SAMSUNG

E-MANUAL

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Model_____ Serial No._____

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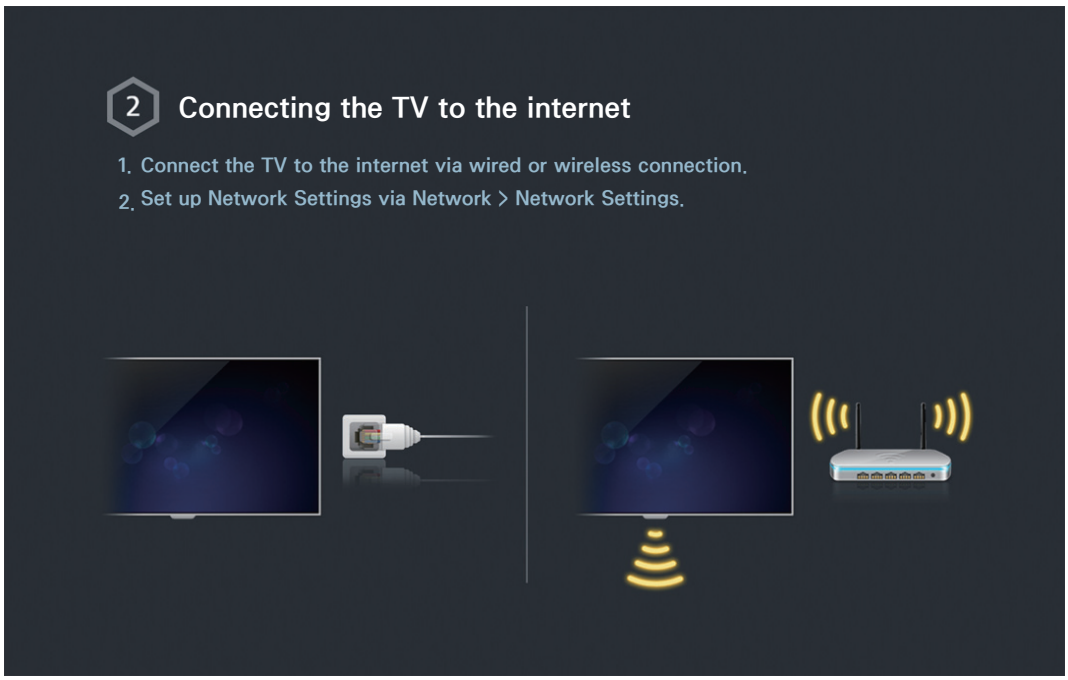
Using the Smart TV



3 Setting up Smart Hub

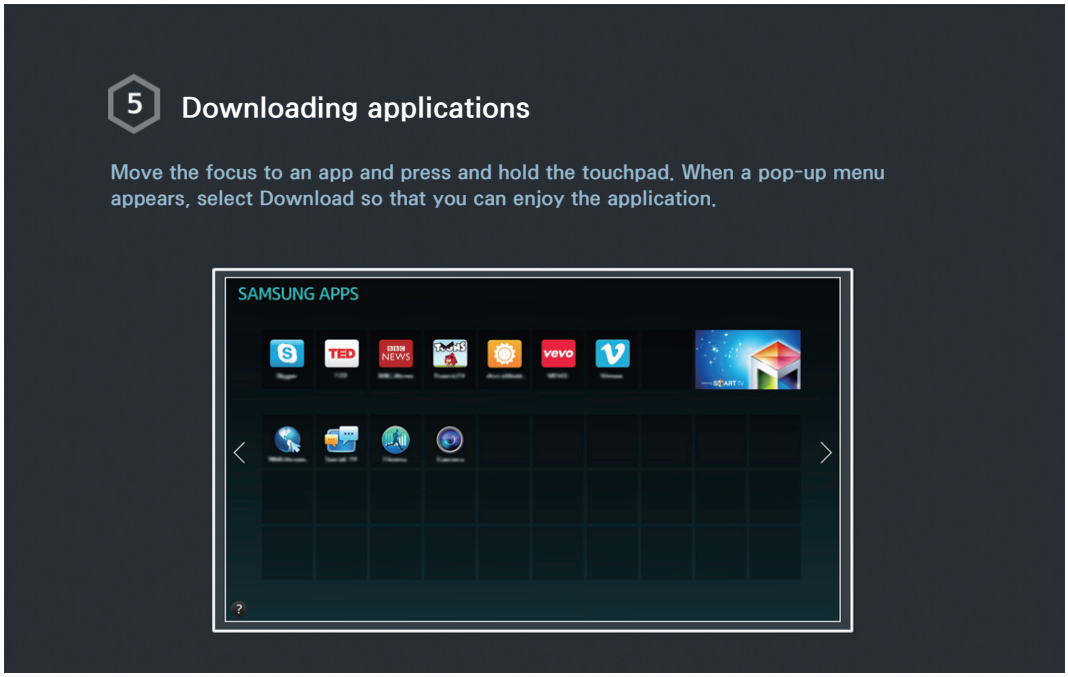
Smart TV services are available on the 5 Smart Hub panels. Before using the Smart Hub, set up the area, and service provider.

You can enjoy various services that Samsung has got to offer by following the directions on the screen.

4 Using Smart Hub

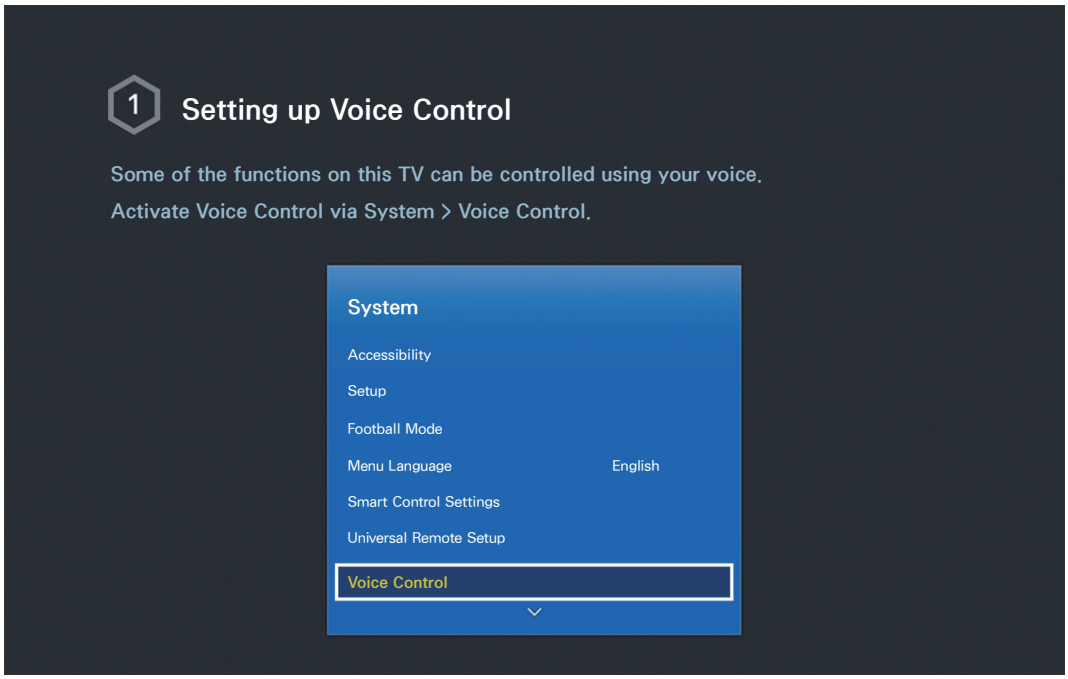
Smart Hub is the heart of this Samsung Smart TV. It is divided into 5 panels which are shown at the top of the Smart Hub screen. You can access On TV, FILMS AND TV SHOWS, Games, MULTIMEDIA, and SAMSUNG APPS.

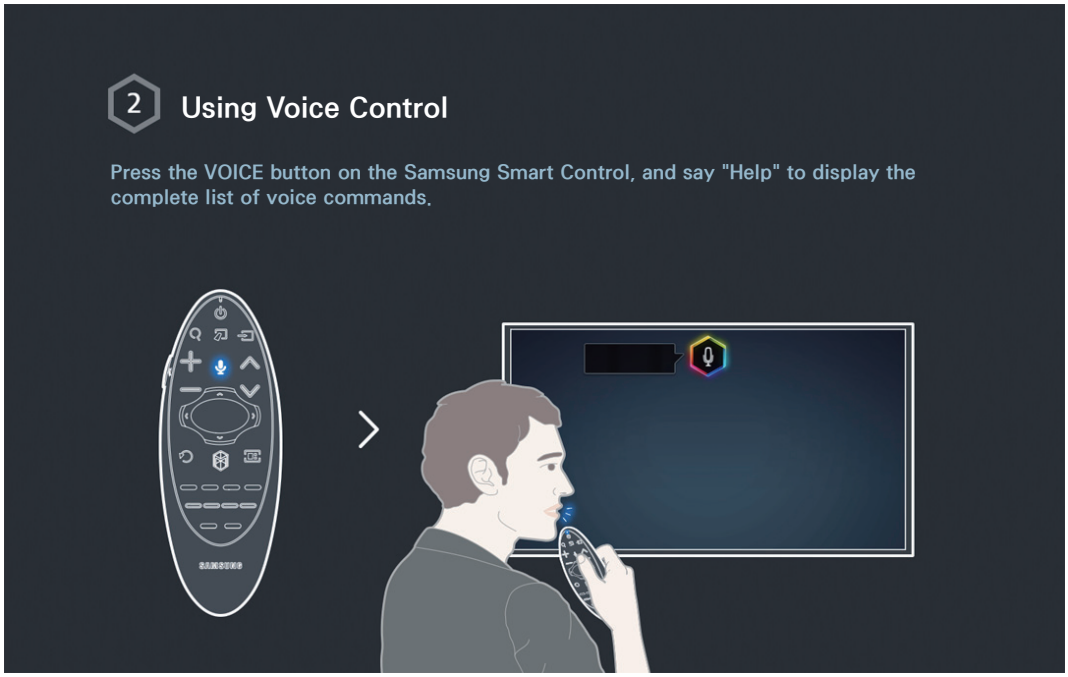
Go to Smart Hub > Apps and download applications from the Samsung Smart TV.



For more information, refer to "Smart Hub".

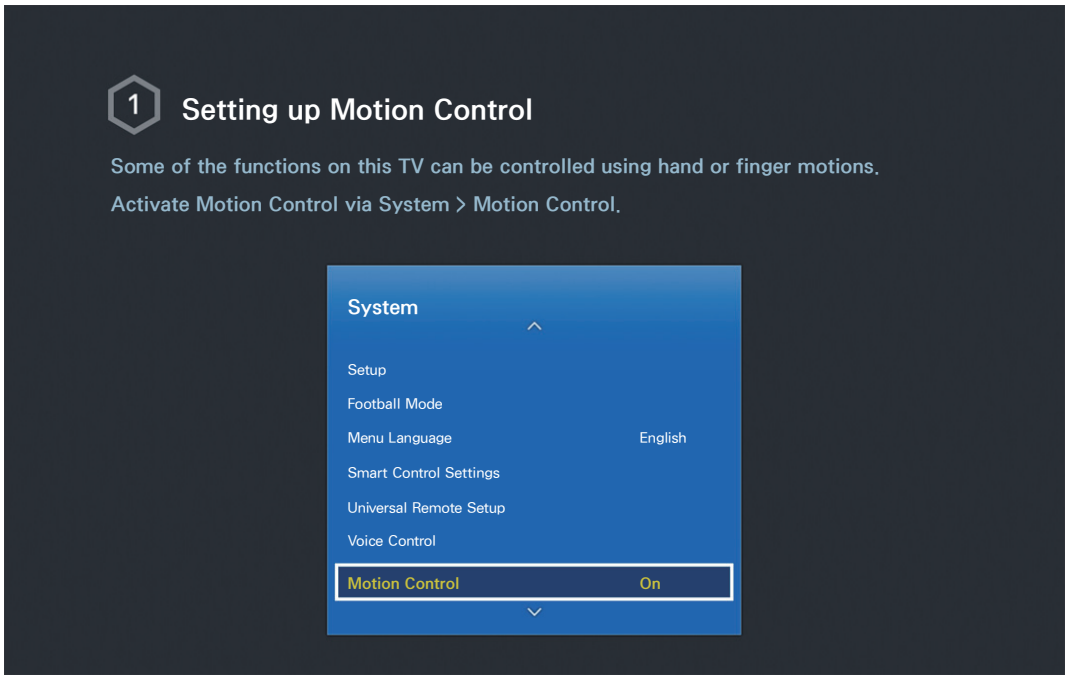
Using Voice Control

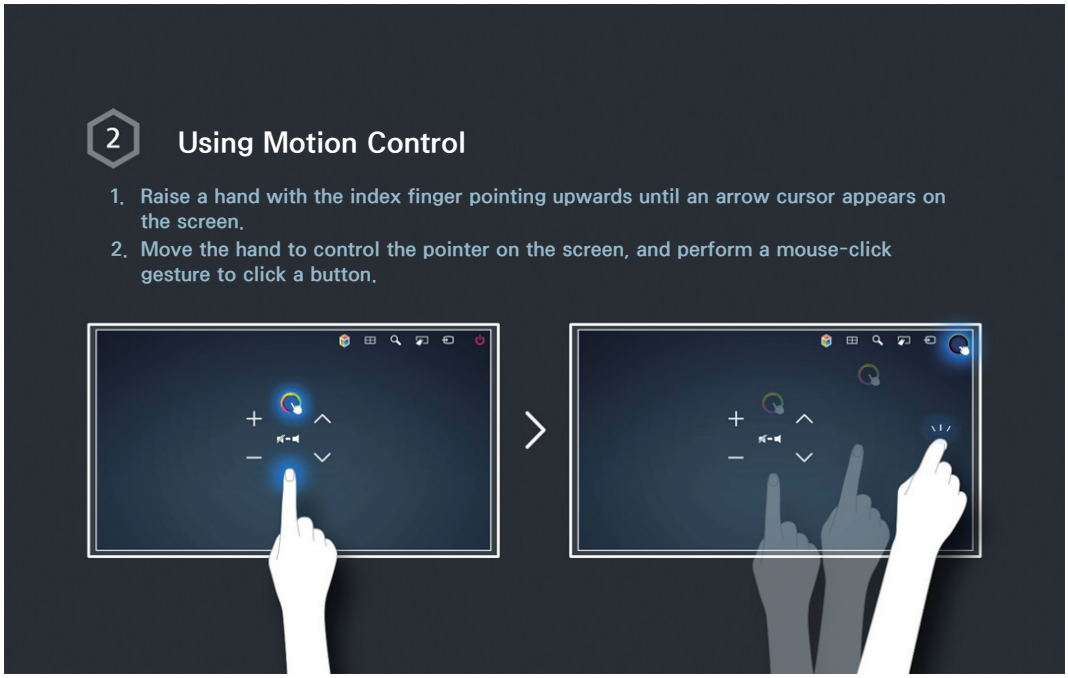




For more information, refer to "TV Control using your Voice".

Using Motion Control





For more information, refer to "TV Control using Motions".

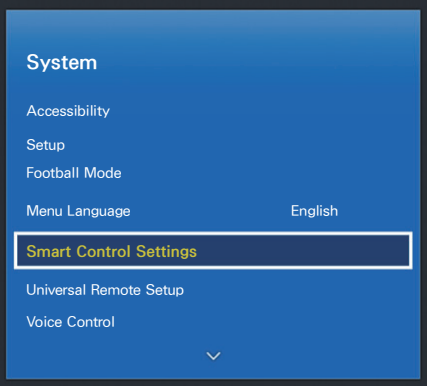
Using the Samsung Smart Control

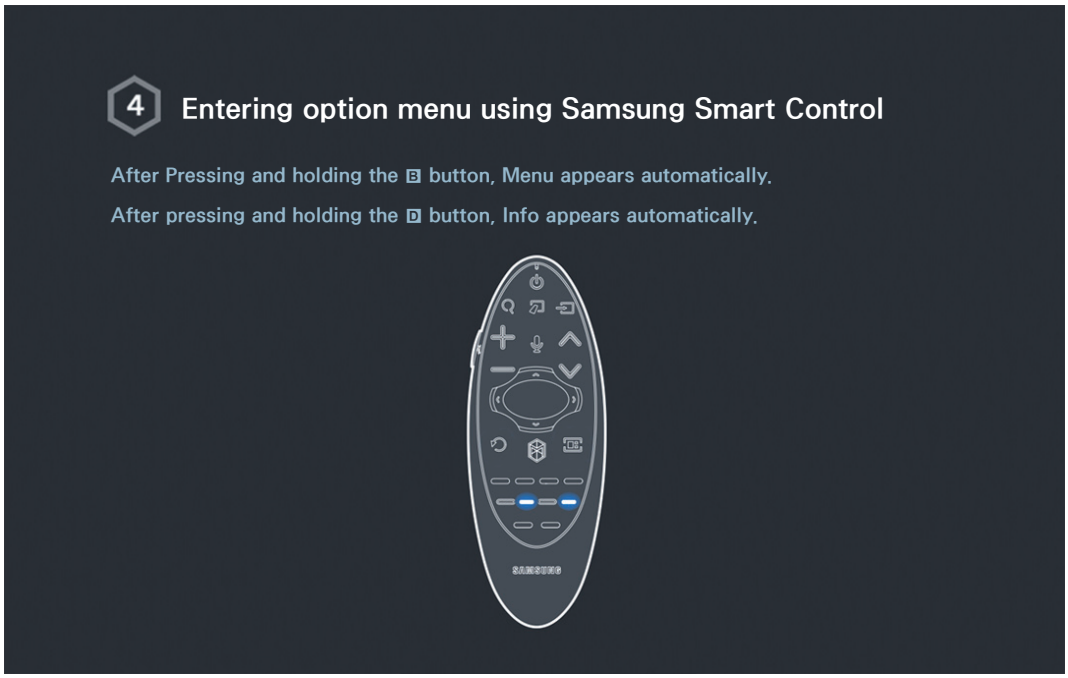
1 Samsung Smart Control

Use the Samsung Smart Control to access various functions via the SEARCH, KEYPAD, SOURCE, and VOICE buttons. In addition, you can move the pointer by pressing and holding the touchpad lightly.

2 Setting the Samsung Smart Control

Set up the Samsung Smart Control based on your preferences. Setting include the touch sensitivity and onscreen remote size.
Set the Smart Control Settings via System > Smart Control Settings.

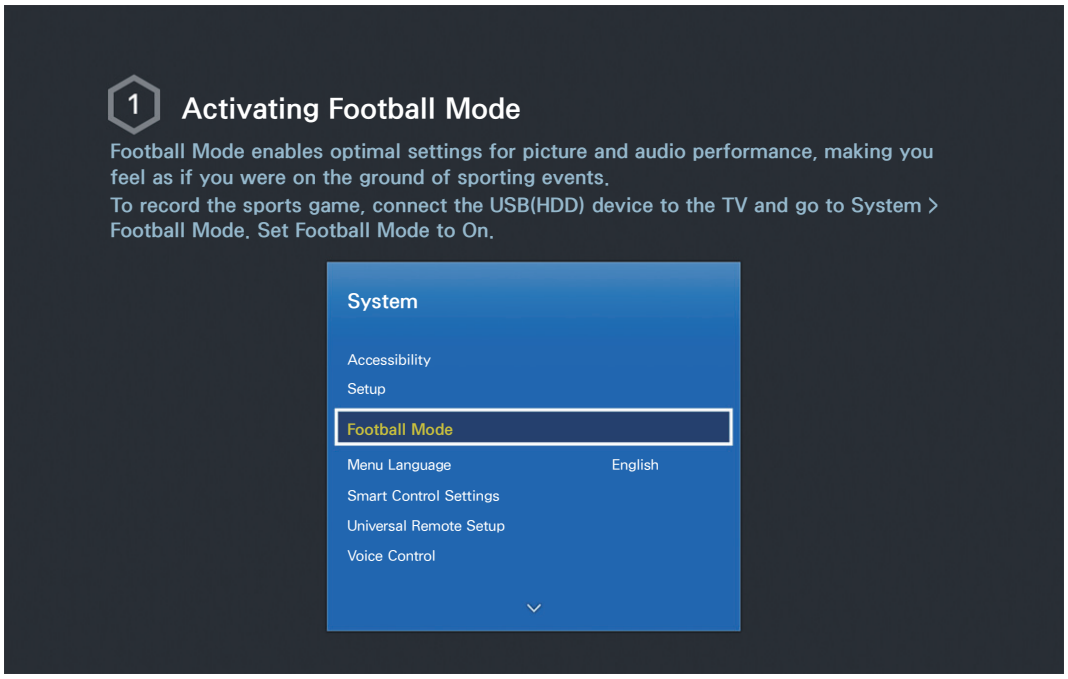




For more information, refer to "Using Samsung Smart Control".

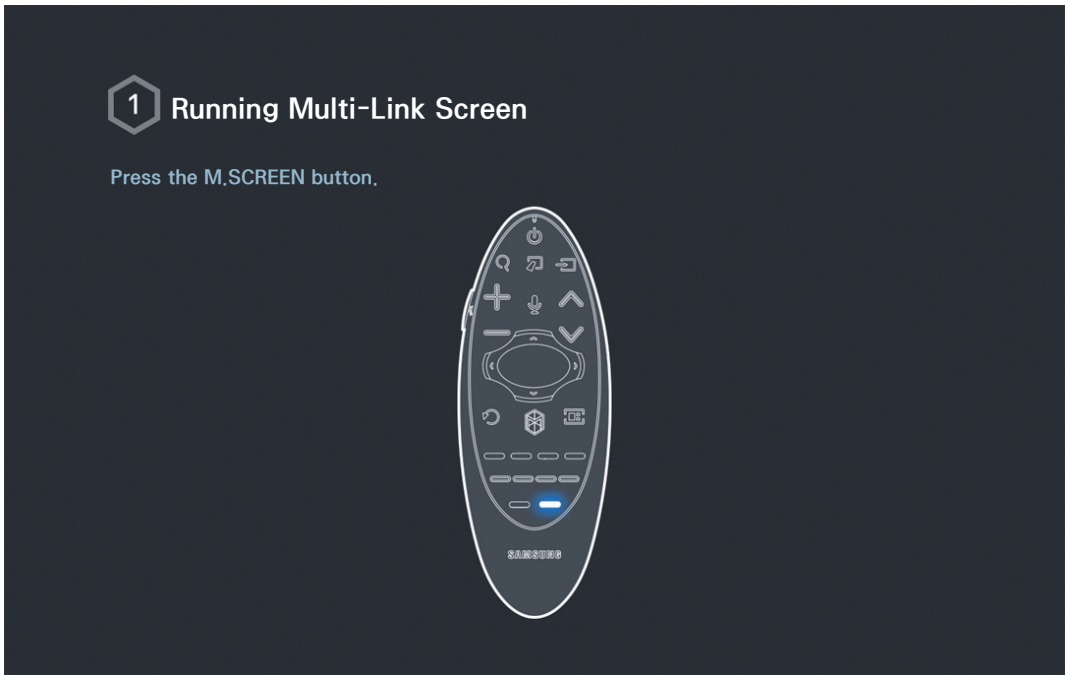
Using the Football Mode

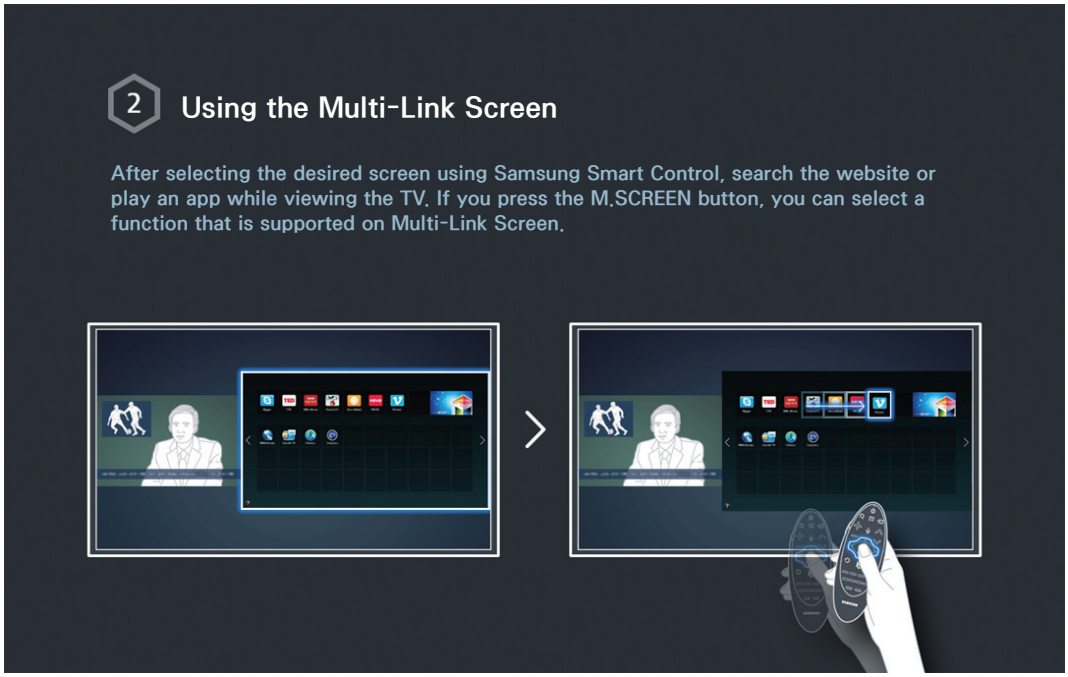
Availability depends on the specific model and area.



For more information, refer to "Adding Realism to Sports".

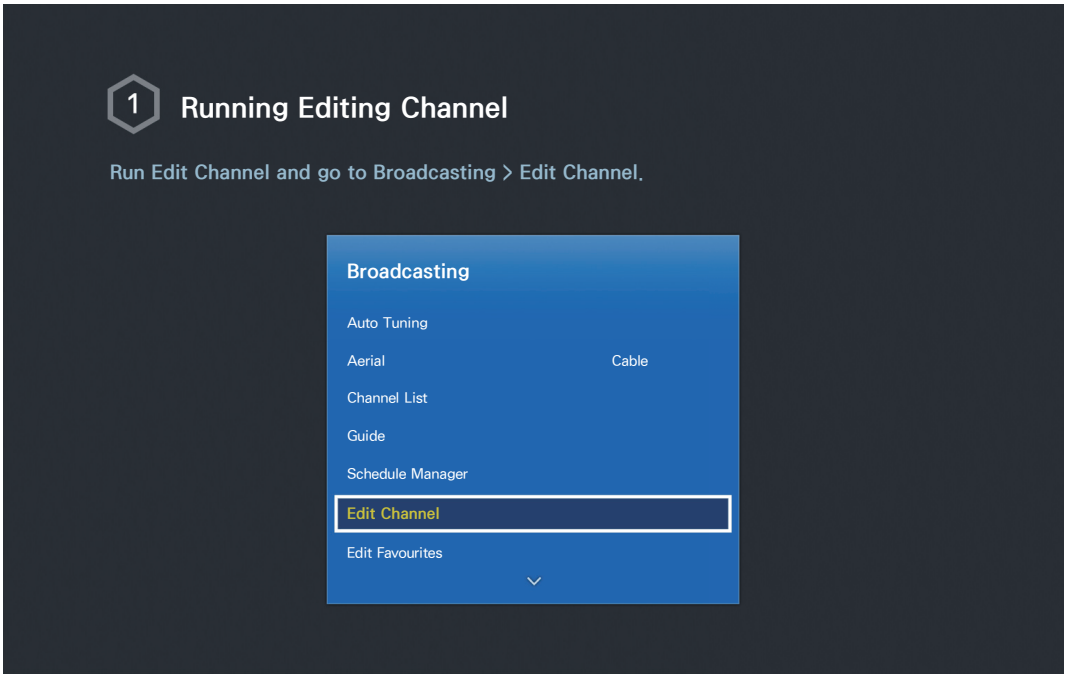
Using the Multi-Link Screen

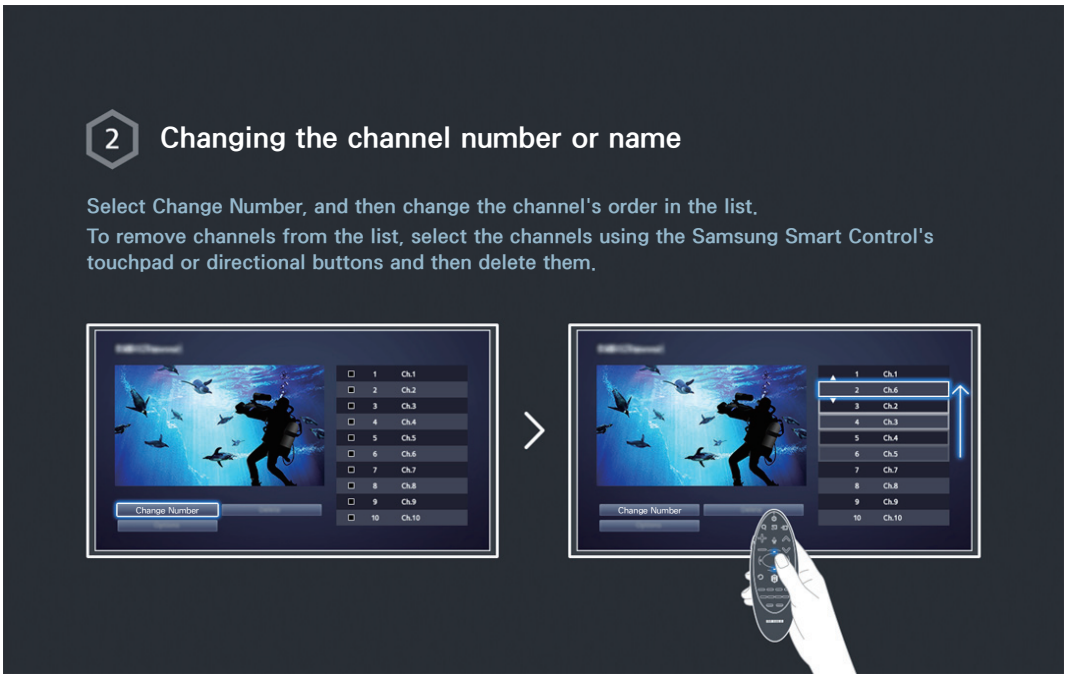




For more information, refer to "Multiple Functions on a Single Screen".

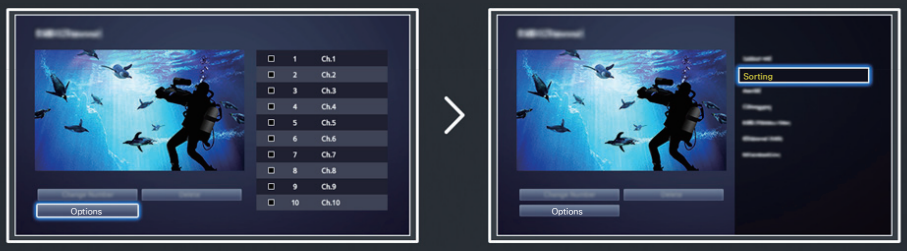
Editing channels





3 Sorting the channel list

1. Select a digital channel in the list and then select Options > Sorting.
2. Select a desired method for sorting the list.



Connecting to a Computer

You can directly connect a computer to the TV or to the network to view the computer screen or content on the TV. Connect the computer to the TV as follows.

Connecting - HDMI Port

You can connect the computer to the TV using the HDMI cable to display the computer screen on the TV.

For HDMI connection, one of the following HDMI cable types is recommended:

- High-Speed HDMI Cable
- High-Speed HDMI Cable with Ethernet

Use an HDMI cable with a thickness of 14 mm or less. Using a non-certified HDMI cable may result in 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 LAN (Local Area Network) built on coaxial cables standardised by the IEEE.

Some computers do not support HDMI interface, depending on its graphics adapter specifications. In this case, use a DVI-to-HDMI cable to connect the computer to the TV.

- When connecting via UHD

Use cable shorter than 3M to get the next best UHD 60P viewing quality.

HDCP 2.2 can only use the HDMI(MHL) port. HDCP is short for 'High-bandwidth Digital Content Protection' and is for video copyright protection.

Connecting - HDMI (DVI) Port

You can connect a computer to the TV by connecting the computer's DVI port to the TV's HDMI port with the DVI to HDMI cable to display the computer screen on the TV.

