Custom**.

- **End Time**

Set the End Time manually.

 This function is available only when **EyeComfort Mode Duration** is set to **Custom**.

- **EyeComfort Mode Level**

Adjust the level of the EyeComfort Mode screen.

- **AI Customization Mode Settings**

 This feature is available when **Adaptive Picture** is set to **AI Customization**.

- **Initial Setup**

Easily customize settings by selecting an image for each content type (e.g., Sports Games, Movies, General) once.

- **Detail Settings**

Customize specific settings, such as Brightness, Contrast, Color and Color Tone, for each content type (e.g., Sports Games, Movies, General).

 Available setting items under **Detail Settings** may differ, depending on the region.

- **Active Voice Amplifier / Active Voice Amplifier Pro**

Analyzes ambient noise and provides optimal sound depending on the noise.

 This function is available only when the microphone switch at the bottom of the TV is active and the sound output is set to **TV Speaker**. The location of the microphone switch may vary depending on the model or geographical area. The microphone on TV is not supported depending on the model or geographical area.

 While using this function, the TV does not save the data.

 This function may not be supported by some modes or apps (e.g., **Game Mode**).

- **Adaptive Sound+ / Adaptive Sound Pro**

Provides optimized sound quality by analyzing the viewing space and the acoustic components of the content.

-  This function can be used only when the microphone switch at the bottom of the TV is active and the sound output is set to **TV Speaker**. The microphone on TV is not supported depending on the model or geographical area.
-  This function may not be supported by some modes or apps (e.g., **Ambient** Mode, **Game Mode**, **Art** Mode, and apps that control the TV sound).
-  While using this function, the TV does not save the data.
-  This function may not be supported depending on the model.
-  The name of this function may appear differently depending on the model.

- **Adaptive Sound**

Provides optimized sound quality by analyzing the viewing space and the acoustic components of the content.

-  This function is only available when the sound output of the TV is set to **TV Speaker**.
-  This function may not be supported by some modes or apps (e.g., **Ambient** mode, **Game Mode**, and apps that control the TV sound).
-  This function may not be supported depending on the model.

- **Adaptive Volume** [Try Now](#)

Automatically adjusts to a specific volume level while you are watching TV. The TV analyzes your volume usage history by time period to automatically adjust the volume when you use an app or switch to an external input source.

-  This function is only available when the sound output of the TV is set to **TV Speaker**.
-  This function may not be supported by some apps or external devices.
-  This function's operation affects **Auto Volume** function, but it does not work the other way around.
-  This function operates based on your volume usage history, and may not operate if the volume usage history by time period is insufficient.
-  The amount of difference made by this function does not exceed +/- 5 levels from the current volume, and this function does not change the current volume if it exceeds 40.

# Adjusting the Picture Quality

Change the Picture Mode and adjust Expert Settings.

## Choosing a picture mode

 >  (left directional button) >  **Settings** > **All Settings** > **Picture** > **Picture Mode** [Try Now](#)

You can select the **Picture Mode** that provides the best viewing experience.

 **Entertain** and **Graphic** are supported only when you change the external device name to PC in PC mode.

- **Dynamic**

Makes the picture brighter and clearer in bright viewing environments.

- **Standard**

Is the default mode suitable for general viewing environments.

- **Eco**

This screen is provided to save energy.

 This function may not be supported depending on the model or geographical area.

- **Movie**

Is suitable for watching TV or movies in a dark room.

- **FILMMAKER MODE**

This screen mode provides picture quality certified by UHD Alliance. The image defined as **FILMMAKER MODE** automatically switches to **FILMMAKER MODE** while watching.

 This function may not be supported depending on the model or geographical area.

 **FILMMAKER MODE** may look darker than other picture modes.

 You can change **FILMMAKER MODE** to a different **Picture Mode**. However, the changed **Picture Mode** will be maintained even after watching the picture defined by **FILMMAKER MODE**.

 FILMMAKER MODE™ logo is a trademark of UHD Alliance, Inc.

## Configuring advanced picture settings

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) [Try Now](#)

Configure the screen settings to your taste by using the following functions:

- [Brightness](#) [Try Now](#)

Adjust the overall picture brightness. The closer to 50, the brighter the picture.

- [Contrast](#) [Try Now](#)

Adjust the difference between the darkest and brightest areas between objects and their background. The closer to 50, the larger the difference.

- [Sharpness](#) [Try Now](#)

Adjust the outline sharpness of objects. The closer to 20, the sharper the object outlines.

- [Color](#) [Try Now](#)

Adjust the chroma of a video. The closer to 50, the deeper the colors.

- [Tint \(G/R\)](#) [Try Now](#)

Adjust the color tone. The higher either value, the redder or greener the video.

- [Apply Picture Settings](#) [Try Now](#)

Apply the selected picture settings to the current input source or all input sources.

- [Picture Clarity Settings](#) [Try Now](#)

Optimize a video that has many dynamic scenes.

 When [LED Clear Motion](#) or [Clear motion](#) is set to [On](#), the screen is flashing or has become darker than when it is [Off](#).

- [Local Dimming](#) [Try Now](#)

Maximize the contrast ratio by automatically adjusting brightness for each section of the picture.

 This function may not be supported depending on the model or geographical area.

- [Contrast Enhancer](#) [Try Now](#)

Automatically adjust the contrast to prevent excessive brightness differences between brighter and darker areas.

- **Auto HDR Remastering** [Try Now](#)

Enjoy HDR-like picture quality – even with SDR content.

 This function may not be supported depending on the model or geographical area.

- **HDR Tone Mapping** [Try Now](#)

Automatically adjusts the brightness with tone mapping processing according to the HDR content information.

 This function may not be supported depending on the model or geographical area.

- **Film Mode** [Try Now](#)

Touch up an old video to improve the picture quality for a better viewing experience.

 This function is only available when the input signal is TV or HDMI (1080i). The terminals and inputable signals may differ depending on the model.

- **Color Tone** [Try Now](#)

Select an appropriate color tone, according to the viewing situation.

- **White Balance** [Try Now](#)

Adjust the brightness of the colors red, green and blue so that the brightest area of the picture becomes white.

- **Gamma** [Try Now](#)

Adjust the medium brightness of a video.

- **Shadow Detail** [Try Now](#)

Adjust the brightness of a dim picture. The closer to 5, the brighter the dim picture.

- **Color Space Settings** [Try Now](#)

Select a range of colors that can be expressed on the picture.

- **Color Booster** [Try Now](#)

Select a range of colors that can be expressed on the picture.

 This function may not be supported depending on the model or geographical area.

- **Smart Calibration** [Try Now](#)

Automatically adjust the picture quality of a movie to obtain the quality intended by the movie producer.

 This function may not be supported depending on the model or geographical area.

To use this function, use a Smartphone that is compatible with the function. The list of compatible models is shown below.

- Galaxy models: Galaxy S, Galaxy Note, Galaxy Fold, and Galaxy Flip series models that were released after January 2019.
- iPhone models: Models with a Face ID function that were released after January 2019.

 Supported models may differ depending on the situation.

- **Peak Brightness**

Adjust the maximum peak brightness for a brighter screen.

 This function may not be supported depending on the model or geographical area.

- **Reset Picture** [Try Now](#)

Reset the picture settings to the default values.

# Changing the Picture Size and Position

Change the picture size and position for your TV.

## Changing the picture size settings

 >  (left directional button) >  **Settings** > **All Settings** > **Picture** > **Picture Size Settings**

**Try Now**

 These functions may not be available on **Samsung TV Plus** and some applications.

- **Picture Size** **Try Now**

You can change the size of the picture displayed on the TV screen to **16:9 Standard**, **Custom**, or **4:3**.

 Supported picture sizes differ with the input signal. For more information, refer to "Picture sizes and input signals."

- **Fit to Screen** **Try Now**

Fitting the picture to the screen.

 This function may not be supported depending on the **Picture Size** setting.

 This function may not be supported depending on the broadcast signals.

- **Zoom and Position** **Try Now**

Adjusting the picture size or position.

 This function is available only if **Picture Size** is set to **Custom**.

 To change the picture position on analog channels, first enlarge the picture and then change the position.

# Setting the Viewing Environment for External Devices

You can optimize the TV for viewing specific video formats.

## Playing games on an optimized screen

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **Game Mode Settings**  
> **Game Mode** [Try Now](#)

You can set the **Game Mode** to optimize the TV screen for better gaming performance.

When you connect a video game console such as PlayStation and Xbox, **Game Mode** is set to **Auto**. When you connect the other game source such as PC, set the **Game Mode** to **On** through the above path. You can also set the **Game Mode** quickly from Home Screen ( >  (left directional button) >  **Settings** > **Game Mode** .

-  This function may not be supported depending on the model.
-  The game mode is not available for normal TV viewing.
-  The screen may shake somewhat.
-  When you press and hold the  button on the Samsung Smart Remote for 1 second or more in **Game Mode**, the **Game Bar** appears. This function may not be supported depending on the model.
-  When **Game Mode** is enabled, **Picture Mode** and **Sound Mode** are switched to **Game** automatically. **Sound Mode** may not be automatically switched depending on the selected audio device on the **Sound Output** menu.
-  When **Game Mode** is set to **On**, some functions are not available.
-  To use a different external device on the same port, remove the game console connection, set **Game Mode** to **Off**, and then connect the external device to the port.
-  The **Game Mode** functions used for Nintendo Switch™ are subject to change without prior notice.

## Setting the Game Mode details

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Game Mode Settings](#)  
[Try Now](#)

 These functions may not be supported depending on the model or geographical area.

- [Virtual Aim Point](#) [Try Now](#)

You can see the virtual aim point on the screen.

 This function may not be supported depending on the model or geographical area.

- [Surround Sound](#) [Try Now](#)

You can make your games more immersive by using intense, three-dimensional sound optimized for games.

 This function may not be supported depending on the model or geographical area.

- [Dynamic Black Equalizer](#) [Try Now](#)

You can easily detect items or hidden enemies lurking in dark corners by improving visibility and object details in dark scenes without washing out colors and contrast in brighter scenes.

 This function may not be supported depending on the model or geographical area.

- [Game Motion Plus Settings](#) [Try Now](#)

You can configure the Game Motion Plus settings.

 This function may not be supported depending on the model.

- [Game Motion Plus](#)

Turn on this function to obtain a softer and clearer picture quality when playing a role-playing game (RPG) or adventure game which involves many dynamic scenes.

- [Blur Reduction](#)

Reduce game screen blur to optimize fast-moving images.

 This function may not be supported depending on the model or geographical area.

- **Judder Reduction**

Remove flicker from a game video to play the game with a clearer picture quality.

- **LED Clear Motion**

Turn on this function to adjust the LED backlight to make dynamic scenes look clearer.

 This function may not be supported depending on the model.

- **Clear motion**

Turn on this function to make dynamic scenes look clearer.

 This function may not be supported depending on the model.

- **Game Picture Expert**

You can adjust the options for specific picture quality features of your game.

 This function may not be supported depending on the model or geographical area.

- **HDR10+ GAMING**

Basic mode provides the most accurate representation of the game's original creative intent. Advanced mode provides enhanced representation of game content to maximize visual impact.

- **Game HDR**

In accordance with the HGiG (HDR Gaming Interest Group) standard, it sets the optimal image quality for HDR games according to the brightness information of the contents.

 When HDR sources are input in Game Mode, this menu is activated.

 **Game HDR** entry path may be different in some models. (🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **Connection** > **Game Mode Settings** > **Game HDR**)

- **Minimap Auto Detection**

Automatically finds and zooms in on the minimap by analyzing the screen when using the **Minimap Zoom** feature.

## Using Cable Box IP Remote

🏠 > ≡ (left directional button) > ⚙️ **Settings** > **All Settings** > **Connection** > **External Device Manager** > **Cable Box IP Remote** [Try Now](#)

Set the cable box that supports IP control to be controlled with Samsung remote control.

 This function may not be supported depending on the model.

## Using Input Signal Plus

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **External Device Manager** > **Input Signal Plus** [Try Now](#)

Expands the input signal range for HDMI connections.

-  If the **Input Signal Plus** feature is turned off, HDR signals sent from an external device cannot be received.
-  When you select the HDMI connector you want to use for **Input Signal Plus**, and then press the Select button to set the **Input Signal Plus** function to **On**, the TV screen may flicker.
-  When you connect the TV to an external device that supports only the UHD 24 Hz or UHD 30 Hz frequency, or any FHD frequency, the **Input Signal Plus** function may not be available. In this case, turn off the **Input Signal Plus** function.
-  For more information about the supported UHD resolutions, refer to "[Supported Resolutions for UHD Input Signals](#)."
-  For more information about the supported 8K resolutions, refer to "[Resolutions for Input Signals supported by 8K models \(QN7\\*\\*C/QN7\\*\\*D series or higher\)](#)."

## Using HDMI Black Level

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **External Device Manager** > **HDMI Black Level** [Try Now](#)

Use HDMI Black Level to adjust the black level to compensate for low black levels, low contrast, or dull colors generated by external devices connected to the TV via an HDMI cable.

-  This function is only available when the input signal connected to the TV via an HDMI connector is set to RGB444.

## Using Media Switching Settings

 >  (left directional button) >  **Settings** > **All Settings** > **Connection** > **External Device Manager** > **Media Switching Settings**

Configure specific settings related to media transition.

-  This function may not be supported depending on the model.
- **Quick Media Switching**  
Quickly and seamlessly switches AV streams with different frequencies.
  -  This feature is available only when a device that supports fast media switching is connected.
- **Picture Adjustment**  
Display media images smoothly and clearly.

# Configuring a Sound Mode and Expert Settings

Change the Sound Mode and adjust Expert Settings.

## Choosing a sound mode

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Sound Mode** [Try Now](#)

You can select the available sound mode that you prefer for a content type or your listening environment.

 When an external device is connected, **Sound Mode** may change accordingly.

 This function may not be supported depending on the model.

## Configuring advanced sound settings

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Expert Settings** [Try Now](#)

You can personalize the sound quality by adjusting the following settings.

 Supported menu options may vary depending on the **Sound Output** setting.

- **Balance** [Try Now](#)

Adjust the volumes of the left and right speakers to balance the sound levels.

 When the TV is used in portrait mode, the **Balance** function may not work properly.

- **Equalizer** [Try Now](#)

Customize the TV sound by adjusting the volume of high-pitched and low-pitched sounds.

 This function is not available when the **Adaptive Sound Pro** or **Active Voice Amplifier** function is turned on.

 This function is not available when the **Sound Mode** function is set to **Adaptive Sound**, **Game**, or **Amplify**.

 The name and properties of this function may appear differently depending on the connected external device.

- **HDMI-eARC Mode** [Try Now](#)

You can connect an audio device that supports eARC via HDMI-eARC. Muting occurs temporarily during device connection.

 This function may not be supported depending on the model.

- **Digital Output Audio Format** [Try Now](#)

Select a digital audio output format. If you select **Auto**, the audio output mode automatically changes to the mode supported by the connected soundbar or A/V receiver.

If you select the **Pass-Through** option, audio data is output with no processing.

 This function is available when the input source is HDMI and the receiver is connected via HDMI-eARC.

- **Digital Output Audio Delay** [Try Now](#)

Adjust the output delay time for digital audio.

 This function is available when the input source is HDMI and the receiver is connected via HDMI-ARC or HDMI-eARC. When the receiver can't process the input source, it may operate in the [Auto](#) option.

 This function may not be supported depending on the model.

- **Dolby Atmos Compatibility**

You can set the TV to allow Dolby Digital+ with Atmos streams that are input from external devices.

Set to [On](#) if the audio device connected via HDMI (eARC) supports Dolby Atmos. The TV screen may flicker when this function is turned on or off.

 If this function is on, set [Digital Output Audio Format](#) to [Auto](#).

 This function may not be supported depending on the model.

- **Dolby Atmos**

When watching Product through the embedded speakers, the virtual surround sound effect of Dolby Atmos can be turned on or off.

If the TV has been installed in portrait mode by using separate accessories, the virtual surround sound effect through the TV speakers does not work.

 This function may not be supported depending on the model.

- **Auto Volume** [Try Now](#)

Automatically adjusts the sound to a certain level when changing channels or switching to another external input.

- **Sound Feedback** [Try Now](#)

Plays the notification sound when manipulating a menu or selecting an option.

- **Simultaneous Optical Output**

The device connected via optical always outputs sound.

 This function may not be supported depending on the model or geographical area.

- **Auracast**

You can listen to the TV's audio by connecting to a Bluetooth audio device that supports [Auracast](#).

 This function may not be supported depending on the model or geographical area.

 Some models support the [Auracast](#) feature. For more information about [Auracast](#), refer to "[Using Auracast](#)."

- **Reset Sound** [Try Now](#)

Reset changed sound settings.

# Using the Sound Support Functions

Configure the sound settings for your TV.

## Selecting speakers

 >  (left directional button) >  **Settings** > **All Settings** > **Sound** > **Sound Output** [Try Now](#)

You can select which speakers the TV uses for audio output.

-  If the soundbar is connected to the TV via both HDMI and Optical, HDMI may be selected first even if you select Optical.
-  External speakers may not be controlled with the Samsung Smart Remote. When an external speaker is enabled, some sound menus are not supported.

Samsung TV supports the Q-Symphony function.

- **Q-Symphony** links Samsung speakers to your TV speakers to play sounds from the different speakers simultaneously, offering the ultimate surround sound experience.

 This function may not be supported depending on the model.

Your Samsung TV supports a USB sound device connection.

- USB 2.0 and higher devices are supported.
- Two USB sound devices can be connected at the same time.

 Make sure to connect a USB sound device directly to a USB port. (USB hubs are not supported.)

 Some USB sound device models may not be compatible with the TV.

## Listening to the TV through Bluetooth devices

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Sound](#) > [Sound Output](#) > [Bluetooth Speaker List](#)

You can connect Bluetooth audio devices to the TV. They must be paired using the TV's Bluetooth function. Refer to the user manual for your audio device such as Bluetooth speaker, soundbar, and headphones for detailed connection and usage.

-  If the TV fails to find a Bluetooth audio device, place the device closer to the TV, and then select [Refresh](#).
-  When you turn on a paired Bluetooth audio device, the TV detects it automatically, and then displays a pop-up window. Use this pop-up window to activate or deactivate the Bluetooth audio device.
-  The sound quality may be affected by the condition of the Bluetooth connection.
-  Before using a Bluetooth audio device, refer to "[Read Before Using Bluetooth Devices](#)."
-  On some models, you can connect and use two Bluetooth devices simultaneously.
-  If multiple BT audio devices and BT input devices are simultaneously connected, sound from the audio devices may be choppy or key data from the input devices may be dropped.  
The number of BT audio devices for connection can be limited to one device, for a stable game service.
-  If a call comes in while you listen to TV sound with Galaxy Buds, the Buds connects to the mobile phone and the TV sound is muted for connecting to the call.  
When the call is ended, the Buds automatically connects to the TV. This feature is supported only when the TV and mobile phone are connected to the same Samsung account.
-  If the Galaxy Buds is disconnected while listening to TV sound with the Buds, the TV sound is muted.
-  Some models support the [Auracast](#) feature. For more information about [Auracast](#), refer to "[Using Auracast](#)."

## Playing TV sounds by configuring Q-Symphony Settings

 > left directional button >  [Settings](#) > [All Settings](#) > [Sound](#) > [Q-Symphony Setup](#)

Use the [Q-Symphony Setup](#) feature to configure wired or wireless symphony settings.

-  This function may not be supported depending on the model.
-  Configuring wired symphony settings is possible only when a Samsung audio device that supports wired symphony functionality is connected to HDMI or Optical.
-  For Samsung audio devices that support Wi-Fi and Q-Symphony, it is possible to configure wireless symphony settings.
-  It is not possible to turn on wired symphony and wireless symphony modes simultaneously.
-  Some models can connect to two wireless audio devices at the same time.
-  This feature may not be supported, depending on your TV model and Samsung audio device.
-  If you set a Samsung wireless audio device as a device for wireless symphony, it is possible to set a position.
-  Position setting may not be supported, depending on the Samsung wireless audio device.  
For device specifications, refer to the user manual for the Samsung audio device.
-  This function is not supported if your TV model is The Frame and installed in portrait orientation. To use the TV in landscape orientation, set up the feature again.

If Samsung soundbars or Samsung wireless speakers that support Q-Symphony are connected, surround sound configuration can be used when the following conditions are met.

- Two or more Samsung wireless speakers of the same type are connected to the same wireless network.
- A Samsung audio device that supports Wi-Fi is connected to the same wireless network as the TV.

 For details on how to connect and use a Samsung audio device that supports Wi-Fi, refer to the device user manual.

 Some Samsung wireless audio devices may not support a configuration that includes soundbars.

If you turn on screen mirroring mode while using a Samsung audio device that supports Wi-Fi, the connection is disconnected.

# System and Support

You can configure system and support settings, such as clock, timers, energy usage and software updates.

## Using the Time Functions and the Timers

Set the current time and use the timer function.

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** 

You can set the **Clock** manually or automatically. Once the **Clock** is set, you can view the current time on the TV anytime.

You must set the clock in the following cases:

- The power cord is disconnected and then connected.
- The **Clock Mode** is changed from **Auto** to **Manual**.
- The TV is not connected to the network.
- No broadcast signals are received.

### Setting the clock automatically

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Clock** > **Clock Mode** > **Auto**

-  This function works only when the TV is connected to the network or is receiving digital broadcasts through a connected antenna.
-  The accuracy of the time information received may differ with the channel and signal.
-  If you get your TV signal from a cable broadcast receiver/set-top box or a satellite receiver/satellite set-top box connected to an HDMI or Component port, you must set the current time manually.

## Adjusting the clock for DST and time zone

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#) [Try Now](#)

Sets the right time by setting Daylight Savings Time (DST) and your local time zone.

- [Time Zone](#)

Selects your time zone.

 This function is only available when the [Clock Mode](#) is set to [Auto](#).

 This function may not be supported depending on the model or geographical area.

- [DST](#)

Automatically adjusts for Daylight Saving Time (DST).

 This function is only available when the [Clock Mode](#) is set to [Auto](#).

## Changing the current time

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#) > [Time Offset](#) [Try Now](#)

[Time Offset](#) adjusts the time through a network connection.

 This function is available only when [Clock Mode](#) is set to [Auto](#), the TV fails to receive time information through normal broadcast signals, and the TV is connected to a network.

## Setting the clock manually

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#) > [Clock Mode](#) > [Manual](#)

When [Clock Mode](#) is set to [Manual](#), you can directly enter the current date and time. Select the [Date](#) and [Time](#) by using the directional buttons on the remote control.

When power is cut off and then supplied, the settings for [Date](#) and [Time](#) are reset to deactivate the [On Timer](#). When their settings are assigned again, the [On Timer](#) is activated.

## Using the sleep timer

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Sleep Timer](#) [Try Now](#)

You can use this function to automatically shut off the TV after a pre-set period of time. You can set the sleep timer for up to 180 minutes after which it will turn off the TV.

 This function may not be supported in some viewing modes.

## Turning off the TV using the off timer

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Off Timer](#) [Try Now](#)

You can set [Off Timer](#) to shut off the TV automatically at a specific time. [Off Timer](#) is only available if the [Clock](#) has been set.

 To use this function, first set the [Clock](#) ( >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)). [Try Now](#)

 This function may not be supported in some viewing modes.

 This function may not be supported depending on the model or geographical area.

# Using the Power and Energy Saving Functions

Use the power saving functions to reduce the TV power consumption.

## Reducing the power consumption of the TV

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Power and Energy Saving** [Try Now](#)

Reduce energy consumption by changing your power preferences and other energy-saving options.

- **Brightness Optimization** [Try Now](#)

Automatically adjust the picture brightness based on the ambient light level.

 This function is not available when the **Adaptive Picture** function is turned on.

- **Minimum Brightness** [Try Now](#)

When **Brightness Optimization** is turned on, you can manually adjust the minimum brightness of the TV screen. This function acts only when the value is less than the setting in  >  (left directional button) >  **Settings** > **All Settings** > **Picture** > **Expert Settings** > **Brightness**. [Try Now](#)

 This function is not available when the **Adaptive Picture** function is turned on.

- **Energy Saving Solution** [Try Now](#)

Reduce power consumption by adjusting brightness settings.

- **Motion Lighting** [Try Now](#)

Adjusts the brightness in response to on-screen movements to reduce power consumption.

 This function is not available when the **Adaptive Picture** or **Game Mode** function is turned on.

- **Power Off Mode**

Choose which screen mode you would like when the power is turned off.

 This function may not be supported depending on the model.

- **Screen Saver** [Try Now](#)

Activate a screensaver when your TV displays a still image for two hours or more.

 This function may not be supported depending on the model.

 If your TV displays the same still image for 2 minutes, **Screen Saver** is automatically activated. **Screen Saver** cannot be turned off, to ensure protection of pixels. (S8\*C/S8\*D/S9\*C/S9\*D Series)

- **Auto Power Saving** [Try Now](#)

When the TV is connected to Wi-Fi, this feature checks Wi-Fi signals and remote control usage data to determine whether the TV is used. If the TV is left idle, the feature automatically switches off the screen.

 This function may not be supported depending on the model.

 This feature may not be supported, depending on the Wi-Fi router.

- **Auto Power Off** [Try Now](#)

Automatically turns off the TV to reduce unnecessary power consumption if the TV Controller and the remote control are not used for the set period of time.

 In some regions, the **Auto Power Off** function may not be supported when **Samsung TV Plus** is operating.

- **Available Remote Battery** [Try Now](#)

You can check the Samsung Smart Remote's remaining amount of the battery.

 This function may not be supported depending on the model.

- **Remote Grip Sensor**

Alerts users so that they can hold the remote control correctly, if the remote-control grip sensor senses any incorrect orientation of the remote control. When turned off, the alert turns off.

 This function may not be supported depending on the model.

# Using the Panel Care Functions

Adjusts settings to protect the screen.

## Setting the Panel Care (S8\*C/S8\*D/S9\*C/S9\*D Series only)

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Panel Care**

 This function is supported on the S8\*C/S8\*D/S9\*C/S9\*D series only.

- **Pixel Shift**

Moves pixels at regular intervals to prevent screen issues.

 When the **Pixel Shift** mode is used, some of the screen edges may move outside the screen borders and may not be visible. To fix the screen at the home position, turn off the **Pixel Shift** mode.

 To prevent afterimage when viewing content with a lot of static images, turn on the **Pixel Shift** mode.

- **Adjust Logo Brightness**

Prevents screen issues by lowering the brightness of fixed images, such as logos and banners.

- **Pixel Refresh**

Adjusts pixels to provide a clearer screen. Some features, such as reservation, recording, and voice recognition, do not work during Pixel Refresh.

 Run this function when there are after-images on the screen.

# Updating the TV's Software

View your TV's software version and update it if necessary.

 **DO NOT** turn off the TV's power until the update is complete. The TV will turn off and on automatically after completing the software update. Video and audio settings may be reset to their defaults after a software update.

 >  (left directional button) >  **Settings** > **Support** > **Software Update** 

## Updating through the network

 >  (left directional button) >  **Settings** > **Support** > **Software Update** > **Update Now** 

 Updating from the network requires an active network connection.

## Updating through a USB device

 >  (left directional button) >  **Settings** > **Support** > **Software Update** > **Update Now** 

After downloading the update file from the Samsung website and storing it on a USB device, connect the USB device to the TV to update.

 To update using a USB device, download the update package from Samsung.com to your computer. Then, save the update package in the USB device's top-level folder. Otherwise, the TV will not be able to locate the update package.

## Updating the TV automatically

 >  (left directional button) >  **Settings** > **Support** > **Software Update** > **Auto Update** 

If the TV is connected to the network, you can have the TV's software update itself automatically while you are watching the TV. When the background update is completed, it is applied the next time the TV is turned on.

If you agree to the Smart Hub terms and conditions, **Auto Update** is set to **On** automatically. If you want this function disabled, use the Select button to turn it off.

 This function may take a longer time if another network function is running concurrently.

 This function requires a network connection.

## Security updates information

Security updates are provided to strengthen the security of your device and protect your personal information. For more information on security updates, visit <https://security.samsungtv.com>.

 The website supports only some languages.

## Using the Parental Settings function

Configure content or app security settings.

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Parental Settings](#) [Try Now](#)

Restrict access to content or apps that require parental guidance. Locked content or apps can be accessed by entering the password.

- [Parental Lock](#) [Try Now](#)

Enable or disable all Parental Settings.

- [Program Rating Lock Settings](#) [Try Now](#)

This function is useful for controlling what programs children can watch on the TV based on their ratings.

 For more information, refer to "[Using Program Rating Lock.](#)"

- [App Lock](#) [Try Now](#)

Set the installed app to lock or unlock.

## Using the Gesture function

Use your custom Gesture to easily control the TV.

 USB cameras may not be supported depending on the model.

 This function may not be supported depending on the model or geographical area.

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Gesture](#)

Connect a camera to the TV, and use your custom Gesture to easily save and load services or settings.

- [Gesture Interaction](#)

Enable or disable the gesture interaction feature. To enable this, an optical recognition device, such as a USB camera, is required.

 This may not work for some functions.

- [Gesture Guide](#)

Enable or disable to display the Gesture Guide.

- [Delete Saved Gesture](#)

Delete the Gesture you saved.

- [Learn Gesture Functions](#)

Check out how to use Gesture functions.

# Audio and Video Functions for the Visually or Hearing Impaired

You can configure the functions for the visually or hearing impaired.

## Running the accessibility functions

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#)  
[Try Now](#)

## Running Accessibility Shortcuts

The [Accessibility Shortcuts](#) provide easy access to the accessibility functions. To display the [Accessibility Shortcuts](#), press and hold the  $\pm$  (Volume) button for 2 seconds or more. You can easily turn on or turn off the functions, such as [Voice Guide](#), [Audio Description](#), [Audio Subtitles](#), [Picture Off](#), [Magnification](#), [High Contrast](#), [Relumino Mode](#), [Zoom Menu and Text](#), [Grayscale](#), [Color Inversion](#), [SeeColors Mode](#), [Learn TV Remote](#), [Learn Menu Screen](#), [Caption](#), [Sign Language Zoom](#), [Sign Language Guide](#), [Learn Gesture Functions](#), [Multi-output Audio](#), [Slow Button Repeat](#), [Auto Menu Sort](#), [Accessibility Settings](#), etc.

 Even if the [Voice Guide](#) is set to [Off](#) or muted, the voice guide for [Accessibility Shortcuts](#) is enabled.

 The shortcut menus may not appear depending on the model or geographical area.

 The menu name may differ depending on the model.

## Enabling voice guides for the visually impaired

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Voice Guide Settings](#) [Try Now](#)

You can activate voice guides that describe the menu options aloud to aid the visually impaired. To activate this function, set [Voice Guide](#) to [On](#). With [Voice Guide](#) on, the TV provides voice guides for channel change, volume adjust, information on current and upcoming programs, schedule viewing, other TV functions, and various content in the [Internet](#), and in [Search](#).

You can go to [Voice Guide](#), and then press the Select button to turn the function on or off.

 The [Voice Guide](#) is provided in the language that is specified on the TV [Language](#). However, some languages are not supported by [Voice Guide](#) even though they are listed in the TV [Language](#). [English](#) is always supported.

 For more information about the TV [Language](#) settings, refer to "[Changing the menu language](#)."

## Changing the volume, speed, pitch, and the TV background volume of the Voice Guide

You can configure the [Volume](#), [Speed](#), [Pitch](#), and the [TV Background Volume](#) of the voice guide.

## Enabling audio for the audio (video) description function

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Audio \(Video\) Description](#) [Try Now](#)

You can activate an audio guide that provides an audio description of video scenes for the visually impaired. This function is only available with broadcasts that provide this service.

 The menu name may differ depending on the model.

 This function may not be supported depending on the model or geographical area.

## Setting the audio subtitles

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Audio Subtitles Settings](#)

This feature audibly reads captions displayed on video content. You can change the volume or speed of audible captions.

 This function may not be supported depending on the model or geographical area.

## The TV screen is turned off but audio continues

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Picture Off](#) [Try Now](#)

Turn off the TV screen and provide only sound to reduce overall power consumption. When you press a button on the remote control other than Volume and Power while the screen is off, the TV screen turns back on.

## Enlarge the screen

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Magnification](#) [Try Now](#)

Enlarge the screen to make the picture or text bigger. You can adjust the zoom level or move the zoom area by following the displayed instructions.

 This function may not be supported depending on the model or geographical area.

## White text on black background (high contrast)

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [High Contrast](#) [Try Now](#)

You can change Smart Hub and setting menu screens to white text on a black background and change the transparent TV menus to opaque automatically so that text can be more easily read.

 If [High Contrast](#) is on, some [Accessibility](#) menus are not available.

## Setting the outline emphasis feature for viewers with low vision

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Relumino Mode Settings](#) [Try Now](#)

This feature increases the contrast and brightness of the screen and emphasizes the outlines of images, so that viewers with low vision can see the screen more clearly.

This feature is only available when the input signal is TV or HDMI. It may not be available for some videos.

 This input signal may differ depending on the model and geographical area.

- [Together Mode](#)

Shows the screen displayed when [Relumino Mode](#) is turned on and the screen displayed when the mode is turned off, side by side simultaneously.

 This function may not be supported depending on the model or geographical area.

## Enlarging the font (for the visually impaired)

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Zoom Menu and Text](#) [Try Now](#)

You can enlarge the size of the font on the screen. To activate, set [Zoom Menu and Text](#) to [On](#).

## Setting the screen to black and white

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Grayscale](#) [Try Now](#)

You can change the color of the TV screen to black and white to sharpen blurred edges caused by colors.

 If [Grayscale](#) is on, some [Accessibility](#) menus are not available.

 This function may not be supported depending on the model or geographical area.

## Inverting the screen color

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Color Inversion](#) [Try Now](#)

You can invert the colors of the text and background for the setting menus displayed on the TV screen to make it easier to read them.

 If [Color Inversion](#) is on, some [Accessibility](#) menus are not available.

 This function may not be supported depending on the model or geographical area.

## Setting the color correction feature for users with color blindness

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [SeeColors Mode](#) [Try Now](#)

This feature helps users with color blindness experience richer colors.

Use this feature to customize the colors for your unique viewing conditions, to experience richer colors on the screen.

 When [SeeColors Mode](#) is in use, some menus are disabled.

 This function may not be supported depending on the model.

## Learning about the remote control (for the visually impaired)

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Learn TV Remote](#) [Try Now](#)

This function helps individuals with a visual impairment to learn the positions of the buttons on the remote control. When this function is activated, you can press a button on the remote control and the TV will tell you its name. Press the  button twice to exit [Learn TV Remote](#).

## Learning about the TV menu

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Learn Menu Screen](#) [Try Now](#)

Learn the menus on the TV screen. Once enabled, your TV will tell you the information and features of the menus you select.

## Showing captions

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) [Try Now](#)

Set [Caption](#) to [On](#) to watch programs with the captions displayed.

 Captions are not displayed by programs that do not support captions.

 This function has no relationship with the features for controlling subtitles of DVD or Blu-ray players. To control DVD or Blu-ray subtitles, use the subtitle feature of the DVD or Blu-ray player and the player's remote control.

## Adjusting the caption position

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) > [Auto Caption Position](#)

You can adjust the caption position automatically.

 This function is activated only for programs that support broadcast captions.

 This function may not be supported depending on the model.

## Splitting the caption

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) > [Separate Closed Caption](#) [Try Now](#)

You can display the caption in the area separated from the broadcast screen.

 This feature is enabled when Digital Closed Caption is supported.

## Selecting the caption language

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) > [Caption Mode](#) [Try Now](#)

- [Default](#) / [CC1 ~ CC4](#) / [Text1 ~ Text4](#)

Operates in either analog TV channel mode or when a signal is supplied from an external device to the TV.  
(Depending on the broadcast signal, the analog caption function may or may not work with digital channels.)

- [Default](#) / [Service1 ~ Service6](#) / [CC1 ~ CC4](#) / [Text1 ~ Text4](#)

Works with digital channels. These functions may not be available in digital caption mode depending on the broadcast.

## Setting the digital caption related options

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) > [Digital Caption Options](#) [Try Now](#)

You can change the font color, background color, size settings, and position, etc.

 The foreground and background colors and opacity settings cannot be the same.

 The [Position](#) function is activated only for programs that support broadcast captions.

## Enlarging the sign language screen for the hearing impaired

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Sign Language Zoom Settings](#) [Try Now](#)

You can zoom in the sign language screen when the program you are watching provides it. First, set [Sign Language Zoom](#) to [On](#), and then select [Edit Sign Language Zoom](#) to change the position and magnification of the sign language screen.

 This function may not be supported depending on the model or geographical area.

## Configure Sign Language Guide options

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Sign Language Guide Settings](#)

You can configure the size, speed, position, and mode of the sign language guide.

## Listening to the TV through Bluetooth devices (for the hearing impaired)

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Multi-output Audio](#) [Try Now](#)

You can turn on both the TV speaker and Bluetooth headphone at the same time. When this function is active, you can set the volume of the Bluetooth headphone higher than the volume of the TV speaker.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Listening to the TV through Bluetooth devices.](#)"

## Configuring the repeat settings for remote control buttons

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Remote Button Repeat Settings](#) [Try Now](#)

You can configure the operation speed of the remote control buttons so that they slow down when you continually press and hold them. First, set [Slow Button Repeat](#) to [On](#), and then adjust the operation speed in [Repeat Interval](#).

# Using Voice Assistants on the TV

You can change the settings of a Voice Assistant after selecting it.

## Select the Voice Assistant

 >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Voice** > **Voice Assistant** [Try Now](#)

Select which **Voice Assistant** you would like to help control your TV.

-  To use this function, the TV must be connected to the network.
-  This function and Voice Recognition Solution Partner may not be supported depending on the model or geographical area.
-  **Voice Assistant** only supports some languages, and the supported functions may differ depending on the geographical area.
-  The **Voice Wake-up** function may not be supported depending on the model, **Voice Assistant** or geographical area.
- **Bixby / Amazon Alexa**
  -  To use the **Voice Assistant**, follow the instructions on the TV screen to enable the selected **Voice Assistant**.
  -  To change the settings for **Voice Assistant**, run the Settings menu under each **Voice Assistant** ( >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **Voice** > **Voice Assistant**). [Try Now](#)
  -  To enable the Settings menus for each **Voice Assistant**, log in each **Voice Assistant**.
  -  For an example of Voice command, see the Settings menus for each **Voice Assistant**.

## Using Other Functions

You can view other functions.

### Changing the menu language

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Language](#) [Try Now](#)

### Setting up a password

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Change PIN](#) [Try Now](#)

The PIN input window appears. Enter a PIN. Enter it again to confirm it. The default PIN is "0000."

-  The default PIN may differ depending on the geographical area.
-  This function may not be supported depending on the model or geographical area.
-  If you forget your PIN, you can reset it with your remote control. With the TV turned on, press the following buttons on the remote control in the order shown to reset the PIN to "0000."  
Press **+/-** (Volume) button. > Volume Up >  > Volume Down >  > Volume Up > .

### Selecting Usage or Retail Mode

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Usage Mode](#) [Try Now](#)

You can set the TV for retail environments by setting [Usage Mode](#) to [Retail Mode](#).

-  For all other uses, select [Home Mode](#).
-  Use [Retail Mode](#) only in a store. With [Retail Mode](#), some functions are disabled, and the TV settings automatically reset after a preset amount of time.
-  This function may not be supported depending on the model.

## Using the Maintenance Mode

 >  (left directional button) >  [Settings](#) > [Support](#) > [Maintenance Mode](#)

Protect your personal information while the TV is repaired or used by someone else. Once service mode turns on, access to the apps or content is blocked. To back up data in which settings are saved, connect a USB stick to the TV.

 This function may not be supported depending on the model.

## Using the Cold Weather Mode

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Cold Weather Mode](#)

 This function is supported only in The Terrace.

 For more information on [Cold Weather Mode](#), refer to the user manual that came with the TV.

 The menu name may differ depending on the model.

## Managing External Devices

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Device Connect Manager](#) [Try Now](#)

When you connect external devices, such as mobile devices or tablets connected to the same network as the TV so you can share content, you can view the list of allowed devices and connected devices.

- [Access Notification](#)

Set whether to display a notification when an external device such as a mobile device or tablet attempts to connect to the TV.

- [Device List](#)

Manage a list of external devices registered to the TV.

## Controlling your Galaxy device with the keyboard and mouse

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Multi Control](#)

Turn on [Multi Control](#) to connect nearby Galaxy devices and use them with your keyboard and mouse.

 To connect to nearby devices, turn on [Multi Control](#), Wi-Fi and Bluetooth on the devices, and ensure that the devices are connected to the same wireless network and logged in with the same Samsung account.

 This function may not be supported depending on the model or geographical area.

## Using AirPlay

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Apple AirPlay Settings](#) [Try Now](#)

You can use AirPlay to view content from your iPhone, iPad, or Mac on the TV screen.

 This function may not be supported depending on the model.

## Restoring the TV to the factory settings

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Factory data reset](#) [Try Now](#)

You can restore all TV settings to the factory defaults.

1. Select [Factory data reset](#). The security PIN entry window appears.
2. Enter the security PIN, and then select [Reset](#). All settings are then reset. The TV turns off and on again automatically and displays the Initial Setup screen.

 For more information on [Factory data reset](#), refer to the Simple User Guide that came with the TV.

 If you skipped some steps in the initial setup, run [Set Up TV](#) ( >  (left directional button) >  [Connected Devices](#) > [TV](#) > down directional button > [Set Up TV](#)), and then configure the settings in the steps you skipped. This function may not be supported depending on the model or geographical area.

# Precautions and Notes

Instructions and information that you must read after installation are available for you.

## Before Using the Recording and Timeshift Functions

Read these instructions before using Recording and Timeshift.

### Before using the recording and schedule recording functions

-  Recording and schedule recording are not supported in the U.S.A. and Canada.
-  Recording may not be supported depending on the model or geographical area.
- To schedule a recording, set **Clock Mode** to **Auto**. Set the **Clock**.
  -  >  (left directional button) >  **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Time** > **Clock** 
- You can set up a maximum total of 30 **Schedule Viewing** and **Schedule Recording** entries.
- Recordings are DRM-protected and therefore cannot be played back on a computer or on a different TV. In addition, these files cannot be played back on your TV if its video circuit has been replaced.
- For a USB device for recording, it is recommended to use the USB hard disk that supports USB 2.0 or later and 5,400 rpm or higher. However, RAID-type USB hard drives are not supported.
- USB memory is not supported.
- The total recording capacity may differ with the amount of available hard drive space and the recording quality level.
- **Schedule Recording** requires at least 100 MB of free space on the USB storage device. Recording will stop if the available storage space falls below 50 MB while recording is in progress.
- If the available storage space falls below 500 MB while both the Schedule Recording and Timeshift functions are in progress, only the recording will stop.
- The maximum recording time is 720 minutes.
- Videos are played according to the TV settings.
- If the input signal is changed while recording is in progress, the screen will go blank until the change is made. In this case, recording will resume, but the  button will not be available.