If the graphics adapter of your computer does not support HDMI interface, connect the computer to the TV with the DVI (Digital Visual Interactive) to HDMI cable. However, DVI-to-HDMI connection is supported by the HDMI port for DVI only and does not support audio signal transmission. To listen to the computer sound, connect the external speaker to the computer’s audio output connector.

Connecting - Samsung Link

Quickly access photo, video and music files saved on a computer with Samsung Link software installed. Also, use Samsung Link to play and view the content of a computer that has been registered to Samsung Link under your Samsung account, even if the computer and the TV are not connected to the same router or AP.

1. Visit the Samsung content and service portal (http://link.samsung.com) on a computer and sign into your Samsung account.

   To install Samsung Link desktop software, you will need to first sign into your Samsung account. If you don't have a Samsung account, create one first.

2. Install Samsung Link desktop software. When the installation is complete, the computer will be registered to Samsung Link.
3. Specify the folder you wish to link to the TV. You can view and play photo, video and music files contained in the specified folder on the TV screen.

   For more information on using Samsung Link desktop software, refer to the software's Help section.

Connecting - Home Network (DLNA)

Quickly access the photo, video and music files saved on a computer by connecting the TV and the computer to the same router or AP.

1. Connect the TV and the computer to the same router or AP. A home network will be configured once the two connections are established.

   Home Network (DLNA) enables content-sharing between the TV, computers and mobile devices connected to the same wired or wireless router.

2. From the computer, select [Control Panel] > [Network and Internet] > [Network and Sharing Centre] > [Change advanced sharing settings] and select [Choose media streaming options...] to activate media streaming.
3. From the list, set TV to [Allowed].
4. Launch Windows Media Player from the computer, select [Settings] > [Library Management] and then add the location where the photo, video and music files are saved to view/play the files on the TV screen.

   It will be possible to view/play on the screen files moved to Windows Media Player's default folder.

   As long as File Sharing is activated, unauthorised access may be allowed. Disable File Sharing if data access is not required.

Connecting with a Mobile Device

Connect mobile device such as a smartphone or tablet to the TV directly or indirectly over a shared network and display the mobile device screen or content on the TV screen. Connect the mobile device to the TV as follows.

Connecting - MHL-to-HDMI Cable

Your TV supports MHL (Mobile High-definition Link) via an MHL cable. MHL enables viewing and playing video, image, and audio files from mobile devices on the TV. However, MHL is only available through the TV's HDMI (MHL) port and only when used in conjunction with an MHL-enabled mobile device.

For information on configuring MHL on your mobile device, refer to the device's User Manual.

- Connecting an MHL-to-HDMI cable automatically switches **Picture Size** to **Screen Fit**. This setting will not change automatically if you are using an HDMI adapter. In this case, change the setting manually in the menu.
- If you are using an HDMI cable, the TV recognises the signal as an HDMI signal and may respond differently than it would to an MHL-to-HDMI cable connection.
- HDCP 2.2 can only use the HDMI(MHL) port. HDCP is short for 'High-bandwidth Digital Content Protection' and is for video copyright protection.

Mobile Device Screen on TV (Screen Mirroring)

Network > **Screen Mirroring** Try Now

Wirelessly connect a mirroring-enabled mobile device to the TV and play the video and audio files stored on the device on the TV. Mirroring refers to the function that plays the video and audio files located on a mobile device on a TV and on the mobile device simultaneously.

- To use the **Screen Mirroring** function, the mobile device must support a mirroring function such as AllShare Cast or **Screen Mirroring**. To check whether your mobile device supports the mirroring function, please visit the mobile device manufacturer's website.
- The video or audio may intermittently stop depending on network conditions.

Connecting via a mobile device

1. On the mobile device, run **Screen Mirroring**. The mobile device searches for available devices to connect to.
2. From the search result list, select TV. The TV displays a pop-up window.
3. In the pop-up window, select **Allow** to connect the mobile device.

   All previously allowed mobile devices will automatically connect without needing approval.

   If you select Deny, the device won't appear and can't be activated in this way. Navigate to **Network** > **Screen Mirroring** > **Device Manager** to allow the previously denied mobile device.

Not searching for the TV on mobile devices...

1. Navigate to **Network** > **Screen Mirroring** to run **Screen Mirroring**. Also, you can select **Screen Mirroring** on a list by pressing SOURCE.
2. Run mirroring on the mobile device. Display a list while automatically searching for mobile devices.
3. Select the TV and it connects automatically.

   When the mobile devices cannot connect, try turning the TV off and on.

Allow/Reject the connection via mobile devices

This is only available for watching when mobile devices allow the connection.

1. Navigate to **Network** > **Screen Mirroring** > **Device Manager** to activate **Device Manager**. This displays a list of required mobile devices connection.
2. You can allow access or deny connections with mobile devices.

Connecting Mobile Devices without a Wireless Router (Wi-Fi Direct)

This option is available only with mobile devices that support Wi-Fi Direct.

Network > **Wi-Fi Direct** Try Now

Wi-Fi Direct lets you connect mobile devices directly to your TV using wireless technology. After connecting a device to the TV using Wi-Fi Direct, it will be possible to view/play video, photo, and music files from the device on the TV.

The mobile device must support Wi-Fi Direct. Make sure the mobile device you intend to use supports Wi-Fi Direct.

The video or audio may intermittently stop depending on network conditions.

1. Enable Wi-Fi Direct on the mobile device and then launch **Wi-Fi Direct**. The TV automatically scans for and displays a list of available devices. The TV's name also appears on the mobile device.
2. Select the device from the list to initiate a connection. If a connection request is made by the TV, a permission message appears on the mobile device and vice versa.
3. Allow the connection. This completes the connection process.

Connecting - Samsung Link

Samsung Link enables you to view/play photo, video and music files from a Samsung Link-enabled mobile device with ease. Also use Samsung Link to play and view the content of a mobile device that has been registered to Samsung Link under your Samsung account, even if the mobile device and the TV are not connected to the same router or AP.

1. Run the Samsung Link app on the mobile device and then sign in with your Samsung account.

   To use Samsung Link, you have to sign in with a Samsung account. If you don't have a Samsung account, create one first.

2. Quickly access and play photo, video and music files from the mobile device running Samsung Link app under your Samsung account.

   For more information on using the Samsung Link app, refer to the Help section of the manual.

Connecting - Home Network (DLNA)

View/play photo, video and music files from a mobile device on the TV.

1. Connect both the TV and the mobile device to the same router or AP. A home network will be configured once the connections are established.

   Home Network (DLNA) enables content-sharing between the TV, computers and mobile devices connected to the same wired or wireless router.

2. Enable File Sharing on the mobile device. The mobile device's shared content can be viewed/played on the TV.

   As long as File Sharing is activated, unauthorised access may be allowed. Disable File Sharing if data access is not required.

Connecting via Smart View 2.0

By installing and running the Smart View 2.0 app on the mobile device, you can view the device screen on the TV, or play the device's multimedia content (videos, photos, and music) on the TV.

Go to Google Play, and search for and install Smart View 2.0 on your mobile device. Smart View 2.0 is a cross-platform multi-screen app that enables you to load the TV screen on a mobile device, share multimedia contents between two devices, and control the TV remotely. For more information, refer to the Smart View 2.0 manual.

Name of TV on Network

Network > **Device Name** Try Now

Choose or enter a TV name to be displayed on the network.

1. Select **Device Name** from the **Network** menu. A list will appear.
2. Choose a name from the list. Alternatively, select **User Input** to enter a name manually. You can view the specified TV name on the network.

Input Signal Selection

You can select a connected external device using the SOURCE button.

For example, to switch to a gaming console connected to the second HDMI connector, press SOURCE. From the **Source** list, select **HDMI2** to change the input signal to HDMI mode. Connector names may vary depending on the model.

The following options are available in the **Source** screen:

- TOOLS Button

  Select a port connected to an external device, and press and hold the Enter button. The following functions are available:

  Available options for each connector may vary.

  - **Edit Name**: Rename devices connected to the TV for easier identification of external sources. For example, you can designate a computer connected to the TV via an HDMI-DVI cable as **DVI PC**. Alternatively, simply designate a computer connected to the TV via an HDMI cable as **PC**. You can also designate an AV device connected to the TV via an HDMI-DVI cable as **DVI Devices**.
  - **Information**: View detailed information about the connected devices.
  - **Anynet+ (HDMI-CEC)**: Displays a list of Anynet+ (HDMI-CEC)-compliant devices that are connected to the TV.

    This option is only available with **Anynet+ (HDMI-CEC)** set to **On**.
  - **Device Format**: Formats USB recording devices connected to the TV.

    This option is only available when a USB device has been selected.
  - **Disconnect USB Device**: Used to safely remove a USB device connected to the TV.

    This option is only available when a USB device has been selected.

- **Universal remote setup**

  Select **Universal remote setup** on the screen to configure the universal remote function. By configuring a universal remote control, you can control cable boxes, Blu-ray players, home theatres, and other external devices using a single remote control.

  Availability depends on the specific model and area.

Inserting Batteries into Samsung Smart Control

To use Samsung Smart Control, first refer to the figure below and insert batteries into the unit.

1. Gently pull on the battery cover's notch and then remove the cover completely once it comes loose.
2. Insert 2 AA alkaline batteries, making sure to align the positive and negative polarities correctly.
3. Place the battery cover on the remote control and insert the top part of the cover into the remote control.
4. Press the catches on both sides of the battery cover in the order shown so that the cover is completely attached to the remote control.

When you see this alarm icon on the screen...

Following alarm icon indicates Samsung Smart Control's batteries are low. If the alarm icon pops up, replace the batteries. Samsung recommends using alkaline batteries for a longer operating life.

<Low Battery Alarm Icon>

Pairing Samsung Smart Control

To control the TV with Samsung Smart Control, you need to pair Samsung Smart Control to the TV via Bluetooth. Pair Samsung Smart Control to the TV.

Samsung Smart Control can only be paired to a single TV.

Point Samsung Smart Control at the remote control sensor of the TV and press the TV button to turn the TV on.

Remote control receiver's location may vary depending on the model.

Reconnecting Samsung Smart Control

If the Samsung Smart Control stops operating or works abnormally, replace the batteries as this may be due to insufficient battery power.

If the problem persists, the Samsung Smart Control restore pairing with the TV.

1. Press both the RETURN button and the GUIDE button simultaneously for more than 3 seconds.

   You must place the Samsung Smart Control approximately 30cm ~ 40cm away from the TV and ensure it is pointing towards the remote control receiver.

2. Connection image is appeared on the screen. And then, Samsung Smart Control is connecting to TV automatically.

Using Samsung Smart Control

Samsung Smart Control makes it even easier and more convenient to use the TV. Pressing the **KEYPAD** button displays a virtual remote control that allows you to easily enter digits, control content, and activate functions on the screen.

We recommend using Samsung Smart Control at a distance of less than 6m. A usable distance may differ depending on the wireless environmental conditions.

Button Functions

Colours and shape may vary depending on the model.

Button	Description
TV	Turns the TV on/off.
SEARCH	Press this button to use the search window.
KEYPAD	With the virtual remote control on the screen, you can easily enter digits, control content, and use functions.
SOURCE	Changes the source.
+ ◢ −	Changes the volume.
VOICE	Starts voice recognition. When the microphone icon appears on the screen, say a voice command into the microphone. Say "Help" to learn about basic usage and voice commands. Say a voice command 10cm to 15cm from the microphone and at an appropriate volume.
(Mute) / AD	Turns the sound on/off.
∧ P ∨	Changes the channel.
∧, ∨, <, >	Moves the pointer or focus.
Touchpad	Place a finger on the touch pad and move the Samsung Smart Control. The pointer on the screen moves in the direction and as much as the Samsung Smart Control is moved. Press the touchpad to run the focused item.
◀◀, ▶, II, ▶▶	Controls for when viewing/playing a video, photo or music file or watching a recorded programme. You can also use the buttons to control content from an external device.
A, B, C, D	Use these colour buttons to access additional options specific to the feature in use.
RETURN / EXIT	Returns to the previous menu. Additionally, when you press this button while watching TV, you can return to the previous channel.
SMART HUB	Launches the Home Screen. From the Home Screen, you can search through favourite apps, channels or sources and quickly access previously run or frequently used functions. Also, when you move to the panel screen, you can use various service provided each service panel.
GUIDE / CH.LIST	Displays the digital channel broadcasting schedule.
INFO	Shows the information about the current digital broadcast programme or content.
⚽	Enable Football Mode for an optimal sports viewing experience.
M.SCREEN	You can split the TV screen and use various functions such as watching TV, surfing the web, watching video, and so on.

Additional Functions

Press and hold the following buttons for 1 second to use additional functions.

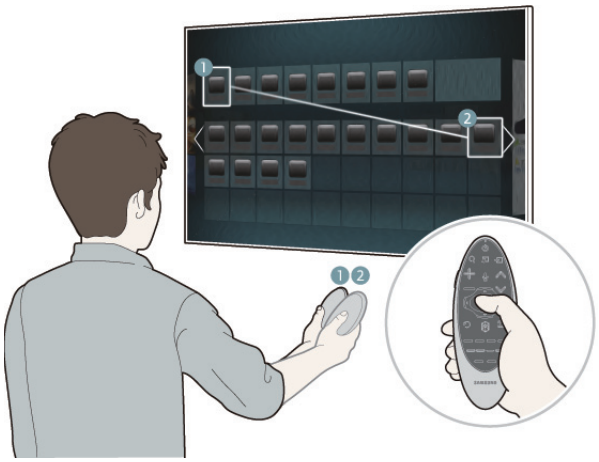
Button	Description
GUIDE / CH.LIST	Press and hold to launch the CH.LIST.
RETURN / EXIT	Press and hold this button to exit all currently running applications
/ AD	Press and hold this button to bring up the Accessibility Shortcuts panel. Select the options to turn them on or off.
B	Displays a menu on the screen.
C	Press and hold to record the broadcast. Availability depends on the specific model and area.
D	Press and hold to view information about the current digital channel or media file.

Using the TV by Moving the Samsung Smart Control

The Samsung Smart Control has a motion sensor (gyro sensor) that allows you to easily control the TV by holding and moving the Samsung Smart Control.

After placing a finger on the touchpad, a pointer appears on the screen. Hold and move the Samsung Smart Control. The pointer moves the same way the Samsung Smart Control is moved. It's also possible to scroll up and down on scrollable screens.

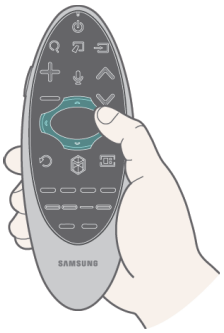
- If you remove the finger from touchpad, the screen pointer disappears.
- If the Voice Guide is set to On, the Samsung Smart Control's motion sensor(gyro sensor) does not work. To use the Samsung Smart Control's motion sensor, set the Voice Guide to Off.



Using the TV with the Touchpad

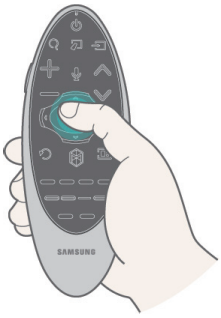
Navigate to the **Support** menu and select the **Smart Control Tutorial** option to learn how to use the touchpad, following the on screen instructions. Try Now

Moving the Focus/Pointer



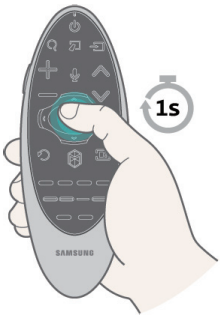
Press the directional buttons (up, down, left, and right) to move the pointer or focus in the direction.

Menu Access & Item Selection



Press the touchpad. This lets you access a TV menu or select an item.

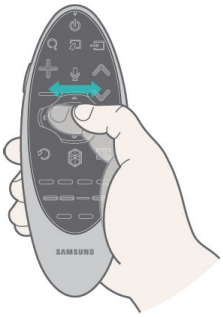
Displaying the Context-sensitive Menu on Smart Hub



Press and hold on the touch pad from the Smart Hub screen. The Options menu available to the selected item appears.

The Options menu depends on the context.

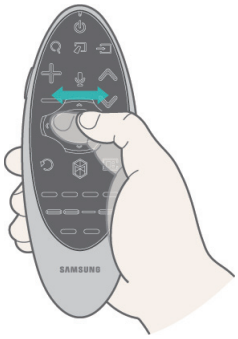
Moving to the Smart Hub panel



On the Smart Hub screen, drag left or right on the touchpad. This will move the Smart Hub panels left or right.

Scrolling on the Web Browser

<Scrolling up/down>



<Scrolling left/right>

Drag up/down or left/right on the touchpad in the web browser screen. This scrolls through the web screen.

Displaying the Remote Control on the Screen (virtual remote control)

Press the KEYPAD button to display the virtual remote control on the screen. You can easily enter digits, control content, and use TV buttons with the virtual remote control.

The virtual remote control buttons may vary depending on the TV's current status.

Button	Description
1 2 3 4 5 6 7 8 9 TTX/MIX 0 Pre-CH	• You can directly enter the channel number to switch to that channel. Select Pre-CH to return to the previous channel. • TTX/MIX: Alternately selects Teletext ON Double, Mix or OFF.
● ▶ ❚❚ ■ ◀◀ ▶▶ ⏮ ⏭	Controls the item when you are playing a video, photo or music file or watching a recorded programme. You can also use the buttons to control the content on an external device.
TOOLS	Use frequently used functions while watching TV. In addition, you can use additional functions that may vary depending on the currently running function.
INFO	Shows the information about the current digital broadcast programme or content.
MENU	Displays the menu on the screen.
Speaker Settings	Select the speakers which you want to use to listen to the TV's sound. To set this option, external speakers must be connected to the TV.
PIP	Display the video from an external device or computer on the main screen and the TV as a picture-in-picture.
3D	Turn the 3D effect on or off.
Multi-Link Screen	You can split the TV screen and use various functions such as watching TV, surfing the web, watching video, and so on.
AD/SUBT	Displays the Accessibility Shortcuts. Select the options to turn them on or off.

Button	Description
P.SIZE	Change the picture size.
DUAL	When you press the Dual I II button the first time, the current dual mode is displayed on the screen. Press the Dual I II button again to change the dual mode.
Web Browser	Launch the Web Browser.
e-Manual	Launch the e-Manual.
Sign In	Log in or out of your Samsung account.
	Move to the right / Move to the left: You can move the virtual remote control on the screen. Large size / Standard size: You can resize the virtual remote control on the screen. Alternatively, navigate to the System > Smart Control Settings menu and select and set the Onscreen Remote Size option. Touch Sensitivity: You can change the touchpad sensitivity. Alternatively, navigate to the System > Smart Control Settings menu and select and set the Touch Sensitivity option. Motion Sensitivity: Put a finger on the touchpad and move it to adjust the speed of the pointer on the screen. Navigate to System > Smart Control Settings, and select Motion Sensitivity to enable this option. Universal Remote Setup: Moves to the Universal Remote Setup screen. Cancel: Close the pop-up menu.

Controlling External Devices with the TV Remote (Universal Remote Setup)

System > **Universal Remote Setup** Try Now

- Availability depends on the specific model and area.

The universal remote control feature lets you control cable boxes, Blu-ray players, home theatres, and other external devices connected to the TV using the TV's remote control. In order to use the TV's remote control as a universal remote, you must first connect the IR extender cable (included).

- You can also use the Anynet+ (HDMI-CEC) function to operate some external Samsung devices with your TV's remote control without any additional setup. Refer to the "Using Anynet+ (HDMI-CEC)" section for more information.
- Certain external devices connected to the TV may not support the universal remote feature.

Setting Up the Universal Remote Control

Before connecting any external devices and cables to the TV, first verify the model number of the purchased TV. A sticker containing the model number is attached to the back of the TV. The connection method varies depending on the model.

To use the TV remote as a universal remote, connect the IR extender cable (included) to the TV and position it within 10 cm of the external device's remote control receiver.

- The colour and design of the IR extender cable may vary depending on the model.
- When you connect the cable, you have to match the cable's colour and socket's colour.

Connect the IR extender cable to the TV or UHD Evolution Kit IR output connector. And place the transmitter end within 10 cm of the external device's receiver pointing in the direction of the remote receiver. However, there must be no obstacles between the IR extender cable and the external device. The presence of obstacles interferes with the transmission of the remote control signal.

- When you use an external device registered with the Universal Remote Control on the Samsung Smart Control, you can use the external device without connecting an IR extender cable. However, if you want to use an external device using **Motion Control** or **Voice Control**, be sure to connect an IR extender cable.

Controlling External Devices with the TV Remote

External Device Registration

1. Turn on the external device to set up the universal remote function for, and bring up the **Source** screen.
2. Select **Universal remote setup** from the top of the screen. This initiates the universal remote setup process.
3. Follow the on-screen instructions and register the external device.

Using the TV Remote

Registering an external device to the TV remote also registers the connector through which the device is connected. Accordingly, simply selecting the external device using the SOURCE button makes it possible to control the device using the TV's remote.

Universal Remote Features

1. Press SOURCE to go to the Source screeen.
2. Select Universal remote setup from the top of the screen. This initiates the universal remote setup process.
3. Select an external registered device on the Universal remote setup screen. The following options are available:

- **Use External Speakers**

  Listen to the audio from the external device through the connected home theater.

  This is available only on the set-top box or Blu-ray player.

- **Link Set-top Box**

  Listen to the audio from the set-top box through the home theater that is connected to the TV.

  This is available only on the home theater system.

- **Link Blu-ray Player**

  Listen to the audio from the Blu-ray player through the home theater that is connected to the TV.

  This is available only on the home theater system.

- **Source Setup**

  Change the TV's input source to your selected external device.

- **Sync with TV power**

  Configure the set-top box to turn off when the TV is turned off

  This is available only on the set-top box.

- **Rename**

  Rename the registered external device (up to 15 characters long)

- **Delete**

  Remove the registered external device.

Controlling the TV with a Keyboard

System > **Device Manager** > **Keyboard Settings** Try Now

You can use a keyboard to control the TV.

Certain models do not support USB HID class keyboards.

Connecting a Keyboard

Connecting a USB Keyboard

Plug the keyboard cable into the USB port. A connection message appears on the screen.

Connecting a Bluetooth Keyboard

Availability depends on the specific model and area.

1. Place the Bluetooth keyboard into the standby status.

   Refer to the keyboard manual for information on putting the keyboard into the standby status.

2. Select **System** > **Device Manager** > **Keyboard Settings** > **Add Bluetooth Keyboard**. The **Add Bluetooth Keyboard** screen will appear and automatically scan for available keyboards.

   If your keyboard was not detected, position the keyboard close to the TV and then select **Refresh**. This initiates a scan for available keyboards again.

3. Select the Bluetooth keyboard from the scan list and then select **Pair and connect**. A number appears on the screen.

4. Enter the number on the Bluetooth keyboard.

   Select **Yes** to change the keyboard's options or **No** to leave them as they are.

Using the Keyboard

Use the following remote features with the USB or Bluetooth keyboard connected to the TV.

- Arrow Keys (moving the focus), Windows Key (MENU Button), Menu List Key (TOOLS Button), Enter Key (Select/run item), ESC (RETURN Button), Number Keys (Number Buttons)
- F1 (A), F2 (B), F3 (C), F4 (D), F5 ( ), F6 (SOURCE Button), F7 (CH.LIST Button), F8 (MUTE Button), F9/F10 (Volume Buttons), F11 / F12 (Channel Buttons)
- Page Up/Page Down: Scroll web browser pages up/down.
- **Holding down the Enter key**: On the Smart Hub screen, navigate to an item and hold down the Enter key to display the Options menu.

  The Options menu depends on the context.

Changing Keyboards Try Now

Availability depends on the specific model and area.

Select System > Device Manager > Keyboard Settings > Select Keyboard. Designate which keyboard to use.

Only one keyboard can be used at a time.

Input Languages, Keyboard Type, and Switch Language Key Try Now

Select System > Device Manager > Keyboard Settings > Keyboard Options. The following options are available:

- Keyboard Language

  If the keyboard supports multiple languages, choose which language you want to use from the list.

- Keyboard type

  Specify the type of language selected under Keyboard Language.

  The Keyboard type list varies depending on which language was selected under Keyboard Language.

- Switch Input Language

  If the keyboard supports multiple languages, choose from the list which key to use to switch between languages.

Controlling the TV with a Mouse

System > **Device Manager** > **Mouse Settings** Try Now

This TV can be operated with ease using a mouse instead of a remote control.

Certain models do not support USB HID class mice.

Connecting a Mouse

Connecting a USB Mouse

Plug the mouse cable into the USB port. A connection message appears on the screen.

Connecting a Bluetooth Mouse

Availability depends on the specific model and area.

1. Place the Bluetooth mouse in standby status.

   Refer to the mouse manual for information on putting the mouse in standby status.

2. Select **System** > **Device Manager** > **Mouse Settings** > **Add Bluetooth Mouse**. The **Add Bluetooth Mouse** screen will appear and automatically scan for available mice.
3. Select the Bluetooth mouse from the scanned list, and then select **Pair and connect**. This pairs the Bluetooth mouse with the TV.

Using the Mouse

Once a USB or Bluetooth mouse is connected to the TV, a pointer will appear on the TV's screen. You can use this pointer to control the TV as you would a computer.

- **Selecting and Running an Item**

  Left-click on the mouse.

- **Displaying the Volume, Mute, and Channel Buttons**

  Select the volume/channel icon on the screen while watching TV. Use the onscreen buttons to adjust the volume or switch the channel.

  Select the volume/channel icon again to hide the buttons.

- **Showing shortcut icons**

  Right-clicking shows the shortcut icons on the screen so that you can easily use the TV functions.

  The shortcut icons may vary depending on the function.

- **Displaying the Context-sensitive Menu on Smart Hub**

  On the Smart Hub screen, navigate to an item, and hold down the left mouse button for 1 second. The Options menu available to the selected item appears.

  The Options menu depends on the context.

- **Scrolling the TV Menu or Screen**

  Move the mouse wheel up or down. This scrolls the TV menu or screen up/down.

- **Exiting the TV Menu or Feature**

  Click on the X button. This closes the menu.

  The X button appears when a mouse is being used. Left-clicking once while using a feature displays the X button.

Changing Mice Try Now

Select **System** > **Device Manager** > **Mouse Settings** > **Select Mouse**. Designate which mouse to use.

Only one mouse may be used at a time.

Changing Mouse Buttons and Pointer Speed Try Now

Select **System** > **Device Manager** > **Mouse Settings** > **Mouse Options**. The following options are available:

- **Primary Button**

  Choose which (left or right) button to use to select and run items.

- **Pointer Speed**

  Adjust the movement speed of the pointer that appears on the screen.

Entering Text Using QWERTY

A QWERTY keypad appears when you need to enter text (entering the network password, logging into your Samsung account, etc.), allowing you to enter text using your remote control.

Using Additional Functions

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

- **Language**

  Select a language from the list.

- **Recommend text**

  Enable/disable the Recommended Text feature. Enabling the **Recommend text** feature allows you to quickly enter text starting with the characters you typed in by displaying recommended words. To enter the word "Internet," for example, all you have to do is enter "In" and select the word "Internet" from the list of recommended words. The word is memorised so that you can enter the same text again more easily.

- **Reset recommended text data**

  Delete both the recommended words and the memorised words to clear the list.

- **Predict Next Letter**

  Enable/disable the Text Prediction feature. Enabling the Text Prediction feature eliminates the need to find and select individual character keys. To enter the word "Internet," for example, select "I". A predicted word will then appear next to the I key. Simply select the predicted word to enter "Internet".

  This feature is limited to words that have previously been added to the dictionary.

- **Accented Character Preview**

  Enable/disable the Show Accented Letters feature. An accented letter is a letter such as Ё or Й with a diacritical mark above it. Enable the Show Accented Letters feature to enter these kinds of letters.

  This is available only with a language that uses diacritical letters.

Establishing a Wired Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.

Connecting a LAN Cable

Use a LAN cable.

- The TV will not be able to connect to the Internet if the network speed is below 10Mbps.
- Use Cat 7 LAN cables to link your TV to the Internet Access Points.

Connecting to a Wired Internet Network Automatically

Network > **Network Settings** Try Now

Automatically connect to an available network.

1. Set the **Network Type** to **Wired**, and then select **Connect**.
2. The TV attempts to connect to an available network. Once successful, you will see a confirmation message. Select **OK**. If the attempt fails, try again, or connect manually.

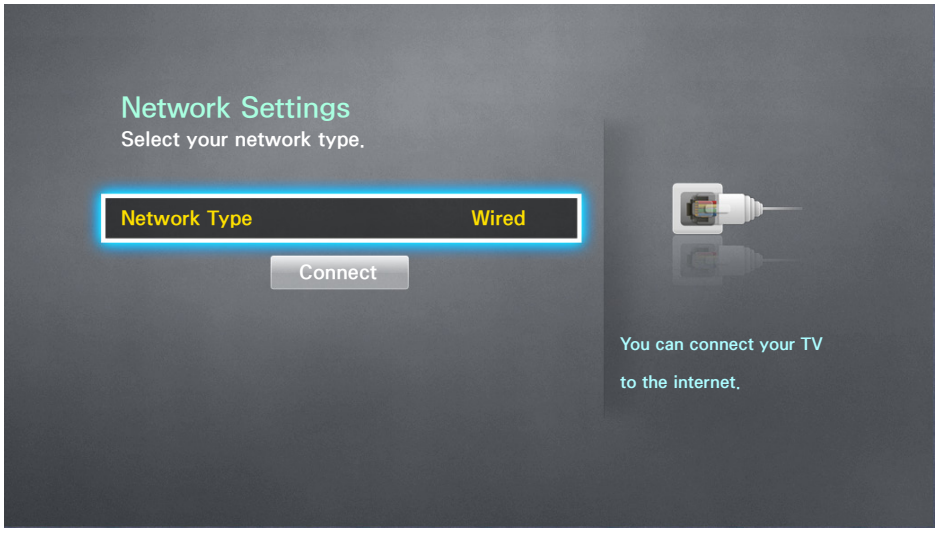
Connecting to a Wired Internet Network Manually

Network > **Network Settings**

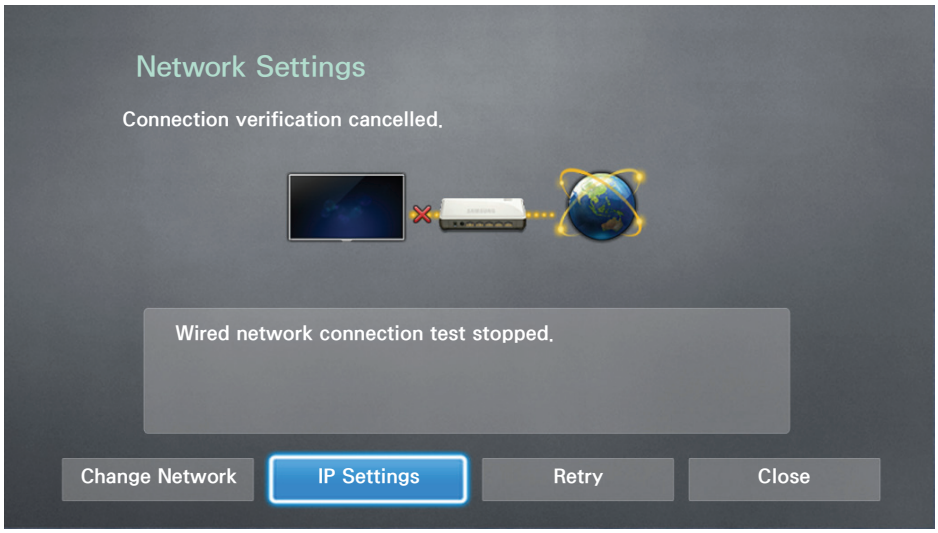
With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway, and DNS values manually to connect to the network. To get these values, contact your Internet Service Provider (ISP).

- Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. Set the **Network Type** to **Wired**, and then select **Connect**.



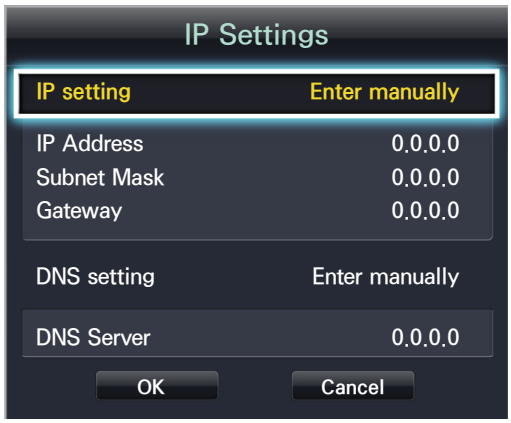
2. Select **Stop** when the TV attempts to connect to the network. Once the network connection has been interrupted, select **IP Settings**.