- When using the Record or Schedule Recording function, the actual recording may start a second or two later than the specified time.
- If the Schedule Recording function is operating while a recording is being made on an HDMI-CEC external device, the priority is given to the Schedule Recording.
- Connecting a recording device to the TV automatically deletes abnormally saved recorded files.
- If the [Sleep Timer](#) or [Auto Power Off](#) has been set, the TV will override these settings, continue to record, and turn off after the recording has ended.
  -  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Sleep Timer](#) [Try Now](#)
  -  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Auto Power Off](#) [Try Now](#)

## Before using the timeshift function

 Timeshift is not supported in the U.S.A. and Canada.

 Timeshift may not be supported depending on the model or geographical area.

- For a USB device for recording, it is recommended to use the USB hard disk that supports USB 2.0 or later and 5,400 rpm or higher. However, RAID-type USB hard drives are not supported.
- USB memory or flash drives are not supported.
- The total recording capacity may differ with the amount of available hard drive space and the recording quality level.
- If the available storage space falls below 500 MB while both the Schedule Recording and Timeshift functions are in progress, only the recording will stop.
- The maximum amount of time available for the Timeshift function is 90 minutes.
- The Timeshift function is not available for locked channels.
- Time-shifted videos are played according to the TV settings.
- The Timeshift function may be terminated automatically once it reaches its maximum capacity.
- The Timeshift function requires at least 1.5 GB of free space available on the USB storage device.

## Read Before Using Apps

Read this information before using Apps.

- If you want to download new apps using [Apps](#), first sign in to your Samsung account.
- Due to the product characteristics featured on Samsung Smart Hub, as well as limitations in available content, certain features, applications, and services may not be available on all devices or in all territories. Visit <https://www.samsung.com> for more information on specific device information and content availability. Services and content availability are subject to change without prior notice.
- Samsung Electronics takes no legal responsibility whatsoever for any interruption of app services caused by the service provider for any reason.
- Application services may be provided in English only and available content may differ with the geographical area.
- For more information about applications, visit the applicable service provider's website.
- An unstable network connection may cause delays or interruptions. In addition, applications may terminate automatically depending on the network environment. If this occurs, check your network connection and try again.
- Application services and updates may become unavailable.
- Application content is subject to change by the service provider without prior notice.
- Specific services may differ with the version of the application installed on the TV.
- An application's functionality may change in future versions of the application. If this occurs, run the application's tutorial or visit the service provider's website.
- Depending on the service provider's policies, certain applications may not support multitasking.
- For details on how to subscribe or unsubscribe from an app, please contact the service provider.

## Read Before Using the Internet Function

Read this information before using the Internet function.

- File download is not supported.
- The **Internet** function may not be able to access certain websites, including websites operated by certain companies.
- The TV does not support playback of flash videos.
- E-commerce for online purchases is not supported.
- ActiveX is not supported.
- Only a limited number of fonts are supported. Certain symbols and characters may not be displayed properly.
- The response to remote commands and the resulting on-screen display may be delayed while a webpage is loading.
- Loading a webpage may be delayed or suspended completely depending on the status of the participating systems.
- Copy and paste operations are not supported.
- When composing an email or a simple message, certain functions such as the font size and color selection may not be available.
- There is a limit to the number of bookmarks and the size of the log file that can be saved.
- The number of windows that can be opened concurrently is limited.
- Web browsing speed will differ with the network environment.
- Browsing history is saved from latest to oldest, with the oldest entries being overwritten first.
- Depending on the types of video/audio codecs supported, you may not be able to play certain HTML5 video and audio files.
- Video sources from PC-optimized streaming service providers may not play properly on our proprietary **Internet** browser.

## Read before setting up a wireless network connection

### Precautions for wireless network

- This TV supports the IEEE 802.11 a /b /g /n /ac communication protocols. Video files stored on a device connected to the TV via a Home Network may not play back smoothly.
  -  Some of the IEEE 802.11 communication protocols may not be supported depending on the model or geographical area.
  -  QN9\*\*C/QN9\*\*D series supports the IEEE 802.11 a /b /g /n /ac /ax communication protocols.
  -  For models other than the QN9\*\*C/QN9\*\*D series, Samsung recommends using IEEE 802.11n.
- To use wireless network, the TV must be connected to a wireless access point or modem. If the wireless access point supports DHCP, the TV can use a DHCP or static IP address to connect to the wireless network.
- Select a channel that is not currently being used by the wireless access point. If the channel set is currently being used by the wireless access point to communicate with another device, the result is usually interference or a communications failure.
- Most wireless networks have an optional security system. To enable a wireless network's security system, you need to create a password using characters and numbers. This password is then needed to connect to a security-enabled access point.

### Wireless security protocols

The TV only supports the following wireless network security protocols. The TV cannot connect to non-certified wireless access point.

- Authentication Modes: WEP, WPAPSK, WPA2PSK
- Encryption Types: WEP, TKIP, AES

In compliance with the Wi-Fi certification specifications, Samsung TVs do not support WEP or TKIP security encryption in networks running in the 802.11n mode. If the wireless access point supports WPS (Wi-Fi Protected Setup), you can connect the TV to your network using PBC (Push Button Configuration) or a PIN (Personal Identification Number). WPS automatically configures the SSID and WPA key settings.

# Read Before Playing Photo, Video, or Music Files

Read this information before playing media content.

## Limitations to the use of photo, video, and music files Try Now

- The TV supports Mass Storage Class (MSC) USB devices only. MSC is a class designation for mass storage devices. Types of MSC devices include external hard drives, flash card readers, and digital cameras. (USB hubs are not supported.) These kinds of devices must be connected directly to the USB port. If a USB extension cable is used or two external hard drives are used simultaneously, a USB device cannot be recognized or files contained in the device cannot be read. Do not disconnect USB devices while they are transferring files.
- When connecting an external hard drive, use the USB (HDD 5V 1A) port. We recommend that you use an external hard drive with its own power adapter.
  -  On models without the HDD 5V 1A marking, connect the drive to one of the USB (5V 1.0A/0.5A) ports.
  -  Some models do not support the HDD 5V 1A USB port. On such models that have 5V 1.0A and 5V 0.5A USB ports, connect the drive to one of those ports.
- Certain digital cameras and audio devices may not be compatible with the TV.
- If there are multiple USB devices connected to the TV, the TV might not be able to recognize some or all the devices. USB devices that use high-power input should be connect to the USB (HDD 5V 1A) port.
  -  Some models do not support the HDD 5V 1A USB port. On such models that have 5V 1.0A and 5V 0.5A USB ports, connect the drive to one of those ports.
- The TV supports the FAT, exFAT, and NTFS file systems.
- In the media contents list, the TV can display up to 1,000 files per folder. If the USB device contains more than 8,000 files and folders, however, some files and folders might not be accessible.
- Certain files, depending on how they are encoded, may not play on the TV.
- Certain files are not supported on all models.
- The DivX and DTS codecs are not supported by the Samsung TV models released in 2024.

## Supported subtitles

### Subtitle formats

| Name                      | Format       |
|---------------------------|--------------|
| MPEG-4 Timed text         | .txt         |
| SAMI                      | .smi         |
| SubRip                    | .srt         |
| SubViewer                 | .sub         |
| Micro DVD                 | .sub or .txt |
| SubStation Alpha          | .ssa         |
| Advanced SubStation Alpha | .ass         |
| SMPTE-TT Text             | .xml         |

### Video formats with subtitles

| Name                      | Container |
|---------------------------|-----------|
| Xsub                      | AVI       |
| SubStation Alpha          | MKV       |
| Advanced SubStation Alpha | MKV       |
| SubRip                    | MKV       |
| VobSub                    | MKV       |
| MPEG-4 Timed text         | MP4       |
| TTML in smooth streaming  | MP4       |
| SMPTE-TT TEXT             | MP4       |
| SMPTE-TT PNG              | MP4       |

## Supported image formats and resolutions

| File extension  | Format | Resolution    |
|-----------------|--------|---------------|
| *.jpg<br>*.jpeg | JPEG   | 16320 x 12240 |
| *.png           | PNG    | 4096 x 4096   |
| *.bmp           | BMP    | 4096 x 4096   |
| *.mpo           | MPO    | 15360 x 8640  |
| *.heic          | HEIF   | 16320 x 12240 |

-  The MPO format is supported partly.
-  The HEIF format is may not be supported depending on the model or geographical area.
-  HEIF supports only the single image of grid type (grid) and its minimum resolution must be at least 512 pixels in width or height.

## Supported music formats and codecs

| File extension          | Format | Codec               | Note                                                                                |
|-------------------------|--------|---------------------|-------------------------------------------------------------------------------------|
| *.mp3                   | MPEG   | MPEG1 Audio Layer 3 |                                                                                     |
| *.m4a<br>*.mpa<br>*.aac | MPEG4  | AAC                 |                                                                                     |
| *.flac                  | FLAC   | FLAC                | Supports up to 16/24 Bit, 48/96/192 kHz, 5.1 channel                                |
| *.ogg                   | OGG    | Vorbis              | Supports up to 2 channels                                                           |
| *.wma                   | WMA    | WMA                 | WMA is supported up to 10 Pro 5.1 channels.<br>WMA lossless audio is not supported. |
| *.wav                   | wav    | wav                 |                                                                                     |
| *.mid<br>*.midi         | midi   | midi                | Supports type 0 and type 1.<br>Seek is not supported.<br>Supports USB device only.  |
| *.ape                   | ape    | ape                 |                                                                                     |
| *.aif<br>*.aiff         | AIFF   | AIFF                |                                                                                     |
| *.m4a                   | ALAC   | ALAC                |                                                                                     |

Supported video codecs (QLED TV(except for Q6\*C/Q6\*D/QE1C/QE1D/Q7\*C/Q7\*D Series)/The Frame (except for 32LS03C)/The Serif/S8\*C/S8\*D/S9\*C/S9\*D/DU9 Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                |    |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|----|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 4096 x 2160: 60  | 60             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |    |
| *.mkv       |                                                                         |                                         |             | 3840 x 2160: 60  |                |                                                                                                                             |    |
| *.asf       |                                                                         |                                         |             | 1920 x 1080: 120 |                |                                                                                                                             |    |
| *.wmv       |                                                                         | HEVC (H.265 - Main, Main10)             | 4096 x 2160 | 4096 x 2160: 60  | 80             |                                                                                                                             |    |
| *.mp4       |                                                                         |                                         |             | 3840 x 2160: 120 |                |                                                                                                                             |    |
| *.mov       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30               | 80             |                                                                                                                             |    |
| *.3gp       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60               | 20             |                                                                                                                             |    |
| *.vro       |                                                                         | Window Media Video v9 (VC1)             |             |                  |                |                                                                                                                             |    |
| *.mpg       |                                                                         | MPEG2                                   |             |                  |                |                                                                                                                             |    |
| *.mpeg      |                                                                         | MPEG1                                   |             |                  |                |                                                                                                                             |    |
| *.ts        |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             | 30               |                |                                                                                                                             |    |
| *.tp        |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                  |                |                                                                                                                             |    |
| *.trp       |                                                                         | H.263 Sorenson                          |             |                  |                |                                                                                                                             |    |
| *.flv       |                                                                         | VP6                                     |             |                  |                |                                                                                                                             |    |
| *.vob       |                                                                         |                                         | AV1         | 3840 x 2160      | 120            |                                                                                                                             | 40 |
| *.svi       |                                                                         |                                         |             |                  |                |                                                                                                                             |    |
| *.m2ts      |                                                                         |                                         |             |                  |                |                                                                                                                             |    |
| *.mts       |                                                                         |                                         |             |                  |                |                                                                                                                             |    |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60               | 20             | Vorbis                                                                                                                      |    |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 60               | 80             |                                                                                                                             |    |
|             |                                                                         | AV1                                     | 3840 x 2160 | 120              | 40             |                                                                                                                             |    |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60               | 20             | RealAudio 6                                                                                                                 |    |

## Supported video codecs (Q7\*C Series, 85CU8 Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps)                    | Bitrate (Mbps) | Audio codecs                                                                                                                |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|-------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 3840 x 2160 | 3840 x 2160: 60                     | 80             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |
| *.mkv       |                                                                         |                                         |             | 1920 x 1080: 120                    |                |                                                                                                                             |
| *.asf       |                                                                         | HEVC (H.265 - Main, Main10)             | 3840 x 2160 | 120                                 | 100            |                                                                                                                             |
| *.wmv       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30                                  | 30             |                                                                                                                             |
| *.mp4       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60                                  | 70             |                                                                                                                             |
| *.mov       |                                                                         | Window Media Video v9 (VC1)             |             |                                     |                |                                                                                                                             |
| *.3gp       |                                                                         | MPEG2                                   |             | 60                                  | 60             |                                                                                                                             |
| *.vro       |                                                                         | MPEG1                                   |             |                                     |                |                                                                                                                             |
| *.mpg       |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             | 30                                  | 20             |                                                                                                                             |
| *.mpeg      |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                                     |                |                                                                                                                             |
| *.ts        |                                                                         | H.263 Sorenson                          |             |                                     |                |                                                                                                                             |
| *.tp        |                                                                         | VP6                                     |             |                                     |                |                                                                                                                             |
| *.trp       |                                                                         |                                         |             |                                     |                |                                                                                                                             |
| *.flv       |                                                                         |                                         |             |                                     |                |                                                                                                                             |
| *.vob       |                                                                         |                                         |             |                                     |                |                                                                                                                             |
| *.svi       |                                                                         |                                         |             |                                     |                |                                                                                                                             |
| *.m2ts      |                                                                         | AV1                                     | 3840 x 2160 | 120                                 | 80             |                                                                                                                             |
| *.mts       |                                                                         |                                         |             |                                     |                |                                                                                                                             |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60                                  | 70             | Vorbis                                                                                                                      |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 3840 x 2160: 60<br>1920 x 1080: 120 | 80             |                                                                                                                             |
|             |                                                                         | AV1                                     | 3840 x 2160 | 120                                 | 80             |                                                                                                                             |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60                                  | 70             | RealAudio 6                                                                                                                 |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 UHD is supported up to Level 5.1.
  - TV does not support FMO / ASO / RS
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- H.264 FHD is supported up to Level 4.2.
  - TV does not support FMO / ASO / RS
- HEVC UHD is supported up to Level 5.2.
  - Resolution is changed during video playback (Up to Level 5.1 3840 x 2160 is supported)
- HEVC FHD is supported up to Level 4.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (Q7\*D Series, 85DU8 Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 4096 x 2160: 60  | 60             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |
| *.mkv       |                                                                         | HEVC (H.265 - Main, Main10)             |             | 1920 x 1080: 120 | 80             |                                                                                                                             |
| *.asf       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30               | 80             |                                                                                                                             |
| *.wmv       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60               | 20             |                                                                                                                             |
| *.mp4       |                                                                         | Window Media Video v9 (VC1)             |             |                  |                |                                                                                                                             |
| *.mov       |                                                                         | MPEG2                                   |             |                  |                |                                                                                                                             |
| *.3gp       |                                                                         | MPEG1                                   |             | 30               |                |                                                                                                                             |
| *.vro       |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             |                  |                |                                                                                                                             |
| *.mpg       |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                  |                |                                                                                                                             |
| *.mpeg      |                                                                         | H.263 Sorenson                          |             |                  |                |                                                                                                                             |
| *.ts        |                                                                         | VP6                                     |             |                  |                |                                                                                                                             |
| *.trp       |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.flv       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.vob       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.svi       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.m2ts      |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.mts       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60               | 20             | Vorbis                                                                                                                      |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 60               | 80             |                                                                                                                             |
|             |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60               | 20             | RealAudio 6                                                                                                                 |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 UHD is supported up to Level 5.1.
  - TV does not support FMO / ASO / RS
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- H.264 FHD is supported up to Level 4.2.
  - TV does not support FMO / ASO / RS
- HEVC UHD is supported up to Level 5.2.
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- HEVC FHD is supported up to Level 4.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

Supported video codecs (Q6\*C/Q6\*D/QE1C/QE1D Series (except for 32Q6\*C/32Q6\*D Series)/DU8/DUX1 Series (except for 85DU8 Series))

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 60               | 60             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |
| *.mkv       |                                                                         | HEVC (H.265 - Main, Main10)             | 4096 x 2160 | 60               | 80             |                                                                                                                             |
| *.asf       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30               | 80             |                                                                                                                             |
| *.wmv       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60               | 20             |                                                                                                                             |
| *.mp4       |                                                                         | Window Media Video v9 (VC1)             |             |                  |                |                                                                                                                             |
| *.mov       |                                                                         | MPEG2                                   |             |                  |                |                                                                                                                             |
| *.3gp       |                                                                         | MPEG1                                   |             |                  |                |                                                                                                                             |
| *.vro       |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             | 30               |                |                                                                                                                             |
| *.mpg       |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                  |                |                                                                                                                             |
| *.mpeg      |                                                                         | H.263 Sorenson                          |             |                  |                |                                                                                                                             |
| *.ts        |                                                                         | VP6                                     |             |                  |                |                                                                                                                             |
| *.trp       |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.flv       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.vob       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.svi       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.m2ts      |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.mts       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60               | 20             | Vorbis                                                                                                                      |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 60               | 80             |                                                                                                                             |
|             |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60               | 20             | RealAudio 6                                                                                                                 |

## Supported video codecs (CU8 Series(except for 85CU8 Series))

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps)                    | Bitrate (Mbps) | Audio codecs                                                                                                                |  |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|-------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|--|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 4096 x 2160: 30<br>1920 x 1080: 120 | 100            | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |  |
| *.mkv       |                                                                         | HEVC (H.265 - Main, Main10)             |             | 4096 x 2160: 60<br>1920 x 1080: 120 | 100            |                                                                                                                             |  |
| *.asf       |                                                                         | Motion JPEG                             | 1920 x 1080 | 60                                  | 80             |                                                                                                                             |  |
| *.wmv       |                                                                         | MPEG4 SP/ASP                            |             | 60                                  | 60             |                                                                                                                             |  |
| *.mp4       |                                                                         | Window Media Video v9 (VC1)             |             |                                     |                |                                                                                                                             |  |
| *.mov       |                                                                         | MPEG2                                   |             | 30                                  | 60             |                                                                                                                             |  |
| *.3gp       |                                                                         | MPEG1                                   |             |                                     |                |                                                                                                                             |  |
| *.vro       |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             | 30                                  | 20             |                                                                                                                             |  |
| *.mpg       |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                                     |                |                                                                                                                             |  |
| *.mpeg      |                                                                         | H.263 Sorenson                          |             |                                     |                |                                                                                                                             |  |
| *.ts        |                                                                         | VP6                                     |             |                                     |                |                                                                                                                             |  |
| *.tp        |                                                                         | AV1                                     | 4096 x 2160 | 4096 x 2160: 60<br>1920 x 1080: 120 | 100            |                                                                                                                             |  |
| *.trp       |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.flv       |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.vob       |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.svi       |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.m2ts      |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.mts       |                                                                         |                                         |             |                                     |                |                                                                                                                             |  |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60                                  | 40             | Vorbis                                                                                                                      |  |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 4096 x 2160 | 4096 x 2160: 60<br>1920 x 1080: 120 | 100            |                                                                                                                             |  |
|             |                                                                         | AV1                                     | 4096 x 2160 | 4096 x 2160: 60<br>1920 x 1080: 120 | 100            |                                                                                                                             |  |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60                                  | 60             | RealAudio 6                                                                                                                 |  |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 UHD is supported up to Level 5.1.
  - TV does not support FMO / ASO / RS
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- H.264 FHD is supported up to Level 4.2.
  - TV does not support FMO / ASO / RS
- HEVC UHD is supported up to Level 5.1.
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- HEVC FHD is supported up to Level 4.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (DU6/CU7/DU7/BEC/BED Series, 32Q6\*C/32Q6\*D Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 3840 x 2160 | 3840 x 2160: 30  | 50             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |
| *.mkv       |                                                                         |                                         |             | 1920 x 1080: 60  |                |                                                                                                                             |
| *.asf       |                                                                         | HEVC (H.265 - Main, Main10)             | 60          | 50               |                |                                                                                                                             |
| *.wmv       |                                                                         | Motion JPEG                             | 60          | 20               |                |                                                                                                                             |
| *.mp4       |                                                                         | MPEG4 SP/ASP                            |             |                  |                |                                                                                                                             |
| *.mov       |                                                                         | Window Media Video v9 (VC1)             |             |                  |                |                                                                                                                             |
| *.3gp       |                                                                         | MPEG2                                   |             |                  |                |                                                                                                                             |
| *.vro       |                                                                         | MPEG1                                   |             |                  |                |                                                                                                                             |
| *.mpg       |                                                                         | Microsoft MPEG-4 v1, v2, v3             | 30          |                  |                |                                                                                                                             |
| *.mpeg      |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                  |                |                                                                                                                             |
| *.ts        |                                                                         | H.263 Sorenson                          |             |                  |                |                                                                                                                             |
| *.tp        |                                                                         | VP6                                     |             |                  |                |                                                                                                                             |
| *.trp       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.flv       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.vob       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.svi       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.m2ts      |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.mts       |                                                                         |                                         |             |                  |                |                                                                                                                             |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60               | 20             | Vorbis                                                                                                                      |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 60               | 50             |                                                                                                                             |
|             |                                                                         | AV1                                     | 3840 x 2160 | 60               | 40             |                                                                                                                             |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60               | 20             | RealAudio 6                                                                                                                 |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 FHD is supported up to Level 4.2. (TV does not support FMO / ASO / RS)
- H.264 UHD is supported up to Level 5.1. (TV does not support FMO / ASO / RS)
- HEVC FHD is supported up to Level 4.1.
- HEVC UHD is supported up to Level 5.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (The Frame (32LS03C model))

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                |  |  |  |  |  |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 1920 x 1080 | 60               | 50             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>OPUS<br>G.711(A-Law, μ-Law) |  |  |  |  |  |
| *.mkv       |                                                                         | HEVC (H.265 - Main, Main10)             |             | 60               | 50             |                                                                                                                             |  |  |  |  |  |
| *.asf       |                                                                         | Motion JPEG                             |             | 60               | 20             |                                                                                                                             |  |  |  |  |  |
| *.wmv       |                                                                         | MPEG4 SP/ASP                            |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.mp4       |                                                                         | Window Media Video v9 (VC1)             |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.mov       |                                                                         | MPEG2                                   |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.3gp       |                                                                         | MPEG1                                   |             | 30               | 20             |                                                                                                                             |  |  |  |  |  |
| *.vro       |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.mpg       |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.mpeg      |                                                                         | H.263 Sorenson                          |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.ts        |                                                                         | VP6                                     |             | 60               | 40             |                                                                                                                             |  |  |  |  |  |
| *.tp        |                                                                         | AV1                                     |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.trp       |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.flv       |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.vob       |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.svi       |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.m2ts      |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.mts       |                                                                         |                                         |             |                  |                |                                                                                                                             |  |  |  |  |  |
| *.webm      | WebM                                                                    | VP8                                     |             | 60               | 20             | Vorbis                                                                                                                      |  |  |  |  |  |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    |             | 60               | 50             |                                                                                                                             |  |  |  |  |  |
|             |                                                                         | AV1                                     |             | 60               | 40             |                                                                                                                             |  |  |  |  |  |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      |             | 60               | 20             | RealAudio 6                                                                                                                 |  |  |  |  |  |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 FHD is supported up to Level 4.2. (TV does not support FMO / ASO / RS)
- HEVC FHD is supported up to Level 4.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (H5/F6 Series)

| File format | Container                                                               | Video codecs                         | Resolution  | Frame rate (fps) | Bitrate (Mbps) | Audio codecs                                                                                                                   |
|-------------|-------------------------------------------------------------------------|--------------------------------------|-------------|------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                       | 1920 x 1080 | 60               | 50             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>Dolby Digital+<br>MPEG(MP3)<br>MPEG-H<br>AC-4<br>OPUS<br>G.711(A-Law, μ-Law) |
| *.mkv       |                                                                         | HEVC (H.265 - Main, Main10)          |             | 60               | 50             |                                                                                                                                |
| *.asf       |                                                                         | Motion JPEG                          |             | 60               | 20             |                                                                                                                                |
| *.mp4       |                                                                         | MPEG4 SP/ASP                         |             |                  |                |                                                                                                                                |
| *.mov       |                                                                         | MPEG2                                |             |                  |                |                                                                                                                                |
| *.3gp       |                                                                         | MPEG1                                |             | 30               | 20             |                                                                                                                                |
| *.vro       |                                                                         | Microsoft MPEG-4 v1, v2, v3          |             |                  |                |                                                                                                                                |
| *.mpg       |                                                                         | H.263 Sorenson                       |             |                  |                |                                                                                                                                |
| *.mpeg      |                                                                         | VP6                                  |             | 60               | 40             |                                                                                                                                |
| *.ts        |                                                                         | AV1                                  |             |                  |                |                                                                                                                                |
| *.tp        |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.trp       |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.flv       |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.vob       |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.svi       |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.m2ts      |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.mts       |                                                                         |                                      |             |                  |                |                                                                                                                                |
| *.webm      | WebM                                                                    | VP8                                  | 60          | 20               | Vorbis         |                                                                                                                                |
|             |                                                                         | VP9 (Profile 0, profile 2 supported) | 60          | 50               |                |                                                                                                                                |
|             |                                                                         | AV1                                  | 60          | 40               |                |                                                                                                                                |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                   | 60          | 20               | RealAudio 6    |                                                                                                                                |

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 FHD is supported up to Level 4.2. (TV does not support FMO / ASO / RS)
- HEVC FHD is supported up to Level 4.1.
- GMC 2 or above is not supported.

## Audio decoders

- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (QN7\*\*C Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps)                    | Bitrate (Mbps)                      | Audio codecs                                                                                                                |    |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|-------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 3840 x 2160 | 3840 x 2160: 60                     | 60                                  | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |    |
| *.mkv       |                                                                         |                                         |             | 1920 x 1080: 120                    |                                     |                                                                                                                             |    |
| *.asf       |                                                                         | HEVC (H.265 - Main, Main10)             | 7680 x 4320 | 7680 x 4320: 60                     | 100                                 |                                                                                                                             |    |
| *.wmv       |                                                                         |                                         |             | 3840 x 2160: 120                    |                                     |                                                                                                                             |    |
| *.mp4       |                                                                         | Motion JPEG                             | 1920 x 1080 | 60                                  | 20                                  |                                                                                                                             |    |
| *.mov       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60                                  | 20                                  |                                                                                                                             |    |
| *.3gp       |                                                                         | Window Media Video v9 (VC1)             |             |                                     |                                     |                                                                                                                             |    |
| *.vro       |                                                                         | MPEG2                                   |             |                                     |                                     |                                                                                                                             |    |
| *.mpg       |                                                                         | MPEG1                                   |             |                                     |                                     |                                                                                                                             |    |
| *.mpeg      |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             | 30                                  |                                     |                                                                                                                             |    |
| *.ts        |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                                     |                                     |                                                                                                                             |    |
| *.tp        |                                                                         | H.263 Sorenson                          |             |                                     |                                     |                                                                                                                             |    |
| *.trp       |                                                                         | VP6                                     |             |                                     |                                     |                                                                                                                             |    |
| *.flv       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.vob       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.svi       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.m2ts      |                                                                         |                                         | AV1         | 7680 x 4320                         | 7680 x 4320: 60<br>3840 x 2160: 120 |                                                                                                                             | 80 |
| *.mts       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60                                  | 20                                  | Vorbis                                                                                                                      |    |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 3840 x 2160 | 60                                  | 80                                  |                                                                                                                             |    |
|             |                                                                         | AV1                                     | 7680 x 4320 | 7680 x 4320: 60<br>3840 x 2160: 120 | 80                                  |                                                                                                                             |    |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60                                  | 20                                  | RealAudio 6                                                                                                                 |    |

 Because the specifications are based on the current 8K connectivity and decoding standards, future connectivity, broadcasting, and decoding standards may not be supported. Upgrading for meeting future standards may require purchase of additional devices.

 Some third-party standards may not be supported.

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 UHD is supported up to Level 5.1, and H.264 FHD is supported up to Level 4.2 (TV does not support FMO / ASO / RS).
- HEVC UHD is supported up to Level 5.2, and HEVC FHD is supported up to Level 4.1.
- HEVC 8K is supported up to Level 6.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

## Supported video codecs (QN8\*\*C/QN8\*\*D/QN9\*\*C Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps)                    | Bitrate (Mbps) | Audio codecs                                                                                                                |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|-------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 4096 x 2160: 60                     | 60             | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |
| *.mkv       |                                                                         |                                         |             | 1920 x 1080: 120                    |                |                                                                                                                             |
| *.asf       |                                                                         | HEVC (H.265 - Main, Main10)             | 7680 x 4320 | 7680 x 4320: 60                     | 100            |                                                                                                                             |
| *.wmv       |                                                                         |                                         |             | 3840 x 2160: 120                    |                |                                                                                                                             |
| *.mp4       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30                                  | 80             |                                                                                                                             |
| *.mov       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60                                  | 20             |                                                                                                                             |
| *.3gp       |                                                                         | Window Media Video v9 (VC1)             |             |                                     |                |                                                                                                                             |
| *.vro       |                                                                         | MPEG2                                   |             |                                     |                |                                                                                                                             |
| *.mpg       |                                                                         | MPEG1                                   |             |                                     |                |                                                                                                                             |
| *.mpeg      |                                                                         | Microsoft MPEG-4 v1, v2, v3             | 1920 x 1080 | 30                                  | 20             |                                                                                                                             |
| *.ts        |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) |             |                                     |                |                                                                                                                             |
| *.tp        |                                                                         | H.263 Sorenson                          |             |                                     |                |                                                                                                                             |
| *.trp       |                                                                         | VP6                                     |             |                                     |                |                                                                                                                             |
| *.flv       |                                                                         | AV1                                     | 7680 x 4320 | 7680 x 4320: 60                     | 80             |                                                                                                                             |
| *.vob       |                                                                         |                                         |             | 3840 x 2160: 120                    |                |                                                                                                                             |
| *.svi       |                                                                         | AV1                                     | 7680 x 4320 | 7680 x 4320: 60                     | 80             |                                                                                                                             |
| *.m2ts      |                                                                         |                                         |             | 3840 x 2160: 120                    |                |                                                                                                                             |
| *.mts       |                                                                         | WebM                                    | VP8         | 1920 x 1080                         | 60             |                                                                                                                             |
| *.webm      | VP9 (Profile 0, profile 2 supported)                                    |                                         | 3840 x 2160 | 60                                  | 80             |                                                                                                                             |
|             | AV1                                                                     |                                         | 7680 x 4320 | 7680 x 4320: 60<br>3840 x 2160: 120 | 80             |                                                                                                                             |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60                                  | 20             | RealAudio 6                                                                                                                 |

 Because the specifications are based on the current 8K connectivity and decoding standards, future connectivity, broadcasting, and decoding standards may not be supported. Upgrading for meeting future standards may require purchase of additional devices.

 Some third-party standards may not be supported.

## Supported video codecs (QN9\*\*D Series)

| File format | Container                                                               | Video codecs                            | Resolution  | Frame rate (fps)                    | Bitrate (Mbps)                      | Audio codecs                                                                                                                |    |
|-------------|-------------------------------------------------------------------------|-----------------------------------------|-------------|-------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----|
| *.avi       | AVI<br>MKV<br>ASF<br>MP4<br>3GP<br>MOV<br>FLV<br>VRO<br>VOB<br>PS<br>TS | H.264 BP/MP/HP                          | 4096 x 2160 | 4096 x 2160: 60                     | 60                                  | AC3<br>LPCM<br>ADPCM(IMA, MS)<br>AAC<br>HE-AAC<br>WMA<br>Dolby Digital+<br>MPEG(MP3)<br>AC-4<br>G.711(A-Law, μ-Law)<br>OPUS |    |
| *.mkv       |                                                                         |                                         |             | 1920 x 1080: 120                    |                                     |                                                                                                                             |    |
| *.asf       |                                                                         | HEVC (H.265 - Main, Main10)             | 7680 x 4320 | 7680 x 4320: 60                     | 100                                 |                                                                                                                             |    |
| *.wmv       |                                                                         |                                         |             | 3840 x 2160: 120                    |                                     |                                                                                                                             |    |
| *.mp4       |                                                                         | Motion JPEG                             | 3840 x 2160 | 30                                  | 80                                  |                                                                                                                             |    |
| *.mov       |                                                                         | MPEG4 SP/ASP                            | 1920 x 1080 | 60                                  | 20                                  |                                                                                                                             |    |
| *.3gp       |                                                                         | Window Media Video v9 (VC1)             |             |                                     |                                     |                                                                                                                             |    |
| *.vro       |                                                                         | MPEG2                                   |             |                                     |                                     |                                                                                                                             |    |
| *.mpg       |                                                                         | MPEG1                                   |             |                                     |                                     |                                                                                                                             |    |
| *.mpeg      |                                                                         | Microsoft MPEG-4 v1, v2, v3             |             |                                     |                                     |                                                                                                                             |    |
| *.ts        |                                                                         | Window Media Video v7 (WMV1), v8 (WMV2) | 1920 x 1080 | 30                                  | 20                                  |                                                                                                                             |    |
| *.tp        |                                                                         | H.263 Sorenson                          |             |                                     |                                     |                                                                                                                             |    |
| *.trp       |                                                                         | VP6                                     |             |                                     |                                     |                                                                                                                             |    |
| *.flv       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.vob       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.svi       |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.m2ts      |                                                                         |                                         |             |                                     |                                     |                                                                                                                             |    |
| *.mts       |                                                                         |                                         | AV1         | 7680 x 4320                         | 7680 x 4320: 60<br>3840 x 2160: 120 |                                                                                                                             | 80 |
| *.webm      | WebM                                                                    | VP8                                     | 1920 x 1080 | 60                                  | 20                                  | Vorbis                                                                                                                      |    |
|             |                                                                         | VP9 (Profile 0, profile 2 supported)    | 7680 x 4320 | 60                                  | 80                                  |                                                                                                                             |    |
|             |                                                                         | AV1                                     | 7680 x 4320 | 7680 x 4320: 60<br>3840 x 2160: 120 | 80                                  |                                                                                                                             |    |
| *.rmvb      | RMVB                                                                    | RV8/9/10 (RV30/40)                      | 1920 x 1080 | 60                                  | 20                                  | RealAudio 6                                                                                                                 |    |

 Because the specifications are based on the current 8K connectivity and decoding standards, future connectivity, broadcasting, and decoding standards may not be supported. Upgrading for meeting future standards may require purchase of additional devices.

 Some third-party standards may not be supported.

## Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

## Video decoders

- H.264 UHD is supported up to Level 5.1.
  - TV does not support FMO / ASO / RS
  - Resolution is changed during video playback (Up to 3840 x 2160 is supported)
- H.264 FHD is supported up to Level 4.2.
  - TV does not support FMO / ASO / RS
- HEVC UHD is supported up to Level 5.2.
  - Resolution is changed during video playback (Up to Level 5.1 3840 x 2160 is supported)
- HEVC FHD is supported up to Level 4.1.
- HEVC 8K is supported up to Level 6.1.
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

## Audio decoders

- WMA is supported up to 10 Pro 5.1 channels, M2 profile.
- WMA1, WMA lossless / Voice are not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital+ is supported for up to 5.1 channels.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ with the codec.

# Read After Installing the TV

Read this information after installing the TV.

## Picture sizes and input signals

The **Picture Size** is applied to the current source. The applied **Picture Size** will remain in effect whenever you select that source unless you change them.

| Input signal                                | Picture size               |
|---------------------------------------------|----------------------------|
| Component                                   | 16:9 Standard, Custom, 4:3 |
| Digital channel (720p)                      | 16:9 Standard, Custom, 4:3 |
| Digital channel (1080i, 1080p)              | 16:9 Standard, Custom, 4:3 |
| * Digital channel (3840 x 2160p @ 24/30 Hz) | 16:9 Standard, Custom      |
| * Digital channel (3840 x 2160p @ 50/60 Hz) | 16:9 Standard, Custom      |
| * Digital channel (4096 x 2160p)            | 16:9 Standard, Custom      |
| HDMI (720p)                                 | 16:9 Standard, Custom, 4:3 |
| * HDMI (1080i, 1080p)                       | 16:9 Standard, Custom, 4:3 |
| * HDMI (3840 x 2160p)                       | 16:9 Standard, Custom      |
| * HDMI (4096 x 2160p)                       | 16:9 Standard, Custom      |
| *HDMI (7680 x 4320p)                        | 16:9 Standard, Custom      |
| USB (720p)                                  | 16:9 Standard, Custom, 4:3 |
| USB (1080i/p @ 60 Hz)                       | 16:9 Standard, Custom, 4:3 |
| * USB (3840 x 2160p @ 24/30 Hz)             | 16:9 Standard, Custom      |
| * USB (3840 x 2160p @ 60 Hz)                | 16:9 Standard, Custom      |
| * USB (4096 x 2160p @ 24/30/60 Hz)          |                            |
| *USB (7680 x 4320p @ 24/30/60 Hz)           | 16:9 Standard, Custom      |

 \*: This input signal may differ depending on the model and geographical area.

 The input ports for external devices may differ depending on the model and geographical area.

## Installing an anti-theft lock

An anti-theft lock is a physical device that can be used to protect the TV against theft. Look for the lock slot on the back of the TV. The slot has a  icon next to it. To use the lock, wrap the lock cable around an object that is too heavy to carry and then thread it through the TV's lock slot. The lock is sold separately. The method of using an anti-theft lock may differ for each model. Refer to the lock's user manual for more information.

 This function may not be supported depending on the model or geographical area.

## Supported Resolutions for UHD Input Signals

Check the supported resolution for UHD input signals.

- Resolution: 3840 x 2160p, 4096 x 2160p

 This function may not be supported depending on the model.

### If Input Signal Plus is set to Off

| Frame rate (fps) | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 50 / 60          | 8 bit                         | -         | -           | -           | 0           |

### If Input Signal Plus is set to On

- Q6\*C/Q6\*D/QE1C/QE1D Series, Q8\*C/Q8\*D Series (50-inch and smaller models)
- DU6/CU7/DU7/BEC/BED Series, CU8/DU8/DUX1 Series (75-inch and smaller models)
- The Frame/The Serif Series (50-inch and smaller models)

| Frame rate (fps) | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 50 / 60          | 8 bit                         | 0         | 0           | 0           | 0           |
|                  | 10 bit                        | -         | -           | 0           | 0           |

- QLED TV (except for Q6\*C/Q6\*D/QE1C/QE1D Series, Q8\*C/Q8\*D (50-inch and smaller models) Series)
- S8\*C/S8\*D/S9\*C/S9\*D Series
- CU8/DU8 Series (85-inch and larger models), DU9 Series
- The Frame/The Serif Series (55-inch and larger models)

| Frame rate (fps) | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 50 / 60          | 8 bit                         | 0         | 0           | 0           | 0           |
|                  | 10 bit                        | 0         | 0           | 0           | 0           |
| 120              | 8 bit                         | 0         | 0           | 0           | 0           |
|                  | 10 bit                        | 0         | 0           | 0           | 0           |

## Resolutions for Input Signals supported by 8K models (QN7\*\*C/QN7\*\*D series or higher)

Check the resolutions for input signals supported by 8K models (QN7\*\*C/QN7\*\*D series or higher).

 This function may not be supported depending on the model.

### If Input Signal Plus is set to Off

| Frame rate (fps) | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 50 / 60          | 8 bit                         | -         | -           | -           | 0           |

### If Input Signal Plus is set to On

- Resolution: 3840 x 2160p, 4096 x 2160p

| Frame rate (fps) | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 50 / 60          | 8 bit                         | 0         | 0           | 0           | 0           |
|                  | 10 bit                        | 0         | 0           | 0           | 0           |
| 120              | 8 bit                         | 0         | 0           | 0           | 0           |
|                  | 10 bit                        | 0         | 0           | 0           | 0           |

- Resolution: 7680 x 4320p

| Frame rate (fps)  | Color Depth / Chroma Sampling | RGB 4:4:4 | YCbCr 4:4:4 | YCbCr 4:2:2 | YCbCr 4:2:0 |
|-------------------|-------------------------------|-----------|-------------|-------------|-------------|
| 24 / 30 / 50 / 60 | 8 bit                         | 0         | 0           | 0           | 0           |
|                   | 10 bit                        | 0         | 0           | 0           | 0           |

## Supported Resolutions for FreeSync (VRR)

[Check the supported resolutions for the FreeSync \(VRR\) signal.](#)

When **Game Mode** is set to **On** or **Auto**, the FreeSync (VRR) function is activated.

 FreeSync (VRR) is only available in select models. For models that support FreeSync (VRR), refer to "[Using FreeSync.](#)"

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | SCAN        |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|-------------|
| 1920 x 1080                  | 120 Hz         | 135.000                          | 120                           | 297.000                  | progressive |
| 2560 x 1080                  | 120 Hz         | 150.000                          | 120                           | 495.000                  | progressive |
| 2560 x 1440                  | 120 Hz         | 150.000                          | 120                           | 495.000                  | progressive |
| 3840 x 2160                  | 120 Hz         | 270.000                          | 120                           | 1188.000                 | progressive |
| 3840 x 1080                  | 120 Hz         | 137.250                          | 120                           | 549.000                  | progressive |
| 3840 x 1600                  | 120 Hz         | 99.419                           | 120                           | 521.750                  | progressive |
| 4096 x 2160                  | 120 Hz         | 270.000                          | 120                           | 1188.000                 | progressive |
| *7680 x 4320                 | 60 Hz          | 264.000                          | 60                            | 2376.000                 | progressive |

 \*: The resolution may not be supported depending on the model.

- Only models that support 144 Hz are supported.