3. In the **IP Settings** screen, set the **IP setting** to **Enter manually**, enter the **IP Address**, **Subnet Mask**, **Gateway**, and **DNS Server** values, and then select **OK**.

- Use one of the following methods to enter the numerical values.

  Set the numbers using the ▲ and ▼ buttons.
  Press **KEYPAD** button and enter the numbers directly.



4. The TV attempts to connect to the network again using the specified settings. A confirmation message appears once a connection is established. Select **OK**.

   The network connection speed may differ depending on the DNS server settings.

   For details on the DNS server settings, contact your Internet service provider (ISP).

Establishing a Wireless Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.

Connecting to a Wireless Internet Network Automatically

Network > **Network Settings**

Connect the TV to the Internet via a wireless router. Make sure you have the wireless router's SSID (name) and security key settings before attempting to connect. The security key can be found on the wireless router's configuration screen.

1. On the **Network Settings** screen, set **Network Type** to **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select a network (SSID). If the network you want doesn't appear in the list, select **Add Network**, and enter the network's SSID manually.
3. Enter the security key and select **Done**. If the selected network is not security-enabled, the TV attempts to connect right away.
4. A network connection will be attempted. Once a connection is established, the TV displays a confirmation message. Select **OK**. If the attempt fails, try again, or connect manually.

Connecting to a Wireless Internet Network Manually

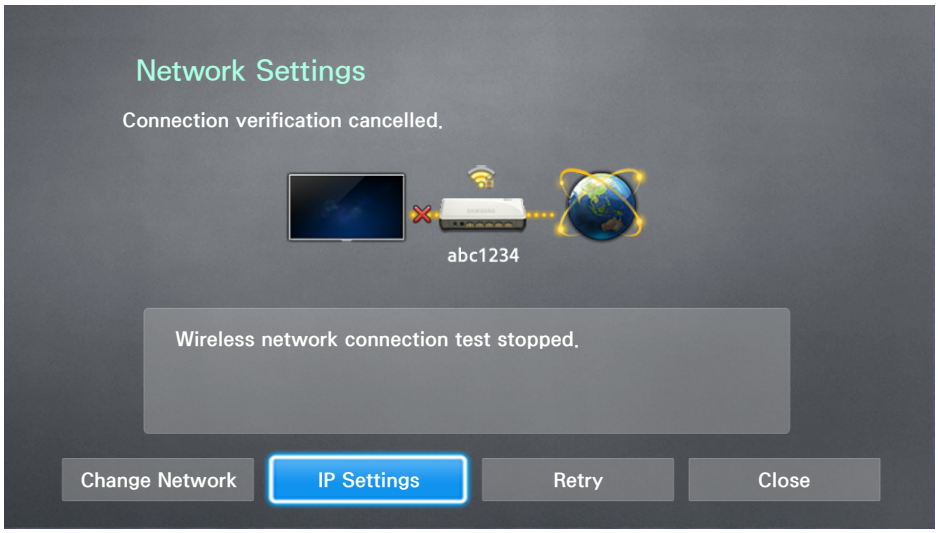
Network > Network Settings

With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway and DNS values manually to connect to the network. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. Setting the **Network Type** to **Wireless** automatically displays a list of available wireless networks.

2. Select the network (SSID) you want to connect to. If the wireless router doesn't appear in the list, select **Add Network**, and enter the network's SSID manually.
3. Enter the security key and select **OK**. If the selected network is not security-enabled, the TV attempts to connect right away.
4. Select **Stop** when the TV attempts to connect to the network. Once the network connection has been interrupted, select **IP Settings**.

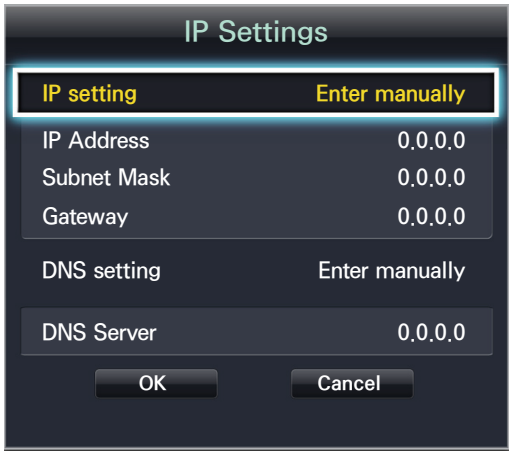


5. In the **IP Settings** screen, set the **IP setting** to **Enter manually**, enter the **IP Address**, **Subnet Mask**, **Gateway**, and **DNS Server** values, and then select **OK**.

   - Use one of the following methods to enter the numerical values.

     Set the numbers using the ▲ and ▼ buttons.

     Press **KEYPAD** button and enter the numbers directly.



6. The TV attempts to connect to the network again using the specified settings. A confirmation message appears once a connection is established. Select **OK**.

   The network connection speed may differ depending on the DNS server settings.

   For details on the DNS server settings, contact the Internet service provider (ISP).

Connecting to a Wireless Internet Network with WPS

Network > **Network Settings**

With wireless routers that support WPS (Wi-Fi Protected Setup) or PBC (Push Button Configuration), it's possible to press a button on the router to connect the TV to the Internet.

This functionality is not available with wireless routers that do not support WPS. Check to see if your wireless router supports WPS.

1. Setting the **Network Type** to **Wireless** automatically displays a list of available wireless networks.
2. Select **WPS(PBC)** and then press the WPS or PBC button located on the wireless router within two minutes.
3. The TV exchanges the network name (SSID) and security key automatically and then attempts to connect to the Internet. A confirmation message appears once a connection is established. Select **OK**.

Troubleshooting Internet Connectivity Issues

If you are not able to connect the TV to the Internet, read the information below.

Troubleshooting Wired Internet Connectivity Issues

No network cable found Try Now Try Now

Make sure the network cable is plugged in. If it is connected, make sure the router is turned on. If it is on, try turning it off and on again.

IP auto setting failed Try Now

Do the following or configure the **IP Settings** manually.

1. Ensure that the DHCP server is enabled on the router and reset the router.
2. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network Try Now

Do the following:

1. Check all **IP Settings**.
2. Ensure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet Try Now

1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet Try Now

If the problem persists, contact your Internet Service Provider.

Troubleshooting Wireless Internet Connectivity Issues

Wireless network connection failed, Try Now Try Now

Selected wireless router not found. Go to **Network Settings** and select the correct router.

Unable to connect to a wireless router Try Now Try Now

Check the following:

1. Check if the router is turned on. If it is, turn it off and on again.
2. Enter the correct security key if required.

IP auto setting failed Try Now

Do the following or configure the **IP Settings** manually.

1. Make sure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network Try Now

Do the following:

1. Check all **IP Settings**.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet Try Now

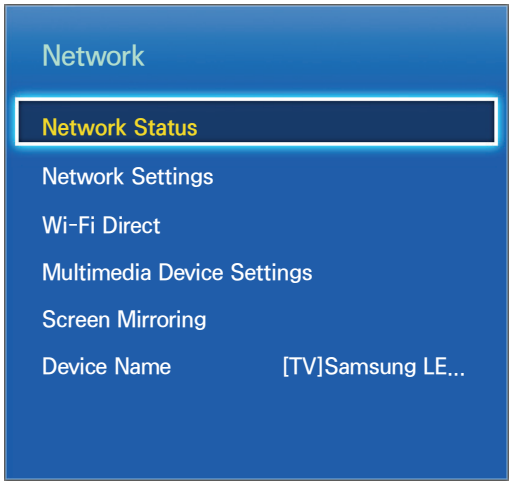
1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet Try Now

If the problem persists, contact your Internet Service Provider.

Checking the Internet Connection Status

Network > Network Status Try Now



Actual menu screen may differ depending on the TV model.

View the current network and Internet status.

Multiple Functions on a Single Screen

This allows you to search the Web, use apps, and much more while watching TV.

- Before using **Multi-Link Screen**, make sure the TV is connected to the Internet. Using **Multi-Link Screen** requires an Internet connection.
- Before using Smart Hub with **Multi-Link Screen**, go to the **On TV Settings** (**Smart Hub** > **On TV Settings** > **Set Up Service Provider**) and finish configuring Smart Hub.
- If the Multi-Link Screen launches while the TV did not configure the Smart Hub, a pop-up window appears. To use the Multi-Link Screen, you need to configure the Smart Hub first. On the pop-up window, select the **Set Up Smart Hub** to finish configuring the Smart Hub.

Launching Multi-Link Screen

Picture > **Open Multi-Link Screen**

From the **Picture** menu, select **Open Multi-Link Screen**.

- Press **M.SCREEN** on the Samsung Smart Control to launch **Multi-Link Screen**.

Using Multi-Link Screen

- UHD and FHD contents and channels cannot be viewed simultaneously.
- Launching **Smart Hub** while using **Multi-Link Screen** automatically terminates **Multi-Link Screen**.
- Certain TV features and apps may not be supported by **Multi-Link Screen**. If this is the case, exit from **Multi-Link Screen** and then use the feature.

Selecting a Feature

1. Press the Samsung Smart Control's **M.SCREEN** button while **Multi-Link Screen** is running. The Options menu appears.
2. Select a feature from the Options menu. This initialises the selected feature.

   - Features supported by **Multi-Link Screen** vary depending on the country.

Changing the Channel/Volume

1. Place the pointer or focus over the screen for which you want to change the channel or adjust the volume.
2. Use the channel buttons to change the channel or the volume buttons to adjust the volume. This changes the selected screen's channel/volume.

Pairing Bluetooth Headphones

Pairing Bluetooth Headphones to the TV makes it possible to hear the audio from a different screen through the headphones.

- Compatibility issues may arise. The mobile phone may not work.
- Depending on the device, there may be audio and video sync problems.
- The devices may disconnect depending on the distance between the TV and headphones.
- You can't use Bluetooth headphones and **SoundShare Settings** (**Sound** > **Speaker Settings** > **SoundShare Settings**) features simultaneously.
- When **Multi-Link Screen** is terminated, the Bluetooth headphone is disconnected.

1. Put the Bluetooth Headphones in the pairing-ready status.
   - Refer to the headphones' manual for instructions on enabling the pairing-ready status.
2. Press the Samsung Smart Control's **M.SCREEN** button while **Multi-Link Screen** is running. The Options menu appears.
3. Select **Settings** from the Options menu.
4. Select pair **Connect Bluetooth Headphones** from the **Settings** menu. The TV will display the Bluetoothpairing window and then automatically scan for available headphones.
   - If the scan fails to locate your headphones, try placing the headphones closer to the TV and then select **Refresh**. This will scan for the headphones again.
5. Select your headphones from the list of scanned headphones and then select **Pair and connect**. This pairs the headphones to the TV.
   - The Bluetooth headphone with a history of pairing is easily reconnected to the TV.
   - If there arise the headphone compatibility issues, clear pairing device history from the Bluetooth headphone and search again to reconnect.

Selecting the Audio-Source Screen

It's possible to listen to audio from one screen through the speakers and audio from a different screen through the Bluetooth headphones.

1. Press the Samsung Smart Control's **M.SCREEN** button while **Multi-Link Screen** is running. The Options menu appears.
2. Select **Settings** from the Options.
3. Select **Speaker Settings** from the **Settings** menu.
4. Select a screen for **TV Speaker** and another for **Bluetooth Headphone**.
   - The same screen cannot be selected for both **TV Speaker** and **Bluetooth Headphone**.
   - **Auto** is only supported by the TV speaker. Bluetooth headphones are not supported.

Smart Hub

Smart Hub > **Open Smart Hub** Try Now

With Smart Hub, you can surf the web, download apps, and stay in touch with family and friends through social networking services. In addition, you can use photo, video, and music files stored on external storage devices.

- Some Smart Hub services are paid services. To purchase such a service, the service provider account or Samsung Apps TV account (Samsung account) is required.
- Make sure the TV is connected to the Internet. The TV must be connected to the Internet in order to use Smart Hub.
- Some features of Smart Hub require an Internet connection and may not be available depending on the service provider, language, or region.
- To use Smart Hub, you must agree to the end user agreement and privacy policy. Otherwise, you will not be able to access the features and services related to them. You can view the entire content of the **Terms & Policy** by navigating to **Smart Hub** > **Terms & Policy**. If you don't wish to use Smart Hub anymore, you can withdraw the agreement.
- Smart Hub service outages can be caused by disruptions in your Internet service.

Testing Smart Hub connections

Support > **Self Diagnosis** > **Smart Hub Connection Test**

If Smart Hub is not functioning, navigate to **Support** > **Self Diagnosis** > **Smart Hub Connection Test**. Diagnose the problem by checking the internet connection, your ISP, the Samsung server and the Samsung Apps panels.

- After completing the test, if Smart Hub continues to have problems, contact your Internet Service Provider or a Samsung Contact Centre.

Opening the Home Screen

Press the button while watching TV to open the **Home Screen**.

On the **Home Screen**, search through favourite apps, channels or sources and access previously run or frequently used functions.

You can configure the TV to automatically open the **Home Screen** when it turns on. Navigate to **Smart Hub** > **Home Screen Settings**, and set **Auto Start** to **On**.

Setting your favourite item

1. Press the button to open the **Home Screen**, and move to a desired item.
2. Press and hold the touchpad. The Options menu appears.
3. In the Options menu, select **Add to Favourites** to add the selected item to the favourite list, which will move top of the list.

   To delete a favourite item, select it and tap and hold the touchpad to display the context menu. Then, select **Remove from Favourites**.

Deleting browsing history

1. Press the button to open the **Home Screen**, and select **Clear All**. You will be asked to confirm your selection.
2. Select **Yes** on the screen. Your browsing history is deleted completely.

   However, the Favourites list items will not be deleted.

   You can also delete your browsing history by selecting **Clear All** in the **Smart Hub** > **Home Screen Settings** menu.

Moving to the Panel Screen

Press the button to open the **Home Screen**, and select the Panel icon. On the Panel screen for each service panel, the following are available:

Usability depends on the specific model and local region.

- **Games**

  Navigate to **Smart Hub** > **Games** to confirm the optimising game apps for Smart TV and detailed information on Smart hub. This makes it easier to download and play games. In addition, you can manage games that you have downloaded or purchased with your Samsung Account.

- **SAMSUNG APPS**

  You can enjoy variety of free and paid news, sports, weather, and gaming apps on the TV as you would on a smart phone or tablet.

- **On TV**

  You can view the current programmes on TV at a glance and view the Programme Recommendations by Channel and Programme Recommendations by Time from the programmes that will be broadcasted. In addition, you can watch recorded videos.

- **FILMS AND TV SHOWS**

  You can directly purchase and view a movie or TV programme through the app provided by Smart Hub without connecting an external video source such as a DVD or Blu-ray player.

- **MULTIMEDIA**

  You can play back photo, video, and music files from an external storage device or watch recorded videos.

Using the Smart Hub Tutorial

Support > **Smart Hub Tutorial**

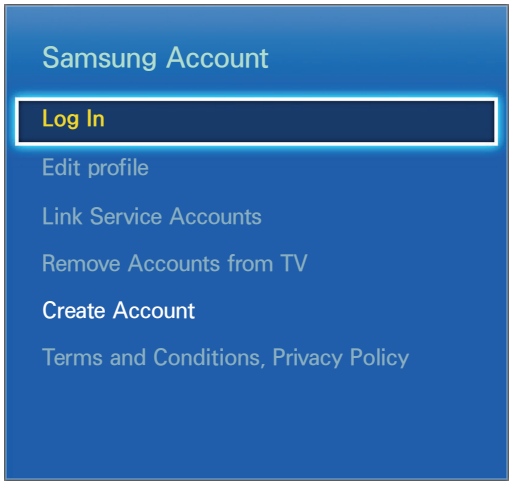
From the **Support** menu, select **Smart Hub Tutorial**. This will familiarise yourself with the basics of Smart Hub and panels.

Resetting Smart Hub

Smart Hub > **Reset Smart Hub** Try Now

Reset all saved information relating to Samsung accounts and linked service accounts, as well as Smart Hub service agreements and applications.

Using Smart Hub with Samsung Account



Actual menu screen may differ depending on the TV model.

Creating a Samsung Account

Smart Hub > **Samsung Account** Try Now

Some Smart Hub services are paid services. To purchase such a service, the service provider account or Samsung Apps TV account (Samsung account) is required.

You can create a Samsung Account using your email address.

To create a Samsung Account, you must agree to the Samsung Account end user agreement and privacy policy. Otherwise, you cannot create a Samsung Account. You can view the entire content of the agreement by navigating to **Smart Hub** > **Samsung Account** > **Terms and Conditions, Privacy Policy**.

Alternatively, you can create a Samsung Account at http://content.samsung.com. You can use one ID for both the TV and the website.

Creating a Samsung Account using Sign Up Samsung Account Menu

1. Navigate to **Smart Hub** > **Samsung Account** > **Create Account** and select **Create a Samsung account**.
2. Agree to use a Samsung Account and select **Next**.
3. Create a Samsung Account according to the instructions on the **Create Account** screen.

   Once a Samsung Account is created, you will be automatically logged in to **Smart Hub**.

Creating a Samsung Account using a Facebook Account

A Facebook user can easily obtain necessary information from Facebook and create a Samsung Account.

1. Navigate to **Smart Hub** > **Samsung Account** and select **Log In**.
2. Select ⊕ and select the **Create with Facebook**.
3. Enter your Facebook ID and password and select **Sign In**.
4. Agree to use a Samsung Account and select **Next**.
5. Create a Samsung Account according to the instructions on the **Create Account** screen. Once a Samsung Account is created, you will be automatically signed in.

   If you create a Samsung Account using your Facebook account, they are automatically linked.

Signing into Samsung Account

Smart Hub > **Samsung Account** > **Log In**

Logging into and Saving a Samsung Account

If you haven't logged into your Samsung Account on the TV, you must save your Samsung Account on the TV.

1. Navigate to **Smart Hub** > **Samsung Account** and select **Log In**.
2. Select ⊕ and select **Sign In**.
3. Enter your ID and password and then select **Sign In**.

   Check the **Sign me in automatically** option if you wish to log into **Smart Hub** automatically.

   If you forgot your password, select **Reset password** to receive password reset instructions via email.
4. Select an image to be used as the profile picture. The **Samsung Account** has been saved on the TV.
5. Select **Done** to log into your Samsung Account.

Easily Logging Into Your Samsung Account Saved on the TV

1. Navigate to **Smart Hub** > **Samsung Account** and select **Log In**.
2. Choose your Samsung Account and select **Sign In**.
3. Using the login method configured for the selected Samsung Account, log into your Samsung Account.

Linking My Samsung and App Accounts

Smart Hub > **Samsung Account** > **Link Service Accounts**

Linking your Samsung Account to accounts of apps installed on the TV lets you automatically log into your linked app accounts when you log into your **Samsung Account**. For example, you can download the Facebook app and link your Facebook account to your **Samsung Account**. In this case, logging into your **Samsung Account** then automatically logs you into your Facebook account as well.

To use **Link Service Accounts**, you must first log into your Samsung Account.

Linking an App Account

1. Navigate to **Smart Hub** > **Samsung Account** and select **Link Service Accounts**. A list of apps that can be linked to your Samsung Account is shown.
2. Select an app from the list. The Link to other accounts window appears on the screen.
3. Enter the current ID and password of the app to log in. When the login is complete, the app account is linked to the Samsung Account.

Disconnecting a Linked Account

1. Navigate to **Smart Hub** > **Samsung Account**, select **Link Service Accounts**. Select an app to unlink.
2. A confirmation dialog box appears. Select **Yes** to unlink the app.

Changing and Adding Information to Samsung Account

Smart Hub > Samsung Account

Using the **Samsung Account** menu, you can manage your Samsung Account.

To change the account information, you must be logged into your Samsung Account.

1. Navigate to **Smart Hub** > **Samsung Account** and select **Edit profile**.
2. Enter the password and then select **Done**. The edit profile screen appears.

The profile editing screen provides the following features.

- **Changing Profile Image**

  If you select **Edit Profile Picture** on the login screen, you can change the profile image.

- **Registering Your Face to Samsung Account**

  If you select **Register face** on the login screen, you can register your face to your Samsung Account. The registered face is used by the **Sign-in Method**.

- **Choosing a Samsung Account Login Method for TV**

  Select **Sign-in Method** on the login screen and choose a login method. You can determine how to log into the TV with the saved Samsung Account.

- **Setting Auto Login**

  Check the **Sign me in automatically** option if you wish to log into **Smart Hub** automatically.

- **Entering Basic User Information**

  You can enter your given name, surname, and date of birth.

- **Receiving e-mail about Samsung services**

  You can determine whether to receive e-mail about Samsung services. Containing the latest information.

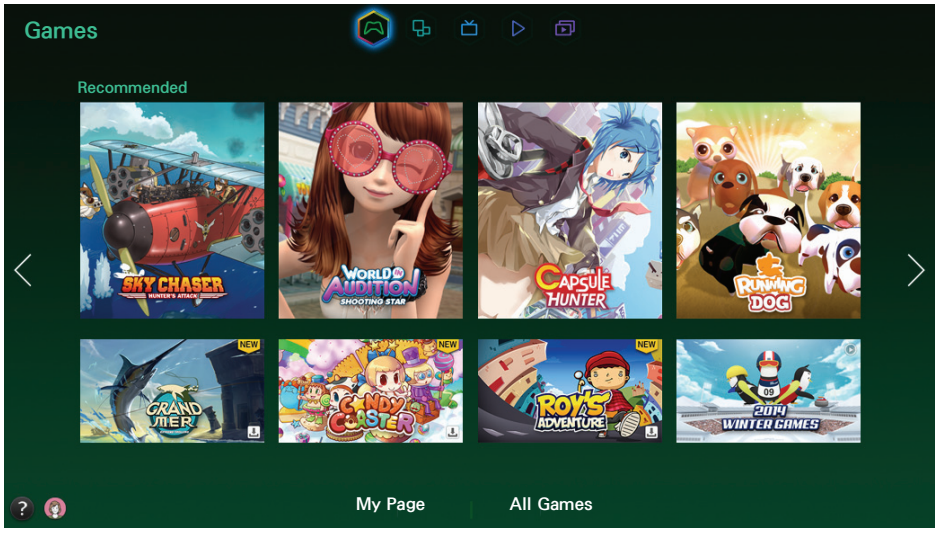
Deleting All Samsung Accounts from the TV

Smart Hub > Samsung Account > Remove Accounts from TV

Navigate to **Smart Hub** > **Samsung Account** and select **Remove Accounts from TV**. The account and password information saved on the TV is deleted, and the account information of any linked apps are also deleted.

To delete your account information, you must be signed in with your Samsung Account.

Using the Games Panel



Actual menu screen may differ depending on the TV model.

This service or some of functions of it may be not available in some countries or region.

Navigate to Smart Hub > Games to confirm the optimising game apps for Smart TV and detailed information on Smart hub. This makes it easier to download and play games. In addition, you can manage games that you have downloaded or purchased with your Samsung Account.

Before you use the Games panel, check if the TV is connected to the Internet. The TV must be connected to the Internet in order to use the Games panel.

To use the Games panel, you must log into your Samsung Account.

Using Pop-Up Menu Functions

In the Games panel, move the focus to a desired game and press and hold the Enter button. The following functions are available:

- **Downloading/Deleting a Game**

  Downloads or deletes the game from the TV.

- **Viewing Detail Information of the Game**

  Displays detailed information of the selected game.

Installing and Running a Game

- When the TV's internal memory is insufficient, you can install a game on a USB device.
- You can play a game installed on a USB device only when the USB device is connected to the TV or UHD Evolution Kit. If the USB device is disconnected during a game playing, the game is terminated.
- The game installed on the USB device cannot be played on a different TV, or a PC.

Quickly Installing Games

1. Select **All Games** from the **Games** panel, navigate to a game from the list and press and hold the Enter button.
   - On the **All Games** screen, select the button to view the guide about the game controller.
   - On the **All Games** screen, select the button and select a desired sorting criterion. Then, the items in the list are accordingly rearranged.
2. In the pop-up menu, select **Download**.

   The selected game is installed on the TV.

Installing an App in the Detailed Game Information Screen

1. On the **Games** panel screen, select a game you wish to install. If you cannot find a desired game, select **All Games** at the bottom of the screen.
   - On the **All Games** screen, select the button to view the guide about the game controller.
   - On the **All Games** screen, select the button and select a sorting criteria. The games are sorted according to the criteria.
2. On the detailed information page of the selected game, select **Download**.

   When installation is complete, the installation complete window appears.

Launching a Game

To run an installed game, select **Play** on the detailed game information screen.

Managing Downloaded or Purchased Games

In Smart Hub, move to the **Games** panel and select **My Page** at the bottom of the screen.

- On the **My Page** screen, select the button to view the game controller guide.
- On the **My Page** screen, select the button and select a desired sorting criterion. This rearranges the list accordingly.

Updating a Game

Select **Update Games** at top of the **My Page** screen to update games installed on the TV.

- The **Update Games** appears only when there is a game that needs to be updated.
- To update games automatically, select the button at top of the **My Page** and set the **Auto Update games** to **On**. Games will then be updated automatically when an update becomes available.

Removing a Game

1. Press the button at top of the **My Page** screen and select **Delete**.
2. Select all of the games you wish to remove. To select all games, select **Select All**.
3. When the selection is complete, select **Delete**.

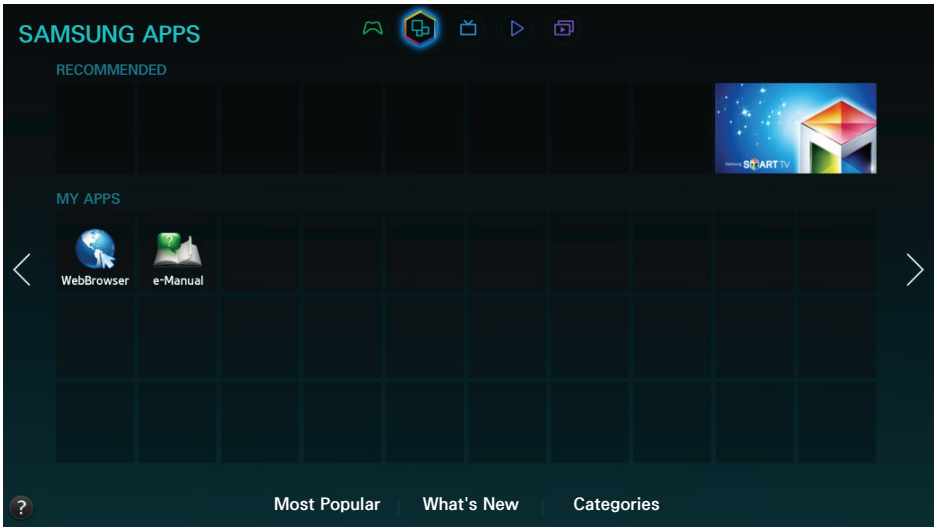
   - Navigate the game you wish to remove and press and hold the Enter button. Then you can easily remove the game.

Rating/Sharing/Reviewing a Game

You can rate or share the game through a social network service or send a review to the developer on the detailed information screen.

- You can rate / share / review a game only when the game has installed on the TV.

Using SAMSUNG APPS Panel



- Actual menu screen may differ depending on the TV model.
- This service or some of functions of it may be not available in some countries or region.

Smart Hub offers a variety of free news, sports, weather, and gaming content you can install directly on your TV the same way as you would on a smartphone or tablet.

- Before you use SAMSUNG APPS, make sure the TV is connected to the Internet. Your TV must be connected to the Internet in order to use SAMSUNG APPS.
- Launching Smart Hub for the first time installs the default apps automatically. The default apps may differ depending on the region.

Using Pop-Up Menu Functions

Move the focus to an app and press and hold the Enter button. You can use the following functions:

- **Move**

  Relocates the selected app.

- **Delete**

  Removes the selected app.

- **Delete Multiple**

  Removes multiple apps at once.

- **View Details**

  Move to the detailed information of the selected app.

- **Change view**

  You can change view mode sort by **Custom view** or **Most Played**.

- **Lock/Unlock**

  You can lock or unlock a selected app from the screen.

- **Update apps**

  You can update the selected app.

Installing an App

- When the TV's internal memory is insufficient, you can install an app on a USB device.
- Only when the USB device is connected are the app icons installed on the USB viewable on the **SAMSUNG APPS** screen. You can use an app installed on a USB device only when the USB device is connected to the TV. If the USB device is disconnected while the app is running, the app is terminated.
- The app installed on the USB device is not available on a different TV, or a PC.

Quick Installation

1. On the **SAMSUNG APPS** screen, select **Most Popular**, **What's New**, or **Categories**.
   - The **Most Popular** and **What's New** show the most popular and newest Samsung Apps. To view the entire app list, select **Categories**. You can view all Samsung Apps classified by genre.
2. Move the focus to an app and press and hold the Enter button. A pop-up menu appears.
3. On the pop-up menu on the screen, select **Download**.
   - While an app is being installed, the progress bar appears at the bottom of the app icon so that you can easily figure out the installation progress.
4. The selected app is installed on the TV.
   - You can view installed apps on the **SAMSUNG APPS** screen.

Installing an App from the Detailed App Information Screen

1. On the **SAMSUNG APPS** screen, select **Most Popular**, **What's New**, or **Categories**.
   - The **Most Popular** and **What's New** show the most popular and the newest Samsung apps. To view the entire app list, select **Categories**. You can view all Samsung Apps by category.
2. Select an app from the list. Detailed information about your selection appears on the screen.
3. Select **Download** on the detailed information screen to install the selected app on the TV.
   - When an app is being installed, a progress bar appears underneath the app icon.
4. When the installation is complete, the **Download** button turns to **Open**.
   - You can view installed apps on the **SAMSUNG APPS** screen.

Launching an App

Select an app on the SAMSUNG APPS screen to launch it.

The icons indicate the following:

- : The app supports motion control.
- : The app supports voice control.
- : The app is installed on a USB device.
- : The app supports a pointer that can move by the Samsung Smart Control.

Default Apps

e-Manual

The embedded e-Manual contains information.

Using Web Browser

Web Browser is an Internet browsing app. Using Web Browser, you can surf the Internet on the TV in the same manner as you would using a PC even while watching a TV programme on PIP.

- Use a keyboard and mouse for a more convenient web browsing experience.
- The browsing screen may differ from that on a PC.

Browsing Methods

Web Browser provides two browsing methods: Pointer Browsing and Link Browsing. Pointer Browsing enables you to move the pointer for selection while Link Browsing allows using the direction arrows to move the focus.

The default browsing method of Web Browser is Pointer Browsing. To enable Link Browsing, select the Link Browsing icon.

Command and Status Bar at a Glance

Open the Web Browser to display the command and status bar at the top of the screen. The following items are available:

- **Back**

  Move to the previous page.

- **Forward**

  Move to the next page.

- **Bookmarks & History**

  Move to the **Bookmarks & History** screen. On this screen, add the current page to Bookmarks, or move, edit, or delete a bookmarked page. Easily access visited pages by navigating the History screen.

- **Home Page**

  Move to the main screen.

- **Address Bar**

  Check the address of the current page, or enter a web page address to move to the page.

- **Refresh** / **Stop**

  Reload the current page or stop reloading the current page.

- **Add to Bookmark**

  Add the current page to Bookmarks.

- **Search**

  Make a keyword search using the user-specified search engine.

  To change the search engine, select the icon and then select a search engine in the **Set Search Engine** menu.

- **Zoom**

  Zoom in or out of the current web page.

- **PIP**

  Use **Web Browser** while watching a TV programme on the same screen.

- **Link Browsing** / **Pointer Browsing**

  Select one from two browsing methods supported by **Web Browser**.

- **Settings**

  Configure the **Web Browser** settings.

- **Close**

  Exit **Web Browser**.

- **New Tab**

  Open a new tab.

Browsing Preferences

Select the item on the screen. Configure the browsing settings to your needs or convenience.

Some items may not be available depending on the web page. Unavailable items are grayed out.

- **Enable Grabbing** / **Disable Grabbing**

  Press Enter and then the arrow keys on your remote to enable Grabbing. Press Enter again to disable Grabbing after you have moved the items on screen to the position you want.

- **Approved Sites**

  To prevent children from accessing inappropriate web pages, limit access to pre-registered web pages.

  You will be asked to enter a password when selecting **Approved Sites**. Enter the password. The default password is 0000.

  Approved Sites feature: Enable/disable the **Approved Sites feature**.

  Reset password for Approved Sites: Change the password.

  Add current site: Add the current web page to **Approved Sites**.

  Manage Approved Sites: Enter the address of the web page that you want to add to **Approved Sites**, or select one from the list and delete it.

  Enabling the **Approved Sites feature** with no web page listed will restrict access to any web page.

- **Private browsing on** / **Private browsing off**

  Enable/disable the **Private Browsing** feature. Enabling **Private Browsing** will not save the browsing history.

  When enabling **Private Browsing**, the icon appears at the start of the address bar.

- **PIP Settings**

  Configure the PIP settings.

  This is available only if watching TV in PIP mode.

  Position: Select the position of the sub picture.

- **Set Search Engine**

  Set the default search engine from the list.

- **Web Browser Settings**

  Configure the **Web Browser Settings**, such as browsing behaviors or security.

  Set as homepage: Select a web page and set it as the homepage.

  Pop-up Block: Block or unblock pop-up windows.

  Page Block: Block or unblock pages such as commercial pages. Manage a list of pages to block by entering the address of a web page.

  General: Delete browsing history or Internet usage information, or reset **Web Browser**. Set **Security Mode** to **On** to restrict access by malicious codes or phishing sites.

  Encoding: Set the **Auto select** to **On**, or select an encoding method from the list.

  Pointer: Adjust the pointer speed in **Pointer Browsing** mode, or change the link access method.

  Browser Information: Check the current version of **Web Browser**.

- **Help**

  This will familiarise yourself with the basics of **Web Browser**.

Rearranging Apps on the SAMSUNG APPS Screen

1. On the SAMSUNG APPS screen, move to the app you wish to change the order.
2. Press and hold the Enter button. A pop-up menu appears.
3. On the pop-up menu, select **Move**.
4. Move an app to a desired location and select the app again.

Removing an App from the TV

Note that if an app is removed, the data related to the app is also deleted.

Removing an App

1. On the **SAMSUNG APPS** screen, move to the app you wish to remove.
2. Press and hold the Enter button. A pop-up menu appears.
3. On the pop-up menu on the screen, select **Delete**. A removal confirmation window appears. Select **Yes**. The selected app is removed.

Removing Multiple Apps

1. On the **SAMSUNG APPS** screen, move to the app you wish to remove.
2. Press and hold the Enter button. A pop-up menu appears.
3. On the pop-up menu on the screen, select **Delete Multiple**. A check box appears on the app icons.
4. Select all the apps you wish to remove and then select **Delete**. A removal confirmation window appears. Select **Yes**. Selected apps are removed.

Rating/Reviewing an App

On the detailed app information screen, you can rate the app or send a review to the app developer.

To rate or review an app, you must log into your Samsung Account. You can only rate or review with a TV purchasing apps and games.

Updating an App

1. On the **SAMSUNG APPS** screen, move to the app you wish to update.
2. Press and hold the Enter button. A pop-up menu appears.
3. On the pop-up menu on the screen, select **Update apps**. A pop-up window appears.
4. Select all the apps you wish to update and then select **Update**. All the selected apps are updated to the latest versions.

Setting Auto App Update

Smart Hub > Apps Settings

To update apps automatically, navigate to **Smart Hub** > **Apps Settings** and set **Auto update** to **On**. The apps installed on the TV are automatically updated as updates become available.

SAMSUNG APPS Features

Smart Hub > Apps Settings Try Now

You can configure the features related to the apps installed on your TV.

Enabling Automatic Tickers

You can configure selected tickers to display automatically when the TV is turned on. Ticker Service enables you to use other services while watching TV. You can receive news, stock, and weather information and more in real-time while watching TV.

To use this feature, make sure that an app supporting the **Auto Ticker** function is installed on the TV.

1. Navigate to **Smart Hub** > **Apps Settings** and select **Auto Ticker**. A list of installed apps that support Ticker Autorun appears.
2. From the list, select apps you wish to run automatically when the TV is turned on.

Setting Push Notification

Push notification function enables apps installed on the TV to send alerts and messages to the user.

1. Navigate to **Smart Hub** > **Apps Settings** > **Push Notification Settings** and set the **Push Notification** to **On**.
2. Set the **Push Notification** setting of apps you wish to receive push notifications from to **On**. Push notification function of the selected apps is activated.

   The **Push Notification** app list only shows installed apps that support **Push Notification Settings**.

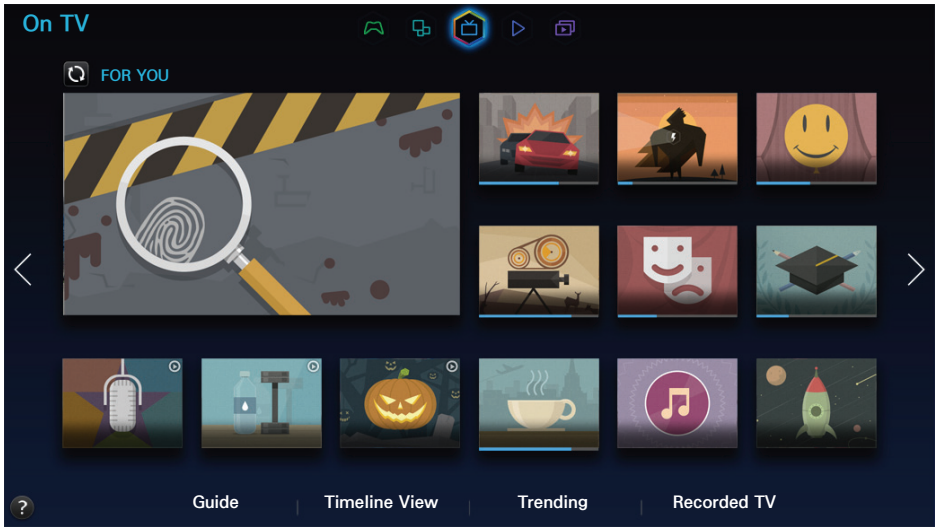
Using an App while Watching TV

If an app linked to a channel is installed on the TV, you can view programme information and use related services offered by the app while watching TV.

Navigate to **Smart Hub** > **Apps Settings** and set **Channel-Bound Apps** to **On**.

This feature is only available with apps supporting **Channel-Bound Apps** installed on the TV.

Using On TV Panel



- Actual menu screen may differ depending on the TV model.
- This service or some of functions of it may be not available in some countries or region.
- Availability of recommended content depends on the specific model and area.

Smart Hub's **On TV** panel lets you view programme lists for recommended channels while watching TV. You can then switch to a programme in the recommendation list or set up **Schedule Viewing**/ **Schedule Recording** for an upcoming programme.

- Before you use **On TV**, check if the TV is connected to the Internet. The TV must be connected to the Internet in order to use **On TV**.
- The channels or programmes recommended by **On TV** may differ from the actual ones depending on the broadcast information provider.

Select a desired programme from the recommendation list. You can watch the selected programme immediately if it is currently on air or move to the detailed programme information screen if it hasn't aired yet.

- Select from the screen to change the recommended content list.
- For a programme being broadcasted, a progress bar appears. For an upcoming programme, the remaining time to broadcast appears.

Move to the navigation bar at the bottom of the screen to access the following options:

- **Viewing the Programme Schedule of Digital Channels**

  Select **Guide** at the bottom of the screen to view the programme schedule of each digital channel at a glance. You can check the programme schedule and even set up a **Schedule Viewing** or **Schedule Recording**.

  The Guide provides information only about digital channels. Analogue channels are not supported.

- **Programme Recommendations by Time**

  Select **Timeline View** at the bottom of the screen to view programme recommendations for different times of the day.

- **Popular Videos**

  Select **Trending** at the bottom of the screen to view the most trendy or popular content in Twitter.

- **Watching a Recorded Programme**

  Select **Recorded TV** at the bottom of the screen to watch a recorded programme.

Using Pop-Up Menu Functions

Move the focus to a desired programme and press and hold the Enter button. The following options are available:

Available functions may differ depending on the selected programme.

- **Recording the Current Programme**

  You can instantly record a programme that is being broadcast on a different channel.

- **Viewing Detailed Information**

  You can move to the detail information screen about the selected programme.

- **Reserving**

  You can set up a **Schedule Viewing** or **Schedule Recording** for the programme.

Viewing Detailed Programme Information

1. Move the focus to a desired programme and press and hold the Enter button. The Options menu appears.
2. From the Options menu on the screen, select **View details**. The detailed information about the selected programme screen appears.

You can find more information about the selected programme in the detailed information screen and you can easily use the following functions:

- **Moving to a Channel**

  Jump to the selected programme's channel.

- **Record**

  You can record the programme.

  This function is only available for programmes that is being broadcasted.

- **Reserving**

  Set up a Schedule Viewing or Schedule Recording for the programme.

  This function is only available for programmes that is being broadcasted.

- **Viewing Related Content**

  View a list of content related to the programme. If you select an item from the list, the detailed screen of the selected item appears.

- **Rate**

  You can rate the programme.

- **Sharing**

  You can share detailed information about the programme on social networking services.

Configuring On TV Settings

Availability depends on the specific model and area.

Smart Hub > On TV Settings

You can set up the signal reception method, cable company, and other broadcast viewing environment settings for On TV.

Navigate to Smart Hub > On TV Settings, select Set Up Service Provider settings and set up the broadcast viewing environment settings according to the onscreen instructions.

Receiving Automatic Notifications

You can configure the TV to display a notification when a frequently watched programme is broadcast.

Navigate to Smart Hub > On TV Settings and set Automatic Notifications to On.

Changing Recommendation Type

You can choose between personally preferred programmes and programmes preferred by the general public as the type of recommendations you wish to receive.

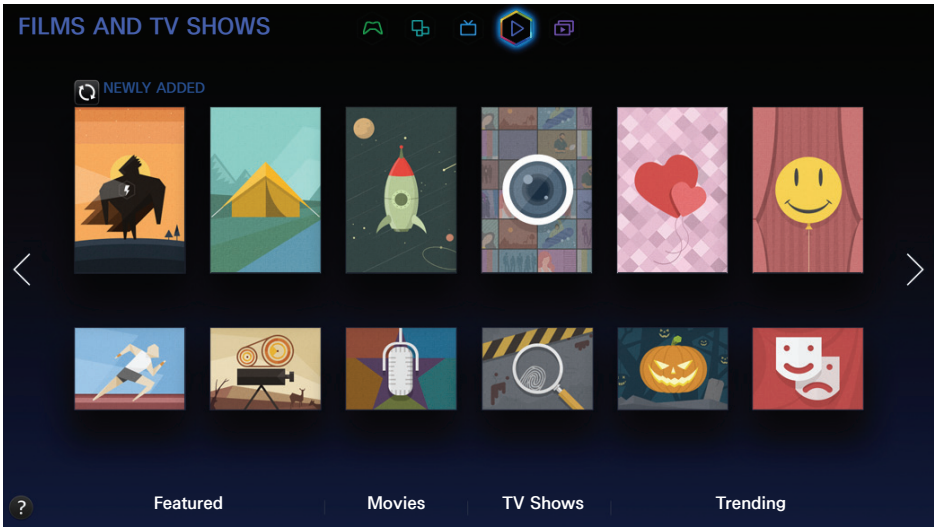
Navigate to Smart Hub > On TV Settings, select Recommendation Type and set it to a desired type.

Removing Adult Content from the Recommended List

You can configure this setting so that recommended programmes that are rated for adults are blocked automatically.

Navigate to Smart Hub > On TV Settings and set Block Adult Content to On.

Using FILMS AND TV SHOWS Panel



- Actual menu screen may differ depending on the TV model.
- This service or some of functions of it may be not available in some countries or region.

Use this feature to purchase and view movies and TV programmes recommended by **FILMS AND TV SHOWS** without having to use an external device such as a DVD player or a Blu-ray player. **FILMS AND TV SHOWS** provides an easy access to a collection of movies and TV programmes available in Smart Hub.

- Not all the **FILMS AND TV SHOWS** options may be available depending on the content you are trying to access or your region.
- Before you use **FILMS AND TV SHOWS**, make sure the TV is connected to the Internet. The TV must be connected to the Internet in order to use **FILMS AND TV SHOWS**.
- Select from the screen to change the recommended content list.

Move to the navigation bar at the bottom of the screen to access the following options:

To sort the content items in each menu, select the button at top of the screen and choose a sorting criteria. However, depending on the selected menu, the button may not appear.

Press in each menu's contents list screen to display only movies or TV programmes in the list. The button may not be shown, depending on the selected menu.

- Enjoying Featured Movies and TV Programmes

  Select **Featured** to view movies or TV programmes selected according to various themes such as movies featuring an actor who went to Hollywood, completed TV series, and so on.

- Viewing a Movie

  Select **Movies** to view a movie from among the movies listed by new arrival, popularity, and genre.

- Viewing a TV Programme

  Select **TV Shows** to view a TV show from among the TV shows listed by new arrival, popularity, and genre.

- Viewing Hot Movies and TV Shows at a Glance in Real-time

  Select **Trending** to view movies and TV programmes that are the most trendy or popular.

- Viewing a Trailer

  Select **Trailers** to view movie trailers for upcoming movies.

Using Pop-Up Menu Functions

Move the focus to a desired movie or TV programme and press and hold the Enter button. The following options are available:

Available options may differ depending on the selected programme.

- **Instant Content Playing**

  Select an app for the selected content to play it right away.

  If the selected app is not installed, a pop-up window will appear. From the pop-up window, move to the detailed app information page or install the app.

Watching a Movie/TV Programme

- If you are using **FILMS AND TV SHOWS** for the first time or have not logged into your Samsung Account, new and popular movies and TV shows will be shown in the **FILMS AND TV SHOWS** list. To view a customised recommendation list in **FILMS AND TV SHOWS**, first log into your Samsung Account. You can view a list of frequently played content on **FILMS AND TV SHOWS** screen in addition to the default recommended content list.

1. On **FILMS AND TV SHOWS** screen, select a movie or TV programme you wish to watch. Detailed information about your selection appears on the screen.
2. On the detailed information screen, select an app to play the content. This launches the selected app and displays detailed information about the content.
   - If the selected app is not installed, a pop-up window will appear. From the pop-up window, move to the detailed app information page or install the app.
3. You can play the content in the detailed information of the content.
   - If the selected content is free, you can instantly watch the content. If the content is a paid content, you must first purchase the content in the app (In-App Purchase).
   - The purchasing procedures on the app may differ depending on the app. You may need to log into the app or enter payment information.

Restricting Purchased Content Viewing

Smart Hub > **VOD Rating Lock**

You can lock content rated as adult content so that children cannot access the content.

Navigate to **Smart Hub** and set **VOD Rating Lock** to **On**.

- To turn on or off the **VOD Rating Lock**, the password is required.

Rating and Sharing a Purchased Content

Rating Content

1. Select content in **FILMS AND TV SHOWS**. Detailed information about your selection appears on the screen.
2. Select ★★★★★ button on the detailed information screen. A pop-up window appears.
3. You can rate the item using the < and > buttons in the pop-up window.

Sharing With SNS

1. Select content in the **FILMS AND TV SHOWS**. Detailed information about your selection appears on the screen.
2. Select either f or button in the detailed information screen. The login page of the selected SNS appears.

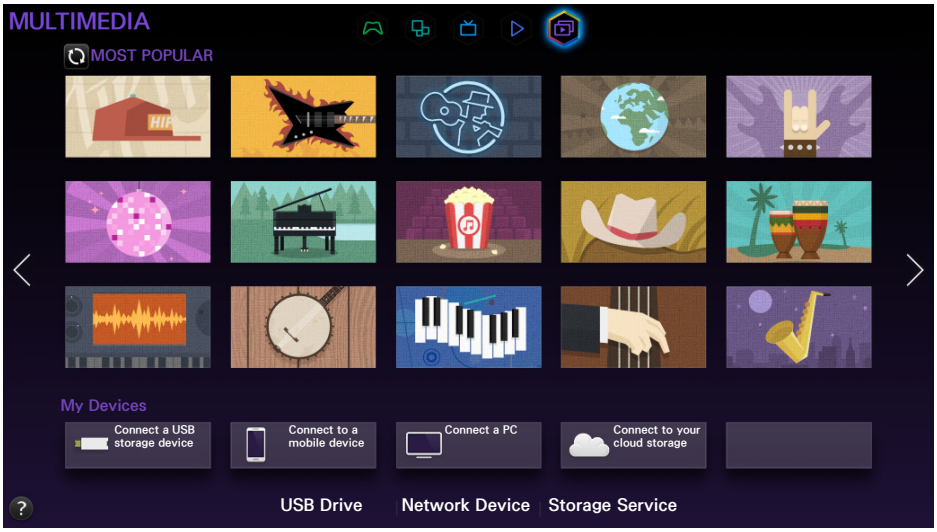
   If you have linked your Samsung Account to the SNS account, you were automatically logged into the SNS account when you logged into your Samsung Account.

3. On the SNS login screen, enter your SNS ID and password to log into the SNS.

   If you have linked your Samsung Account to the SNS account, you can skip this step.

4. In the pop-up window, type the article you wish to post to the SNS and select **Post**. The article is posted to the SNS.

Playing Photos, Videos, and Music (MULTIMEDIA)



- Actual menu screen may differ depending on the TV model.
- This service or some of functions of it may be not available in some countries or region.

You can play media content saved on a USB device, smartphone, camera, computer, or Storage Service on the TV.

- You cannot play media content if the content or the storage device are not supported by the TV. For more information, refer to "Photo, Video, and Music File Limitations".
- Backup important files before connecting a USB device. Samsung shall not be held responsible for damaged or lost files.

Playing Media Content from a USB Device

1. Select **USB Drive** in the **MULTIMEDIA** panel. USB devices connected to the TV are listed.
2. Select the device you wish to access. Folders and files of the selected USB device are listed.
3. Select the media content you wish to play. This plays the selected content.

- Alternatively, move to the media content to play and press the ► button to play the content.
- If you connect a USB device to the TV while watching the TV, a pop-up window appears on the screen so that you can easily navigate the folders and files of the USB device.
- Alternatively, if you select a USB device on the **Source** screen, a pop-up window appears on the screen so that you can easily navigate the folders and files of the USB device.
- When connecting a USB device to the UHD Evolution Kit models, the TV may fail to recognise it, depending on the device. If this happens, directly connect the device to the USB port on the TV's rear.

Safely Removing a USB Device

1. Press the **SOURCE** button. The Source screen appears.
2. Navigate the USB device you wish to remove, and press and hold the Enter button. An options window appears.
3. Select **Disconnect USB Device** from the list.

Playing Multimedia Content Saved in a Computer/Mobile Device

- To view a guide about the PC connection, select **Connect to a PC** under Network Device.
- To view a guide about a Smartphone or tablet connection, select **Connect to a Phone** under **Network Device**.

Allowing Connection with a Computer/Mobile Device

To play multimedia content in a computer or mobile device on the TV, you need to allow the connection with the computer on the TV.

- You can connect to a computer or mobile device on any DLNA DMC device. DLNA DMC function enables users to connect a mobile device to the TV, search for multimedia content and control play operations on the TV.

1. Select **Network Device** in the **MULTIMEDIA** panel. Devices connected to the TV are listed.
2. Select **Options** and then **Multimedia device settings**. Devices connected to the TV are listed.
   - Alternatively, select **Multimedia Device Settings** from the **Network** menu to see the list of the devices connected to the TV. Try Now
3. Allow connection with the desired device you wish to connect to the TV. You can only play media files from devices that have been allowed to connect to the TV.
   - If a computer or mobile device requests the multimedia content play, the connection allowance confirmation window appears on the TV so that you can easily connect the computer or mobile device.

When Connected through Home Network (DLNA)

- To connect a computer through home network (DLNA).
- To connect a mobile device through home network (DLNA).
- You may experience compatibility issues when attempting to play media files via a third-party DLNA server.
- However, the content shared by a computer of a mobile device may not play depending on the encoding type and file format of the content. In addition, some functions may not be available.
- The multimedia content may not smoothly play depending on the network status. If this is the case, use a USB storage device.

1. Select **Network Device** in the **MULTIMEDIA** panel. Devices connected to the TV are listed.
2. Select a device connected via the home network (DLNA). Folders and files shared by the selected device will be listed.
3. Select a media content you wish to play from the list. This plays the selected content.

   - Alternatively, move to the media content and press ► to play.

When Connected through Samsung Link

- To connect a computer through Samsung Link.
- To connect a mobile device through Samsung Link.
- However, the content shared by a computer of a mobile device may not play depending on the encoding type and file format of the content. In addition, some functions may not be available.
- The multimedia content may not smoothly play depending on the network status. If this is the case, use a USB storage device.

1. Navigate to **Smart Hub** > **Samsung Account** menu and select **Log In** to sign in with your the Samsung Account.
2. Select **Network Device** in the **MULTIMEDIA** panel. Devices connected to the TV are listed.
3. Select a device connected via Samsung Link. Folders and files shared by the selected device will be listed.
4. Select a media content you wish to play from the list. This plays the selected content.

   - Alternatively, move to the media content and press ► to play.

Playing Media Content from a Storage Service

Storage Services store user content such as photo, video, and music files on a server so that they can be viewed/played on the TV over the Internet. It's also possible to view your media content saved on Storage Services such as Dropbox and SkyDrive from the TV.

To play content from a Storage Service, you must log into your Samsung Account and link it to the Storage Service account.

1. Navigate to **Smart Hub** > **Samsung Account** menu and select **Log In** to sign into your **Samsung Account**.
2. Select **Storage Service** in the **MULTIMEDIA** panel. Storage Services linked to your Samsung Account appears.
3. Select a Storage Service. Folders and files found in the selected Storage Service are listed.
4. Select the media content you wish to play from the list. This plays the selected content.

   Alternatively, move to the media content and press ► to play.

Buttons and Functions Available while Viewing Photos

Press enter to access the following buttons. Pressing RETURN hides the playback buttons.

- **Pause** / **Play**

  Start or stop the slide show. The slide show feature displays all the photos contained in the selected folder, one photo at a time.

- **Previous** / **Next**

  View the previous/next photo in the queue.

- **Settings**

Function	Description
Slideshow Settings	Speed: Set the slide show speed. Effects: Apply transition effects to the slide show.
Rotate	Rotate the photo.
Zoom	Zoom in by up to a factor of 4.
Picture Mode	Change Picture Mode.
Background Music	Listen to background music while viewing photos. The music file must be located on the same device as the photo files. A mini player appears on the screen when background music is played. Use the mini player to pause the music or play a different music file.
Sound Mode	Change Sound Mode. This option is supported only when background music is playing.
Select Speakers	Choose speakers for the background music.
Send	This function is the same as the "Copy" function of a computer. Use this function to send the current photo to another storage device. For information on storage devices supported by this feature, refer to "Storage Device File Transfers".
Information	View detailed information about the current photo.

Buttons and Functions Available while Watching Video

Press enter to access the following buttons. Pressing RETURN hides the playback buttons.

- **Pause** / **Play**

  Pause or play the video.

  When the video is paused, you can use the following functions. However, audio will not be heard while the video is paused.

  – **Step**: Press ⏸ to scan the paused video one frame at a time.

  – **Slow Motion**: Select the ⏩ button to play the video at reduced speed (1/8, 1/4, 1/2).

- **Rewind** / **Fast Forward**

  Rewind or Fast Forward the video. Repeatedly select the button to make the rewind/fast forward speed faster by up to 3 times. To restore normal playback speed, select ▶.

- **Previous** / **Next**

  Select ⏮ twice to play the previous video. Selecting ⏮ once reloads the current video from the beginning.

  To play the next video, select the ⏭ button.

- **Settings**

Function	Description
Select Scene	Thumbnails: Select a scene and play the video from the scene. Thumbnails is not available when 1) the thumbnail of the video is not extracted yet, 2) the video contains audio only or 3) the video play time is shorter than 60 seconds. Chapter Titles: Select and play another video in the same folder. Time Bar: You can use the <, > buttons to scan through the video in 10 seconds intervals or enter a specific time value to jump to that point in the video.
Subtitles	Control the subtitle of the video. Language: Turn the subtitles on or off. Sync: When the video and the subtitles are not synchronised, you can adjust the synchronisation. Reset Sync: Reset the subtitle synchronization adjustment to 0. Size: Choose the font size for the subtitles. Encoding: If the subtitles are broken, you can change the encoding language.
Repeat	Set the repeat mode. Repeat One repeats the current programme only. Repeat All repeats all programmes contained in the folder.
Rotate	Rotate the video.
Picture Size	Change the picture size. However, the supported picture size is determined by the video content.
Picture Mode	Change the Picture Mode setting.
Sound Mode	Change the Sound Mode setting.
Select Speakers	Choose a speaker to play the audio.
Audio Language	Choose a desired audio language. This option works only when the video supports multi-track sound.
Information	View detailed information about the video.

Buttons and Functions Available while Playing Music

Press enter to access the following buttons. Pressing RETURN hides the playback buttons.

- **Pause** / **Play**

  Pause or resume the music.

- **Rewind** / **Fast Forward**

  Rewind or fast forward the music. To restore normal playback speed, select ►.

- **Previous** / **Next**

  Select ⏮ twice to play the previous music file. Selecting ⏮ once reloads the current music file from the beginning.

  To play the next music file, select the ⏭ button.

- **Repeat**

  Set the repeat mode. **Repeat One** repeats the current music file only. **Repeat All** repeats all music files contained in the folder.

- **Shuffle**

  Play the music files in order or randomly.

- **Select Speakers**

  Choose a speaker to play the audio.

- **Sound Mode**

  Change the Sound Mode setting.

Functions on the Media Content List Screen

The media content screen for the selected storage device includes the following functions.

- **Filter**

  Use this option to filter the list to see only the photo, video, or music files contained in the storage device.

- **Sort by**

  Sort the list by content type.

  This function is not available when **Filter** is set to **All**.

- **Options**

  This function is not available when **Filter** is set to **All**.

Function	Description
Slide Show	Start the slide show. This option is available for photo files. This option is not available with **Sort by** set to **Folder**.
Play Selected	Play only the selected content.
Send	This function is the same as the "Copy" function of a computer. Use this function to send the media content to another storage device. For information on storage devices supported by this feature, refer to "Storage Device File Transfers".
Encoding	If the media content's title is being displayed incorrectly, you can change the encoding method. This function is available only for music files.
Rename Playlist	Rename your playlist. This function is available only when the media content is music.
Delete Playlist	Delete a playlist that you have created. This function is available only for music files.
Add to Playlist	Add a file to an existing playlist or create a new playlist. This function is available only for music files.
Index	If the content list is too long to navigate efficiently, select a letter to quickly skip to that section of the list. This is not available when **Sort by** is set to **Folder**.

Listening to Music in HD Quality

- Availability depends on the specific model and area.

Use **MULTIMEDIA** on the **Smart Hub** screen to play HD music in HD native quality.

- Standard audio signals are sampled at 48 kHz while HD audio signals are sampled at 96 kHz.
- Some S/PDIF receivers may not be compatible. For such incompatible receivers, deactivate HD Audio and use normal audio mode instead.
- The HD audio signals available on the TV are not available on external audio players connected via HDMI, Bluetooth, or Wi-Fi networks.

1. Navigate to **Sound** > **Additional Settings**, and set **HD Audio** to **On**.
2. Select **SMART HUB** to open the **Smart Hub**.
3. Navigate to **Smart Hub** > **MULTIMEDIA**, and specify the file to play in HD quality.
   - HD music files have the HD icon next to them in the playlist.
   - Navigate to the music file and select ► to play it.
   - Setting **HD Audio** to **Off** during the playback will stop playing the HD music.
   - Playing an HD music file while the **Multi-Link Screen** is running will automatically terminate the **Multi-Link Screen**.

TV Control using your Voice

System > Voice Control

You can access and select certain menu options and functions using voice commands. For more effective voice recognition, speak slowly and clearly in the language specified in the System > Voice Control > Language option.

- Voice Control is classified into two: interactive voice control that enables conversational instructions, and imperative voice control where only pre-defined instructions are used. Smart Hub setup, and time settings, as well as the user's agreement on the use terms. Trying the interactive voice control without completing any of these requirements will display a notification pop-up. Follow the onscreen instructions and complete the necessary settings. The imperative voice control is available regardless of the interactive voice control settings. Use only "pre-defined commands" in the imperative voice control mode.
- Please read through the instructions before using Voice Control. For more information, refer to "Read Before Using Voice, Motion, or Face Recognition".
- If you use the Voice Control function interactively at least once, the TV will change the on-screen menu name from Voice Control to Voice Interaction.

Voice Control can be used in the following ways:

- Using the TV's built-in microphone (from a distance)
- Using the VOICE button (up close)

  - If you use the TV's built-in microphone, ambient noise may interfere with Voice Control. If this is the case, press VOICE and then say the command word/phrase 10cm to 15cm away from the microphone on the remote control. Voice commands may not be recognised properly if you speak too softly or loudly. The optimal volume for voice commands is between 75 dB and 80dB.

Testing Noise Around the TV's Built-in Microphone

System > Voice Control > Voice Recognition Environment Test

To enable Voice Control using the TV's built-in microphone, you must run the Voice Control Environment Test to improve the voice recognition rate.

1. Navigate to **System** > **Voice Control** and run **Voice Recognition Environment Test**, and stand within 4 m of the TV.
2. Select **Start** to measure the ambient noise. If the ambient noise level is suitable, the test will proceed to the next step. If this part of the test fails, remain quiet and try again.
3. This test measures the volume and clarity of the user's voice. The TV will play an audio recording of the command shown on the screen. Repeat the command loud and clear within 30 seconds. If the TV successfully recognises your voice command, the test is complete and the TV proceeds to the next step. If this part of the test fails, try again.
4. The level of echo in the surrounding area is measured. If the echo level is suitable, the Voice Control Environment Test will end.

Checking Ambient Noise and Illumination (Voice & Motion Control Environment Check)

Support > Self Diagnosis > Voice & Motion Control Environment Check

Navigate to **Support** > **Self Diagnosis** and select **Voice & Motion Control Environment Check**. This function measures the ambient noise and illumination levels around the built-in camera and microphone of the TV to check if they are suitable for voice and motion control use.

Enabling Voice Control

- Make sure that **Voice Control** (**System** > **Voice Control** > **Voice Control**) is enabled.
- While Voice Control is activated, the TV can turn on automatically due to an environmental input.

1. To use the TV's built-in microphone, say the **Trigger Word** within 4m from the TV. To use the remote control's microphone, Press the **VOICE** button on the Samsung Smart Control. The microphone icon appears on the screen when Voice Control is enabled.
2. Say a command. You can use Voice Control to operate the TV when you are watching the TV or other videos.

   - Say the command from 10cm to 15cm away from the microphone on the Samsung Smart Control. Voice commands may not be recognised properly if you speak too softly or loudly. The optimal volume for voice commands is between 75 dB and 80dB.

Using the Voice Recognition Tutorial

Support > **Voice Recognition Tutorial**

This lets you familiarise yourself with the basics of using Voice Control. Run **Voice Recognition Tutorial** from the **Support** menu, or run **Voice Control** and say "**Tutorial**".

Using the Voice Sensitivity

- Availability depends on the specific model and area.

System > **Voice Control** > **Voice Sensitivity**

Set the sensitivity of the TV microphone.

Learning Voice Control Basics

- **Moving the focus**

  Say "**Focus left**", "**Focus right**", "**Focus up**", or "**Focus down**" to move the focus. However, these commands can only be used in situations when the focus can be moved.

- **Selecting an item**

  Say "**Select**" to confirm the selection.

- **All Voice Commands**

  Say "**Help**" to display the complete list of voice commands, organised by category.

- **Deactivating Voice Control**

  Press **VOICE** button. This terminates Voice Control.

The TV recognises predefined voice commands only, and the voice commands may differ from the manual depending on the version.

Changing Voice Control Language

System > **Voice Control** > **Language**

Navigate to **System** > **Voice Control** > **Language**, and select a preferred language from the list. Now you can use Voice Control in the specified language.

Interactive Voice Control is not available in some languages. If this is the case, choose a different language.

Changing the Trigger Words

System > **Voice Control** > **Trigger Word**

Navigate to **System** > **Voice Control** > **Trigger Word** and select a **Trigger Word** from the list. You can choose a trigger word to start Voice Control. If the TV recognises the trigger word, it activates Voice Control.