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | SCAN        |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|-------------|
| 1920 x 1080                  | 144 Hz         | 166.587                          | 144                           | 346.500                  | progressive |
| 2560 x 1080                  | 144 Hz         | 172.339                          | 144                           | 470.830                  | progressive |
| 3840 x 2160                  | 144 Hz         | 323.677                          | 144                           | 1424.180                 | progressive |
| 3840 x 1080                  | 144 Hz         | 166.607                          | 144                           | 653.100                  | progressive |
| 3840 x 1600                  | 144 Hz         | 246.569                          | 144                           | 1035.590                 | progressive |

- Only models that support 165 Hz are supported.

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | SCAN        |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|-------------|
| 1920 x 1080                  | 165 Hz         | 192.788                          | 165                           | 401.000                  | progressive |
| 2560 x 1080                  | 165 Hz         | 192.831                          | 165                           | 524.500                  | progressive |
| 3840 x 2160                  | 165 Hz         | 385.750                          | 165                           | 1543.000                 | progressive |
| 3840 x 1080                  | 165 Hz         | 196.502                          | 165                           | 1053.250                 | progressive |
| 3840 x 1600                  | 165 Hz         | 285.750                          | 165                           | 1143.000                 | progressive |

- Only models that support 240 Hz are supported.

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | SCAN        |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|-------------|
| 1920 x 1080                  | 240 Hz         | 291.587                          | 240                           | 606.500                  | progressive |
| 2560 x 1080                  | 240 Hz         | 291.544                          | 240                           | 793.000                  | progressive |
| 3840 x 2160                  | 240 Hz         | 540.000                          | 240                           | 2376.000                 | progressive |
| 3840 x 1080                  | 240 Hz         | 291.563                          | 240                           | 1166.250                 | progressive |
| 3840 x 1600                  | 240 Hz         | 431.750                          | 240                           | 1727.000                 | progressive |

## Read Before Connecting a Computer (Supported Resolutions)

Check the resolutions supported for PC input signals.

When you connect your TV to a computer, set the computer's video card to one of the standard resolutions listed in the tables below. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolutions are 3840 x 2160 @ 60 Hz (UHD models), and 7680 x 4320 @ 60 Hz (QN7\*\*C/QN7\*\*D series or higher). Choosing a resolution not included in the tables can result in a blank or flickering screen or can turn on only the receiver of the remote control. Refer to the user manual of your graphics card for compatible resolutions.

 The native resolutions are 3840 x 2160 @ 60 Hz (UHD models) and 7680 x 4320 @ 60 Hz (QN7\*\*C/QN7\*\*D series or higher) with the **Input Signal Plus** set to **On**. The native resolution is 3840 x 2160 @ 30 Hz with the **Input Signal Plus** set to **Off**.

### IBM

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 720 x 400                    | 70 Hz          | 31.469                           | 70.087                        | 28.322                   | - / +                                  |

### MAC

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 640 x 480                    | 67 Hz          | 35.000                           | 66.667                        | 30.240                   | - / -                                  |
| 832 x 624                    | 75 Hz          | 49.726                           | 74.551                        | 57.284                   | - / -                                  |
| 1152 x 870                   | 75 Hz          | 68.681                           | 75.062                        | 100.000                  | - / -                                  |

## VESA DMT

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 640 x 480                    | 60 Hz          | 31.469                           | 59.940                        | 25.175                   | - / -                                  |
| 640 x 480                    | 72 Hz          | 37.861                           | 72.809                        | 31.500                   | - / -                                  |
| 640 x 480                    | 75 Hz          | 37.500                           | 75.000                        | 31.500                   | - / -                                  |
| 800 x 600                    | 60 Hz          | 37.879                           | 60.317                        | 40.000                   | + / +                                  |
| 800 x 600                    | 72 Hz          | 48.077                           | 72.188                        | 50.000                   | + / +                                  |
| 800 x 600                    | 75 Hz          | 46.875                           | 75.000                        | 49.500                   | + / +                                  |
| 1024 x 768                   | 60 Hz          | 48.363                           | 60.004                        | 65.000                   | - / -                                  |
| 1024 x 768                   | 70 Hz          | 56.476                           | 70.069                        | 75.000                   | - / -                                  |
| 1024 x 768                   | 75 Hz          | 60.023                           | 75.029                        | 78.750                   | + / +                                  |
| 1152 x 864                   | 75 Hz          | 67.500                           | 75.000                        | 108.000                  | + / +                                  |
| 1280 x 720                   | 60 Hz          | 45.000                           | 60.000                        | 74.250                   | + / +                                  |
| 1280 x 800                   | 60 Hz          | 49.702                           | 59.810                        | 83.500                   | - / +                                  |
| 1280 x 1024                  | 60 Hz          | 63.981                           | 60.020                        | 108.000                  | + / +                                  |
| 1280 x 1024                  | 75 Hz          | 79.976                           | 75.025                        | 135.000                  | + / +                                  |
| 1440 x 900                   | 60 Hz          | 55.935                           | 59.887                        | 106.500                  | - / +                                  |
| 1600 x 900                   | 60 Hz          | 60.000                           | 60.000                        | 108.000                  | + / +                                  |
| 1680 x 1050                  | 60 Hz          | 65.290                           | 59.954                        | 146.250                  | - / +                                  |
| 1920 x 1080                  | 60 Hz          | 67.500                           | 60.000                        | 148.500                  | + / +                                  |

## VESA CVT

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 2560 x 1440                  | 60 Hz          | 88.787                           | 59.951                        | 241.500                  | + / -                                  |
| 2560 x 1440                  | 120 Hz         | 192.996                          | 119.998                       | 497.750                  | + / -                                  |

 The resolution may not be supported depending on the model.

 2560 x 1440 @ 60 Hz resolution is not supported in [Game Mode](#).

## CTA-861

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 1920 x 1080i                 | 50 Hz          | 28.125                           | 50.000                        | 74.250                   | + / +                                  |
| 1920 x 1080i                 | 60 Hz          | 33.750                           | 60.000                        | 74.250                   | + / +                                  |
| *1920 x 1080                 | 100 Hz         | 112.500                          | 100.000                       | 297.000                  | + / +                                  |
| *1920 x 1080                 | 120 Hz         | 135.000                          | 120.003                       | 297.000                  | + / +                                  |
| 3840 x 2160                  | 30 Hz          | 67.500                           | 30.000                        | 297.000                  | - / -                                  |
| *3840 x 2160                 | 60 Hz          | 135.000                          | 60.000                        | 594.000                  | - / -                                  |
| *3840 x 2160                 | 100 Hz         | 225.000                          | 100.000                       | 1188.000                 | + / +                                  |
| *3840 x 2160                 | 120 Hz         | 270.000                          | 120.000                       | 1188.000                 | + / +                                  |
| 4096 x 2160                  | 24 Hz          | 54.000                           | 24.000                        | 297.000                  | + / +                                  |
| 4096 x 2160                  | 30 Hz          | 67.500                           | 30.000                        | 297.000                  | + / +                                  |
| *4096 x 2160                 | 50 Hz          | 112.500                          | 50.000                        | 594.000                  | + / +                                  |
| *4096 x 2160                 | 60 Hz          | 135.000                          | 60.000                        | 594.000                  | + / +                                  |
| *4096 x 2160                 | 100 Hz         | 225.000                          | 100.000                       | 1188.000                 | + / +                                  |
| *4096 x 2160                 | 120 Hz         | 270.000                          | 120.000                       | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 24 Hz          | 108.000                          | 24.000                        | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 30 Hz          | 132.000                          | 30.000                        | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 50 Hz          | 220.000                          | 50.000                        | 2376.000                 | + / +                                  |
| *7680 x 4320                 | 60 Hz          | 264.000                          | 60.000                        | 2376.000                 | + / +                                  |

 \*: The resolution may not be supported depending on the model.

# Supported Resolutions for Video Signals

Check the resolutions supported for video signals.

## CTA-861

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 720 (1440) x 576i            | 50 Hz          | 15.625                           | 50.000                        | 27.000                   | - / -                                  |
| 720 (1440) x 480i            | 60 Hz          | 15.734                           | 59.940                        | 27.000                   | - / -                                  |
| 720 x 576                    | 50 Hz          | 31.250                           | 50.000                        | 27.000                   | - / -                                  |
| 720 x 480                    | 60 Hz          | 31.469                           | 59.940                        | 27.000                   | - / -                                  |
| 1280 x 720                   | 50 Hz          | 37.500                           | 50.000                        | 74.250                   | + / +                                  |
| 1280 x 720                   | 60 Hz          | 45.000                           | 60.000                        | 74.250                   | + / +                                  |
| 1920 x 1080i                 | 50 Hz          | 28.125                           | 50.000                        | 74.250                   | + / +                                  |
| 1920 x 1080i                 | 60 Hz          | 33.750                           | 60.000                        | 74.250                   | + / +                                  |
| 1920 x 1080                  | 24 Hz          | 27.000                           | 24.000                        | 74.250                   | + / +                                  |
| 1920 x 1080                  | 25 Hz          | 28.125                           | 25.000                        | 74.250                   | + / +                                  |
| 1920 x 1080                  | 30 Hz          | 33.750                           | 30.000                        | 74.250                   | + / +                                  |
| 1920 x 1080                  | 50 Hz          | 56.250                           | 50.000                        | 148.500                  | + / +                                  |
| 1920 x 1080                  | 60 Hz          | 67.500                           | 60.000                        | 148.500                  | + / +                                  |
| *1920 x 1080                 | 100 Hz         | 112.500                          | 100.000                       | 297.000                  | + / +                                  |
| *1920 x 1080                 | 120 Hz         | 135.000                          | 120.003                       | 297.000                  | + / +                                  |
| 3840 x 2160                  | 24 Hz          | 54.000                           | 24.000                        | 297.000                  | + / +                                  |
| 3840 x 2160                  | 25 Hz          | 56.250                           | 25.000                        | 297.000                  | + / +                                  |
| 3840 x 2160                  | 30 Hz          | 67.500                           | 30.000                        | 297.000                  | + / +                                  |
| *3840 x 2160                 | 50 Hz          | 112.500                          | 50.000                        | 594.000                  | + / +                                  |
| *3840 x 2160                 | 60 Hz          | 135.000                          | 60.000                        | 594.000                  | + / +                                  |
| *3840 x 2160                 | 100 Hz         | 225.000                          | 100.000                       | 1188.000                 | + / +                                  |
| *3840 x 2160                 | 120 Hz         | 270.000                          | 120.000                       | 1188.000                 | + / +                                  |

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 4096 x 2160                  | 24 Hz          | 54.000                           | 24.000                        | 297.000                  | + / +                                  |
| 4096 x 2160                  | 30 Hz          | 67.500                           | 30.000                        | 297.000                  | + / +                                  |
| *4096 x 2160                 | 50 Hz          | 112.500                          | 50.000                        | 594.000                  | + / +                                  |
| *4096 x 2160                 | 60 Hz          | 135.000                          | 60.000                        | 594.000                  | + / +                                  |
| *4096 x 2160                 | 100 Hz         | 225.000                          | 100.000                       | 1188.000                 | + / +                                  |
| *4096 x 2160                 | 120 Hz         | 270.000                          | 120.000                       | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 24 Hz          | 108.000                          | 24.000                        | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 30 Hz          | 132.000                          | 30.000                        | 1188.000                 | + / +                                  |
| *7680 x 4320                 | 50 Hz          | 220.000                          | 50.000                        | 2376.000                 | + / +                                  |
| *7680 x 4320                 | 60 Hz          | 264.000                          | 60.000                        | 2376.000                 | + / +                                  |

 \*: The resolution may not be supported depending on the model.

## VESA CVT

| Resolution<br>(Dots x lines) | Display format | Horizontal<br>frequency<br>(KHz) | Vertical<br>frequency<br>(Hz) | Clock frequency<br>(MHz) | Polarity<br>(horizontal /<br>vertical) |
|------------------------------|----------------|----------------------------------|-------------------------------|--------------------------|----------------------------------------|
| 2560 x 1440                  | 60 Hz          | 88.787                           | 59.951                        | 241.500                  | + / -                                  |
| 2560 x 1440                  | 120 Hz         | 192.996                          | 119.998                       | 497.750                  | + / -                                  |

 The resolution may not be supported depending on the model.

# Supported Resolutions for HDBT

Check the resolutions supported for HDBT.

 HDBT is used only for The Terrace.

## CEA-861

| Resolution<br>(Dots x lines) | Display format | Horizontal frequency<br>(KHz) | Vertical frequency<br>(Hz) | Clock frequency<br>(MHz) |
|------------------------------|----------------|-------------------------------|----------------------------|--------------------------|
| 640 x 480                    | 60 Hz          | 31.469                        | 59.940                     | 25.175                   |
| 720 x 480                    | 60 Hz          | 31.469                        | 59.940                     | 27.000                   |
| 720 x 576                    | 50 Hz          | 31.250                        | 50.000                     | 27.000                   |
| 1280 x 720                   | 50 Hz          | 37.500                        | 50.000                     | 74.250                   |
| 1280 x 720                   | 60 Hz          | 45.000                        | 60.000                     | 74.250                   |
| 1440 x 240                   | 60 Hz          | 15.734                        | 59.940                     | 27.000                   |
| 1440 x 240                   | 60 Hz          | 15.734                        | 59.826                     | 27.000                   |
| 1440 x 288                   | 50 Hz          | 15.625                        | 50.000                     | 27.000                   |
| 1440 x 480                   | 60 Hz          | 15.734                        | 59.940                     | 27.000                   |
| 1440 x 576                   | 50 Hz          | 15.625                        | 50.000                     | 27.000                   |
| 1440 x 576                   | 100 Hz         | 31.250                        | 100.000                    | 54.000                   |
| 1920 x 1080                  | 24 Hz          | 27.000                        | 24.000                     | 74.000                   |
| 1920 x 1080                  | 25 Hz          | 28.125                        | 25.000                     | 74.000                   |
| 1920 x 1080                  | 30 Hz          | 33.750                        | 30.000                     | 74.000                   |
| 1920 x 1080                  | 50 Hz          | 33.750                        | 30.000                     | 74.250                   |
| 1920 x 1080                  | 50 Hz          | 56.250                        | 50.000                     | 149.000                  |
| 1920 x 1080                  | 60 Hz          | 67.500                        | 60.000                     | 149.000                  |
| 1920 x 1080                  | 100 Hz         | 56.250                        | 100.000                    | 149.000                  |
| 1920 x 1080                  | 100 Hz         | 112.500                       | 100.000                    | 297.000                  |
| 1920 x 1080                  | 120 Hz         | 135.000                       | 120.000                    | 297.000                  |
| 2880 x 288                   | 50 Hz          | 15.625                        | 50.000                     | 54.000                   |
| 2880 x 480                   | 60 Hz          | 15.734                        | 59.940                     | 54.000                   |
| 2880 x 576                   | 50 Hz          | 31.250                        | 50.000                     | 108.000                  |
| 3840 x 2160                  | 30 Hz          | 67.500                        | 30.000                     | 297.000                  |

# Read Before Using Bluetooth Devices

Read this information before using a Bluetooth device.

 This function may not be supported depending on the model or geographical area.

## Restrictions on using Bluetooth

- Compatibility issues may occur, depending on the Bluetooth device (A Mobile exclusive headphone may not be available, depending on the environment).
- Lip-sync errors may occur.
- The TV and Bluetooth device may disconnect, depending on the distance between them.
- A Bluetooth device may hum or malfunction:
  - When a part of your body is in contact with the receiving/transmitting system of the Bluetooth device or the TV.
  - When the device is subject to electrical variation from obstructions caused by a wall, corner, or office partitioning.
  - When the device is exposed to electrical interference from same frequency-band devices including medical equipment, microwave ovens, and wireless LANs.
- If the problem persists, we recommend you use a wired connection.
  - DIGITAL AUDIO OUT (OPTICAL) port
  - HDMI (eARC/ARC) port

## Blocking programs based on their TV Rating

Read this information before viewing a blocking program.

To block content in [TV Rating](#), select a rating category to lock. All programs at that level and higher are blocked and require the PIN to watch. To unblock a category, select the lock icon. To unblock all the categories in a row, select the lock under [ALL](#).

 This function may not be supported depending on the model or geographical area.

### Categories on the left:

- [TV-Y](#): Young children.
- [TV-Y7](#): Children 7 and over.
- [TV-G](#): General audience.
- [TV-PG](#): Parental guidance.
- [TV-14](#): Viewers 14 and over.
- [TV-MA](#): Mature audience.

### Categories on the top:

- [ALL](#): Lock all TV ratings.
- [FV](#): Fantasy violence.
- [V](#): Violence.
- [S](#): Sexual situations.
- [L](#): Adult language.
- [D](#): Sexually suggestive dialog.

## Blocking movies based on their Motion Picture Association of America (MPAA) rating

The [Movie Rating \(MPAA\)](#) system applies to all materials with supplied ratings in the U.S.A.

From the MPAA:

“The Motion Picture Association of America (MPAA) has implemented a rating system that provides parents or guardians with advanced information on which films are appropriate for children.”

Select a lock beside one of the rating categories to block that category and all higher categories. To unblock a category, select the lock icon.

- [G](#): General audience (no restrictions).
- [PG](#): Parental guidance suggested.
- [PG-13](#): Parents strongly cautioned.
- [R](#): Restricted. Children under 17 should be accompanied by an adult.
- [NC-17](#): No children under age 17.
- [X](#): Adults only.
- [NR](#): Not rated.

## Blocking programs based on their Canadian English Rating

The [Canadian English Rating](#) system applies to all rated material viewed on English-Canadian TV channels.

Select a lock beside one of the rating categories to block that category and all higher categories. To unblock a category, select the lock icon.

- [C](#): Programming intended for children under age 8.
- [C8+](#): Programming generally considered acceptable for children 8 years and over to watch on their own.
- [G](#): General programming, suitable for all audiences.
- [PG](#): Parental Guidance.
- [14+](#): Programming containing themes or content that may not be suitable for viewers under the age of 14.
- [18+](#): Adult programming.

## Blocking programs based on their Canadian French Rating

The [Canadian French Rating](#) system applies to all rated material viewed on French-Canadian TV channels.

Select a lock beside one of the rating categories to block that category and all higher categories. To unblock a category, select the lock icon.

- [G](#): General.
- [8 ans+](#): Programming acceptable for children 8 years and over to watch on their own.
- [13 ans+](#): Programming that may not be suitable for children under the age of 13.
- [16 ans+](#): Programming not suitable for children under the age of 16.
- [18 ans+](#): Programming restricted to adults.

## Blocking Programs based on their Downloadable U.S. Rating

The [Downloadable U.S. Rating](#) system only applies to material originating from US DTV channels.

Parental restriction information is automatically downloaded while you watch DTV channels. This download may take several seconds. If the information is unavailable from the broadcasting station, the [Downloadable U.S. Rating](#) menu is deactivated.

Parental restriction levels differ with the broadcasting station. The default menu name and the [Downloadable U.S. Rating](#) name changes depending on the downloaded information.

Even when the on-screen display is set to another language, the [Downloadable U.S. Rating](#) menu appears only in English.

Select a lock beside one of the rating categories to block that category and all higher categories. To unblock a category, select the lock icon.

## Licenses & Other Information

Check the licenses and other information and trademarks applied in your TV.



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(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website: [www.samsung.com/recycling](https://www.samsung.com/recycling) or call, 1-800-SAMSUNG

For battery recycling go to [call2recycle.org](https://call2recycle.org) or call 1-800-822-8837

# Troubleshooting

The following are troubleshooting solutions for each problem.

## Picture Issues

When the TV has trouble with the picture, these steps may help resolve the problem.

### The screen is flashing or has become dark

If your TV is flickering or dimming sporadically, you may need to disable some of the energy efficiency features.

Disable [Brightness Optimization](#), [Energy Saving Solution](#), [Motion Lighting](#), or [Contrast Enhancer](#).

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Brightness Optimization](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Energy Saving Solution](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Motion Lighting](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Contrast Enhancer](#) [Try Now](#)

 For the S8\*C/S8\*D/S9\*C/S9\*D series, when the ambient temperature is high, the screen brightness slightly dims automatically to prevent afterimages on the screen.

Run [Picture Test](#). When the tested image quality is normal, check the signal of the connected device.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Picture Test](#) [Try Now](#)

### The picture is not bright, or the picture colors do not look clear

If the screen appears too dim, try changing the settings under [Reset Picture](#) or disabling [Brightness Optimization](#), [Energy Saving Solution](#).

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Reset Picture](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Brightness Optimization](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Energy Saving Solution](#) [Try Now](#)

Go to [Picture](#) and adjust the [Picture Mode](#), [Contrast](#), [Brightness](#), and [Sharpness](#) settings.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Picture Mode](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Contrast](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Brightness](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Sharpness](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Color](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Tint \(G/R\)](#) [Try Now](#)

## The picture colors are black and white or do not look the way they should look

If the product's colors or absolute whites/blacks seem to be off, launch [Picture Test](#).

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Picture Test](#) [Try Now](#)

If the test results indicate that the problem is not caused by the TV, do the following:

When using the One Connect Box, confirm that its video input connectors are connected to the correct external device video output connectors.

If using a component cable, ensure that the green (Y), blue (Pb), and red (Pr) cables are connected properly. Incorrect connections may cause color problems or a blank screen.

 Component port may not be supported depending on the model.

Check whether [Grayscale](#) is set to [On](#).

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Grayscale](#) [Try Now](#)

## The TV automatically turns off by itself

If your TV appears to turn off by itself, try disabling some of the TV's energy efficiency functions.

See if [Sleep Timer](#) has been enabled. The [Sleep Timer](#) automatically turns the TV off after a specified period of time.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Sleep Timer](#) [Try Now](#)

If the [Sleep Timer](#) has not been enabled, see if [Auto Power Off](#) or [Off Timer](#) has been enabled and disable it.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Auto Power Off](#) [Try Now](#)
-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Off Timer](#) [Try Now](#)

## TV (The Frame TV) cannot be turned off.

If your TV is The Frame model, you can turn off the TV by pressing and holding the Power button. To switch from Art mode to TV mode or vice versa, short-press the Power button when the TV is on.

Configure operation settings for the power button on the remote control in  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Power Button Option](#). This feature is set to [Art/TV](#) by default.

If you briefly press the power button on the remote control, switches to Art mode or TV mode. If you set this feature to [On/Off](#), the TV turns on or off.

 This function may not be supported depending on the model.

## Unable to power on

If you are having problems powering on your TV, there are a number of things to check before calling the service department.

Confirm that the TV's power cord is connected correctly at both ends and that the remote control is operating normally.

Make sure that the antenna cable or cable TV cable is firmly connected.

If you have a cable box or satellite box, confirm that it is plugged in and turned on.

In case of a model that supports One Connect Box, check the One Invisible Connection or One Connect Cable between the TV and One Connect Box.

## The TV remains on or does not turn on automatically.

If the surrounding area is too dark or bright, the motion sensor may not work normally. The performance of the motion sensor may be affected by the installation environment (height, tilt, obstacles). If the clothes you wear or your skin color is similar to the surrounding shading, the motion sensor may not work properly.

 Motion Sensor may not be supported depending on the model or geographical area.

The TV responds to all visual changes around it (lights, displays, dogs, out-of-window changes, and other occurrences). You can adjust the response level by adjusting the sensitivity of the motion detector.

-  > left directional button >  [Art](#) > [Art Mode Options](#) > [Sleep Options](#) > [Motion Detector](#)

 [Art Mode Options](#) can be found at the bottom of the [Art](#) home. To configure the option settings, scroll down to the far bottom.

 [Motion Detector](#) may not be supported depending on the model or geographical area.

## Unable to find a Channel

If your TV is not connected to a cable box or satellite box, run [Auto Program](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Auto Program](#) [Try Now](#)

When using a broadcast receiver such as set-top box and IPTV, check the connection to the TV.

-  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) [Try Now](#)

When the symptom persists, contact your service provider.

## The TV image does not look as good as it did in the store

Store displays are tuned to a digital UHD channel or HD channel.

Change the output resolution of your devices, such as digital broadcast receiver, IPTV, and set-top box to UHD or HD.

Be sure to use an HDMI cable to enjoy high quality videos.

-  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Video Device](#) > [HDMI](#)

To connect the TV with your PC, make sure that your PC's graphic card supports UHD resolutions.

For more information about the supported UHD resolutions, refer to "[Supported Resolutions for UHD Input Signals](#)."

For more information about the supported 8K resolutions, refer to "[Resolutions for Input Signals supported by 8K models \(QN7\\*\\*C/QN7\\*\\*D series or higher\)](#)."

-  Make sure that the set-top box or cable box supports the content or broadcast for UHD and set the resolution. For more information, contact your service provider.
-  When using a [Samsung TV Plus](#) channel, check the network connection. When the network speed is slow, the app may not work or the image quality may be poor.

## Displayed video looks blurry

If you notice blurring or juddering on the screen, use the [Picture Clarity Settings](#) function to resolve the issue.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Picture Clarity Settings](#) [Try Now](#)

## The picture is distorted

The compression of video content may cause picture distortions, especially in fast moving pictures from sports programs and action movies.

Remove and reconnect the power cord, and check the remote control battery.

If the signal reception is weak or poor, screen distortion may be visible but it is not a malfunction.

Mobile phones used close to the TV (within 3.2 ft) may cause noise on analog and digital channels.

## There is a dotted line on the edge of the screen

Change [Picture Size](#) to [16:9 Standard](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Picture](#) > [Picture Size Settings](#) > [Picture Size](#)  
[Try Now](#)

Change the output resolution of your external device.

## The picture won't display in full screen

HD channels will have black bars on either side of the screen when displaying upscaled SD (4:3) content.

Black bars will appear at the top and bottom of the screen when you watch movies that have aspect ratios different from your TV.

Adjust the picture size options on your external device or set the TV to full screen.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Picture](#) > [Picture Size Settings](#) > [Picture Size](#)  
[Try Now](#)

## The Caption function in the TV menu is deactivated

When an external device is connected with an HDMI or Component cable, the [Caption](#) function is unavailable. Adjust the caption setting on the external device.

## Captions appear on the TV screen

Turn off the [Caption](#) function in [Caption Settings](#).

-  >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) > [Caption](#) [Try Now](#)

## The HDR of the connected external device turns off

If the [Input Signal Plus](#) feature is turned on, the range of receiving HDMI input signals is expanded, allowing you to view HDR content sent from an external device.

-  >  >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Input Signal Plus](#) [Try Now](#)

 This function may not be supported depending on the model.

# Sound and Noise Issues

When the TV has difficulties with sound, these steps may help resolve the problem.

## How can I connect an audio device to the TV?

The connection method, such as HDMI, Optical, Bluetooth, and Wi-Fi may differ depending on the audio device.

For more information about how to connect an audio device, run [Connection Guide](#).

-  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Audio Device](#)

## There is no sound or the sound is too low at maximum volume.

Check the volume control of your TV, and then check the volume control of the external device (cable box or satellite box, DVD, Blu-ray, etc.) connected to your TV.

Check the cable connection between an external device and the TV and then try cable connection again.

## The picture is good but there is no sound.

Check the [Sound Output](#) setting. If it is set to [TV Speaker](#), check the volume setting.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Sound](#) > [Sound Output](#) [Try Now](#)

If you are using an external device, check the device's audio output option.

For example, you may need to change your cable box's audio option to HDMI if the box connected to your TV is using an HDMI cable.

To listen to computer sound, connect an external speaker to the computer's audio output connector.

If your TV has a headphone jack, make sure there is nothing plugged into it.

Reboot the connected device by disconnecting and then reconnecting the device's power cord.

With a set-top box or cable box, check the cable connection and reboot the external device. When the symptom persists, contact your service provider.

## HDMI (eARC/ARC) is connected, and there is no sound.

Check whether [Digital Output Audio Format](#) is set to [Pass-Through](#).

If a soundbar or A/V receiver that does not support [Dolby Digital+](#) is used and [Pass-Through](#) is selected, there is no sound when a [Dolby Digital+](#) source is received.

It is recommended to set [Digital Output Audio Format](#) to [Auto](#) if only limited audio format is supported depending on the performance of the connected soundbar or A/V receiver.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Sound](#) > [Expert Settings](#) > [Digital Output Audio Format](#) > [Auto](#)

## The speakers are making an odd sound.

Run [Sound Test](#).

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Sound Test](#) [Try Now](#)

Make sure that the audio cable is connected to the correct audio output connector on the external device.

For antenna or cable connections, check the [Broadcast Signal](#). A low signal level may cause sound distortions.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Broadcast Signal](#)

## The sound is interrupted.

Sound quality may become affected if the wireless router is close to the Bluetooth speaker. Place the Bluetooth speaker as close as possible to the TV without obstacle between them. Do not place the wireless router close to the Bluetooth speaker body.

To minimize interruptions, we recommend a wireless access point that uses a 5 GHz frequency. 5 GHz may not be available depending on the model.

When the symptom persists, it is recommended to use wired connection such as HDMI (eARC/ARC) and Optical.

Whenever a function is used on the TV or the channel is changed, the TV voices the activity. The TV explains in voice-over the video scenes displayed on the screen.

Turn off the [Voice Guide](#) function in [Voice Guide Settings](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Voice Guide Settings](#) > [Voice Guide](#) [Try Now](#)

## The TV audio is not being played through the Soundbar or A/V receiver.

Check the Soundbar or A/V receiver's power supply and its settings.

- When connecting the optical cable between the TV and Soundbar or A/V receiver, make sure that the sound output is set [Receiver \(Optical\)](#) on your TV.
- In case of HDMI eARC connection, make sure that it is connected to the eARC dedicated HDMI port on your TV. However, the eARC can be used only when the Soundbar or A/V receiver supports the eARC feature.

## The sound is not heard clearly.

Change to an appropriate sound mode.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Sound](#) > [Sound Mode](#) [Try Now](#)

When [Intelligent Mode](#) and [Adaptive Sound Pro](#) are turned on, the sound effects are automatically adjusted to the surroundings.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Intelligent Mode Settings](#) > [Intelligent Mode](#) [Try Now](#)

 This function may not be supported depending on the model.

To optimize the sound depending on the surroundings, select [Adaptive Sound Pro](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Intelligent Mode Settings](#) > [Adaptive Sound Pro](#) [Try Now](#)

 This function may not be supported depending on the model.

## The volume of the external device cannot be adjusted.

Check the cable connection between the TV and the external device.

When connecting an external speaker such as home theater via HDMI, make sure it is connected to the HDMI (eARC/ARC) port on the TV. Make sure that the  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Anynet+ \(HDMI-CEC\)](#) is active on your TV. [Try Now](#)

 If a device is connected via Optical, volume control may not be possible, depending on the device.

## I want to turn the TV and audio device off and on at the same time.

When you connect the Samsung Soundbar to the TV via Bluetooth, the power turns off and on together. It may not be supported depending on the Samsung Soundbar model.

When you connect an audio device that supports HDMI eARC to the HDMI (eARC) port on the TV, the power turns off and on together.

# Channel and Broadcast Issues

When the TV has difficulties receiving broadcasts, these steps may help resolve the problem.

## "Weak or No Signal" displayed in TV mode or cannot find channel.

Make sure that the external device is connected securely and turned on. Move to [Connected Devices](#) to switch to other input sources.

-  >  (left directional button) >  [Connected Devices](#) > Sources

When using a set-top box or cable box, check the broadcast signals or the network that is connected to the external device.

## The TV is not receiving all channels.

Confirm that the coaxial cable is securely connected to the TV.

Run [Factory data reset](#) or [Auto Program](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Factory data reset](#) [Try Now](#)
-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Broadcasting](#) > [Auto Program](#) [Try Now](#)

## The captions are not provided on a digital channel.

When watching channels with the antenna cable connected, run [Caption Settings](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#) > [Caption Settings](#) [Try Now](#)

Some channels may not have caption data.

When watching a channel on an external device such as a set-top box and cable box, turn on the caption function on the device. For more information, contact your service provider.

## Broadcasting is deactivated.

[Broadcasting](#) is only available when Sources is set to [TV](#).

[Broadcasting](#) cannot be accessed while you watch TV using a cable box or satellite box.

[Broadcasting](#) cannot be accessed while a recording is in progress or the Timeshift function is running.

 [Record](#) and [Timeshift](#) may not be supported depending on the model or geographical area.

# External Device Connectivity Issues

When the TV has difficulties connecting to external devices such as a PC, game console, or mobile device, these steps may help resolve the problem.

## The "Mode Not Supported" message appears.

Adjust the output resolution of the external device to a resolution supported by the TV.

## The video is OK but there is no audio.

If you are using an HDMI connection, check the audio output setting on your PC.

If you are using a DVI to HDMI cable, a separate audio cable is required.

To listen to the computer sound, connect external speakers to the audio output connection of the computer.

## I want to connect to a PC and mobile device via screen mirroring.

To wirelessly connect the TV to your PC, read the instructions at [PC > Screen Sharing \(Wireless\)](#) in [Connection Guide](#), and then try to connect.

-  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [PC](#) > [Screen Sharing \(Wireless\)](#)

Confirm that the TV and your PC are connected to the same network.

To wirelessly connect the TV to your mobile device, read the instructions at [Smartphone > Screen Sharing \(Smart View\)](#) in [Connection Guide](#), and then try to connect.

-  >  (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Smartphone](#) > [Screen Sharing \(Smart View\)](#) [Try Now](#)

If the TV has difficulties connecting to your PC or mobile device due to surrounding radio interferences, change the frequency of the wireless access band, and then try to connect.

## No screen appears when connecting the TV to an external device.

For more information about how to connect an external device, run [Connection Guide](#).

-  > ≡ (left directional button) >  [Connected Devices](#) > [Connection Guide](#) [Try Now](#)

Make sure that the external device is connected securely and turned on. Move to Sources to switch to other input sources.

-  > ≡ (left directional button) >  [Connected Devices](#) > Sources

Using [HDMI Troubleshooting](#), you can check the connection to HDMI cable and external devices (takes approximately 2 minutes).

-  > ≡ (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Video Device](#) > [HDMI Troubleshooting](#)

When using a set-top box or cable box, check the broadcast signals or the network that is connected to the external device.

## I want to connect to a Bluetooth speaker.

For more information on how to connect a Bluetooth speaker, see [Audio Device](#) > [Bluetooth](#) in [Connection Guide](#).

-  > ≡ (left directional button) >  [Connected Devices](#) > [Connection Guide](#) > [Audio Device](#) > [Bluetooth](#)

## The PC screen does not appear or it flickers.

When the PC screen does not appear or the PC is not recognized, check the power supply of the PC and then reconnect the HDMI cable between the PC and TV. When the symptom persists, check that the PC is in Sleep mode and then set [Input Signal Plus](#) to [On](#).

-  > ≡ (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Input Signal Plus](#) [Try Now](#)

When the set resolution is not matched, it may cause a blank or flickering screen. For the PC supported resolution, refer to "[Read Before Connecting a Computer \(Supported Resolutions\)](#)."

# Network Issues

When the TV has difficulties connecting to the network, these steps may help resolve the problem.

## Wireless network connection failed. Unable to connect to a wireless access point. Unable to connect to the network.

 >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Smart Hub Connection Test](#) [Try Now](#) [Try Now](#)

Ensure that the network cable is connected and the router is powered on.

Connect your mobile device to the router via Wi-Fi.

Turn the router off and back on again. (Requires 2 to 3 minutes)

If a security key is required, make sure it has been entered correctly.

Unplug the TV's power cord and plug it back in or press and hold the power button for at least 3 seconds.

Make sure that there is no electromagnetic wave generating device placed between the TV and router.

If unable to establish a wireless internet connection, connect the TV to the wireless router via a LAN cable.

If the TV is able to connect to the internet normally via the cable connection, there might be a problem with the wireless router. In this case, try using a different wireless router.

 Wired networks are not supported by some models.

## Wired network connection failed.

Check if the LAN cable is plugged in on both ends. If it is plugged in, check if the access point is turned on. If it is on, turn it off, wait 1 or 2 minutes, and then turn it on.

 Wired networks are not supported by some models.

## Connected to a local network, but not to the Internet.

Connected to a local network, but not to the Internet.

 Wired networks are not supported by some models.

1. Check if the Internet LAN cable is connected to the access point's external LAN port.
2. Check the DNS setting in [IP Settings](#).

–  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [Network](#) > [Network Status](#) > [IP Settings](#)

# Anynet+ (HDMI-CEC) Issues

When Anynet+ (HDMI-CEC) isn't working, these steps may help resolve the problem.

## What is Anynet+?

You can use the TV's remote control to control external devices that support Anynet+ (HDMI-CEC) and that are connected to the TV via an HDMI cable. For example, if a connected external device supports Anynet+, you can have the connected device turn on or off when you turn the TV on or off.

## Anynet+ does not work. The connected device is not displayed.

Make sure the device is an [Anynet+ \(HDMI-CEC\)](#) device. From the settings menu on the device, check and confirm that the HDMI-CEC option is enabled.

From the TV, check and confirm that the [Anynet+ \(HDMI-CEC\)](#) feature is set to **On**.

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Anynet+ \(HDMI-CEC\)](#) [Try Now](#)

Check and confirm that the device's power cord is securely plugged in.

Check the device's HDMI cable connection.

[Anynet+ \(HDMI-CEC\)](#) cannot function under specific circumstances. (when the TV is scanning channels or performing [Factory data reset](#))

When connecting or disconnecting an HDMI cable, turn the TV off and then back on again.

I want to start Anynet+. I also want the connected devices to turn on when the TV is turned on.

Check if the Anynet+ device is properly connected to the TV, and then select [Anynet+ \(HDMI-CEC\)](#) menu to see if [Anynet+ \(HDMI-CEC\)](#) is set to **On**.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Anynet+ \(HDMI-CEC\)](#) [Try Now](#)

I want to exit Anynet+. It is inconvenient to turn on other devices because the TV also turns on. It is inconvenient because the connected devices (e.g. set-top box) turn off together.

To turn off the Anynet+ function of a device connected to the TV, turn off the [Anynet+ \(HDMI-CEC\)](#) function of the device.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Connection](#) > [External Device Manager](#) > [Anynet+ \(HDMI-CEC\)](#) [Try Now](#)

When [Anynet+ \(HDMI-CEC\)](#) is turned off, the soundbar connected via the HDMI (eARC) port does not turn off and on together with the TV. To prevent a specific device connected to the TV from turning off automatically, turn off the HDMI-CEC function on a specific device connected to the TV.

The message "Connecting to Anynet+ device..." or "Disconnecting from Anynet+ device" appears on the screen.

You cannot use the remote control when the TV is configuring Anynet+ or switching to the TV viewing screen.

Use the remote control after the TV has completed the Anynet+ configuration or has switched to the TV viewing screen.

The Anynet+ device won't play.

You cannot use the play function when [Factory data reset](#) is in progress.

# Remote Control Issues

When the remote control isn't working, these steps may help resolve the problem.

## The remote control does not work.

The connection between the remote control and the TV may be lost.

Point the Samsung Smart Remote at the front of the TV, and then press and hold the  and  buttons simultaneously for 3 seconds or more.

Also, if the remote control does not work properly or its response is very slow, the battery might be low or dead.

- Charge the remote control by using the USB port (C-type) on the bottom, or turn over the remote to expose the solar cell.
  - You can check remaining battery of Samsung Smart Remote with solar cell in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Available Remote Battery](#). [Try Now](#)

 This function may not be supported depending on the model.

- If the remote control has batteries, replace them with new ones.

## External devices cannot be operated with the TV remote control.

Check the cable connection between the TV and external devices.

When the symptom persists, set it manually in  >  (left directional button) >  [Connected Devices](#) > [Universal Remote Setup](#).

# Recording Issues

When Timeshift or Schedule recording aren't working, these steps may help resolve the problem.

## The Timeshift or recording function cannot be used.

Check if there is a storage device connected to the TV.

Recording will automatically stop if the signal becomes too weak.

Check the free space on the storage device.

The function will not work if there isn't enough storage space on the USB device.

Before using the recording function, be sure to read all precautions. For more information, refer to "[Before Using the Recording and Timeshift Functions](#)."

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

## Cannot record videos received from an external device or Samsung TV Plus.

The recording function is only available for digital broadcast channels received by the TV. You cannot record videos received from an external device or [Samsung TV Plus](#).

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

## The "Format Device" message appears when the Timeshift or recording function is used.

To use the recording function, the storage device connected to the TV must have been already formatted.

Formatting the storage device deletes all data from it, and the storage device is formatted in NTFS.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

## The recorded files on the TV are not played back on a PC.

The recorded files on the TV can only be played back on the same TV. Those video files cannot be played back on a PC or other TV.

Playback may not work properly if the recording file has a problem. If the problem persists, check the recording file.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

# Apps

When apps aren't working, these steps may help resolve the problem.

## I cannot find the app I want.

To use smart functions, you should connect to a network, agree to the terms and conditions, and log in with your Samsung account. If these settings were not configured during the initial setting process, you can configure Smart Hub settings by running [Apps](#) from the Home Screen.

-  > left directional button >  [Home](#) > [Apps](#)

If Smart Hub settings are complete but the app you want cannot be found on the Home Screen, you can find the app from  [Search](#) or [Apps](#). To add frequently used apps to the Home Screen, run the [Add to Home](#) feature from [Apps](#).

-  > left directional button >  [Home](#) > [Apps](#) > [App Settings](#) > List of installed apps > [Add to Home](#)

## I launched an app, but it's in a different language. How can I change the language?

Languages supported by an app may be different from the TV [Language](#) set in the menu.

The ability to change the language depends on the app's provider. Change the language from the settings menu in the app.

## The app does not work properly. Its image quality is poor.

Check the network connection. When the network speed is slow, the app may not work or its image quality may be poor.

Uninstall and reinstall the app. For more information about app uninstallation, refer to "[Managing installed apps](#)."

The services of your application are not provided by the TV but by the application service provider.

Refer to the Help section on the application service provider's website.

## The Smart Hub Home Screen keeps appearing whenever you turn on the TV.

Turn off the [Start with Smart Hub Home](#) function in [Start Screen Option](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Start Screen Option](#) > [Start with Smart Hub Home](#) [Try Now](#)

# Media Files

When files don't play, this may help resolve the problem.

## Some files are interrupted during playback.

This problem may occur with unsupported files or high-bitrate files. Most files can be played back, but some files may not play smoothly.

## Some files can't be played.

Some files that use an unsupported codec may not be played back.

Make sure that the codec is supported by the TV. For more information, refer to "[Read Before Playing Photo, Video, or Music Files.](#)"

# Voice Assistant Issues

When the Voice Assistant isn't working, these steps may help resolve the problem.