Turning On the TV Using Voice Control

To turn on the TV using a voice command, say "(the trigger word) + Turn On". (Example: “Hi TV, Turn On")

To turn on the TV using Voice Control make sure Voice Control is activated.

Using the Voice Interaction function Interactively

Voice Control allows you to set up **Schedule Recording**/**Schedule Viewing**, access VODs, search and launch applications, and execute various other commands using voice commands and without having to remember specific commands or keywords. Saying "Turn off the TV in 30 minutes", for example, instructs the TV to turn off after 30 minutes (Sleep Timer).

If you use the **Voice Control** function interactively at least once, the TV will change the on-screen menu name from **Voice Control** to **Voice Interaction**.

Activate Voice Interaction and say a command. See the examples below:

- **When you don't know which channel a specific programme is on:**

  "Watch **** (Title)". / "Play **** (Title)". / "Run **** (Title)"

- **When you want to find a specific programme or content item:**

  "*** (Title)" / "Find *** (Title)."

- **When you want to reserve and record a programme:**

  "Remind me to watch *** (Title)." / "Set up a timer to record *** (Title)." / "Record *** (Title)."

- **When you want to know various daily information:**

  "What's the weather in *** (place name)." / "What is the *** (company) stock price?"

- **When you want programme recommendations:**

  "Recommend something to me." / "Are there any popular drama (genre) out?"

- **When you want to operate the TV:**

  "Volume ** (level)" / "Channel ** (Number) / ** (channel name)"

- **When you play an app for the camera, such as skype, or for fitness:**

  "Camera" / "Fitness" / "Skype"

- **When you log in or out of the Samsung Account:**

  "Sign In *** (User name)" / "Sign Out *** (User name)"

Enabling/Disabling TV Voice

Enable/disable the TV's voice responses to your Voice Control commands. Navigate to **System** > **Voice Control** menu and select **Use TV Voice**.

Enabling TV Voice in Selected Voice Gender

Navigate to **System** > **Voice Control** > **Voice Gender**, and select a voice gender. Enjoy the TV voice in the selected voice gender.

TV Control using Motions

System > Motion Control

It's possible to use motion commands to change channels, adjust the volume, and control the pointer while searching the web using Smart Hub.

- Please note, that not all apps support **Motion Control**.
- Please read through the instructions before using Motion Control. For more information, refer to "Read Before Using Voice, Motion, or Face Recognition".
- Motion Control is not available while Voice Control is activated.

Testing Ambient Illumination Using the TV Camera

System > Motion Control > Motion Control Environment Test

Run this test before using Motion Control to ensure proper functionality.

1. Initiate the **Motion Control Environment Test**, and select **Start** 1.5m to 4m away from the TV. If the light is reflected onto the TV's screen, or there are moving objects in the background, the motion may not be properly recognised by the TV.
2. Face the TV camera, and follow the onscreen instructions to raise your hand from a comfortable position with the index finger spreading upwards, and move it left or right slowly. A pointer appears on the screen when the TV recognises the action. If the recognition fails, change the hand position and try again.

Checking Illumination (Voice & Motion Control Environment Check)

Support > Self Diagnosis > Voice & Motion Control Environment Check

Navigate to **Support > Self Diagnosis** menu and select **Voice & Motion Control Environment Check**. This function measures the illumination levels around the built-in camera and microphone of the TV to check if they are suitable for motion control use.

Activating Motion Control

System > Motion Control > Motion Control

To enable Motion Control, face the TV camera and raise your hand from a comfortable position with the index finger spreading upwards, and move it left or right slowly. When your hand is successfully recognised by the TV camera, Motion Control is activated and a pointer appears on the screen.

- If Motion Control is activated, a pop-up window appears and guides you through basic use of Motion Control.
- Moving your hand out of the range of the TV camera deactivates Motion Control. To reactivate Motion Control, simply raise your hand towards the TV camera within 3 seconds.
- The recognition may be terminated if the index finger does not fully spread out or is moved too fast.

Using Motion Control Tutorial

Support > Motion Control Tutorial

This lets you familiarise yourself with the basics of using Motion Control. From the **Support** menu, run **Motion Control Tutorial**.

- If Motion Control is activated, a pop-up window appears and guides you through basic use of Motion Control.

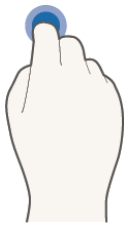
Learning Motion Control Basics

The following basic motion control commands are available:

- **Moving the pointer**

Moving your hand moves the pointer accordingly.

- **Selecting an item**



Fold and then spread your index finger as if clicking on a mouse. You can select a TV menu or run a function. Keeping your index finger folded is like holding down the remote control button.

- **Returning to the previous menu**

Make a large counterclockwise circle with your hand to return to the previous menu.

A small circle may not be recognised by the TV.

- **Moving to the Smart Hub panel**

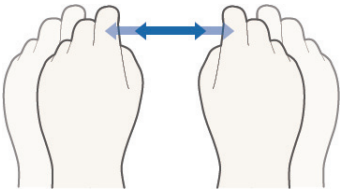
Move your hand from left to right or from right to left as you would turn a book page. You can directly move from Smart Hub to another panel screen. (Example: SAMSUNG APPS panel→ On TV panel)

- **Displaying Smart Hub's context menu**

On the Smart Hub screen, fold your index finger for more than 1 second and spread it out. This displays the selected item's context menu.

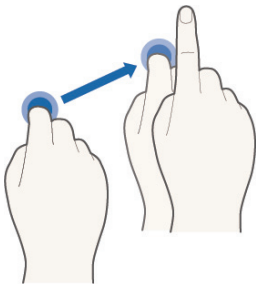
The screen's option menu differs depending on the selected lists.

- **Zooming in** and **zooming out**



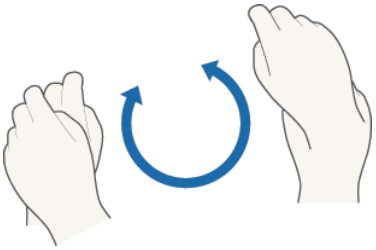
Raise both hands in the direction of the TV camera with both index fingers also raised. Two pointers appear on the screen when the TV recognises the hands. Fold both index fingers and horizontally spread your hands apart or bring them closer. Doing so zooms in on/out from the item displayed on the screen (web page, map, or photo).

- **Panning while zoomed in**



While zoomed in on a picture, fold your index finger and move your hand, and then spread the finger to release. This allows you to pan through a zoomed in picture.

- **Rotating a picture**



Raise both of hands toward the TV camera with both index fingers also raised. Two pointers appear on the screen when the TV recognises the hands. Fold both index fingers and make either a clockwise or counterclockwise circle with your hands. This is available for a photo image that displays on the screen.

A small circle may not be recognised by the TV.

- **Using Like function**

With Motion Control, inactive, raise and hold your thumb for 2 seconds toward the TV camera. You can automatically add Facebook's Like function. However, this is only available in Facebook.

Showing and Hiding Animated Motion Guide

Navigate to **System** > **Motion Control**, and select **Animated Motion Guide** from the menu. Now you can display an animated guide when Motion Control is activated.

Adjusting Pointer Speed

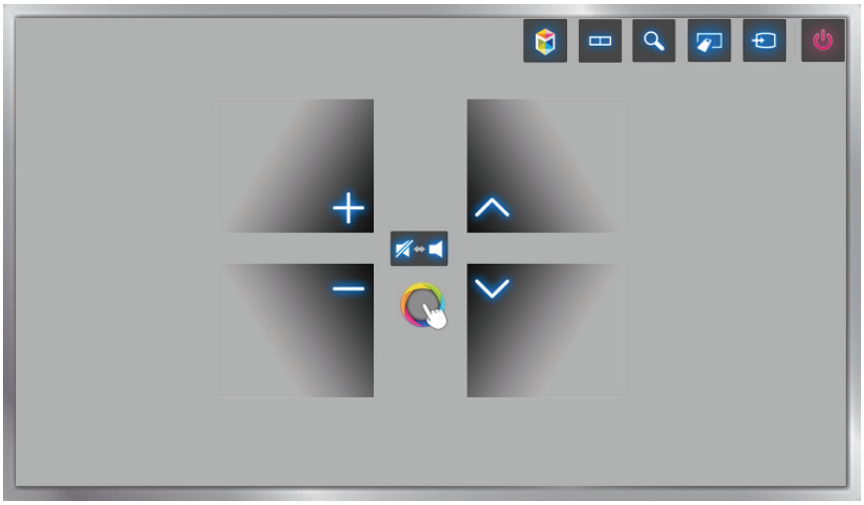
Navigate to **System** > **Motion Control** > **Pointer Speed**, and select a pointer speed.

Motion Control Screen Layout

Motion Control Layout on the TV Screen

Activating Motion Control while watching the TV displays the following icons on the screen:

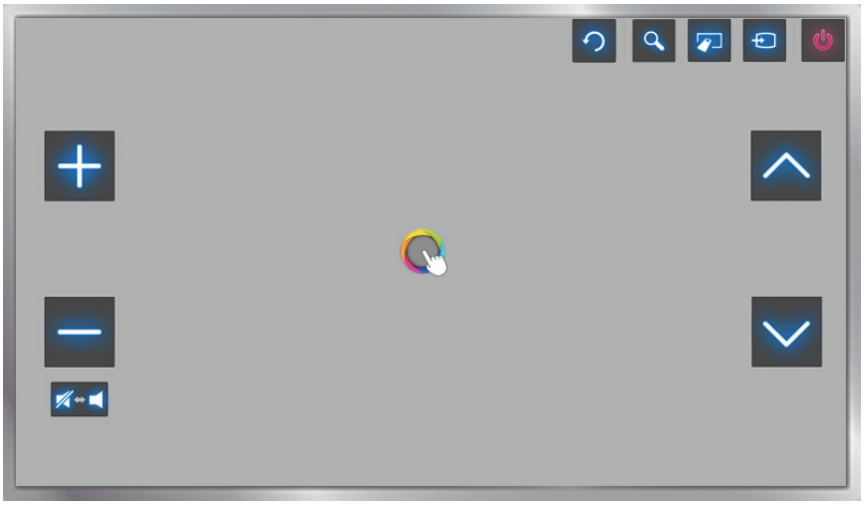
The displayed icon differs depending on the model.



Icon	Description
/	Adjusts the volume.
	Mutes or unmutes the TV.
/	Changes the channel.
	Launches Smart Hub.
or	You can split the TV screen and use variable functions such as watching the TV, surfing the web and watching the video and so on.
	Press this button to search for information through the search window in various services.
	The virtual remote control appears.
	Changes the source.
	Turns the TV off.

Motion Control Layout on the Smart Hub Screen

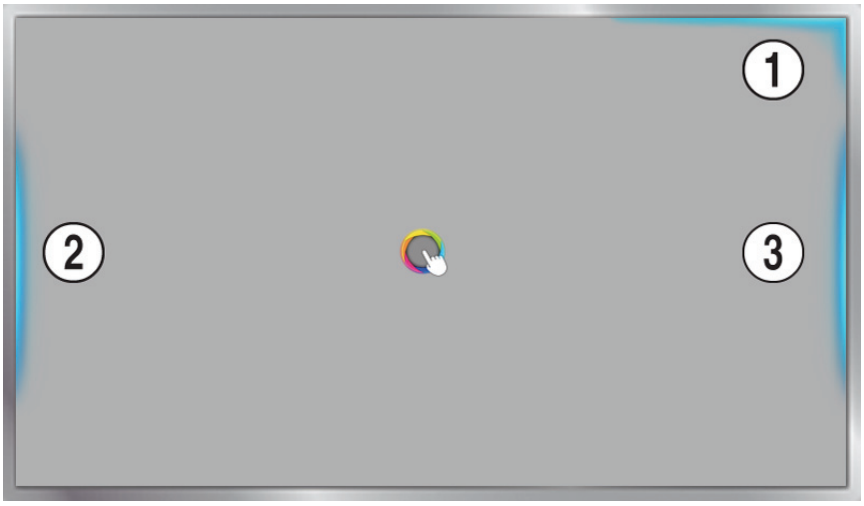
Activating Motion Control while using Smart Hub displays the following icons on the screen:



Icon	Description
/	Adjusts the volume. However, this is only available for On TV.
	Mutes or unmutes the TV. However, this is only available for On TV.
/	Changes the channel. However, this is only available for On TV.
	Returns to the previous menu.
	Press this button to search for information through the search window in various services.
	The virtual remote control appears.
	Changes the source.
	Turns the TV off.

Displaying Hidden Icons When Using Smart Hub

When using Motion Control with Smart Hub, the icons will disappear automatically after 2 seconds of inactivity. To display the hidden icons, move the pointer to one of the three edges shown below (marked in blue) and then hold it there for 1 second. The icons will reappear on the screen.



Icon	Description
①	/ / / /
②	/ /
③	/

Signing in with Face Recognition

Users can register their faces using the TV camera, and sign in with their Samsung accounts through Face Recognition. One face may be registered per account. Depending on the ambient illumination level and/or shadows over the face, the TV may have difficulty recognising the user's face.

- Please read through the instructions before using Face Recognition. For more information, refer to "Read Before Using Voice, Motion, or Face Recognition".

Registering Your Face to Your Samsung Account

Register your face to your Samsung Account to allow the TV to recognise you by your face. Create a new account if you do not already have one.

- First, you must sign in with your Samsung Account.

1. Navigate to **Edit profile** (**Smart Hub** > **Samsung Account** > **Edit profile**) and select **Register face** in the account information screen.
   - To register your face using the Virtual Remote panel, press **KEYPAD** to select your active Samsung Account and then select **Edit profile**.
   - To register your face using the **Games** panel of **Smart Hub**, select the currently signed-in Samsung Account on the screen and then select **Edit profile**.
2. Read the information displayed in the pop-up window, select **OK**, and then enter the account password.
3. On the face registration screen, select **Take picture** and then align your face with the dotted red line displayed on the screen. The dotted line will turn green once your face is recognised.
   - Your entire face must be visible to the camera. Make sure the face is brightly lit. Shadows prevent the camera from recognising your face accurately.
   - Keep your expression as neutral as possible. In addition, keep your mouth closed but at the same time as neutral as possible.
   - Check the box to add password entry to the sign-in process using Facial Recognition for additional security. Select Try Again to try again.
4. On the Samsung Account information screen, select **Save**. This completes the face registration process.

Changing Login Method to Face Recognition

To sign in with your Samsung Account using face recognition, navigate to **Edit profile** (**Smart Hub** > **Samsung Account** > **Edit profile**) and change the login method.

- First, you must sign in with your Samsung Account.

1. Navigate to **Smart Hub** > **Samsung Account** and select **Edit profile**.
   - To register your face using the Virtual Remote panel, press **KEYPAD** to select your active Samsung Account and then select **Edit profile**.
   - To register your face using the **Games** panel of **Smart Hub**, select the currently signed-in Samsung Account on the screen and then select **Edit profile**.
2. Enter the password in the password input box and then select **Done**. The edit profile screen appears.
3. Select **Sign-in Method** and change the login method to Face Recognition.
4. Select **Done**.

Signing into Samsung Account with Your Face

1. Navigate to **Smart Hub** > **Samsung Account** and select **Log In**.
   - Press **KEYPAD** on Samsung Smart Control, and select **Sign In** to access the Sign In screen.
   - From the **Games** panel of **Smart Hub**, select **Sign In**.
2. Choose your Samsung Account.
3. Face towards the TV camera. If you have set the login method to face recognition, the TV will automatically match your face with your Samsung Account. If recognition fails, try again.
   - Password entry is required when logging into accounts that have been configured to require password entry during face registration.
   - The user's entire face must be visible to the camera. Make sure the face is brightly lit. Shadows prevent the camera from recognising your face accurately.
   - Keep your expression as neutral as possible. In addition, keep your mouth closed but at the same time as neutral as possible.
   - Even if more than one registered face matches your face, the TV signs you in with the matching face's account.

Digital Broadcast Information at a Glance

Broadcasting > **Guide** Try Now

The Guide provides an overview of each digital channel's programme lineup. You can check the programme schedules and set up a **Schedule Viewing** or **Schedule Recording**.

Press **GUIDE** to launch the guide.

The information in the **Guide** is for digital channels only. Analogue channels are not supported.

Using the Guide

Move to the programme schedule and then press and hold the Enter button. The following options are available:

- **Changing the Channel List**

  If you select **Channel Filter**, you can change the channels displayed in the channel lists.

- **Navigating the Programme Schedule**

  Press to the ◀◀, ▶▶ button to navigate the programme schedule by 24 hours. You can only view the future programme schedule.

  It is available for moving the page using the ∧, ∨ button.

- **Moving to the Schedule Manager**

  You can move to the **Schedule Manager** screen.

- **Adding Favourites**

  Click **Edit Favourite Channels** to add the selected programme to the Favourites.

- **Viewing Detailed Information**

  View detailed information about the selected programme. The programme information may vary depending on the type of incoming signal and may not be available at all for certain programmes.

  – Select a current programme on another channel and select **View Details** to **Watch** or **Record** the programme.

  – Select an upcoming programme and select **View Details** for **Schedule Viewing** or **Schedule Recording**.

Checking the Current Programme Info

While watching TV, select **INFO** to view information about the current programme.

- In order to view the programme info, you must first set the TV's clock. Set the **Clock** (**System** > **Time** > **Clock**).
- The programme information may vary depending on the type of incoming signal and may not be available at all for certain programmes.

In addition, select right button to view information about the next programme, and press enter, to set up a **Schedule Viewing** or **Schedule Recording** for the upcoming programme.

Change the Broadcast Signal

Broadcasting > **Aerial** Try Now

Choose your preferred method of receiving digital broadcasts.

Digital Signal Info and Strength

Support > **Self Diagnosis** > **Signal Information** Try Now

Select **Support** > **Self Diagnosis** > **Signal Information**. Displays the digital channel's signal information and strength.

- 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 is only available for digital channels.

Recording Programmes

Availability depends on the specific model and area.

You can record current and upcoming programmes using a USB device instead of a video recorder.

However, this is only available for digital channels. The icon appears next to programmes and channels for which a **Schedule Recording** has been set.

We recommend a USB hard disk drive with a minimum speed of 5,400rpm for TV recording. USB memory sticks are not supported.

Read all precautions before using recording.

Creating a USB Recording Device

> **On TV** > **Recorded TV** or > **MULTIMEDIA** > **USB Drive**

In order to record programmes on a USB device connected to the TV, the device must first be formatted for the TV. Use the **Format Device** option to prepare the USB device.

Formatting a USB device erases all data contained on the device. Back up the data before proceeding. Samsung will not be held responsible for damaged or lost files.

1. Run the Smart Hub and then choose **Recorded TV** from the bottom of the **On TV** screen.
2. Select **Format**, and then select **Format Device**. This will bring up the **Format Device** screen and allow you to format the device for TV recordings.
3. Once formatting is complete, the USB device is tested to see if it has been properly formatted. You will be able to start using the device after the test is completed. If the device fails the test, it means that this device cannot be used to record TV.

Managing USB Recording Devices

You can use the following to manage USB recording devices.

1. Run the Smart Hub and then choose **Recorded TV** from the bottom of the **On TV** screen or **USB Drive** from the bottom of the **MULTIMEDIA** screen. A list of connected devices appears.
2. Select a USB recording device from the list. The list of recordings contained on the device appears.
3. Select **Options** from the top of the screen and then **Manage Devices**. The **Manage Devices** screen appears.

The following options are available from the **Manage Devices** screen:

- **Format Device**: Formats the USB device for TV recordings.
- **Check Device**: Check the malfunctions of USB device. If the USB have a problem, try to recover.
- **Device Performance Test**: Tests the performance of the USB device. This test tells you whether the USB device can be used for TV recordings.
- **Default Recording Device**: If there are multiple USB recording devices connected to the TV, use this option to specify the default device.

Recording Programmes

You can record current and upcoming programmes.

Instant Recording

Press the REC button to begin recording the current programme right away.

The Instant and Schedule Recording options from the Guide

Select a current programme from the Guide and then select INFO.

You can instantly start recording the programme. Alternatively, select a programme that will air in the future.

The Instant and Schedule Recording options from the Programme Info

Select INFO to display information about the current programme. In the information screen, select a programme that is currently airing to start recording it right away. Alternatively, press <, > button and select a programme that will air in the future to record it.

The Schedule Recording option on a Specified Date and Time

1. Select Broadcasting > Schedule Manager.
2. Select Schedule from the Schedule Manager to bring up a pop-up menu. Select Schedule Recording.
3. Specify the Aerial, Channel, Repeat, Start Time, and End Time options for the programme you want to record, and then select OK to finish.

Buttons and Functions Available While Recording a Programme

Press enter while recording a programme. The following buttons will appear as well as the recording progress bar.

- **Information**

  This displays detailed information about the programme being recorded.

  The programme information may differ depending on the broadcasting signal and may not be available at all for certain programmes.

- **Recording Time**

  You can select the recording time.

- **Stop Recording** / **Go to Live TV**

  You can stop recording. / You can watch the live TV while watching a recorded programme.

- **Rewind** / **Fast Forward**

  Pressing these buttons decreases or increases playback by up to max 5 steps. To restore normal playback speed, select Play.

  Fast Forward cannot be used while watching the Current Programme.

- **Pause** / **Play**

  Pause/resume video.

- **Channel List**

  You can view the channel list.

- **Tools**

  You can launch the **Tools** menu. The **Tools** menu provides functions that you can use while watching a recorded programme.

Managing the Schedule Recording List

Broadcasting > **Schedule Manager**

You can change the settings of scheduled recording sessions or cancel scheduled sessions altogether.

Deleting Schedule Recording Sessions

You can delete scheduled recording sessions.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Delete**. This cancels the selected recording session.

Editing Schedule Recording Sessions

You can change the settings of scheduled recording sessions.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Edit** and change the settings of the selected session.
4. Once finished, select **OK**. This applies the changes you made to the selected recording session.

Viewing Recorded Programmes

> On TV > Recorded TV or > MULTIMEDIA > USB Drive

Recorded broadcasts can be viewed using the Recorded TV option at the bottom of the On TV screen or the USB Drive option at the bottom of the MULTIMEDIA screen.

1. Run the Smart Hub and then choose Recorded TV from the bottom of the On TV screen or USB Drive from the bottom of the MULTIMEDIA screen.
2. Select a USB recording device. A list of recordings appears.
3. Select a recording file from the list or select ► to play the selected file.

Available Buttons and Features while Playing Recordings

Press enter. Playback controls will appear. To hide the controls, press Return.

Buttons that appear are different depending on the file being played.

- Zoom

  You can pause the current file (recorded programme) and zoom in on one of 9 different sections of the screen.

  You can only use this function for programmes recorded in Football Mode.

- Stop

  Stop the playing files (recorded programme) and then, move the storage files (recorded programme).

- Pause / Play

  Pause the file (recorded broadcast) or resume if already paused.

  When the video is paused, you can use the following functions. However, audio will not be heard while the video is paused.

  – **Step**: Press ıı to scan the paused video one frame at a time.

  – **Slow Motion**: The ►► button plays the video back at 1/4 the normal speed.

- **Rewind** / **Fast Forward**

  Rewind or Fast Forward the recording file (recorded programme). Repeatedly select the button to make the rewind/fast forward speed faster by up to max 5 steps. To restore normal playback speed, press the ► button.

- **Previous** / **Next**

  To play the previous file (recorded programme), press ⏮ twice. Selecting ⏮ once reloads the current video from the beginning.

  To play the next file (recorded programme), press ⏭.

  This function is not available when the Programme is recorded in **Football Mode**.

- **Highlights Player**

  Select **Highlights Player** to view highlights from the current recording.

  This feature is only available for programmes that were recorded in **Football Mode** and along with highlight data have been saved.

- **Live TV**

  This function enables the PIP feature so that you can watch a live programme through PIP.

  Channels cannot be changed.

  You can only use this function for programmes recorded in **Football Mode**.

- Tools

Function	Description
Search	Search Scene: This will take you to a scene in the video. Search Scene cannot be used if 1) the extraction of the thumbnails from the file (Recorded broadcast) being played back is not finished, 2) playing back a file with audio only (recorded broadcast), or 3) the duration of the recorded file (recorded broadcast) is less than 60 seconds. Search Titles: Select and play a different file located in the same folder. Search Time Bar: Press <, > button to scan through the file in 1-minute increments or enter a specific time value to jump to that point in the video.
Subtitle Settings	Subtitle: Turn the subtitles On or Off. Subtitle Language: Used to change the language.
Repeat Mode	This changes the repeat mode. Choose Repeat One to repeat playing the current file and Repeat All to repeat playing all files contained in the same folder.
Picture Size	Used to change the size of the screen. The supported picture sizes vary depending on the video.
Picture Mode	Change the Picture Mode setting.
Sound Mode	Used to change the Sound Mode.
Select Speakers	Choose a speaker to play the audio.
Audio Language	Choose a desired audio language. This option works only when the video supports multi-track sound.
Information	Displays detailed information about the current file.

Managing Recorded Files

Availability depends on the specific model and area.

> On TV > Recorded TV or > MULTIMEDIA > USB Drive

Select Recorded TV at the bottom of the On TV screen or USB Drive at the bottom of the MULTIMEDIA screen to lock/unlock, rename, delete, and generally manage the recording files.

1. Run the Smart Hub and then choose Recorded TV from the On TV screen or USB Drive from the bottom of the MULTIMEDIA screen.
2. Select a USB recording device. A list of recordings appears.

Saved File List Features

- **Sorting the Saved File List**

  Sorting with Sort by: Select Sort by at the top of the screen and then select a viewing mode. The list is sorted based on the selected viewing mode.

  Sorting with Filter: Select Filter at the top of the screen and then select a filter. The list is refreshed to only show files that match the selected filter.

- Options

Function	Description
Play Selected	Select files from the file list and then select Play. You can create a playlist.
Lock	To prevent to delete the files (recorded programme), you can lock the files (recorded programme). This locks all the selected files.
Unlock	Use this option to unlock any locked files. Select the files and then select Unlock. This unlocks all selected files.
Delete	Deletes recording files. Select the files and then select Delete. This deletes all selected files.
Rename	Renames the file. Enter the new name using the keypad and then select Done to finish. The new name can be up to 29 characters long.
Index	When navigating a large number of media items, select a character. Media items starting with that character appear.
Manage Devices	Used to manage USB recording devices connected to the TV.

Setting Up a Schedule Viewing

Configure the TV to show a specific channel or programme at a specific time and date. The icon appears next to programmes that have been configured for a **Schedule Viewing**.

To set up a **Schedule Viewing**, you must first set the TV's clock. Go to **Clock** (**System** > **Time** > **Clock**).

Setting Up Schedule Viewing

Digital Channel Schedule Viewing

You can set up **Schedule Viewing** for programmes on digital channels on the following screens:

- **The Guide Screen**

  Select an upcoming programme from the **Guide** to set up a **Schedule Viewing** for it.

- **The Programme Info Screen**

  Select **INFO** to display information about the current programme. From the programme information screen, select right button to view information about the next programme, and press enter, to set up a **Schedule Viewing** or **Schedule Recording** for the upcoming programme.

Analogue Channel Schedule Viewing

Broadcasting > **Schedule Manager** Try Now

The **Schedule Viewing** function for programmes on analogue channels can be set up by specifying the time and date.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select **Schedule** from the **Schedule Manager** to bring up a pop-up menu. Select **Schedule Viewing**.
3. Specify the **Aerial**, **Channel**, **Repeat**, and **Start Time** options for the programme you want to watch and then select **OK** to finish.

Managing the Schedule Viewing List

Broadcasting > **Schedule Manager**

You can change the settings of **Schedule Viewing** sessions or cancel scheduled sessions altogether.

Deleting Schedule Viewing Sessions

You can delete **Schedule Viewing** sessions.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Delete**. This cancels the selected viewing session.

Editing Schedule Viewing Sessions

1. You can change the settings of **Schedule Viewing** sessions. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Edit** and change the settings of the selected session.
4. Once finished, select **OK**. This applies the changes you made to the selected viewing session.

Using Timeshift

Availability depends on the specific model and area.

Timeshift lets you pause and rewind live TV as you would a DVD. **Timeshift** is only available for digital channels and activating **Timeshift** disables the **Broadcasting** option.

Timeshift requirements:

- A USB recording device must be connected to the TV in order to use **Timeshift**.
- We recommend a USB hard disk drive with a minimum speed of 5,400rpm for use with the TV's **Timeshift** feature. USB memory sticks are not supported.
- Read all precautions before using the **Timeshift** function.

Press ► while watching TV to activate the **Timeshift** function. This activates **Timeshift** and displays a progress bar and the following buttons at the top of the screen:

- **Information**

  Displays detailed information about the current programme.

  The programme information may vary depending on the type of incoming signal and may not be available at all for certain programmes.

  This button is only available while watching a live programme.

- **Go to Live TV** / **Stop Timeshift**

  Watches the live TV or Exits the **Timeshift**. / You can watch the current programme by selecting this button while watching a recorded programme.

- **Pause**

  Pauses the screen.

  The following features are available while paused. However, audio is not supported while the video is paused.

  - **Step:** ıı Scans the paused video one frame at a time.
  - **Slow Playback:** Select ◄◄ / ►► to play the video back at 1/4 the normal speed.

- **Rewind** / **Fast Forward**

  Slows down or speeds up playback by a factor of up to 5. To restore the normal playback speed, press ►.

  Fast Forward cannot be used while watching the Current Programme.

- **Channel List**

  Displays the channel list.

- **Tools**

  You can launch the Tools menu. Open the Tools menu to access the context menus available in Timeshift mode.

Using the Channel List

Broadcasting > Channel List Try Now

Launch the Channel List while watching TV to change channels or to see what's on other channels.

Select a channel from the Channel List to jump to it right away. To quickly scroll through the list, use the channel up/down buttons. This moves the focus one page at a time.

The Channel List screen contains the following icons:

- A : An analogue channel
- : A favourites channel
- : A locked channel

- **Using Options**

  Press < button to select Options. The following options are available:

Function	Description
Aerial	Choose between Terrestrial, Cable, and Satellite. Availability depends on the specific model and area.
Category	If you select a Category, its channels appear in the list among the TV's channels.
Sorting	Sort the list by Channel Number or by Name (Digital channels only).
Genre	Sort the list to include channels of the selected genre only. However, Genre can only be used channels contain the genre information. Check the network and make sure the TV is connected to the Internet. Your TV needs to be connected to the Internet in order to receive the channel's genre information.
Edit Favourites	Designate favourites channels.

- **Changing to Favourites**

  Press > button to select Favourites 1 through Favourites 5. This shows the selected list's channels. However, a Favourites list can only be selected if it contains at least one favourites channel. If you haven't created a Favourites list yet, you need to create one first.

Registering, Removing, and Editing Channels

Broadcasting > **Edit Channel** Try Now

Remove channels from the index of channel restore removed channels, and rename analogue channels. The **Edit Channel** screen icons indicate the following:

- A : An analogue channel
- 💚 : A favourites channel
- 🔒 : A locked channel

Registering and Removing Channels

Broadcasting > **Edit Channel**

Removing Registered Channels

Remove registered channels from the index.

1. Select the channels you want to remove. Unselect channels by choosing them again. To select all the channels, select **Options** from the bottom of the screen and then select **Select All** from the list.
2. Once you have made your selection, select **Delete** from the bottom of the screen to remove the selected channels.

Editing Registered Channels

Broadcasting > **Edit Channel**

Select **Options** at the bottom of the screen to access the following options. However, the available options may vary depending on the broadcast signal.

- **Select All**

  Selects all channels displayed in the **Edit Channel** screen.

- **Sorting**

  (Digital channels only)

  Change the list ordered by Channel **Name** or **Number**.

- **Aerial**

  Choose between **Terrestrial**, **Cable** or **Satellite**.

  Availability depends on the specific model and area.

- **Category**

  If you select a **Category**, its channels appear in the list among the TV's channels.

- **Edit Favourites**

  Organise favourites lists to find favourite channels and switch between channels more easily.

- **Rename channel**

  Rename Analogue Channels. The new name can be up to 5 characters long.

- **Channel Info**

  Check the information of the channel.

- **Information**

  View detailed information about the current programme.

Enabling/Disabling Password Protection on Channels

Broadcasting > **Edit Channel**

You can lock channels you don't want your children to view.

To enable password protection, set **Channel Lock** to **On**. First, navigate to **Broadcasting** > **Channel Lock** and set it to **On**. Try Now

Locking/ Unlocking Channels

Select channels from the **Edit Channel** screen and then select **Lock** or **Unlock** at the bottom of the screen. When the password entry window appears, enter the password. This locks or unlocks the selected channels.