## The microphone is off.

Turn on the microphone switch at the bottom of the TV. Each time the switch is turned on or off, the screen displays a pop-up window showing whether the microphone is turned on or off.

-  If the microphone is turned off, all voice recognition features and some sound features involving the microphone do not work.
-  The position and appearance of the microphone switch may differ depending on the model.
-  This function may not be supported depending on the model or geographical area.

## The voice commands do not work well.

Voice commands may differ depending on the [Voice Assistant](#). Refer to the command examples for each [Voice Assistant](#).

- [Bixby](#):  >  [Discover Bixby](#)
- [Amazon Alexa](#):  >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Amazon Alexa Settings](#) [Try Now](#)

-  This function and Voice Recognition Solution Partner may not be supported depending on the model or geographical area.
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## Bixby/Alexa answers although I did not call it.

The TV may recognize an ambient noise or everyday conversation as a call to Voice Assistant.

Turn off the [Hands-free wake-up](#) function or set the [Wake-Up Sensitivity](#) to [Low](#).

-  >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Bixby Settings](#) > [Voice Wake-up](#)
-  >  [Bixby Settings](#) > [Voice Wake-up](#)

-  This function and Voice Recognition Solution Partner may not be supported depending on the model or geographical area.
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## I spoke "Hi, Bixby/Alexa" but Bixby/Alexa does not answer.

When the TV is far from you or the ambient noise is so loud, the TV may be unable to recognize your voice.

- For best results, you need to be within 10 feet (3-4 m) of your TV. Please look at your TV screen and speak.

Turn on the [Hands-free wake-up](#) function.

-  >  [Bixby Settings](#) > [Voice Wake-up](#) > [Hands-free wake-up](#)

 This function and Voice Recognition Solution Partner may not be supported depending on the model or geographical area.

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## Voice recognition does not work with the Samsung Smart Remote unlike other features. There is no response even if the Voice Assistant button is pressed.

The connection between the remote control and the TV may be lost. Try pairing the remote control with the TV.

Point the Samsung Smart Remote at the front of the TV, and then press and hold the  and  buttons simultaneously for 3 seconds or more.

Also, if the remote control does not work properly or its response is very slow, the battery might be low or dead.

- Charge the remote control by using the USB port (C-type) on the bottom, or turn over the remote to expose the solar cell.
  - You can check remaining battery of Samsung Smart Remote with solar cell in  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Power and Energy Saving](#) > [Available Remote Battery](#). [Try Now](#)

 This function may not be supported depending on the model.

- If the remote control has batteries, replace them with new ones.

## During voice recognition, the heavy load message appears and the function does not work.

Unplug and then plug the TV power cord and then try again after 1 minute and 30 seconds. It may take a while if the voice recognition server is being inspected.

## I want to see weather information of the desired area.

Say with the area name included.

## Other issues

Use these procedures to resolve other issues that may occur in relation to the product.

### The TV is hot.

Watching TV for an extended period of time causes the panel to generate heat.

The heat from the panel is dissipated through internal vents running along the top of the TV.

The bottom, however, may feel hot to the touch after extended use.

Children watching TV need constant adult supervision to prevent them from touching the TV.

This heat, however, is not a defect and does not affect the TV's functionality.

### The TV smells like plastic.

This smell is normal and will dissipate over time.

### The settings are lost after 5 minutes or every time the TV is turned off.

If **Usage Mode** is set to **Retail Mode**, the TV's audio and video settings are automatically reset every 5 minutes.

Change **Usage Mode** to **Home Mode**.

-  > ≡ (left directional button) > ⚙ **Settings** > **All Settings** > **General & Privacy** > **System Manager** > **Usage Mode** > **Home Mode**

 This function may not be supported depending on the model or geographical area.

### The TV is tilted to the side.

Remove the base stand from the TV and reassemble it.

## The stand is wobbly or crooked.

Refer to the Unpacking and Installation Guide and make sure that the stand is assembled correctly.

## I want to know how to attach and remove the TV stand.

For details on how to attach the stand, refer to the Unpacking and Installation Guide.

To remove the stand, follow the attachment steps in reverse order.

The Unpacking and Installation Guide can be downloaded from the Samsung Electronics website at <https://www.samsung.com/support/>.

## A POP (TV's internal banner ad) appears on the screen.

Change [Usage Mode](#) to [Home Mode](#).

-  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Usage Mode](#) > [Home Mode](#)

 This function may not be supported depending on the model or geographical area.

## The screen is off, but I hear noise.

Even when the screen is off, noise may be heard if the product performs tasks in the background. Noise will not be heard after the tasks are completed.

- For example, noise may be heard when SmartThings is operating or the network is reconnected through Wi-Fi

## The TV is making a popping noise.

The expansion and contraction of the TV's outer casing may cause a popping noise.

This does not indicate a product malfunction.

The TV is safe to use.

## The TV is making a humming noise.

Your TV utilizes high-speed switching circuits and high levels of electrical current. Depending on the TV's brightness level, the TV may seem slightly noisier than a conventional TV.

Your TV has undergone strict quality control procedures that meet our demanding performance and reliability requirements.

Some noise coming from the TV is considered normal and is not an acceptable cause for an exchange or refund.

## The TV narrates the screen events in voice-over.

To turn off [Voice Guide](#), move the focus from [Accessibility Shortcuts](#) to [Voice Guide](#) and then press the Select button. You can turn on or off [Voice Guide](#). To run [Accessibility Shortcuts](#), see the following:

- Press and hold the  $\pm$  (Volume) button on your Samsung Smart Remote or Remote Control.

# Diagnosing TV operational issues

You can diagnose issues with your TV and Smart Hub and run reset functions.

## Self Diagnosis

 >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) [Try Now](#)

Check whether the product is displaying images and playing sounds normally. Check whether modules and sensors are working normally. You can also configure settings related to Smart Hub reset.

 Some functions may not be supported depending on the model or geographical area.

- [Power](#)

View information on the power supply history.

- [SW Version Information](#)

Check the currently installed software version, and update the software to the latest version, if necessary.

- [Video Test](#)

Play test videos to check for problems with the screen.

- [Picture Test](#)

Use test photos to check for problems with the screen.

- [Sound Test](#)

Play test sounds to check the sound quality.

- [Remote Control](#)

Check for problems with the Remote Control connection or buttons.

- [HDMI Troubleshooting](#)

Select the HDMI port and check whether the HDMI cable is connected properly.

- [HDMI Signal](#)

Check the signals, signal records and connections of external devices.

- [HDMI-CEC Check](#)

Check for an abnormally operating HDMI-CEC connection.

- **Smart Hub Connection Test**

Check the network connection.

- **Wi-Fi**

Check whether the Wi-Fi module is working normally. The result may appear to be a failure if there is no available access point (AP) in the vicinity.

- **Bluetooth**

Check whether the Bluetooth module is working normally.

- **IoT Module**

Check whether the IoT Module is working normally.

- **Acceleration Sensor**

Check whether the Acceleration Sensor is working normally.

- **Light sensor**

Check whether the light intensity sensor is working normally.

- **Mic Test**

Check whether the microphone module is working normally.

- **Broadcast Signal**

Check the condition of the current broadcast signal.

- **Reset Smart Hub**

Reset the Smart Hub information.



## Cannot select Broadcast Signal in Self Diagnosis.

Verify that the current channel is a digital channel.

**Broadcast Signal** is only available for digital channels.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Broadcast Signal](#)

## Reset Smart Hub

Resets all Smart Hub settings to their factory defaults and deletes all information related to Samsung accounts, linked service accounts, Smart Hub service agreements, and Smart Hub applications.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Reset Smart Hub](#)  
[Try Now](#)

## Reset picture

Resets current picture settings to the default settings.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Picture](#) > [Expert Settings](#) > [Reset Picture](#)  
[Try Now](#)

## Reset sound

Resets current sound settings to the default settings.

-  > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [Sound](#) > [Expert Settings](#) > [Reset Sound](#)  
[Try Now](#)

# Getting Support

Get help directly from Samsung if you have a problem with your TV.

## Getting support through Remote Management

 >  (left directional button) >  **Settings** > **Support** > **Remote Management** [Try Now](#)

After consenting to our service agreement, you can use **Remote Management** to access Remote Support and have a Samsung service technician diagnose your TV, correct problems, and update your TV's software remotely via the web. You can also turn **Remote Management** on and off.

 This function requires a network connection.

## Finding the contact information for service

 >  (left directional button) >  **Settings** > **Support** > **About TV** [Try Now](#)

You can view the address of the Samsung website, the call center phone number, your TV's model number, your TV's software version, Open Source License and other information you may need to get service support from a Samsung call agent or the Samsung website.

 You can also view information by scanning the QR code of your TV.

 You can also start this function by pressing and holding the  button for 5 or more seconds. Continue holding the button until the customer information pop-up window appears.

## Requesting service

 >  (left directional button) >  **Settings** > **Support** > **Device Care** > **Request Support** [Try Now](#)

You can request service when you encounter a problem with the TV. Select the item matching the problem that you encountered, enter the required item, move the focus to **Next**, and then press the Select button. Select **Request Now** > **Send** or **Schedule Appointment** > **Request** > **Send**. Your service request will be registered. The Samsung Contact Center will contact you to set up or confirm your service appointment.

 You must agree to the terms and conditions for the service request.

 This function may not be supported depending on the geographical area.

 This function requires a network connection.

# Accessibility Guidance

Provides a menu and a remote control guide that aid the visually impaired.

## Learn Menu Screen

Once "Learn Menu Screen" is enabled, your TV will tell you the information and features of the menus you select.

## Using the Remote control

You can see the description of the buttons on the Samsung Smart Remote or Remote Control.

 The Samsung Smart Remote may not be supported depending on the model or geographical area.

## Orientation of the Samsung Smart Remote or Remote Control

Hold the remote control with the buttons facing towards you. The side with the button in the upper left is the top of the remote control.

## Description of the Samsung Smart Remote or Remote Control

 The images, buttons, and functions of the remote control may differ with the model or geographical area.

From top to bottom and left to right:

- The  button is at the top left.
- Of the 2 buttons below the  button on the Samsung Smart Remote, the left one is the  button and the right one is the  button.
- There is a small LED (microphone) between the  button and the  button on the Samsung Smart Remote, but it cannot be felt by hand.
- Of the 2 buttons below the  button on the Remote Control that comes with CU6/DU6/CU7/DU7/BEC/BED Series (except for CU77\*\*/DU75\*\*/DU77\*\* model), the left one is the  button and the right one is the  button.

- If you press the  button and then select the numeric/color button and press the down directional button, while viewing a program, the [Recordings](#), [Schedule Manager](#), [Timeshift](#), [Stop](#) (when Record or Timeshift is running), [Info](#), red, green, yellow and blue options appear.
  -  [Record](#) and [Timeshift](#) may not be supported depending on the model or geographical area.
  -  This function may not be supported depending on the geographical area.
- Underneath these 2 buttons are a round button and a large outer circle button. The round button is the Select button, and the large outer circle button consists of 4 directional buttons (up / down / left / right).
- Underneath the directional button are 3 buttons, one on the left, one on the right, and one in the center. The one on the left is the  button and the one on the right is the  button. The round button in the middle is the  button.
- If you press the  button while watching a TV program, the screen you are watching stops and a control bar appears. You can select [Rewind](#), [Play](#), [Pause](#), [Fast Forward](#), [Stop Timeshift](#), [Record](#), [Go to Live TV](#), or [Info](#). You can press the up directional button to go to the playback screen and check the time that the actual broadcast program is running and the timeshift time.
  -  You can use the [Slow Rewind](#) or [Slow Forward](#) functions when you select the [Pause](#) option.
  -  To use Record or Timeshift, you must connect a USB device.
  -  This function may not be supported depending on the model or geographical area.
- Underneath the  button are 2 thin horizontal buttons. These buttons protrude higher above the surface than the other buttons on the remote control. The one on the left is the volume button and the one on the right is the channel button. Push up from beneath or down from above to use these as rocker buttons to change the channel or volume.
  - Briefly press the  $\pm$  (Volume) button to mute the sound.
  - Press and hold the  $\pm$  (Volume) button to open the [Accessibility Shortcuts](#) menu.
  - Briefly press the  $\wedge/\vee$  (Channel) button to open the [Guide](#).
  - Press and hold the  $\wedge/\vee$  (Channel) button to open the [Channel List](#).
  -  This function may not be supported depending on the model or geographical area.

# Using the Accessibility Menu

View how to use the Accessibility functions and descriptions on their functions.

 This function may not be supported depending on the model or geographical area.

## Running the Accessibility Shortcuts menu

You can turn on or turn off the accessibility functions such as [Voice Guide](#), [Audio Description](#), [Audio Subtitles](#), [Picture Off](#), [Magnification](#), [High Contrast](#), [Relumino Mode](#), [Zoom Menu](#) and [Text, Grayscale, Color Inversion, SeeColors Mode, Caption, Sign Language Zoom, Sign Language Guide, Slow Button Repeat, Auto Menu Sort](#), and you can move to the [Learn TV Remote](#), [Learn Menu Screen](#), [Learn Gesture Functions](#), [Multi-output Audio](#), and [Accessibility Settings](#) pages.

 The menu name may differ depending on the model.

- Samsung Smart Remote / Remote Control

On the Samsung Smart Remote or Remote Control, there are 2 thin horizontal rocker buttons next to each other located slightly below the middle of the remote. The one on the left is the volume button. Press and hold the volume button to open the [Accessibility Shortcuts](#) menu.

Even if the [Voice Guide](#) is set to [Off](#) or muted, when you press and hold the volume button, the voice guide for [Accessibility Shortcuts](#) is enabled.

## Running the Accessibility menu functions using the General menu

 >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Accessibility](#)

[Try Now](#)

You can also go to the [Accessibility](#) menu from the TV settings menu. This provides more options, for example, to change the speed of Voice Guide.

The TV will not verbalize this menu unless [Voice Guide](#) is already turned on.

1. Press the  button.
2. Press the left directional button to navigate to  [Menu](#), and then press the up and down directional buttons to navigate to  [Settings](#).
3. Press the Select button, and press [All Settings](#) to open the menu. Press Select to load the TV's Set menu.
4. Press the down directional button to reach [General & Privacy](#), and then press the Select button to open this menu.

5. Place the focus on [Accessibility](#), and press the Select button to open the menu.
6. The menu will appear with [Voice Guide Settings](#) as the first selection. Highlight [Voice Guide Settings](#), and then press the Select button.
7. A menu appears with the options to change [Voice Guide](#), [Volume](#), [Speed](#), [Pitch](#), and [TV Background Volume](#).
8. Select the menu using the directional buttons, and then press the Select button.

 The menus are activated when [Voice Guide](#) is on.

## Running the Accessibility menu functions using Bixby

 This function is available only if Voice Assistant is set to Bixby. (🏠 > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Voice Assistant](#)) [Try Now](#)

 Bixby may not be supported depending on the model or geographical area.

To use Bixby, the TV must be set up and tuned and must be connected to the network. You can connect the TV to the network during the initial setup or do it later through the settings menu.

There are many commands you can say to control the TV. These can be used together with [Voice Guide](#) to give you voice input and voice output. You can use the Samsung Smart Remote but the TV must be connected to the network.

To speak a command, press and hold the  button (located near the top right of the Samsung Smart Remote, directly right the  button) and say the command, and then release the  button. The TV will confirm the command.

For example you can:

- Turn Voice Guide on

Press the  button on the Samsung Smart Remote, and then say "**Voice Guide on.**"

- Turn Audio (Video) Description on

Press the  button on the Samsung Smart Remote, and then say "**Video Description on**" or "**Audio Description on.**"

- Turn High Contrast on

Press the  button on the Samsung Smart Remote, and then say "**High Contrast on.**"

 The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## Learning about the Accessibility menu functions

- **Voice Guide Settings**

Provides voice guides to make it easier for the visually impaired to use the TV. Voice guide supports basic operations such as changing channels and adjusting the volume, provides voice descriptions about the current broadcast and the following broadcast, and offers guidance on setting up Scheduled Viewing events. The feature also provides voice descriptions on [Internet](#), [Search](#), and other smart services.

Move to [Voice Guide](#) and press the Select button to enable/disable the feature.

- **Audio Description**

This feature provides commentary about what's happening in the scene as assistance for the visually impaired.

However, the feature must be supported by the broadcast you are watching.

- **Audio Subtitles Settings**

This feature is intended for visually impaired viewers and audibly reads captions displayed on video content. You can change the volume or speed of audible captions.

 This function may not be supported depending on the model or geographical area.

- **Picture Off**

Turn off the TV screen and provide only sound to reduce overall power consumption. When you press a button on the remote control other than Volume and Power while the screen is off, the TV screen turns back on.

- **Magnification**

Enlarge the screen to make the picture or text bigger. You can adjust the zoom level or move the zoom area by following the displayed instructions.

 This function may not be supported depending on the model or geographical area.

- **High Contrast**

To display all menus with an opaque black background and a white font, providing maximum contrast.

 If [High Contrast](#) is on, some [Accessibility](#) menus are not available.

- **Relumino Mode Settings**

This feature increases the contrast and brightness of the screen and emphasizes the outlines of images, so that viewers with low vision can see the screen more clearly.

This feature is only available when the input signal is TV or HDMI. It may not be available for some videos.

 This input signal may differ depending on the model and geographical area.

- **Together Mode**

Shows the screen displayed when [Relumino Mode](#) is turned on and the screen displayed when the mode is turned off, side by side simultaneously.

 This function may not be supported depending on the model or geographical area.

- [Zoom Menu and Text](#)

You can enlarge important elements on the menu such as the names of programs.

- [Grayscale](#)

You can change the color of the TV screen to black and white to sharpen blurred edges caused by colors.

 If [Grayscale](#) is on, some [Accessibility](#) menus are not available.

 This function may not be supported depending on the model or geographical area.

- [Color Inversion](#)

You can invert the colors of the text and background displayed on the TV screen to make it easier to read the text.

 If [Color Inversion](#) is on, some [Accessibility](#) menus are not available.

 This function may not be supported depending on the model or geographical area.

- [SeeColors Mode](#)

This feature helps users with color blindness experience richer colors.

Use this feature to customize the colors for your unique viewing conditions, to experience richer colors on the screen.

 When [SeeColors Mode](#) is in use, some menus are disabled.

 This function may not be supported depending on the model.

- [Learn TV Remote](#)

Learn the names and functions of the buttons on remote control. On this screen, pressing the power button (top left button) will turn off the TV, but when any other button is pressed the TV will say the button name and briefly tell what that button does. This teaching mode helps you to learn the location and operation of the buttons on the remote without affecting normal TV operation. Press the  button twice to exit [Learn TV Remote](#).

- [Learn Menu Screen](#)

Learn the menus on the TV screen. Once enabled, your TV will tell you the information and features of the menus you select.

- **Caption Settings**

You can view the caption in programs that provide broadcast captions.

- ✎ Some functions may not be supported depending on the model or geographical area.
- ✎ When watching a channel on an external device such as a set-top box and cable box, turn on the caption function on the device. For more information, contact your service provider.

- **Auto Caption Position**

Automatically adjust the caption position.

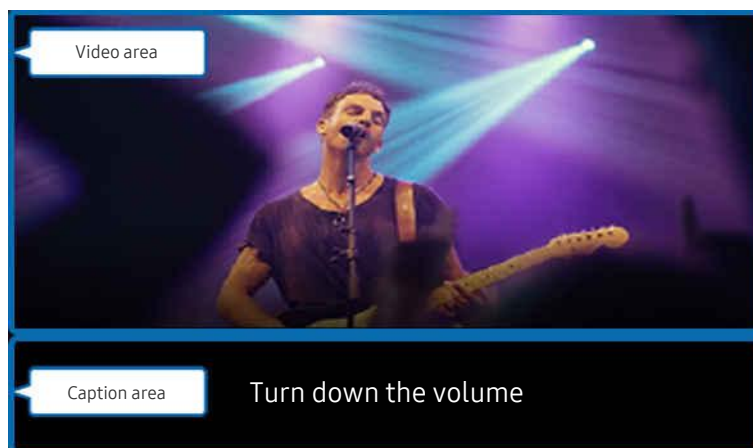
- **Separate Closed Caption**

You can see the caption separated from the broadcast image. The captions from the broadcaster are classified into \*open caption and \*closed caption. Two types of captions can overlap when both are used.

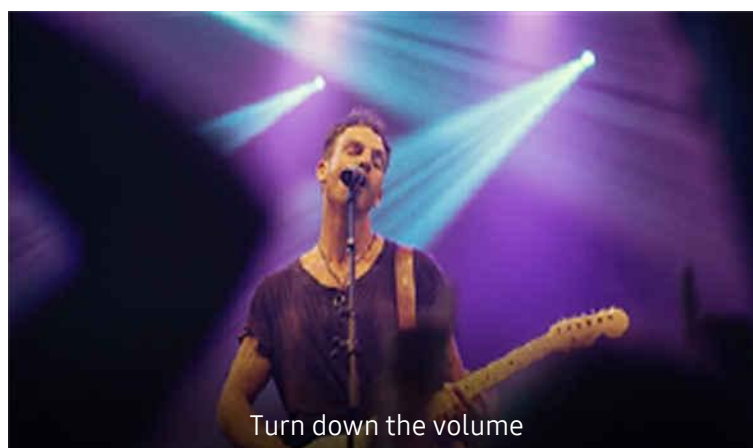
- ✎ This feature is enabled when Digital Closed Caption is supported.
- ✎ \*open caption: Included in content. You cannot turn on or off its display.
- ✎ \*closed caption: You can turn on or off its display.

At this time, you can use this function to separate the caption from the broadcast image, which allows you to see the closed caption without interruption.

- On: Displays the screen with a separate caption area.



- Off: Displays the caption on the screen.



- **Caption Language**

Change caption language.

- **Caption Mode**

You can select a desired caption mode from the list.

- **Digital Caption Options**

You can set the caption display details.



The **Position** function is available only in the programs that provide captions. Your TV supports the caption from the broadcaster. Using this function, the caption can be positioned on a desired location. It can be used by the hearing impaired for convenience.

- **Sign Language Zoom Settings**

You can zoom in the sign language screen when the program you are watching provides it. Set **Sign Language Zoom** to **On** and then adjust the window's position and aspect ratio under **Edit Sign Language Zoom**.



This function may not be supported depending on the model or geographical area.

- **Sign Language Guide Settings**

Provides a description of menu items with sign language.

- **Multi-output Audio**

You can turn on both the TV speaker and Bluetooth headphone designed for the hearing impaired at the same time. The hearing impaired can then set the volume of their Bluetooth headphone higher than the volume of the TV speaker without affecting the volume of the TV speaker, allowing both the hearing impaired and their families to listen to the TV at comfortable sound levels.



This function may not be supported depending on the model or geographical area.

- **Remote Button Repeat Settings**

You can configure the operation speed of the remote control buttons so that they slow down when you continually press and hold them.

- **Auto Menu Sort**

Automatically sorts your frequently used menu items.

# Using the TV with Voice Guide on

Turn on Voice Guide that describes the menu options aloud to aid the visually impaired.

## Changing channel

There are 3 ways to change the channel. Every time you change channels, the new channel details will be announced. The ways to change the channel are below.

- **Channel List**

Press and hold the  $\wedge/\vee$  (Channel) button to open the **Channel List**. Use the up or down directional button to move to a channel and press the Select button.

- $\wedge/\vee$  (Channel) button

Of the 2 buttons that protrude from the center of the Samsung Smart Remote or Remote Control, the right one is the  $\wedge/\vee$  (Channel) button. Push up or pull down the  $\wedge/\vee$  (Channel) button to change the channel.

- Number button

Use the  or  button on the Samsung Smart Remote or Remote Control to open the virtual numeric pad, enter a number, and then select **Done**.

## Using on-screen number entry via the Samsung Smart Remote or Remote Control

Use the virtual numeric pad to enter numbers (e.g., to enter a channel number or to enter a PIN).

Press the  or  button on the Samsung Smart Remote or Remote Control and the virtual numeric pad with 2 rows appears on screen. Voice Guide speaks “**virtual numeric pad, 6**” which indicates that the number strip is on screen and the focus is on the number 6. This strip has the following buttons:

- In the top row, a list of Most Watched Channel is shown.
- Press the  or  button: On the bottom row: From the far left: **1, 2, 3, 4, 5, 6, 7, 8, 9, 0, -, Delete**

 The options that you can select in the virtual numeric pad may vary depending on the viewing mode.

Use the left and right directional buttons to move along the row, and then press the Select button to choose the numeric pad. When you have finished selecting all the numbers you need (for example, 123), press the directional button to move to the **Done** option, and then press the Select button to finish.

When entering a channel number, you can enter the number, and then select the **Done** option on the top row or you can enter the channel number and wait. After a short while, the channel will change and the virtual numeric pad will disappear from the screen.

## Changing volume

Use the **+/-** (Volume) button on the left to change the volume. Every time you change the volume, the new volume level will be announced.

- Samsung Smart Remote / Remote Control

Of the 2 buttons that protrude from the center of the Samsung Smart Remote or Remote Control, the left one is the **+/-** (Volume) button. Push up or pull down the **+/-** (Volume) button to change the volume.

## Using program information

When watching TV, press the Select button to view program information which then appears at the top of the screen. Voice Guide will say program subtitles or audio descriptions if they are available. To view more detailed program information, press and hold the Select button. Voice Guide will say more details such as a synopsis of the program.

Press the left or right directional button to see what you can watch next on the same channel. Press the up or down directional button to move to other channels and see which programs are currently being broadcast on them.

Press  to go back or close the program details.

 This function may not be supported depending on the geographical area.

## Using the guide

See an overview of each channel's program lineup.

When you want to know the program information for each channel while watching a broadcast program, press the  $\wedge/\vee$  (Channel) button on the Samsung Smart Remote or Remote Control. Use the directional buttons to view the program information.

You can see the daily program schedules for each channel and program information in the [Guide](#). You can select programs to schedule for viewing or recording.

You can also open the [Guide](#) using Bixby. Press and hold the  button on your Samsung Smart Remote, and then say "Guide."

-  This function may not be supported depending on the model or geographical area.
-  The information in the [Guide](#) is for digital channels only. Analog channels are not supported.
-  If the [Clock](#) is not set, the Guide is not provided. Set the [Clock](#) first. ( >  >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)) [Try Now](#)
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

If you need to set the clock again, follow the steps below.

1. Press the  button and press the left directional button on the remote control.
2. Press the down directional button to move to the  [Settings](#).
3. Press the Select button, and press the right directional button to move to the [All Settings](#).
4. Press the Select button to open the TV's [All Settings](#) menu.
5. Use the up and down directional buttons to move to the [General & Privacy](#) menu, and then press the Select button.
6. Use the up and down directional buttons to move to the [System Manager](#) menu, and then press the Select button.
7. Select the [Time](#) menu, and then press the Select button.
8. Select the [Clock](#) menu, and then press the Select button.
9. Select the [Clock Mode](#) menu, press the Select button, and then select [Auto](#) or [Manual](#).

 If you select [Manual](#), you can move to the [Date](#) or [Time](#) menu below to set the time or date.

When you open the [Guide](#), a table grid of channels and programs is displayed. In the top rows, the selected filter type and the time are shown. Each row has a channel name on the left and programs on that channel on the right.

In the [Guide](#), use the up and down directional buttons to move between channels and use the left and right directional buttons to move between programs at different times within a channel.

You can also use the  or  button to enter a channel number and go to that channel directly. You can use the  button to move to the program currently broadcasting.

When you move the focus to a program, you will hear detailed information about the selected program. When you move the focus to a different channel, you will hear the channel name and number, and the program details. If you move to a different day, you will hear the day announced for the first program you reach on that day. The day is not repeated, so if you are not sure what the day is, you can move forwards and backwards 24 hours and then the day will be announced.

## To view a program on now

In the [Guide](#), move to the program currently broadcasting, and then press the Select button to go to live TV on the selected channel and program.

## Other options in the guide

In the [Guide](#), move to a broadcast scheduled program, and then press the Select button. A pop-up menu listing the functions below appears.

Use the up and down directional buttons to move within this menu, and then press the Select button to choose an item. Press  to close the menu and go back to the [Guide](#).

 For the program you are currently watching, press the Select button.

- **Record**

You can record the program that you are currently watching or a program on another channel.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

- **Stop**

You can stop the recording function that is currently running.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

- **Edit Recording Time**

You can change the start and end times of scheduled program recordings.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

- **Schedule Viewing**

You can schedule the viewing of a broadcast scheduled program.

- **Schedule Recording**

You can schedule recording of a broadcast scheduled program.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "Recording."

- **Cancel Scheduled Viewing**

You can cancel your scheduled viewings.

- **Cancel Scheduled Recording**

You can cancel your scheduled recordings.

 This function is not available in the U.S.A. and Canada.

 This function may not be supported depending on the model or geographical area.

- **View Details**

You can see the detailed information on the selected program. The information may differ with the broadcast signal. If the information is not provided with the program, nothing appears.

Press the Select button on the **View Details** option. This will open the details pop-up window for that program which will display a synopsis. The details pop-up window contains detailed information and the **OK** option. After reading the detailed information, press the Select button on the remote control to close the pop-up window.

# Using Schedule Viewing

Configure the TV to show a specific channel or program at a specific time and date.

 This function may not be supported depending on the model or geographical area.

The  icon appears next to programs that have been configured for a schedule viewing.

 To set up a schedule viewing, you must first set the TV's clock (  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [System Manager](#) > [Time](#) > [Clock](#)). [Try Now](#)

## Setting up a schedule viewing

You can set up a schedule viewing on two screens.

- **The Guide Screen**

On the [Guide](#) screen, select a program you would like to view, and then press the Select button. Select [Schedule Viewing](#) on the pop-up menu that appears.

- **The Program Info Screen**

Press the Select button while watching the TV. The Program Info window appears. Select a broadcast scheduled program by using the left or right directional buttons, and then press the Select button. You can schedule a reminder to watch the program by selecting [Schedule Viewing](#).

## Cancelling a scheduled viewing

You have 2 ways to cancel a scheduled viewing.

- Cancelling a scheduled viewing from the [Guide](#)

1. Press the  (channel) button to access the [Guide](#).
2. Move to the program to cancel the viewing schedule, and press the Select button.
3. Move to [Cancel Scheduled Viewing](#), and then press the Select button.
4. When a pop-up message asking you to cancel the selected scheduled viewing appears, select [Yes](#). The scheduled viewing is canceled and the [Guide](#) screen appears.

- Cancelling a scheduled viewing from [Schedule Manager](#) or [Recordings](#)

1. On the remote control, press the  or  button.
2. Use the directional buttons to move to the control pad.
3. Press the Select button to open [Schedule Manager](#) or [Recordings](#).

 If the TV supports the [Recordings](#) function, press the directional buttons to move to [Schedules](#).

4. Press the up directional button to move to the [Schedules](#) option.
5. Use the down directional button to move to the list of programs scheduled to view.
6. Use the right directional button to move to the [Delete](#) option, and then press the Select button to delete the selected item.

 This function may not be supported depending on the model or geographical area.

# Using the Channel List

See how to list the channels available on your TV.

Using [Channel List](#), you can change the channel or check programs on other digital channels while watching TV.

Press and hold the  $\wedge/\vee$  (Channel) button to open the [Channel List](#).

 The focus is on the channel you are currently watching, and the name and number of the channel, along with the program title, are displayed.

Use the up and down directional buttons to move within the channel list (or use the  $\wedge/\vee$  (Channel) button to go up and down a page at a time). You can also use the  or  button to enter a channel number and go to that channel directly.

Press the left directional button in the [Channel List](#) to move to the Category List. Use the up and down directional buttons to move within this list. Press the Select button to choose a category you want from the Category List. The Category List contains [All Channels](#), [Favorites](#), [Samsung TV Plus](#), and [Air](#) or [Cable](#). Use the up and down directional buttons to move to a channel you want to view, and then press the Select button.

- [Air](#) or [Cable](#)

To select [Air](#) or [Cable](#), move the focus to [Air](#) or [Cable](#), and then press the Select button. [Air](#) is suitable for homes equipped with separate, over-the-air antennas. [Cable](#) is suitable for homes that subscribe to a local cable-service, but do not have a cable box. You do not need to use this function if your TV is connected to a cable box or satellite box.

 This function may not be supported depending on the incoming broadcast signal.

- [Edit Channels](#)

Edit the channels stored on your TV.

- [All Channels](#)

Displays the channels that have been automatically searched.

 These are the channels your TV will receive either over the air if your TV is set to [Air](#) or over cable if your TV is set to [Cable](#). See [Air](#) or [Cable](#) below.

- [Samsung TV Plus](#)

While the TV is connected to the network, you can watch popular programs or highlights for each theme through a virtual channel at any time. As with regular channels, the TV provides the daily program schedules for [Samsung TV Plus](#).

 This function may not be supported depending on the model or geographical area.

- [Genre](#)

Select a genre to sort and display specific channels to suit your preferences.

 This function may not be supported depending on the model or geographical area.

- [Favorites](#)

Displays [Favorites](#), [My List 1](#) to [My List 4](#). Use the up and down directional buttons to move between the lists of favorites. Highlight the one you want, and then press the Select button. The channel list will now show only the channels in this list.

# Recording

Recording a program to an external hard drive connected via USB.

-  This function is not available in the U.S.A. and Canada.
-  This function may not be supported depending on the model or geographical area.
-  Read all precautions before using the recording feature. For more information, refer to "[Before Using the Recording and Timeshift Functions](#)."

## Using the instant and schedule recording options from the guide screen:

To record a program that is on now, open the Guide by pressing the  $\wedge/\vee$  (channel) button, move to the program, and then press the Select button. You will get a pop-up menu. Use the up and down directional buttons to move to **Record**. Press the Select button to record the program. You will be returned to the program guide. Recording automatically ends at the time when the program ends.

To stop recording, press the down directional button while the program being recorded is displayed. The control bar appears. Move the focus to **Stop Recording**, and then press the Select button. When a pop-up window appears, select **Stop**.

To record a program that is on later, move to the program in the **Guide**, and then press the Select button. You will get a pop-up menu. Use the up and down directional button to move within this menu. Move to the **Schedule Recording**, and then press the Select button. You will hear a message saying the program has been set to record and then you will be returned to the program guide.

The  icon is placed visually next to the program title to show it is set to record. To find out if a program is set to record or to cancel a scheduled recording, press the Select button on the program. If it is already set to record, then the option on the menu will be **Cancel Scheduled Recording**. You can press the Select button to cancel the scheduled recording or just press the  button to go back to the program guide without cancelling the recording.

## Recording the program you are watching

To display a menu for recording a program or starting the Timeshift function, press the  button twice or press the  button while watching the program. You can select the following functions on the menu:

- **Record**  
Immediately starts to record the program you are watching.
- **Timeshift**  
Starts the Timeshift function.
- **Stop**  
Stops the recording or the Timeshift function that is running.
- **Info**  
Displays the details about the program you are watching.

## Scheduling recording from the program info window

Press the Select button while viewing a program to display the program info window. In the program info window, use the left and right directional buttons to select a broadcast scheduled program, and then press the Select button. To schedule a recording for the program, select **Schedule Recording**.

## Changing the recording time

When recording a live program you can specify how long you want to record for.

Press the down directional button to display the control bar at the bottom. Press the left or right directional buttons to move to **Edit Recording Time**, and then press the Select button. A slider scale appears and you will hear the recording time currently set. Use the left and right directional buttons to change the time, and then press the Select button. You will hear a menu that gives information about the recording time. To return to the program you are watching, press the  button on the remote.

 The maximum recording time differs depending on the capacity of the USB device.

## Viewing recorded programs

1. On the remote control, press the  or  button.
2. Use the directional buttons to move to the control pad.
3. Select either [Schedule Manager](#) or [Recordings](#) to access the [Recording & Schedule Manager](#) screen.

To play a program, use the up and down directional buttons to move between program titles. Press the Select button to play the program or press the right directional button to move to a list of options. Use the up and down directional buttons to move between the options in this list. You can play, remove, delete the program, or view the program details.

Select the [Play](#) option to play the program. The program will start. If you have watched part of this program before, you will get a pop-up menu on screen allowing you to [Play](#) (from start), [Resume](#) (from where you left off), or [Cancel](#). Use the left and right directional buttons to move to the required option, and then press the Select button.

 This function may not be supported depending on the model or geographical area.

## Deleting a recorded program

You can delete any recorded program.

1. Go to the list of [Recordings](#) to delete a recorded program.
2. Use the up and down directional buttons to move to the recording you want to delete.
3. Press the right directional button to move to a list of 3 options.
4. Press the down directional button to move to the [Delete](#) option, and then press the Select button.

 You will be asked if you want to remove the selected item.

5. Press the left directional button to move to the [Delete](#) button, and then press the Select button to delete the program title.

 The program will be deleted and you will be returned to the list of [Recordings](#).

# Using Smart Hub

Learn how to use Smart Hub to access apps, games, movies, and more.

## Smart Hub

Use a variety of Smart Hub content offered by your Samsung TV.

-  Some Smart Hub services are for pay services.
-  To use smart functions, you should connect to a network, agree to the terms and conditions, and log in with your Samsung account.
-  Some Smart Hub features may not be supported depending on the service provider, language, or geographical area.
-  Smart Hub service outages can be caused by disruptions in your Internet service.

Press the  button. You are redirected to the Home Screen of the content you are currently using. Press the left directional button, and try moving the focus to other items.

Use a variety of Smart Hub content, as follows: [Samsung Account](#), [Search](#), [Ambient](#) or [Art](#), [Daily+](#), [Game](#), [Home](#), [Menu](#), [Privacy Choices](#)

-  Supported Smart Hub content may vary depending on the model and geographical area.

## Using the Smart Hub Home Screen

On the leftmost part of the Smart Hub Home Screen is the static menu listed. You can quickly and easily use the listed menu items to access the main TV settings or external devices, search, and apps.

- [Samsung Account](#)

Go to the [Samsung Account](#) screen to create a new account or sign out of your account.

-  For more information, refer to "[Using a Samsung account](#)."

-  [Search](#)

Search for channels, programs, movies, and apps offered by Smart Hub.

-  To use the Search service, make sure the TV is connected to a network.
-  This function may not be supported depending on the model or geographical area.

-  [Ambient](#)

When the TV is not being used, set your TV to display content that you desire such as the Time or Weather.

To return to TV mode from [Ambient](#) mode, press  > the left directional button >  [Home](#). Press the  button to turn off the TV.

-  This function may not be supported depending on the model or geographical area.
-  For more information, refer to "[Using Ambient Mode](#)."

-  **Art**

When you are not watching TV or when the TV is turned off, you can use the **Art** mode function to edit image contents such as artworks and photos, or to display the content.

 This function is supported only in The Frame.

 For more information, refer to "[Using Art Mode.](#)"

-  **Daily+**

Offers a variety of practical apps, including a home workout app, video chat app and remote medical service app, allowing you to conveniently experience different lifestyles at home.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[About the Daily+ Home screen.](#)"

-  **Game**

Play games from the TV screen by connecting a Controller to the TV. Configure settings to optimize the Controller and audio device for playing games.

 This function may not be supported depending on the model or geographical area.

 For more information, refer to "[Using Samsung Gaming Hub.](#)"

-  **Home**

View a variety of TV programs. Install various apps offered by Smart Hub, such as video, music and sports apps, and use the apps from the TV.

 For more information, refer to "[Using the Home Function.](#)"

-  **Menu**

Manage external devices connected to the TV, and configure settings for various functions available on the TV.

 For more information, refer to "[About the Menu Home Screen.](#)"

-  **Privacy Choices**

From your TV, easily manage the privacy policy regarding services related to Smart Hub and verify how personal information is protected.

 To use Smart Hub, you must agree to the Smart Hub service agreement and the collection and use of personal information. Without giving consent, you cannot use the additional features and services. You can view the entire text of the [Terms & Privacy](#) by navigating to  >  (left directional button) >  [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Terms & Privacy](#). [Try Now](#)

 If you want to stop using Smart Hub, you can cancel the agreement. To cancel the Smart Hub service agreement, select [Reset Smart Hub](#) ( >  (left directional button) >  [Settings](#) > [Support](#) > [Device Care](#) > [Self Diagnosis](#) > [Reset Smart Hub](#)). [Try Now](#)

 This function may not be supported depending on the model or geographical area.

# Launching the User guide

Open the user manual embedded in your TV.

 >  (left directional button) >  [Settings](#) > [Support](#) > [Open User guide](#)

You can view the embedded User guide containing information about your TV's key features.

 Alternatively, you can download a copy of the User guide from Samsung's website (<https://www.samsung.com>).

 Words in blue (e.g., [Internet](#)) indicate a menu item.

The User guide's Home Screen contains 1 row of menu icons. Use the left and right directional buttons to move within a row. Press the Select button to open the section you want to read.

 You can use the directional buttons on the remote control to use the functions on the top such as [Search](#), [Sitemap](#), and [Index](#).

The User guide contains a section called "Learn TV Remote" in "Accessibility Guidance". This is particularly useful for people who cannot easily see the buttons on the control or who are not clear what each button does. When you are viewing this section of the User guide, pressing the buttons on the remote control will not affect the TV.

## Using Bixby

[Set Voice Assistant to Bixby. A guide to using Bixby to control your TV.](#)

To use Bixby, your TV must be connected to the network and you must use the microphone on your Samsung Smart Remote.

To use Bixby, press and hold the  button on the Samsung Smart Remote, say a command into the microphone on the remote, and then release the button to run Bixby.

-  This function may not be supported depending on the model or geographical area.
-  The existing functional specifications may be changed if Bixby is updated.
-  This function is available only if Voice Assistant is set to Bixby. (🏠 > ≡ (left directional button) > ⚙️ [Settings](#) > [All Settings](#) > [General & Privacy](#) > [Voice](#) > [Voice Assistant](#)) [Try Now](#)
-  The supported language may differ depending on the geographical area.
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.

## Running Bixby

Press and hold the  button on the Samsung Smart Remote. Bixby is activated in the listening mode, the Bixby icon appears at the bottom of the TV screen. Say a command, and then release the button. The TV provides feedback on how it understands the command, and then performs the commanded task.

-  If the TV does not understand the command, try again with more precise pronunciation.
-  This function may not be supported depending on the model or geographical area.
-  You can find a detailed description of the voice commands at [Discover Bixby](#). Press the  button. The  icon appears at the bottom right of the screen. Press the Select button to go to the [Discover Bixby](#) screen.
-  The images, buttons, and functions of the Samsung Smart Remote may differ with the model or geographical area.