Edit Channel Number

Availability depends on the specific model and area.

Broadcasting > **Edit Channel Number**

Use this to change channel number. When channel number is changed, channel information is not updated automatically.

Creating a Personal Favourites List

Broadcasting > **Edit Favourites** Try Now

You can designate frequently watched channels as favourites. Favourites channels are highlighted in the **Edit Channel** and **Channel List** screens with the ♥ symbol. You can create up to 5 favourites channel lists.

Registering a Channel as Favourites

Broadcasting > **Edit Favourites**

Registering the Current Channel as a Favourites

Add the current channel to a Favourites list.

1. Select **TOOLS** while watching TV to display a list of options. Select **Edit Favourites** from the list.
2. From the pop-up window, select all the Favourites lists you want to add the current channel to and then select **OK**.
3. This adds the current channel to the selected Favourites list(s). Select **OK**.

Registering Multiple Channels as Favourites

It's possible to register multiple channels as favourites at the same time.

1. Select **Broadcasting** > **Edit Favourites**.
2. Select **Category** from the bottom of the screen to change the channel list to the one containing that channels you want to register.
3. Select the channels from the list in the middle of the screen.
4. Select **Change Fav.** and then change the **Favourites 1** to the **Favourites 5** you want to use.
5. Select **Add**.

Viewing Favourites List Channels Only

It's possible to flip through Favourites list channels using only the channel up/down buttons.

A Favourites list can only be selected if it contains at least one favourites channel.

1. Run **Channel List**. (**Broadcasting** > **Channel List**).
2. Press > button to select **Favourites 1** through **Favourites 5**.
3. Choose a channel from the selected Favourites list. This changes the channels and **Channel List** changes to the selected Favourites channel.

Editing a Favourites List

Broadcasting > **Edit Favourites**

You can rename and edit Favourites lists.

Edit Favourites Features

Select **Options** from the bottom of the **Edit Favourites** screen to access the following options:

- **Copy to Favourites**

  Copy channels from one favourites channels list to another.

  This can only be used when the focus has selected a channel registered to a Favourites list.

- **Rename Favourites**

  Rename an existing favourites channels list.

  This can only be used when the focus has selected a channel registered to a Favourites list.

- **Sorting**

  Change the list ordered by Channel **Name** or **Number**. This function is not available on analogue channel.

- **Aerial**

  Choose between **Terrestrial**, **Cable** or **Satellite**.

  Availability depends on the specific model and area.

- **Edit Channel**

  You can manage the channels saved on the TV.

- **Information**

  View detailed information about the current programme.

Removing Registered Channels from a Favourites List

Remove channels from a favourites channels list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. Select the channels you want to remove from the selected Favourites list.
3. Select **Delete**.

Rearranging a Favourites List

Rearrange the order of the channels in a Favourites Channels List.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. From the selected Favourites list, select the channels you want to rearrange.
3. Select **Change order** from the bottom of the screen and then rearrange the selected channels. Press enter to finish.

Renaming a Favourites List

Rename an existing favourites channels list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. Select **Options**. A list appears.
3. Select **Rename Favourites** from the list. A pop-up window appears. Rename the list in the pop-up window. The new name can be up to 20 characters long.

Copying a Favourites List to a Different Favourites List

Copy channels from one favourites channels list to another.

1. Select **Change Fav.** and then change the Favourites list on the side of the screen to the Favourites list you want to use.
2. From the Favourites list displayed on the side of the screen, select all the channels you want to copy.
3. Select **Options**. A list appears.
4. Select **Copy to Favourites** from the list. A pop-up window appears.
5. From the pop-up window that appears on the screen, select the Favourites lists you want to copy the selected channels to. This copies the selected channels to the selected Favourites lists.

   Copy to Favourites is only available when there are channels in the Favourites list.

Adding Realism to Sports

Availability depends on the specific model and area.

System > **Football Mode** Try Now

Football Mode enables optimal picture and sound settings for sports events, making them appear and sound as if you were actually there. In addition, it will be possible to use video recording and time shift functions at the same time while watching a sports event and manually or automatically designated highlight scenes if a recording device is connected to the TV when you are using **Football Mode**.

- For more information about recording a programme and using a recording device, refer to the "Recording Programmes" section.
- For more information about the "Time Shift" feature, refer to the "Using Timeshift" section.
- Whether **Football Mode** or **Soccer Mode** is displayed depends on the area.
- Using the colour buttons may be restricted in **Soccer Mode** while using the **Data Service**.

Enabling Football Mode

System > **Football Mode** > **Football Mode**

Select **System** > **Football Mode** and then set **Football Mode** to **On**. Picture and sound settings of the TV are automatically optimised for sports events.

- Enabling **Football Mode** changes the **Picture Mode** to **Stadium** and the **Sound Mode** to **Stadium**, and disables some **Picture** and **Sound** menus.
- Press ⚽ while watching TV to activate/deactivate **Football Mode**.

Extracting Highlights Automatically

System > **Football Mode** > **Auto Highlights**

Select **System** > **Football Mode** and set the **Auto Highlights** to **On**. You can set the TV to automatically save highlights without user intervention.

However, **Auto Highlights** is not available with these TV operations:

- Recording two channels simultaneously
- When **Audio Description** is set to **On**
- Switching the input signal using the SOURCE button
- When 3D mode is active

- The **Auto Highlights** performance depends on the signal characteristics.
- It is advisable to use **Auto Highlights** only while watching a soccer game. Using this for other sporting events may display irrelevant picture frames.

Functions Available in Football Mode

Press enter. The following buttons will appear.

- **Zoom**

  You can pause the current video and zoom in on one of 9 different sections of the screen. Pan the zoomed-in image using ∧, ∨, <, > buttons.

  - You cannot use this function when watching a 3D channel or when **PIP** or **MULTIMEDIA** is active.
  - When the **Data Service** is running, the **Zoom** is not available.

- **Manual Highlight**

  Pressing this button saves 10 seconds of video leading up to that point and 10 seconds of video that follows as a highlight.

  - This function can also be accessed using the B button.
  - Available only while recording is in progress.
  - Also possible to configure the TV to automatically save highlights without user intervention. Select **System** > **Football Mode** and then set **Auto Highlights** to **On**.

- **Stop Recording** / **Go to Live TV**

  Use this button while watching a live programme to stop recording it. Use while watching a recorded programme to watch a live programme.

  - Available only when recording is in progress.

- **Record**

  Start recording the sports event being watched.

  - Available only with the recording function supported.

- **Rewind**

  Rewind the current video. Select repeatedly to increase the rewind speed by up to max 5 steps.

  - Available only when recording is in progress.

- **Pause** / **Play**

  Pause/resume video.

  Available only when recording is in progress.

- **Fast Forward**

  Fast forward the current video. Select repeatedly to increase the fast forward speed by up to max 5 steps.

  Available only when recording is in progress.

- **Highlights Player**

  Use **Highlights Player** to view manually or automatically saved highlight segments of the recording.

  However, **Highlights Player** is not available with these TV operations:

  - Recording two channels simultaneously
  - When **Audio Description** is set to **On**
  - Switching the input signal using the **SOURCE** button
  - When 3D mode is active

  Available only when recording is in progress.

- **Watch Live TV at the same time**

  Select while viewing a recorded programme to watch live TV on a PIP window. Press once more to exit PIP mode.

  However, **Watch Live TV at the same time** is not available with these TV operations:

  - Recording two channels simultaneously
  - When **Audio Description** is set to **On**
  - Switching the input signal using the **SOURCE** button
  - When 3D mode is active

  Available only when recording is in progress.

  Available only while watching a recorded programme.

- **Information**

  Displays detailed information about the current programme.

  Available only when recording is in progress.

- **Go to Social TV** / **SOCIAL TV**

  Used to launch an SNS app.

Viewing a Sports Event Recorded in Football Mode

View recorded sports events using the **Recorded TV** option in the **On TV** screen or the **USB Drive** option in the **MULTIMEDIA** screen.

TV-Viewing Support Features

Showing Subtitles

System > Accessibility > Subtitle Try Now

Show subtitles. Subtitles will be displayed when watching a broadcast that supports subtitles. Switches subtitles On or Off.

- Press and hold the button on the Samsung Smart Control to turn on or off Subtitle.
- DVD subtitles are only available if the DVD player is connected to an external input connector.

- **Subtitle Mode**

  Set the subtitle mode.

- **Subtitle Language**

  Set the subtitle language.

  - The TV cannot control or modify DVD or Blu-ray subtitles. To control DVD or Blu-ray subtitles, use the subtitle feature of the DVD or Blu-ray player and the player's remote control.

Subtitle Options

System > Accessibility > Subtitle

Select a subtitle mode. The list of modes may vary depending on the broadcast.

- **Primary Subtitle**

  Set the primary subtitle language.

- **Secondary Subtitle**

  Set the secondary subtitle language.

Changing Teletext Language

Broadcasting > **Channel Settings** > **Teletext Language**

Availability depends on the specific model and area.

Use this to set the teletext language.

- **Primary Teletext**

  Set the primary teletext language.

- **Secondary Teletext**

  Set the secondary teletext language.

Digital Text

This function is only available in UK.

Broadcasting > **Channel Settings** > **Digital Text**

Availability depends on the specific model and area.

If the programme broadcasts with digital text, this feature is enabled.

MHEG (Multimedia and Hypermedia Information Coding Experts Group) An International standard for data encoding systems used in multimedia and hypermedia. This is at a higher level than the MPEG system which includes data-linking hypermedia such as still images, character service, animation, graphic and video files as well as multimedia data. MHEG is user runtime interaction technology and is being applied to various fields including VOD (Video-On-Demand), ITV (Interactive TV), EC (Electronic Commerce), tele education, teleconferencing, digital libraries and network games.

PIP Broadcast Viewing

Picture > **PIP** Try Now

Use the **PIP** (Picture-In-Picture) function to watch TV in a small window while also watching images from an external source such as a DVD player, a Blu-ray player, or a computer in the background.

Select **Picture** > **PIP** to display the PIP settings window. This settings window contains the following options:

- **PIP**

  Activates/deactivates **PIP**.

- **Aerial**

  Select the **PIP** sub-picture broadcast signal.

- **Channel**

  Select the **PIP** sub-picture channel.

- **Size**

  Select the **PIP** sub-picture size.

- **Position**

  Select the **PIP** sub-picture position.

- **Sound Select**

  Select the audio source.

Scanning for Available Channels

Broadcasting > **Auto Tuning** Try Now

Availability depends on the specific model and area.

Automatically scans and indexes all channels received through the TV's antenna input connector.

If there are saved channels, this feature deletes the existing list and then saves the newly scanned channels.

If the TV is connected to a cable box or satellite receiver, you do not need to do this.

1. Select **Broadcasting** > **Auto Tuning**.
2. Select **Start** when prompted. This initiates the Auto Programme function. The process can take up to 30 minutes to complete.

- **Auto Tuning**

  Scans for channels automatically and stores them in the TV's memory.

- **Cable Search Option** (when the aerial was set to **Cable**)

  Availability depends on the specific model and area.

  Sets additional search options such as the frequency and symbol rate for a cable network search.

- **Standby Auto Tuning**

  Availability depends on the specific model and area.

  Auto-tune channels while your TV is in standby mode.

- **Wake-up Timer**

  Availability depends on the specific model and area.

  Schedule timer to turn the TV on and scan channels automatically.

Selecting the Broadcast Audio Options

Broadcasting > **Audio Options** Try Now

- **Audio Language**

  (Digital channels only)

  Change the default value for audio languages.

  Primary Audio: Set the primary audio language.

  Secondary Audio: Set the secondary audio language.

  The available language may differ depending on the broadcast.

- **Audio Format**

  (Digital channels only)

  Change a desired audio format. The supported audio format may vary depending on the broadcast programme.

Audio Description

System > **Accessibility** > **Audio Description**

(Digital channels only)

This function handles the Audio Stream for the AD (Audio Description) which is sent along with the Main audio from the broadcaster.

Audio Description: Turn the audio description function on or off.

Volume: Adjust the audio description volume.

Genre Selection

Broadcasting > **Genre Selection**

Availability depends on the specific model and area.

Turn the channel genre selection feature on or off when you run Guide.

Adult genre enabling

Broadcasting > **Adult genre enabling**

Availability depends on the specific model and area.

Enables or disables all adult services. When disabled, adult services will not be available.

Using the Channel Settings

Broadcasting > Channel Settings

Country (Area)

Broadcasting > Channel Settings > Country (Area) Try Now

Select your country so that the TV can correctly auto-tune the broadcasting channels. This depends on the country or region.

When the PIN input screen appears, enter your 4 digit PIN number.

- Digital Channel

  Change the country for digital channels.

- Analogue Channel

  Change the country for analogue channels.

Manual Tuning

Broadcasting > Channel Settings > Manual Tuning Try Now

Scans for a channel manually and stores in the TV.

If a channel is locked using the Channel Lock function, the PIN input window appears.

This function depends on the country and region.

When Aerial Source is set to Terrestrial or Cable

- **Digital Channel Tuning**

  Scans for a digital channel.

1. Select the **New**.

   When selecting **Aerial** → **Terrestrial**: **Channel**, **Frequency**, **Bandwidth**

   When selecting **Aerial** → **Cable**: **Frequency**, **Modulation**, **Symbol Rate**

2. Select the **Search**. When scanning has finished, a channel is updated in the channel list.

- **Analogue Channel Tuning**

  Scans for an analogue channel.

1. Select the **New**.
2. Set the **Programme**, **Colour System**, **Sound System**, **Channel** and **Search**.
3. Select the **Store**. When scanning has finished, a channel is updated in the channel list.

Channel mode

- **P** (programme mode)

  When tuning is complete, the broadcasting stations in your area have been assigned to position numbers from P0 to P99. You can select a channel by entering the position number in this mode.

- **C** (aerial channel mode) / **S** (cable channel mode)

  These two modes allow you to select a channel by entering the assigned number for each aerial broadcasting station or cable channel.

Fine-Tuning the Screen

Broadcasting > **Channel Settings** > **Fine Tune** Try Now

Available for analogue broadcasts only.

Analogue pictures can become shaky and full of noise. If this happens, you can fine-tune the signal and/or reduce noise to clear up the picture.

1. Select **Channel Settings** > **Fine Tune**. An adjustment bar appears on the screen.
2. Make adjustments using the Samsung Smart Control until the picture clears up and then select **Save** or **Close**. Select **Reset** to reset the Fine-Tune operation.

Delete CAM Operator Profile

Broadcasting > **Channel Settings** > **Delete CAM Operator Profile**

Availability depends on the specific model and area.

Select the CAM operator to delete.

Satellite System

Availability depends on the specific model and area.

Broadcasting > **Channel Settings** > **Satellite System** Try Now

A set of satellite dish settings must be configured for each wanted satellite before performing a channel scan.

Satellite System is available when **Aerial** is set to **Satellite**. When the PIN input screen appears, enter the PIN.

- **Satellite Selection**: You can choose the satellites for this TV.
- **LNB Power**: Enables or disables the power supply for the LNB. Try Now
- **LNB Settings**: Configures the outdoor equipment. Try Now

  Satellite: Selects the satellite for receiving digital broadcasts.

  Transponder: Selects a transponder from the list or adds a new transponder.

  DiSEqC Mode: Selects DiSEqC mode for the selected LNB.

  Lower LNB Oscillators: Sets the LNB oscillators to a lower frequency.

  Upper LNB Oscillators: Sets the LNB oscillators to a higher frequency.

  Tone 22 kHz: Selects the Tone 22 kHz depending on the LNB type. For a universal LNB it should be **Auto**.
- **SatCR/Unicable Settings**: Configure single cable installation.

  This function is only available for UHD TV.

  SatCR is short for satellite channel router.

  This function may not support depending on the country.

  SatCR/Unicable: Enables or disable single cable installation support.

  Slot Number: Select the SatCR user slot number for this receiver.

  Slot Frequency: Enter the appropriate frequency to receive the signal from SatCR.

  Detect Slot Frequency: Auto-detect the signal frequency for the selected slot number.

Verify Slot Frequency: Verify that the frequency entered corresponds to the selected slot.

- **Positioner Settings**: Configures the aerial positioner. Try Now

  Positioner: Enables or disables the positioned control.

  Positioner Type: Sets the positioned type between DiSEqC 1.2 and USALS (Universal Satellite Automatic Location System).

  - **My Longitude**: Sets the longitude for my location.
  - **My Latitude**: Sets the latitude for my location.
  - **Satellite Longitude Settings**: Sets the longitude of user defined satellites.

  User Mode: Sets the position of satellite aerial according to each satellite.

  If you store the current position of satellite aerial according to a certain satellite, when the signal of that satellite is needed, the satellite aerial can be moved to pre-populated position.

  - **Satellite**: Selects the satellite to set the position for.
  - **Transponder**: Selects a transponder from the list for signal reception.
  - **Moving Mode**: Selects the movement mode between discrete and continuous movement.
  - **Step Size**: Adjusts the step size degrees for the aerial rotation. Step Size is available when Moving Mode is set to Step.
  - **Go To Stored Position**: Rotates the aerial to the stored satellite position.
  - **Aerial Position**: Adjusts and stores the aerial position for the selected satellite.
  - **Store Current Position**: Stores current position as the selected positioner limit.

  Installer Mode: Sets limits to the scope of movement of satellite aerial or reset the position. Generally, installation guide uses this function.

  - **Limit Position**: Selects the direction of the positioner Limit.
  - **Aerial Position**: Adjusts and stores the aerial position for the selected satellite.
  - **Store Current Position**: Stores the current position as the selected positioner Limit.
  - **Go to zero**: Moves the aerial to the reference position.
  - **Reset positioner limit**: Allows the aerial to rotate over the full arc.

- **Reset all settings**: All satellite settings will be reset to the initial values.

Common Interface

Broadcasting > **Common Interface** Try Now

- **CI Menu**

  Enables the user to select from the CAM-provided menu. Select the CI menu based on the menu PC Card.

- **CAM video transcoding**

  You can configure the setting to transcode the video codec from the CAM automatically. Turn it **Off** if you do not want to use it.

  You must use a CAM that supports video codec transcoding.

- **Application Info**

  View information about the CAM inserted into the CI slot and about the "CI or CI+ CARD" inserted into the CAM. You can install the CAM any time, with or without the TV turned on.

1. Purchase a CI CAM module at your nearest dealer or by phone.
2. Firmly insert the "CI or CI+ CARD" into the CAM in the direction of the arrow.
3. Insert the CAM with the "CI or CI+ CARD" into the common interface slot, in the direction of the arrow so that it aligns parallel with the slot.
4. Check if you can see a picture on a scrambled signal channel.

Changing the Picture Mode and Adjusting the Picture Quality

Choosing the Right Picture Mode for the Viewing Environment

Picture > **Picture Mode** Try Now

The following picture modes utilise different contrast and brightness settings to provide the best viewing experience for the environment.

When connected to a PC via an HDMI-to-DVI cable, only the **Standard** and **Entertain** modes can be chosen.

- **Dynamic**

  If the ambient lighting is too bright and makes the screen blurry, use this mode to make the picture clearer.

- **Standard**

  This is the default mode suitable for most environments.

- **Natural**

  This mode is useful for reducing eye strain.

  This mode is available for LED / UHD TVs only.

- **Relax**

  Consumes less power and reduces eye strain.

  This mode is only available for PDP TVs.

- **Movie**

  Appropriate for darkened rooms, for watching movies, and when experiencing eye fatigue. Darkens the screen and reduces glare.

- **Entertain**

  Sharpens images for a more dynamic viewing experience.

  This mode is only available when connected to a computer via an HDMI-to-DVI cable.

- **Stadium**

  Setting **Football Mode** (**System** > **Football Mode**) to **On** automatically configures **Picture Mode** to **Stadium** for a more realistic viewing experience.

  Stadium cannot be selected by the user.

Adjusting the Picture Quality for Each Picture Mode

Picture > **Backlight** (or **Cell Light**), **Contrast**, **Brightness**, **Sharpness**, **Colour** or **Tint (G/R)**

Select one of the settings to display its slide bar. Change the adjustment value using <, >. Change the item using ∧, ∨. Adjusted values are applied to the current source and picture mode.

The **Colour** and **Tint (G/R)** settings cannot be adjusted when the TV is connected to a computer via an HDMI to DVI cable.

Choose a **Picture Mode** and then adjust the settings.

- **Backlight** Try Now

  Adjusts the brightness of individual pixels. Decreasing the brightness reduces power consumption.

  This option is only available for LED / UHD TVs.

- **Cell Light**

  Adjusts the brightness of the panel. Decreasing the brightness reduces power consumption.

  This option is only available for PDP TVs.

- **Contrast** Try Now

  Adjusts the screen contrast.

- **Brightness** Try Now

  Adjusts the overall brightness.

- **Sharpness** Try Now

  Sharpens or dulls the edges of objects.

- **Colour** Try Now

  Adjusts the overall colour saturation.

- **Tint (G/R)** Try Now

  Adjusts the ratio of green to red. Increase the green value to saturate the greens and the red value to saturate the reds.

  Adjusted values are saved by the TV for the current source and picture mode, and remain in effect each time the source and picture mode are selected. Consequently, the TV can have different picture settings for each external source.

Applying the Current Picture Settings to Other Input Sources

Picture > **Apply Picture Mode** Try Now

You can apply the picture quality setting that you configured for the TV to all external devices connected to the TV or to the current source only.

To apply the setting to all external devices connected to the TV, select **All Sources**. To apply the setting to the current input only, select **Current Source**.

Fine-Tuning Each Picture Mode (Advanced Settings)

Picture > **Advanced Settings** Try Now

Select **Picture** > **Advanced Settings** to fine-tune how images are displayed on the TV screen for each **Picture Mode**.

- **Advanced Settings** is only available when the **Picture Mode** is set to **Standard** or **Movie**.
- When the TV is connected to a computer via an HDMI-DVI cable, only **White Balance** and **Gamma** can be adjusted.

Choose a **Picture Mode** and then adjust the settings.

- **Dynamic Contrast** Try Now

  Automatically adjusts the screen contrast. Use this option to achieve the optimal contrast setting.

- **Black Tone** Try Now

  Adjusts the black colour depth.

- **Flesh Tone** Try Now

  Darkens or lightens skin tones.

- **RGB Only Mode** Try Now

  Adjusts the red, green, and blue levels individually.

- **Colour Space** Try Now

  Adjusts the range of colours that can be displayed on screen. **Auto** automatically adjusts the colour space depending on the input signal. **Native** applies a range that is wider than the input signal. **Custom** allows you to adjust the colour space manually.

- **White Balance** Try Now

  Adjust the colour temperature of the picture to make white objects look white, and the overall picture appear natural.

  2 Point: Adjust each of the 3 colour's luminosity with the offset menu and the brightness with the gain menu. To restore the default values, select **Reset**.

  10 Point: Adjust the white balance by adjusting the brightness of each of the 10 sections of red, green, and blue colours of the input signal. To choose a section, select a desired section in **Level** field.

  You can use the **10 Point** function only when the **Picture Mode** is set to **Movie**. Some external devices may not support this.

- **Gamma** Try Now

  Adjusts the primary colour intensity.

- **Motion Lighting** Try Now

  Adjusts the brightness in response to on-screen movements to reduce power consumption.

  This feature is only available when the **Picture Mode** is set to **Standard** and is not available in 3D mode.

  Adjusting the **Contrast**, **Brightness**, and other picture quality settings deactivates the feature.

Adjusting the Picture for Easier Viewing (Picture Options)

Picture > **Picture Options** Try Now

Select **Picture** > **Picture Options** to make additional adjustments for an easier viewing experience.

When the TV is connected to a computer via an HDMI-DVI cable, only **Colour Tone** can be adjusted.

Choose a **Picture Mode** and then adjust the settings.

- **Colour Tone** Try Now

  Adjusts the colour tone. The setting is applied on an individual **Picture Mode** basis. When a **Picture Mode** is changed, the corresponding setting will be applied automatically.

  If the **Picture Mode** is set to **Dynamic**, you will only be able to choose **Cool** or **Standard**.

- **Digital Clean View** Try Now

  Reduces static and ghosting caused by a weak signal. Selecting **Auto Visualisation** displays the signal strength at the bottom the screen. Green indicates the best possible signal.

  Available for analogue channels only.

- **MPEG Noise Filter** Try Now

  Reduces MPEG noise and improves video quality.

- **HDMI Black Level** Try Now

  Some external devices connected to the TV via an HDMI cable can have issues, such as low black level, low contrast, and dull colours. Use **HDMI Black Level** to adjust the black level to compensate.

  This is only available when the Input Signal, connected to the TV via an HDMI connector, is set to RGB444.

- **Film Mode** Try Now

  Optimises the picture quality for movies. Select this mode for watching movies.

  This feature is only available when watching TV or when the input signal is AV, Component (480i, 1080i), or HDMI (1080i).

- **Motion Plus** Try Now

  Availability depends on the specific model and area.

  Removes blurring and judder from scenes with rapid movement. If you select **Custom**, you can configure Blur Reduction and Judder Reduction manually and set **LED Clear Motion** on for a sharper LED image.

  The Info screen on your TV displays the resolution and frequency of the incoming signal (60Hz), but not the frequency the TV is generating for the image it is displaying by using **Motion Plus** function.

  If noise occurs on the screen, please set up the **Motion Plus** to **Off**. If **Motion Plus** is **Custom**, you can set up the **Blur Reduction**, **Judder Reduction**, **LED Clear Motion** and **Reset** manually.

  If **LED Clear Motion** is **On** at 60Hz video signal, the screen may flicker.

  Blur Reduction: Adjusts the blur reduction level from video sources.

  Judder Reduction: Adjusts the judder reduction level from video sources when playing films.

  LED Clear Motion: Removes drag from fast scenes with a lot of movement to provide a clear picture.

  Reset: Reset the custom settings to the factory defaults.

  If you have Motion Plus on, and then bring up the INFO screen, the INFO screen displays the resolution and frequency of the incoming video signal (60Hz). This frequency is not the same as the frequency of the picture the TV is displaying when Motion Plus is on..

- **Analogue Clean View**

  Reduce diagonal noise in picture cause by the crosstalk of signals.

  This function is only available for analogue broadcasts.

  Availability depends on the specific model and area.

- **Black Optimiser**

  Adjust overall black colour depth to give a change to picture depth. This is not available when playing a media file or using the TV as a computer display.

  This feature is only available for PDP TVs.

- **Smart LED**

  This controls the brightness of individual areas on screen to maximum contrast automatically.

  Availability depends on the specific model and area.

- **Cinema Black**

  In **Movie** mode, this feature dims the top and bottom areas of the video image to provide a more immersive viewing experience.

  Availability depends on the specific model and area.

Viewing in 3D

Picture > **3D** Try Now

The 3D option lets you view 3D media content and broadcasts. You will need to wear Samsung 3D Active Glasses to play 3D content. IR-type Samsung 3D Active Glasses and third-party 3D glasses are not supported.

- Carefully read the health and safety information concerning 3D viewing before viewing 3D content. Refer to the "3D Precautions" section for more information.
- Whether 3D video is displayed in true HD is usually determined by the quality of the content.

Starting 3D

1. Play 3D content or turn on a channel that's showing a 3D broadcast.
2. Put the Samsung 3D glasses on and then select **3D**. 3D viewing is enabled.

The ideal viewing distance is three times the height of the screen or more. 3D images may not appear if you do not adhere to the recommended viewing angle or distance.

The 3D feature may not work properly if there is another 3D product or an electronic device running nearby. If there is a problem, keep other electronic devices as far away as possible from the 3D Active Glasses.

The left and right 3D images may initially overlap when the TV is turned on. It takes a moment for the display to optimise for the overlapping to go away.

There are several restrictions when using 3D TV:

- Launching Smart Hub automatically disables 3D mode.
- **PIP** cannot be used.
- Certain **Picture** options are disabled.

Changing the 3D Mode

Picture > **3D** > **3D Mode** Try Now

1. Launch 3D and then select **3D Mode** under **Picture** > **3D**.
2. Choose from the 3D modes that appear on the screen. Supported **3D Mode** may vary depending on the 3D content.

   3D Mode is automatically configured for most 3D content.

The following **3D Mode** is available. However, mode availability may vary depending on the 3D content's format.

Availability depends on the specific model and area.

The supported resolutions vary for each mode. Refer to the "Supported Resolutions for each 3D Mode" section for more information.

- Off (Off)

  Deactivates 3D viewing.

- 2D→3D (Normal)

  Converts normal images to 3D images.

  Some formats do not support this mode.

- (L/R)

  Splits a single image into left and right overlapping images to create the 3D effect.

- (T/B)

  Splits a single image into top and bottom overlapping images to create the 3D effect.

- (Horizontal Line)

  Switches between left and right images one horizontal line at a time.

- (Vertical Line)

  Switches between left and right images one vertical line at a time.

- (Pixel)

  Switches between left and right images one pixel at a time.

- (Frame)

  Switches between left and right images one frame at a time.

When the TV is connected to a computer:

The (Horizontal Line), (Vertical Line), and (Pixel) settings can only be selected when the computer's resolution is set to 1920x1080 ,or the computer is connected to the TV via an HDMI-DVI cable.

The (Frame) setting can only be selected when the computer's resolution is set to 1920x1080 and the frequency to 60Hz.

Adjusting the 3D Effect

Picture > 3D

Configure the viewpoint, depth, and other 3D settings for a custom viewing experience.

All 3D effects with the exception of **3D Auto View** can only be used while watching 3D content.

- **Adjusting the 3D perspective**

  Availability depends on the specific model and area.

  Select **Picture** > **3D** > **3D Perspective**. Use the adjustment bar shown on the screen to adjust the perspective.

- **Adjusting the 3D Depth**

  Availability depends on the specific model and area.

  Select **Picture** > **3D** > **Depth**. Use the adjustment bar shown on the screen to adjust the depth.

  This option cannot be used if 3D mode is set to (L/R) or (T/B).

- **Adjusting the 3D Effect**

  Availability depends on the specific model and area.

  Configure **3D Effect** to **Manual** or **Auto**. **Auto** automatically selects the best **3D Perspective** and **Depth** settings for the 3D signal, and **Manual** allows the user to adjust the **3D Perspective** and **Depth** settings manually.

  This option cannot be used if 3D mode is set to (L/R) or (T/B).

- **Reversing the Left/Right 3D Images** Try Now

  Select **Picture** > **3D** > **L/R Change**. This option is used to reverse the left and right images.

- **Displaying 3D Content in 2D** Try Now

  Select **Picture** > **3D** > **3D → 2D**. This option is used to enable 2D viewing of 3D content.

  This function is not available if 3D mode is set to (Normal) or (Off).

- Automatically Turning on 3D if 3d Content is Detected

  Select **Picture** > **3D** > **3D Auto View**. Use **3D Auto View** to set the TV to automatically activate 3D mode when 3D content or a 3D broadcast is detected. If **3D Auto View** is set to **Message Alert**, a window confirming 3D activation will be displayed. 3D is activated once confirmed.

  3D is not displayed while certain applications are running. To watch the TV in 3D mode, exit the application.

- Adjusting 3D Optimisation

  Availability depends on the specific model and area.

  Select **Picture** > **3D** > **3D Optimisation**. Automatically adjusts the picture overall to provide an optimal 3D effect.

Picture Support Functions

PIP Broadcast Viewing

Picture > **PIP**

Use the **PIP** ("Picture-In-Picture") function to watch TV in a small window while also watching content from a DVD player, Blu-ray player, computer, or a different external device in the background.

Select **Picture** > **PIP** to display the PIP settings window. This settings window contains the following options:

- **PIP**

  Activates/deactivates **PIP**.

- **Aerial**

  Select the **PIP** sub-picture broadcast signal.

- **Channel**

  Select the **PIP** sub-picture channel.

- **Size**

  Select the **PIP** sub-picture size.

- **Position**

  Select the **PIP** sub-picture position.

- **Sound Select**

  Select the audio source.

Changing the Picture Size and Position

Choosing the Right Screen Size

Picture > **Picture Size** > **Picture Size** Try Now

Most TV programmes and videos are displayed in full screen, but some programmes and videos are larger or smaller. Change the screen size for such programmes and videos so that the picture fits the screen better.

- Supported screen sizes vary depending on the input signal. Refer to the "Picture Sizes and Input Signals" section for more information about supported screen sizes.
- The **Picture Size** option is not available for images in the UHD resolution because the supported screen size is fixed. (When connecting via UHD)

- **Auto Wide**

  Automatically adjusts the picture size to the 16:9 aspect ratios.

- **16:9**

  Set the picture to the 16:9 wide-screen format.

- **Wide Zoom**

  Magnifies the picture size more than 4:3. A magnified picture can be moved up and down.

- **Zoom**

  Magnifies the 16:9 wide pictures vertically to fit the screen size. A magnified picture can be moved up and down.

  - **Zoom** is not available when **Picture Size** set to **Wide Zoom**.

- **4:3**

  Sets the picture to basic 4:3 mode.

⚠ **Do not leave the TV in 4:3 mode for an extended period. The dark borders displayed on the left and right / top and bottom of the screen may cause image retention. This phenomenon can appear on LED and PDP TVs. (Screen burn - this phenomenon can appear on PDP TVs.) This is not covered by the warranty.**

- **Screen Fit**

  Displays the full image without any cutoff.

- **Smart View 1**

  Reduces a 16:9 picture by 50%.

  - This mode is only available for LED / UHD TVs and in HDMI mode.

- **Smart View 2**

  Reduces a 16:9 picture by 25%.

  - This mode is only available for LED / UHD TVs and in HDMI or DTV mode.

Adjusting the Screen Position

Picture > **Picture Size** > **Zoom/Position** or **Position**

Adjusts the screen position.

This option is only available with **Picture Size** set to **Wide Zoom**, **Zoom**, or **Screen Fit**. When the TV is tuned to a digital channel, the screen position cannot be adjusted if the **Picture Size** is set to **Screen Fit**.

- The **Picture Size** option is not available for images in the UHD resolution be cause the supported screen size is fixed. (When connecting via UHD)

1. To adjust the screen's position, select **Picture** > **Picture Size** > **Zoom/Position** or **Position**. A pop-up window appears.
2. Select **Zoom** or **Position** again from the pop-up window.
3. Adjust the screen. Once done, select **Zoom** or **Position** and then **Close**. Select **Reset** to reset the screen position.

Adjusting the 4:3 Screen Size

Picture > **Picture Size** > **4:3 Screen Size** Try Now

Available only when picture size is set to Auto Wide. You can determine the desired picture size at the 4:3 WSS (Wide Screen Service) size or the original size. Each European country requires different picture size.

- Not available in Component or HDMI mode.

Listening to Audio Only with the Screen Turned Off (Picture Off)

Picture > **Picture Off** Try Now

Turns off the screen and plays audio through the speakers only. To turn the screen back on, press any button other than the **TV** and **VOLUME** buttons.

Resetting the Picture Mode Settings

Picture > **Reset Picture** Try Now

Use this option to reset the current **Picture Mode** to its factory settings. This does not affect the settings of other Picture Modes.

Changing the Sound Mode and Using Sound Effects

Choosing the Right Sound Mode for the Environment

Sound > Sound Mode Try Now

Sound modes apply preset adjustments to the sound output, optimised for different viewing and listening circumstances.

The sound modes cannot be used when you are listening to audio through external speakers.

- **Standard**

  This is the normal sound mode.

- **Music**

  This mode emphasises normal music instead of voice.

- **Movie**

  This mode is calibrated to provide the best sound for movies.

- **Clear Voice**

  This mode emphasises voice.

- **Amplify**

  This mode increases the overall intensity of high-frequency sounds for a better listening experience. It is designed for hearing-impaired listeners.

- **Stadium**

  Setting Football Mode (System > Football Mode) to On automatically configures Sound Mode to Stadium for a more realistic viewing experience.

  Stadium cannot be selected by the user.

Using Sound Effects

Sound > **Sound Effect** Try Now

Use sound effects to alter how the TV projects sound.

Restrictions:

- Sound effects can only be used with the **Sound Mode** set to **Standard**.
- Sound effects cannot be used when you are listening to audio through external speakers.

Choose a **Sound Effect** and then adjust the settings.

- **Virtual Surround** Try Now

  Produces sound that will make you feel like you are sitting in a movie theatre or concert hall.

- **Dialog Clarity** Try Now

  Increases voice intensity to make dialog clearer.

- **Equaliser** Try Now

  Lets you adjust the speaker balance and make bandwidth adjustments. Select **Reset** to reset the settings.

Customising Sound (Sound Customiser)

Sound > **Sound Customiser** Try Now

Sound Customiser lets you calibrate the TV for optimal sound quality based on your hearing capabilities and the ambient conditions.

Customising Sound

Sound > **Sound Customiser** > **Add Custom Sound** Try Now

Customise sound in a quiet environment to ensure accurate measurements.

1. Select **Sound** > **Sound Customiser** > **Add Custom Sound**.
2. Select **Start** to preview a test tone. Select **Next**.
3. A 6-step test will start. During each stage, select **Yes** when you can hear the test tone. If you want to listen to it again, select **No**. Once the test is complete, you can compare the original sound to the calibrated sound.
4. Select **Next** and enter a name for the calibrated sound profile. Once the settings have been saved, you will be able to play TV sound that has been optimised for the user's sense of hearing and the ambient environment.

Using a Custom Sound Profile

Sound > **Sound Customiser** > **Custom Sound Profile** Try Now

If there are multiple Custom Sounds, simply choose the one you want to use.

1. Select **Sound** > **Sound Customiser** > **Custom Sound Profile**.
2. Select a **Custom Sound Profile** from the list.

Renaming and Deleting Custom Sound Profiles

Sound > **Sound Customiser** > **Manage Custom Sound** Try Now

Rename or delete custom sound profiles.

Custom Sound Profile must contain a Custom Sound Profile.

1. Select **Sound** > **Sound Customiser** > **Custom Sound Profile**.
2. Choose a **Custom Sound Profile** you want to rename or delete.
3. Select **Sound** > **Sound Customiser** > **Manage Custom Sound**. This brings up the **Manage Custom Sound** window.
4. Select a **Custom Sound Profile** you want to rename or delete and then select **Rename** or **Delete**. Selecting Rename brings up the on-screen keyboard. Use the keyboard to change the name. Delete the selected **Custom Sound Profile**.

Modifying a Custom Sound

Sound > **Sound Customiser** > **Edit Custom Sound** Try Now

Modify the sound settings of a Custom Sound profile.

1. Select **Sound** > **Sound Customiser** > **Edit Custom Sound** and then select the Custom Sound you want to edit from the pop-up window.
2. Select Preview to listen to the preview test tone, and then select Next. Select **Next**.
3. A 6-step test will start. During each stage, select **Yes** when you can hear the test tone. If you want to listen to it again, select **No**. Once the test is complete, you can compare the original sound to the calibrated sound.
4. Select **Next** and enter a name for the calibrated sound profile. Once the settings have been saved, you will be able to enjoy TV sound that has been optimised for the your sense of hearing and the ambient environment.

Sound Support Functions

Selecting Speakers

Sound > **Speaker Settings** > **TV Sound Output** Try Now

This lets you choose which speakers the TV uses for audio output. To listen to the audio through the speakers of a connected receiver or home theatre only, select Receiver or Audio Out. To listen to audio through the TV's speakers and the speakers of a connected AV receiver or home theatre simultaneously, select **TV Speaker**. If this causes an echo effect, choose any speaker option other than **TV Speaker** to mute the TV speakers, or turn off the receiver or home theatre.

- Using external speakers alone disables the volume button and the mute function. In addition, certain **Sound** options will also be disabled.

Designating the TV's Installation Type

Sound > **Speaker Settings** > **TV Installation Type**

Specify the TV's installation type. Choose between **Wall Mount** and **Stand** to optimise the TV's sound automatically.

Listening to TV Sound through Samsung Bluetooth Audio

Sound > **Speaker Settings** > **SoundShare Settings**

Connect the TV to a Samsung audio device for a richer, clearer sound.

- This option is only available for Samsung audio devices that support SoundShare.
- You can't use Bluetooth headphones and **SoundShare Settings** features simultaneously.

Pair the Samsung audio device using the TV's Bluetooth function. Refer to the Samsung audio device's operating manual for more information on pairing.

- **Samsung Audio Device List**

  Displays a list of paired Samsung audio devices. Select a device to display its menu options. You can activate/deactivate the audio device or remove it from the list.

- **Add New Device**

  Enables/disables SoundShare. The connection signals from new devices are ignored if **Add New Device** is set to **Off**.

  - When listening to TV audio through a Samsung audio device, certain types of content may produce video-to-audio synching issues.

Enabling the Sound (Additional Settings)

Sound > **Additional Settings** Try Now

Configure additional settings for optimum audio output.

- **DTV Audio Level** Try Now

  (Digital channels only)

  The TV cannot freely control the volume of the digital audio that it sends to the AV receiver. Use this to set the digital audio volume at a comfortable level.

  According to the type of broadcast signal, MPEG / HE-AAC can be adjusted between -10dB and 0dB.

  To increase or decrease the volume, adjust between the range 0 and -10 respectively.

- **Audio Format**, **Audio Delay**

  This Smart TV is SPDIF-enabled. The Sony Philips Digital Interface (SPDIF) provides digital audio output to speakers and various digital devices, including A/V Receivers and home theatres.

  Audio Format Try Now

  Selects the Digital Audio output (SPDIF) format. The available Digital Audio output (SPDIF) formats may vary depending on the input source.

  Audio Delay Try Now

  This setting helps correct timing mismatches between the audio and video tracks when you are watching TV and listening to audio through a digital audio device. Enabling the feature displays a slide bar that you can use to adjust the delay by up to 250ms.

- **Dolby Digital Comp** Try Now

  Some digital TV programmes provide 5.1-channel Dolby audio. This TV converts Dolby audio to stereo audio so that it can play the sound through the TV's speakers. There are two methods to choose from. **RF** is for better sound at lower volumes, and **Line** is for higher volumes.

- **HD Audio**

  Listen to the audio from the TV in HD quality.

  - This function is only available for UHD TV.
  - Standard audio signals are sampled at 48 kHz while HD audio signals are sampled at 96 kHz.
  - Some S/PDIF receivers may not be compatible. For such incompatible receivers, deactivate **HD Audio** and use normal audio mode instead.
  - The HD audio signals available on the TV are not available on external audio players connected via HDMI, Bluetooth, or Wi-Fi networks.

- **Auto Volume** Try Now

  When you change channels, video sources, or content, Auto Volume automatically adjusts the TV's volume level so that the volume level remains the same for all sources. For example, if you switch from a streaming video application to a Blu-ray player or a favourite TV channel, Auto Volume can modify the volume up to 12db to equalise the sound.

  The Auto Volume function has two settings: **Normal** and **Night**. **Normal** applies a normal level of volume adjustment. **Night** applies a slightly lower volume level and is ideal for late-night TV viewing. If you want to use the volume control of a connected source device to control the sound, deactivate the Auto Volume function. When you use the Auto Volume function with a source device, the device's volume control may not function properly.

Listening to 3D Audio in 3D Mode

Sound > **3D Audio** Try Now

3D audio technology provides immersive sound that matches the pop-up effect of 3D video by using perspective in the audio depth control.

- Only available in 3D mode.

Resetting All Sound Settings

Sound > **Reset Sound** Try Now

Use to reset all sound settings to the factory defaults.

Setting the Time and Using the Timer

Setting the Current Time

System > Time > Clock Try Now

Set the clock manually or automatically. Once the clock has been set, you can select the INFO button to check the current time.

The clock must be reset every time the power is disconnected.

Setting the Clock using Digital Broadcast Info

System > Time > Clock > Clock Mode Try Now

Set Clock Mode to Auto. The TV automatically downloads the correct time from a digital channel. To enable this option, the TV's Antenna jack must be connected to either an antenna or a cable output and must be receiving digital broadcasts. The accuracy of the time information received may vary depending on the channel and signal. If your TV is connected to a set-top-box or satellite box using HDMI or Component connections, you must set the time manually.

Availability depends on the specific model and area.

If the Clock is Wrong in Auto Mode...

System > Time > Clock > Time Offset Try Now

If the time set automatically is incorrect, you can offset the clock in 1-hour increments by as much as -/+ 12 hours. Select System > Time > Clock > Time Offset and offset the clock to the correct time.

Time Offset adjusts the time through network connections and is only available if the Clock Mode is set to Auto and the TV is connected to the Internet though a local area network.

Time Offset will adjust the time if the TV fails to receive time information through normal digital broadcast signals.

Setting the Clock Manually

Manually enter the time. Set Clock Mode to Manual and then select Clock Set to enter the current time and date.

Clock Set: Set the current Date and Time.

Time Zone: Select your time zone.

This function is only available when the Clock Mode is set to Auto.

DST: Switches the DST (Daylight Saving Time) function on or off.

This function is only available when the Clock Mode is set to Auto.

GMT: Selects your time zone.

When Country is set to others, you can use this function.

Using the Timers

Using the Sleep Timer

System > **Time** > **Sleep Timer** Try Now

This automatically shuts off the TV after a preconfigured period of time. Select **System** > **Time** > **Sleep Timer**. You can set the timer up to 180 minutes in 30-minute increments.

Turning On the TV using On Timer

System > **Time** > **On Timer** Try Now

Set the On Timer so that the TV turns on automatically at a chosen time. Select **System** > **Time** > **On Timer**. The timer configuration window appears. Configure the following settings:

The **On Timer** is only available if the **Clock** has been set.

- **Setup**

  Specify the dates and the duration. Use **Manual** to specify the days of the week.

- **Time**

  Set the time that the TV turns on automatically.

- **Volume**

  Specify the volume when the TV turns on.

- **Source**

  Select the signal source from the list. Specify the channel or source to be displayed when the TV turns on. To specify a USB device, a USB device must first be connected to the TV. To play media from an HDMI or Component source such as a DVD player or Blu-ray player, the device must already be turned on, and playing the media when the TV is turned on.

- **Aerial**

  Set the **Source** to **TV** to select a broadcast signal.

- **Channel**

  Set the **Source** to **TV** to select a channel.

- **Music** / **Photo**

  Set the **Source** to **USB** to choose a USB folder that contains music or photo files. Selecting both music and image files plays the music files and displays the images at the same time.

Restrictions:

- This feature will not function properly if the selected USB device does not contain media files or a folder has not been specified.
- The slideshow will not start if there is only one image file on the USB device.
- Folders with long names cannot be selected.
- Always use different folder names for multiple USB devices.
- Use a USB memory stick or multi-card reader. The **On Timer** may not work with certain battery-powered USB devices, MP3 players, or PMPs because the TV may take too long to recognise the device.

Turning Off the TV Using Off Timer

System > **Time** > **Off Timer** Try Now

Set the Off Timer to turn the TV off automatically at a specific time. Select **System** > **Time** > **Off Timer**. The timer configuration window appears. Configure the following settings:

The **Off Timer** is only available if the **Clock** has been set.

- **Setup**

  Specify the dates and the duration. Use **Manual** to specify the days of the week.

- **Time**

  Set the time that the TV turns off automatically.

Using the Screen Burn Protection and Energy Saving Features

Preventing Screen Burn

System > Auto Protection Time Try Now

This feature is only available for LED / UHD TVs.

Still images can leave burned-in after-images on the screen if left for a long time. Use Screen Burn Protection to protect the screen. Select System > Auto Protection Time and then choose a time setting from the list. If a still image is shown on the screen for longer than the time you selected, the TV will automatically activate Screen Burn Protection to prevent burned-in after- images that may damage the screen.

Screen Burn Protection

System > Screen Burn Protection

This feature is only available for PDP TVs.

To reduce the possibility of screen burn, the TV uses Pixel Shift screen burn prevention technology. Pixel Shift moves the picture slightly on the screen to avoid over-using some elements and under using others. The Pixel Shift Time setting allows users to programme the time between picture movements, in minutes.

The TV also has the following additional screen burn protection functions:

- Pixel Shift
- Auto Protection Time
- Scrolling
- Side Grey

Pixel Shift

System > Screen Burn Protection > Pixel Shift

Set the TV to very slightly shift pixels on the PDP screen in a horizontal or vertical direction to minimize burned-in after-images. The **Pixel Shift** value may differ depending on the monitor size and mode. It is not available in **Screen Fit** mode.

Settings:

- **Horizontal**: Available Settings: 0 - 4 (pixels), Optimum settings for TV/AV/Component/HDMI: 4
- **Vertical**: Available Settings: 0 - 4 (pixels), Optimum settings for TV/AV/Component/HDMI: 4
- **Time** (minutes): 1 - 4 min, Optimum settings for TV/AV/Component/HDMI: 4 min

Auto Protection Time

System > Screen Burn Protection > Auto Protection Time

If the screen displays a still image for a certain period of, the TV activates the screen saver to prevent the formation of burnt-in ghost images.

Scrolling

System > Screen Burn Protection > Scrolling

This removes after-images on the screen by illuminating all the pixels on the PDP according to a set pattern. Use this when there are after-images or symbols on the screen, especially when a still image was displayed on the screen for a long time.

The after-image removal function has to be executed for approximately 1 hour to effectively remove after-images. If the after-image is not removed the first time, repeat the process. Press any button to cancel this process.

Side Grey

System > Screen Burn Protection > Side Grey

This allows selection of colours for the sidebars the TV displays when the screen size is set to 4:3. The default colour is gray.

Using Energy Saving Features

System > Eco Solution Try Now

Eco Solution adjusts the TV's brightness level and prevents overheating to reduce overall power consumption.

- **Energy Saving** Try Now

  Select a brightness setting from the list to reduce the TV's power consumption.

- **Eco Sensor** Try Now

  Automatically adjusts the TV's brightness level based on the ambient light level to reduce the TV's power consumption. If the Eco Sensor has adjusted the screen's brightness level, you can manually adjust the screen's minimum brightness level by adjusting the **Min. Backlight** or **Min Cell Light** (applicable models). Changing the **Picture** menu's **Backlight** or **Cell Light** (applicable models) setting while **Eco Sensor** is running automatically disables **Eco Sensor**.

- **No Signal Power Off** Try Now

  Select a time from the list. If no signal is received for the specified duration, the TV automatically cuts off the power to reduce power consumption.

- **Auto Power Off** Try Now

  If the TV remains turned on for four hours without any user input, the TV will automatically turn off to prevent overheating.

Using Anynet+ (HDMI-CEC)

Use Anynet+ (HDMI-CEC) to control all external devices that support HDMI-CEC using just the TV's remote control. Note that Anynet+ (HDMI-CEC) only works with the TV's remote control and not with the panel keys.

You can configure the TV's universal remote function to control third-party cable boxes, Blu-ray players, and home theatres that do not support HDMI-CEC using the TV's remote control.

Anynet+ Requirements:

- Anynet+ cannot be used to control external devices that do not support HDMI-CEC.
- Anynet+ devices must be connected to the TV using an HDMI cable. Some HDMI cables may not support Anynet+ (HDMI-CEC). In this case, you will need to replace the HDMI cable.
- The TV remote control may not function under certain circumstances. If this occurs select the Anynet+ device again.
- Anynet+ (HDMI-CEC) only works with external devices that support HDMI-CEC and only when those devices are either in standby mode or turned on.
- Anynet+ (HDMI-CEC) can control up to 12 compatible external devices (up to 3 of the same type). With home theatre systems, however, the number of systems that can be controlled is limited to one.
- To listen to 5.1-channel audio from an external device, connect the device to the TV via an HDMI cable and the device's digital audio output connector directly to the home theatre system.
- A home theatre system that has been connected to the TV using an HDMI cable and an optical cable supports 2-channel audio only. 5.1-channel audio is, however, available for digital broadcasts with 5.1-channel audio.

Setting Up Anynet+ (HDMI-CEC)

System > **Anynet+ (HDMI-CEC)** Try Now

- **Anynet+ (HDMI-CEC)** Try Now

  Enables/disables **Anynet+ (HDMI-CEC)**. Set to **Off** to disable all Anynet+ related features. Set to On to enable all **Anynet+ (HDMI-CEC)** related features.

- **Auto Turn Off** Try Now

  When set to **Yes**, turns off **Anynet+ (HDMI-CEC)** compatible external devices when the TV is turned off.

  Some **Anynet+ (HDMI-CEC)** compatible devices do not support this feature.

- **Search for Devices** Try Now

  Search for **Anynet+ (HDMI-CEC)** compatible devices.

Using Anynet+ (HDMI-CEC)

Selecting an External Device

1. Select TOOLS. The **Tools** list appears.
2. Select **Anynet+ (HDMI-CEC)** from the list. The **Select Device** screen appears.
3. Select a device and wait for the switch to take place. This process may take up to 2 minutes to complete and cannot be cancelled once started.

Accessing the External Device's Menu

Once the TV has switched over to the selected device, you can access the device's menu using the TV's remote control.

Select TOOLS. The following list appears, though it may differ based on the external device:

- **Anynet+ (HDMI-CEC)**

  Displays a list of HDMI-CEC-compliant devices connected to the TV. Select **View TV** to exit Anynet+ (HDMI-CEC), and start watching TV. To switch to the screen of an external device, simply select that respective device.

- (Connected Device) **Menu**

  Display the menu of the connected device. If the target device is a DVD player, the DVD menu is shown.

- (Connected Device) **Tools**

  Displays a list of frequently-used functions available for the device. If the target device is a DVD player, the DVD playback menu is shown.

  Some external devices may not support this option.

- (Connected Device) **Title Menu**

  Display the connected device's title menu. If the target device is a DVD player, the DVD title menu is shown.

  Some external devices may not support this option.

Using the e-Manual

Launching the e-Manual

Support > **e-Manual**

The embedded e-Manual contains information.

- You can also download a copy of the e-Manual from Samsung's website, and read it on your computer or print it out.
- Yellow words indicate a menu item; white bold words indicate remote control buttons. Arrows are used to indicate the menu path. (Example: **Picture** > **Picture Mode**)

1. Select **e-Manual**. The e-Manual loads.
2. Select a category from the side of the screen. Once a selection has been made, the contents of the selected category appear.
3. Select an item from the list. This opens the e-Manual on the corresponding page.

If a description doesn't fit on a single screen...

You can scroll pages in one of the following ways.

- Position the focus on the page to display ⌃ / ⌄ on the screen. Press ⌃, ⌄ button.

Additional e-Manual Features

Loading Pages using Keywords

Select **Search** from the side of the screen to bring up the search screen. Enter a search term and then select **Done**. Select an item from the search results to load the corresponding page.

Loading Pages from the Index Page

Select **Index** from the side of the screen to bring up the index screen. Select a keyword from the list to navigate to the relevant page.

Using History to Load Previously Read Pages

Select **Recent pages** from the side of the screen. A list of previously read pages is shown. Select a page. The e-Manual jumps to the selected page.

Accessing the Menu from the e-Manual (Try Now)

Select (**Try Now**) on a feature-description to directly move to the corresponding menu and try out the feature.

If you want to read an **e-Manual** entry on a specific screen menu feature, press the **KEYPAD** button and select **e-Manual** using Samsung Smart Control.

Certain menu options cannot be used.

Loading Reference Pages

Select (**Link**) from the side of a feature-description page to access the corresponding reference page.

Updating the e-Manual to the Latest Version

You can update the e-Manual in the same way as updating apps.

1. Select the **e-Manual** item in the **SAMSUNG APPS** screen.
2. Press and hold the Enter button. The Options menu appears.
3. From the Options menu on the screen, select **Update apps**. A pop-up window appears.

   Update apps is shown on the screen only when an update is required.
4. Select **e-Manual** in the pop-up window and then select **Update**. You can update the e-Manual to the latest version.

Updating the Software

Support > **Software Update** Try Now

Check your TV's software version and upgrade it if necessary.

If the TV is connected to the Internet, TV is set to update software automatically. If you don't want to update it automatically, set **Auto update** (**Software Update** > **Auto update**) to **Off**.

Updating Software over the Internet

Support > **Software Update** > **Update now**

Select **Support** > **Software Update** > **Update now**. An online upgrade downloads and installs the upgrade software directly from the Internet.

This option requires an Internet connection.

⚠ **DO NOT turn off the TV's power until the upgrade is complete. The TV will turn off and on automatically after completing the software upgrade. All video and audio settings return to the default settings after a software upgrade.**

Updating Software using a USB connection

Support > **Software Update** > **Update now**

1. Visit Samsung's website on a computer and download the update package to a USB device.

   Save the update package in the USB device's top-level folder. Otherwise, the TV will not be able to locate the update package.

2. Connect the USB device with the update package to the TV.
3. Select **Support** > **Software Update** > **Update now**. The software is updated using the update package on the USB device.

⚠ **DO NOT turn off the TV's power until the upgrade is complete. The TV will turn off and on automatically after completing the software upgrade. All video and audio settings return to the default settings after a software upgrade.**

Enabling Automatic Software Updates

Support > **Software Update** > **Auto update** Try Now

If the TV is connected to the Internet, the **Auto update** option upgrades the TV's software while it is in Standby Mode. In Standby Mode, the TV appears to be turned off, but still has access to the Internet. This allows the TV to upgrade itself automatically while it is not in use.

This option requires an Internet connection.

Because the TV's internal processes are operating, the screen may emit a faint glow, and this may continue for more than 1 hour until the software download is complete.

If you agree to the Smart Hub terms and conditions, **Auto update** will be set to **On**, If you don't want the TV's software updated automatically, set **Auto update** (**Support** > **Software Update** > **Auto update**) to **Off**.

1. Select **Support** > **Software Update** > **Auto update**.
2. Specify when you want the upgrade to take place. The TV will connect to the server at the specified time, download the update package, and upgrade its own software.

Software Update via satellite channel

Availability depends on the specific model and area.

Support > **Software Update** > **Manage Satellite Channels**

(When the **Aerial** was set to **Satellite**) Manage software downloads via a satellite channel.

Protecting the TV from Hacking and malicious code

System > Smart Security Try Now

When the TV is connected to the Internet, it is vulnerable to hacks and malicious code. Smart Security protects the TV and storage media connected to the TV from such threats.

Navigate to System > Smart Security and set Smart Security to On. Try Now

Checking the TV and Connected Storage Media

System > Smart Security > Scan

Navigate to System > Smart Security and select Scan. This scans the TV and connected media for the presence of malicious code. If no malicious code is detected, a notification window appears on the screen.

If malicious code is detected...

If malicious code was found, the results of the scan will appear on the screen. This result window displays all malicious code found, and provides options to either quarantine the code or allow them to continue.

1. Select all malicious code to quarantine or allow.
2. Select Block or Allow. This moves the selected malicious code to the Isolated List or Allowed List.

   The Isolated List displays all blocked malicious code. You can also relocate codes from this list to the Allowed List.

   The Allowed List displays all allowed malicious code. You can also relocate codes from this list to the Isolated List.

Automatically Scanning when the TV is Powered On

System > Smart Security > Settings > Auto Scan

Navigate to System > Smart Security > Settings and then set Auto Scan to On. This automatically scans the TV and connected storage media when the TV is powered on.

Automatically Adding malicious code to the Blocked List

System > Smart Security > Settings > Move to Isolated List automatically

Navigate to System > Smart Security > Settings and set Move to Isolated List automatically to On. Malicious code found during the scanning process is automatically added to the Blocked List.

Using Other Functions

Enabling Voice Guide for the Visually Impaired

Availability depends on the specific model, area and language.

System > **Accessibility** > **Voice Guide**

Voice Guide provides guiding information in voice to aid the visually impaired to use the TV more conveniently. Enabling this option provides voice guide regarding focus change, channel change, volume change, and various other TV statues.

Navigate to **System** > **Accessibility** > **Voice Guide** and set **Voice Guide** to **On**.

Press and hold the button on the Samsung Smart Control to turn on or off the **Voice Guide**.

The Voice Guide is only provided in the language set in the **Menu Language**(**System** > **Menu Language**). However, some of the languages are not supported by Voice Guide even though they are listed in the **Voice Guide** screen. If this is the case, choose a different language.

To change the speaker's gender for the Voice Guide option, navigate to **System** > **Voice Control** > **Use TV Voice** and change the **Voice Gender** option.

If the **Voice Guide** is set to On, the Samsung Smart Control's motion sensor(gyro sensor) does not work. To use the Samsung Smart Control's motion sensor, set the **Voice Guide** to **Off**.

The Voice Guide will give information for the following functions on the TV.

Some sub-functions or function menus may not provide Voice Guide. In this case, the TV will tell you that Voice Guide is not provided.

- Change Channels
- Changing TV Volume
- Programme Info Window (**Information**)
- **Channel List**
- **Source**
- **Guide**
- **On TV**
- **Voice Control**
- TV' menu

Changing the volume, speed, pitch and Description Level of the Voice Guide

Navigate to **System** > **Accessibility** and then select **Voice Guide**. This changes the volume, speed, pitch and description level of the **Voice Guide**.

- **Volume**

  Change the **Voice Guide** option's volume level.

  The **Voice Guide** volume may vary depending on the TV volume setting.

- **Speed**

  Change the **Voice Guide** option's tempo.

- **Pitch**

  Adjust the pitch of the Voice Guide.

- **Description Level**

  Adjust the **Voice Guide** option to better suit the user's description Level.

Enabling the High Contrast

System > **Accessibility** > **High Contrast** Try Now

Navigate to **System** > **Accessibility** and set the **High Contrast** option to **On**. This option changes major service screens to white text on black background or change the transparent TV menus to opaque so that text can be more easily read.

Press and hold the button on the Samsung Smart Control to turn on or off **High Contrast**.

Adjusting the Menu Transparency

System > **Accessibility** > **Menu Transparency** Try Now

Navigate to **System** > **Accessibility** and adjust the opacity level. Adjust the menu's transparency.

When the **High Contrast** (**System** > **Accessibility** > **High Contrast**) setting is set to **On**, menu display is automatically set to opaque and you cannot change the **Menu Transparency** settings.

Expanding the Smart Hub's Focus Area

System > **Accessibility** > **Enlarge** Try Now

Navigate to **System** > **Accessibility** and set **Enlarge** to **On**. This zooms in the focused item when you use Smart Hub.

- Press and hold the button on the Samsung Smart Control to turn on or off **Enlarge**.

Changing the Menu Language

System > **Menu Language** Try Now

Select **System** > **Menu Language** and then choose a language from the list. Use this option to change the menu language.

Checking Notifications

System > **Notifications** Try Now

Select **Notifications** from the **System** menu to view the list of event messages generated by the TV. **Notifications** appear on the screen when events such as an update release for an app or Samsung Account login/logout occurs.

- Select **Delete All** to delete all notifications.
- Select **Service Notice** to check the SMART TV service notifications in a web browser.

Setting Up a Password

System > **Change PIN** Try Now

Set a PIN (Personal Identification Number) to lock channels, reset the TV, and change the TV settings.

1. Select **System** > **Change PIN**. The PIN input window appears.
2. Enter a PIN. The default PIN is 0000. (For France, Italy: "1-1-1-1")
3. Enter a new PIN and then enter it again to confirm it. The PIN change is complete.

- If you forget your PIN, you can reset it using the Samsung Smart Control. With the TV turned on, press the following buttons on the remote to reset the PIN to 0000: → + → **RETURN** → − → **RETURN** → + → **RETURN**. + is the Volume Up button. − is the Volume Down button. The button is on the left side of the remote.

Programme Rating Lock

Broadcasting > **Programme Rating Lock** Try Now

Availability depends on the specific model and area.

The **Programme Rating Lock** blocks programmes with ratings higher than those desired. This is useful for controlling what children watch on TV. This will not function for programmes originating from external sources, such as DVD players or USB files.

This PIN is required to watch a blocked programme.

The **Programme Rating Lock** is not available in HDMI or Component mode.

Enabling Game Mode

System > **General** > **Game Mode** Try Now

Game Mode optimises the TV's settings for playing video games on a gaming console such as PlayStation™ or Xbox™.

Requirements:

- Game Mode cannot be used for normal TV viewing.
- Connect the gaming console before enabling Game Mode. Otherwise, the picture quality may suffer.
- The screen may shake a little.
- Enabling Game Mode automatically sets the **Picture Mode** to **Standard** and the **Sound Mode** to **Movie**.
- To use a different external device, first disconnect the game console and disable Game Mode.

Enjoying Rich Colours and Superior Picture Quality (BD Wise)

System > **General** > **BD Wise** Try Now

Connecting a Samsung DVD player, Blu-ray player, or home theatre system that supports **BD Wise** enables the richest colours and best possible picture quality. Enabling BD Wise automatically optimises the TV's resolution.

This feature is only available when the external device is connected via an HDMI cable.

Enabling/Disabling Sound Feedback

System > General > Sound Feedback Try Now

Sound Feedback provides audio cues as you navigate through menus and select menu options.

Locking/Unlocking the Panel Keys

System > General > Panel Lock Try Now

Use to lock and unlock the TV's panel buttons.

Showing/Hiding the Samsung Logo while Booting

System > General > Boot Logo Try Now

Use to enable or disable the Samsung logo display that appears when the TV starts up.

Enabling/Disabling the Front Indicators

System > General > Light Effect Try Now

Use to turn the indicators on the front of the TV on/off. Turning the Light Effect off reduces the TV's power consumption.

- The colour of the TV's light may vary depending on the model.
- Availability depends on the specific model and area.

Anti Flicker

System > General > Anti Flicker

- Availability depends on the specific model and area.

Change the power frequency for the cable to stop the camera from flickering.

Registering the TV as a DivX-Certified Device (Watching Paid DivX Movies)

System > DivX® Video On Demand Try Now

Viewing DivX® DRM-protected DivX movies on the TV first requires registration of the TV as a DivX-certified device.

- DRM ("Digital rights management") Digital Rights Management is a digital security measure designed to protect copyright.
- You can watch personally-created and free DivX content without registering the TV.
- Visit the DivX website (http://www.divx.com) and log into your user account before registering the TV as a DivX-certified device. If you do not have an account, please create one.

1. Select **System > DivX® Video On Demand**. A window with a registration code appears on the screen.
2. Visit the DivX website on a computer and click [Register Your Device] under [Support] from the top menu.
3. Enter the registration code shown on the TV's screen in the [Enter your registration code] field.
4. Enter the TV's name in the [Name your device] field and then select [NEXT].
5. Click [DOWNLOAD] and save the [device_name.divx] file.
6. Transfer the [device_name.divx] file from the computer onto a USB device and then plug the USB device into the TV.
7. Play the [device_name.divx] file on the TV to register the TV as a DivX-certified device.

Restoring the TV to the Factory Settings

Support > **Self Diagnosis** > **Reset** Try Now

This option restores all TV settings (excluding the Internet) to the factory defaults.

1. Select **Support** > **Self Diagnosis** > **Reset**. The Security PIN entry window appears on the screen.
2. Enter the Security PIN and then select **Yes**. All settings are then reset. The TV turns off and on again automatically, and then displays the **Setup** screen.

   For more information on Setup, refer to the user manual that came with the TV.

Turning the TV into a Display Model (for retail stores)

Support > **Use Mode** Try Now

Select **Support** > **Use Mode** > **Store Demo**. This turns the TV into a display model for use in a retail environment.

For all other uses, select **Home Use**.

Store Demo should be used in retail environments only. With **Store Demo**, certain functions are disabled and the TV automatically resets itself after a certain amount of time.

UHD Evolution Kit Backup (When connecting via UHD)

System > UHD Evolution Kit Backup

Upgrade your Samsung TV with the 2015 Evolution Kit for more benefits. However, this upgrade requires backing up and converting existing data in your TV and apps accordingly to ensure they remain on the upgraded device.

1. In the **System** menu, select **UHD Evolution Kit Backup**. The **UHD Evolution Kit Backup** screen appears.
2. Select **Start**. Data in the TV will be backed up to the USB storage.
   - Do not turn the TV off or unplug the power cable of the TV during this backup.
   - Do not disconnect the USB storage device during this backup.
3. When complete, select **Done**.

Update Recorded Programmes (When connecting via UHD)

System > Update Recorded Programmes

To watch a previously recorded programme on Samsung TV with the 2015 Evolution kit, it is necessary to convert the recorded programme saved on a USB Drive to the Samsung TV format with the 2015 Evolution kit.

1. Connect the recording USB device to the USB HDD 5V 1A port.
2. In the **System** menu, select **Update Recorded Programmes**. The **Update Recorded Programmes** screen appears.
3. Select **Start**. Start conversion so material is properly displayed on the TV.
4. When complete, select **Done**.

Data Service

This function may not be available, depending on the country.

Allows the user to use information (text, still images, graphics, documents, software, etc.) transmitted via broadcast media.

Auto Run Data Service

Broadcasting > **Channel Settings** > **Auto Run Data Service**

Sets whether or not to automatically run data service. **Auto Run Data Service** automatically runs data service without user intervention.

If any other secondary function is under way, **Auto Run Data Service** may not work.

Using Data Service

If the channel you are currently watching provides data service, you can enjoy a variety of data services by selecting A.

Provided Data Service information may vary depending on broadcast.

While using data services, changing the channel using numeric keys may not be possible, depending on the service.

1. Select A and then select a desired service.

   If **Auto Run Data Service** is **On**, the data service will automatically run with loading banner. In this case, the A function does not work.

2. Select A to display the data service screen.
3. Move to a desired option on the data service screen and then select **OK**. The selected service starts.
4. If you select **EXIT**, data service closes.

HbbTV

This function may not be available, depending on the country.

Access services from entertainment providers, online providers and CE manufactures through HbbTV.

- In some countries, HbbTV is a data service.
- This service may be supported in other countries.
- Some broadcasting may not support the HbbTV.

To use HbbTV, download, install and run HbbTV Widget from SAMSUNG APPS, then follow the instructions on the screen.

HbbTV is turned off by default. To use HbbTV, go to **System** > **Data Service** and set it **Enable**. (Depending on the country)

- HbbTV is not available when Timeshift is running or when a recorded video is being played back.
- An application on HbbTV may malfunction temporarily depending on the circumstances of the broadcast station or application provider.
- An application is only available for use on HbbTV when the TV network is connected to an external network. The application may malfunction depending on the network conditions.
- If the current channel is compatible with both the HbbTV and non-HbbTV text input modes, activate TTX by select TTX key twice.

Using HbbTV:

- When the screen indicates (with the A, etc.) that HbbTV is being accessed.
- Select TTX using the remote once to enter the HbbTV text-input mode.
- Select TTX using the remote twice to enter the non-HbbTV text-input mode.

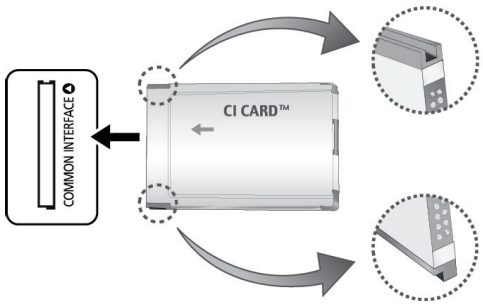
Connecting to a TV Viewing Card slot

The connection method differs depending on the model.

To connect the CI CARD, follow these steps:

A CI Card Adapter that lets the TV use two different CI Cards is available, depending on the model.

Using the “CI or CI+ CARD”



To watch paid channels, the “CI or CI+ CARD” must be inserted.

Turn the TV off to connect or disconnect a CI card.

- If you don’t insert the “CI or CI+ CARD”, some channels will display the message “Scrambled Signal”.
- The pairing information containing a telephone number, the “CI or CI+ CARD” ID the Host ID and other information will be displayed in about 2~3 minutes. If an error message appears please contact your service provider.
- When the configuration of channel information has finished, the message “Updating Completed” is displayed, indicating the channel list is updated.

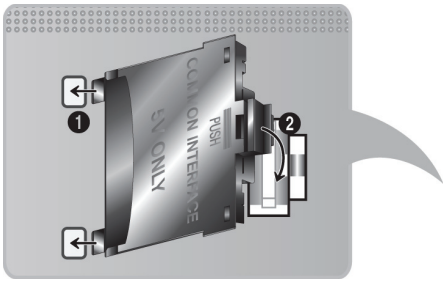
Requirements:

- You must obtain a “CI or CI+ CARD” from a local cable service provider.
- When removing the “CI or CI+ CARD”, carefully pull it out with your hands since dropping the “CI or CI+ CARD” may cause damage to it.
- Insert the “CI or CI+ CARD” in the direction marked on the card.
- The location of the COMMON INTERFACE slot may be different depending on the model.
- “CI or CI+ CARD” is not supported in some countries and regions; check with your authorised dealer.
- If you have any problems, please contact a service provider.
- Insert the “CI or CI+ CARD” that supports the current aerial settings. The screen will be distorted or will not be seen.

To connect the CI CARD Adapter, follow these steps:

- We recommend attaching the adapter before installing the wall mount, or inserting the “CI or CI+ CARD”.
- Turn the TV off to connect or disconnect a CI card adapter.

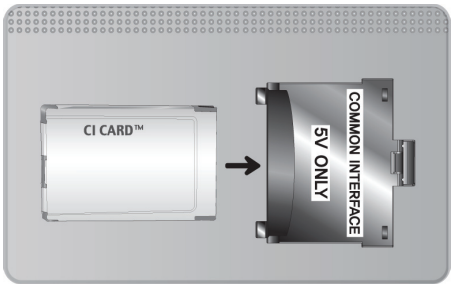
<TV Rear>



1. Insert the CI CARD Adapter into the two holes on the product 1.
   - Please find two holes on the rear of the TV. Two holes are beside the **COMMON INTERFACE** port.
2. Connect the CI CARD Adapter into the **COMMON INTERFACE** port on the product 2.
3. Insert the “CI or CI+ CARD”

⚠ **We recommend that you insert the CI card before you mount the TV on a wall. It may be difficult to insert after the mounting. Insert the card after attaching the CI-Module on TV. It is difficult to attach the module if you insert the card before attaching.**

Using the “CI or CI+ CARD”



To watch paid channels, the “CI or CI+ CARD” must be inserted.

- If you don’t insert the “CI or CI+ CARD”, some channels will display the message “Scrambled Signal”.
- The pairing information containing a telephone number, the “CI or CI+ CARD” ID the Host ID and other information will be displayed in about 2~3 minutes. If an error message appears please contact your service provider.
- When the configuration of channel information has finished, the message “Updating Completed” is displayed, indicating the channel list is updated.

Requirements:

- You must obtain a “CI or CI+ CARD” from a local cable service provider.
- When removing the “CI or CI+ CARD”, carefully pull it out with your hands since dropping the “CI or CI+ CARD” may cause damage to it.
- Insert the “CI or CI+ CARD” in the direction marked on the card.
- The location of the COMMON INTERFACE slot may be different depending on the model.

Teletext Feature

Availability depends on the specific model and area.

The index page of the Teletext service gives you information on how to use the Service. For Teletext information to be displayed correctly, channel reception must be stable. Otherwise, information may be missing or some pages may not be displayed.

You can change Teletext pages by select numeric using your remote control.

Teletext on / **mix** / **off**: Activates the Teletext mode for the current channel. Press twice to overlap the Teletext mode with the current broadcasting screen. Press it one more time to exit teletext.

Store: Stores the Teletext pages.

Size: Displays the teletext on the upper half of the screen in double-size. To move the text to the lower half of the screen, press it again. For normal display, press it once again.

Hold: Holds the display at the current page, in the case that there are several secondary pages that follow automatically. To undo, press it again.

Colour buttons (**red**, **green**, **yellow**, **blue**): If the FASTEXT system is used by the broadcasting company, the different topics on a Teletext page are colour-coded and can be selected by coloured buttons. Press the colour corresponding to the topic of your choice. A new colour coded page appears. Items can be selected in the same way. To display the previous or next page, select corresponding coloured button.

Mode: Selects the Teletext mode (LIST / FLOF). If pressed during LIST mode, switches the mode to List save mode. In List save mode, you can save a Teletext page into a list using the (store) button.

Sub-page: Displays the available sub-page.

Page up: Displays the next Teletext page.

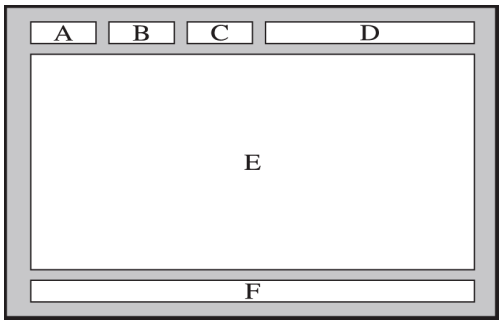
Page down: Displays the previous Teletext page.

Index: Displays the index (contents) page at any time while you are viewing Teletext.

Reveal: Displays the hidden text (answers to quiz games, for example). To display the normal screen, press it again.

Cancel: Shrinks the Teletext display to overlap with the current broadcast.

Typical Teletext page



Part	Contents
A	Selected page number.
B	Broadcasting channel identity.
C	Current page number or search indications.
D	Date and time.
E	Text.
F	Status information. FASTEXT information.

Getting Support

The TV has several built-in systems designed for user and TV system support.

Support through Remote Management

Support > **Remote Management** Try Now

If you need assistance with your TV, you can use this feature to let Samsung Electronics diagnose your TV remotely. You will need to read and agree to the service agreement before using this feature. A Samsung Electronics technician will then diagnose, repair, and update your TV remotely.

This option requires an Internet connection.

What Does Remote Service Do?

Samsung Remote Support service offers you one-on-one support with a Samsung Technician who can remotely.

- **Diagnose** your TV
- **Adjust the TV settings** for you
- **Perform a factory reset** your TV
- Install recommended **firmware updates**

How Does it Work?

Having a Samsung Tech remotely service your TV is easy.

Call the Samsung Contact Centre and ask for remote support.

Open the menu on your TV and go to the Support section.

Select Remote Management, and then read and agree to the service agreements. When the PIN screen appears, provide the PIN number to the agent.

The agent accesses your TV.

Finding the Information You Need for Service

Support > **Contact Samsung** Try Now

Use this option to find the support service website's address and contact number, your TV's model number, your TV's software version, the Smart Hub info, and other information you need to receive the service support.

- Press A to view the open source licence.

There is a problem with the screen

Testing the Picture

Support > **Self Diagnosis** > **Picture Test** Try Now

Before you review the list of problems and solutions below, run the Picture Test to determine if the problem is caused by the TV. The Picture Test displays a high definition picture you can examine for flaws or faults. If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Centre for assistance. If the test picture is displayed properly, there may be a problem with an external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

- If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Centre for assistance.
- If the test picture is displayed properly, there may be a problem with the external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

The Problem	Try this!
Flickering and Dimming	If your Samsung Television is flickering or dimming sporadically, you may need to disable some of the energy efficiency features. Disable Energy Saving (System > Eco Solution > Energy Saving) or Eco Sensor (System > Eco Solution > Eco Sensor).
Component Connections/Screen Colour	If the colour on your Samsung television screen is not correct or the black and white colours are off, run Picture Test (Support > Self Diagnosis > Picture Test). If the test results indicate that the problem is not caused by the TV, do the following: • Make sure to connect to an external device. • Check the other connections as well. If the TV is connected to an external device via a component cable, confirm that the Pb, Pr, and Y jacks are plugged into their proper connectors.
Screen Brightness	If the colours on your Samsung TV are correct but just a little too dark or bright, try adjusting the following settings first. • Go to the Picture menu and adjust the Contrast, Backlight / Cell Light (applicable models), Sharpness, Colour, and Tint (G/R) settings.
Motion Plus/Blur	If you notice ghosting or blurring on the screen, use the Motion Plus option (Picture > Picture Options > Motion Plus) to resolve the issue.
Unwanted Powering Off	If your Samsung TV appears to turn off by itself, try disabling some of the TV's energy efficiency features. See if Sleep Timer (System > Time > Sleep Timer) has been enabled. The Sleep Timer automatically turns the TV off after a specified period of time. If the Sleep Timer has not been enabled, see if No Signal Power Off (System > Eco Solution > No Signal Power Off) or Auto Power Off (System > Eco Solution > Auto Power Off) has been enabled and disable them.
Problems Powering On	When the TV is turned on, the remote control receiver flashes 5 times before the screen turns on. If you are having problems powering on your Samsung television, 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/satellite box confirm that it is plugged in and turned on.
Unable to find a Channel	Launch Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning). If your TV is not connected to a cable box or satellite box, run Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning).
The TV image does not look as good as it did in the store.	Store displays are all tuned to digital, HD (high definition) channels. If you have an analogue cable/set top box, upgrade to a digital set top box. Use HDMI or Component cables to deliver HD (high definition) picture quality. Many HD channels are upscaled from SD (Standard Definition) content. Look for a channel that is broadcasting true HD content. • Cable/Satellite Subscribers: Try HD channels from the channel lineup. • Terrestrial/Cable Aerial Connection: Try HD channels after running the Auto Tuning function. Adjust the cable/satellite box's video output resolution to 1080i or 720p.

The Problem	Try this!
The picture is distorted.	The compression of video content may cause picture distortions, especially in fast moving pictures from sports programmes and action movies. A weak or bad quality signal can cause picture distortions. This is not an issue with the TV. Mobile phones used close to the TV (within 1 m) may cause noise in analogue and digital channels.
The colour is wrong or missing.	If you're using a Component connection, make sure that the Component cables are connected to the correct jacks. Incorrect or loose connections may cause colour problems or a blank screen.
The colour is poor or the picture is not bright enough.	Go to the Picture menu and then adjust the Picture Mode, Brightness, Sharpness, and Colour settings. See if Energy Saving (System > Eco Solution > Energy Saving) has been enabled. Try resetting the picture. (Picture > Reset Picture)
There is a dotted line on the edge of the screen.	If the Picture Size has been set to Screen Fit, change the setting to 16:9. Change the cable/satellite box resolution.
The picture is black and white.	Make sure to properly connect any external device to the TV properly.
The colour is wrong or missing.	If you are using a Component connection, make sure that the Component cables are connected to the correct jacks. Incorrect or loose connections may cause colour problems or a blank screen.

I can't hear the sound clearly

Testing the Sound

Support > Self Diagnosis > Sound Test Try Now

Before you review the list of problems and solutions below, make sure that the Speaker Select menu item is set to TV Speaker, and then listen to the speakers again. If the TV still does not play audio, run the Sound Test. The Sound Test uses a built-in melody to check for sound problems. If the TV does not play sound during the Sound Test, or the sound is distorted, there may be a problem with the TV. Contact Samsung's Call Centre for assistance. If the TV plays the Sound Test melody without distortion, there may be a problem with an external device. Please check the connections. If the problem persists, refer to the external device's user manual.

- If you can't hear the melody or there is a problem, make sure Sound > Speaker Settings > TV Sound Output is set to TV Speaker and then try again. If the problem persists, there may be a problem with the TV. Contact Samsung's Call Centre for assistance.
- If the melody is played, there may be a problem with the external device. Please check the connections. If the problem persists, refer to the external device's user manual.

The Problem	Try this!
There is no sound or the sound is too low at maximum volume.	Check the volume control of the device (cable/satellite box, DVD, Blu-ray, etc.) connected to your TV.
The picture is good but there is no sound.	Set Sound > Speaker Settings > TV Sound Output to TV Speaker. 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 the computer sound, connect the external speaker to the computer's audio output connector. Reboot the connected device by disconnecting and then reconnecting the device's power cable.
The speakers are making an odd sound.	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 signal information. A low signal level may cause sound distortions. Run Sound Test (Support > Self Diagnosis > Sound Test).

I can't see 3D images clearly.

Testing 3D Picture Quality

Support > **Self Diagnosis** > **3D Picture Test** Try Now

If you have not paired your 3D glasses with the TV, pair them first. To test 3D picture quality, the TV and the 3D glasses must have been paired.

Put on the 3D glasses, navigate to **Support** > **Self Diagnosis** and select **3D Picture Test**. The 3D Picture Test displays a high definition picture to examine the 3D screen for flaws or faults. If the test fails to identify a problem, there may be a problem with an external device or the signal strength.

If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Centre for assistance.

If the test picture is displayed properly, there may be a problem with the external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

The Problem	Try this!
The 3D glasses are not working correctly.	Make sure the glasses are powered on. The 3D feature may not work properly if there is another 3D product or an electronic device running nearby. If there is a problem, keep other electronic devices as far away as possible from the 3D Active Glasses.
I can't see 3D images clearly.	The ideal viewing distance is three times or more the height of the screen. We also recommend watching 3D content with your eyes level with the screen.
The batteries in the 3D glasses are flat.	Turn off the 3D glasses when they are not in use. If you leave the 3D glasses on, the battery lifespan is shortened.

There is a problem with the broadcast.

The Problem	Try this!
The TV is not receiving all channels.	If your TV is not connected to a cable box or satellite box: • Confirm that the coaxial cable is securely connected to the TV. • If you are using an antenna, verify it is positioned correctly and the all the connections are secure. • Run Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning).
There are no captions with digital channels.	Go to Subtitle (System > Accessibility > Subtitle) and change the Subtitle Mode. Some channels may not have caption data.
The picture is distorted.	The compression of the video content may cause picture distortions. This is especially true with fast moving pictures from sports programmes and action movies. A weak signal can cause picture distortions. This is not a problem with the TV.

The computer won't connect.

The Problem	Try this!
The "Mode Not Supported" message appears.	Set your PC's output resolution so it matches 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.

I can't connect to the Internet.

The Problem	Try this!
The wireless network connection failed.	Make sure the TV is connected to a wireless IP router.
The software update over the Internet has failed.	Check the network connection status. If the TV is not connected to a network, connect to a network. The upgrade stops if you already have the latest software version.

Data Service

The Problem	Try this!
Why am I getting on-screen messages when I haven't selected the Data Service option?	If Auto Run Data Service is set to On, messages will automatically appear on the screen when you watch a broadcast that supports the Data Service. If the broadcast doesn't support the Data Service, no messages will appear on the screen. If you do not wish to receive Data Service messages, disable Auto Run Data Service.
How do I hide Data Service messages?	Press EXIT button to hide the messages. If you do not wish to receive Data Service messages, disable Auto Run Data Service.
How do I use the Data Service?	Enabling the Auto Run Data Service option automatically displays messages on the screen whenever you watch a broadcast that supports the Data Service. You can press the corresponding buttons shown on the screen to access additional features and functions offered by that broadcast.
What is an interactive service and how does it work?	Interactive services include viewer surveys, quizzes, ticket requests, product purchases, and other interactions between the viewer and the TV station. Generally, you will need to set up an account with the broadcaster and log in to the account in order to enjoy the interactive services they offer. Note that interactive services are only available when your TV is connected to the Internet. In addition, T-Commerce requires that you have a certificate. Copy your certificate from the computer to a USB device and connect that device to the TV. (Interactive services are not being offered yet. The actual service launch date varies depending on the broadcaster.)
A message displays "Receiving" but no change happens.	This indicates an error has occurred while receiving data. An execution error message will also appear on the screen. If this happens, try again.
Nothing appears on the screen after the Data Service is launched.	The Data Service may be initialising or the signal may have been severed by the broadcaster.

The Schedule Recording/Timeshift function isn't working.

The Problem	Try this!
The TV cannot recognise the USB device or the Format Device, Check Device and Device Performance Test functions fail.	Refer to the USB device's manual and see if data can be stored on it. Check if the USB device is in a locked state. Check if the USB device was formatted when it was connected to a computer. Formatting a USB device after connecting it to the TV may result in a formatting failure. If Device Performance Test or Format Device has failed, there may be a problem with the USB device or its specifications. Try using a different USB device.
There is a message saying I need to format the USB Drive.	Check if the USB device is in a locked state. Use the USB recovery function to recover the USB device.
Schedule Recording cannot be used.	Check if there is a USB device connected to the TV. Check if the channel is a digital channel that can be recorded. Recording will automatically stop if the signal becomes too weak. The Timeshift function will not work if there isn't enough storage space on the USB device.
I get a performance test failure message and then Schedule Recording and the Timeshift operation stops working.	This problem can occur when using a low-performance USB Drive that does not support recording. A USB hard drive with a speed of 5,400rpm or above is recommended. A USB memory stick is not supported.

Anynet+ (HDMI-CEC) isn't working.

The Problem	Try this!
Anynet+ does not work.	Confirm that the device is an Anynet+ device. The Anynet+ system supports Anynet+ devices only. Check if the power cord of the Anynet+ device is properly connected. Check the cable connections of the Anynet+ device. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Check whether the TV remote control is in TV mode. Check whether the remote control is Anynet+ compatible. Anynet+ may not function when certain functions are operational. (Channel Search, Smart Hub, set up, etc.) If you have disconnected and then reconnected the HDMI cable, scan for devices again or turn your TV off and on.
I want to start Anynet+.	Check if the Anynet+ device is properly connected to the TV and then navigate to the System menu to see if Anynet+ (HDMI-CEC) is set to On. Once verified, select TOOLS button. A list appears. Select Anynet+ (HDMI-CEC) from the list and then a device.
I want to exit Anynet+.	Select View TV from the Anynet+ menu. Select a non-Anynet+ device from the Source list.
The message "Connecting to Anynet+ device..." or "Disconnecting from Anynet+ device" appears on the screen.	You cannot use the remote control when you are configuring Anynet+ or switching to a viewing mode. Use the remote control after the TV has completed the Anynet+ configuration or has switched to a viewing mode.
The Anynet+ device won't play.	You cannot use the play function when Setup is in progress.
The connected device is not displayed.	Check whether the device supports Anynet+. Check whether the HDMI cable is properly connected. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Scan for Anynet+ devices again. Anynet+ devices must be connected to the TV using an HDMI cable. Make sure the device is connected to your TV with an HDMI cable. Some HDMI cables may not support Anynet+. If the connection is terminated because there has been a power failure or the HDMI cable has been disconnected, please scan for the device again.
The TV audio is not being played through the receiver.	Connect an optical cable to the TV and the receiver. ARC enables digital sound to be outputted via the HDMI (ARC) port. However, ARC is only available when the TV is connected to an audio receiver that supports ARC.

I am having trouble launching/using apps.

The Problem	Try this!
I launched an app, but it's in English. How can I change the language?	Languages supported by the app may be different from the user interface language. The ability to change the language depends on the service provider.
My application is not working.	Check with the service provider. Refer to the help section on the application service provider's website.

My file won't play.

The Problem	Try this!
Some files can't be played.	This problem may occur with high-bitrate files. Most files can be played back, but you might experience problems with high-bitrate files.

I want to reset the TV.

Reset	Path	Description
Reset Settings	Support > Self Diagnosis > Reset	Reset Picture, Sound, Channel, Smart Hub, and all other settings except for the network settings to their factory default settings.
Resetting Smart Hub	Smart Hub > Reset Smart Hub	Reset all saved information relating to Samsung accounts and linked service accounts, as well as Smart Hub service agreements and applications.

Other Issues

The Problem	Try this!
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 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.
The "Mode Not Supported" message appears.	The output resolution of the attached device is not supported by the TV. Check the supported resolutions of the TV and adjust the external device's output resolution accordingly.
The Subtitle item in the TV menu is grayed out.	You cannot select the Subtitle menu if you have selected a source connected to the TV via HDMI or Component connections. To view subtitle, turn on the external device's subtitle function.
The TV smells of plastic.	This smell is normal and will dissipate over time.
The Signal Information option under Self Diagnosis isn't activated.	Verify that the current channel is a digital channel. The Signal Information is only available for digital channels.
The TV is tilted to the side.	Remove the base stand from the TV and reassemble it.
The Broadcasting option has been deactivated.	Broadcasting is only available when the Source is set to TV. The Broadcasting menu cannot be accessed while watching TV using a cable box or satellite receiver. Certain Broadcasting menus cannot be accessed while recording or while the TimeShift operation is in progress.
The settings are lost after 5 minutes or every time the TV is turned off.	If the Use Mode is set to Store Demo, the TV's audio and video settings are automatically reset every 5 minutes. Change the Use Mode (Support > Use Mode) to Home Use.
There is an intermittent loss of audio or video.	Check the cable connections and reconnect them. Loss of audio or video can be caused by using overly rigid or thick cables. Make sure the cables are flexible enough for long term use. If you are mounting the TV to a wall, we recommend using cables with 90-degree connectors.
There are small particles on the TV's bezel.	This is part of the product's design and is not a defect.
The PIP menu is not available.	PIP functionality is only available when you are using an HDMI or Component source.

The Problem	Try this!
A POP (TV's internal banner ad) appears on the screen.	Change the Use Mode (Support > Use Mode) to Home Use.
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 utilises 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.
Image Retention (Burn In) Issue	This issue affects PDP TVs only. Watching TV for an extended period of time or using the 4:3 screen ratio only may result in burn-ins. PDP TVs are equipped with Pixel Shift screen burn reduction technology. Pixel Shift technology reduces screen burn-ins in PDP TVs. It does this by moving the picture slightly vertically or horizontally. Use Screen Burn Protection (System > Screen Burn Protection) to prevent screen burn-ins.

Before Using the Recording and Timeshift Functions

Availability depends on the specific model and area.

Before Using the Recording and Schedule Recording Functions

- To set up a Schedule Recording, you must first set the TV's clock. Set the **Clock** (**System** > **Time** > **Clock**).
- 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.
- A USB hard drive with a speed of 5,400rpm or above is recommended. However, RAID-type USB hard drives are not supported.
- USB memory sticks are not supported.
- The total recording capacity may vary depending on the amount of available hard drive space and the recording quality level.
- **Schedule Recording** requires at least 100MB of free space on the USB storage device. Recording will stop if the available storage space falls below 50MB while recording is in progress.
- If the available storage space falls below 500MB while both the Schedule Recording and Timeshift functions are in progress, only the recording will stop.
- The maximum recording time is 360 minutes.
- A video is 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 ● will not be available.
- **Device Performance Test** must be performed on the USB storage device connected to the TV before a recording can be made. To perform the **Device Performance Test**, select **Recorded TV** in the **On TV** panel or **USB Drive** in the **MULTIMEDIA** panel and then select the recording device. When you make a recording on the **Guide** or Programme Info screen, if the USB storage device has failed in the **Device Performance Test**, the **Format Device** and **Device Performance Test** are performed again.
- 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 recording files.
- If the **Off Timer** or **Auto Power Off** has been set, the TV will overide these settings, continue to record, and turn off after the recording has ended.

Before the Using Timeshift Function

- A USB hard drive with a speed of 5,400rpm or above is recommended. However, RAID-type USB hard drives are not supported.
- USB memory sticks or flash drives are not supported.
- The total recording capacity may vary depending on the amount of available hard drive space and the recording quality level.
- If the available storage space falls below 500MB 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.
- A time-shifted video is played according to the TV settings.
- Before the Timeshift function can be used, the **Device Performance Test** must be performed on the USB storage device connected to the TV. To perform the **Device Performance Test**, select **Recorded TV** in the **On TV** panel or **USB Drive** in the **MULTIMEDIA** panel and then select the recording device.
- The Timeshift function may be terminated automatically once it reaches its maximum capacity.
- The Timeshift function requires at least 1.5GB of free space available on the USB storage device.
- Launching an app, switching to an analogue channel, or changing the TV to a mode that does not support the Timeshift function automatically terminates the Timeshift function. The Timeshift operation will resume if the TV is changed back to a digital channel again.

S-Recommendation Disclaimer

Availability depends on the specific model and area.

S Recommendation with Voice Interaction

Recommendation given to common speech commands

Voice Interaction limited to the official language of the country of purchase. Performance may vary based on content availability, clarity and volume of your voice, and ambient noise levels. Strong regional accents may not be recognised.

Certain Samsung Smart TV features may not be available without express consent to the collection and use of personal information.

Certain features within S Recommendation require internet access and may not be available based on service provider, language, dialect and region.

Visit www.samsung.com for more information about service operator compatibility.

Actual remote control may differ from image shown.

S Recommendation

Content recommendations to fit your TV viewing preferences

Certain Samsung Smart TV features may not be available without express consent to the collection and use of personal information.

Certain features within S Recommendation require internet access and may not be available based on service provider, language, dialect and region.

Visit www.samsung.com for more information about service operator compatibility.

Actual remote control may differ from image shown.

Before Using 3D Viewing Mode

Availability depends on the specific model.

3D Precautions

Warning

- When viewing a 3D video under a fluorescent lamp (50 Hz - 60 Hz) or 3-wavelength lamp, you may notice a small amount of screen flickering.

  If this occurs, dim or turn off the light.

- Switching the input mode while watching a 3D movie may disable the 3D function on the TV.

  As a result, the 3D glasses may not function and the movie may not be displayed properly.

- Ensure you are within the working distance of the glasses when you view a 3D video.

  The images may not be viewable in 3D if you move outside of the working distance for 3 seconds.

  If the 3D glasses are moved outside of their working distance, the signal from the TV will disconnect and the glasses' 3D function will turn off after several seconds. When this happens, the red LED will turn on for 3 seconds.

- If you lie on your side while watching TV with 3D active glasses, the picture may appear dark or may not be visible. The actual 3D effect may be experienced differently depending on the viewer. The 3D effect may not be visible if the visual ability of your left eye differs greatly from the visual ability of your right eye.

- If a part of the 3D glasses or lenses is defective or damaged, it cannot be repaired and the glasses should be replaced. If the glasses stop working within the warranty period, the glasses can be repaired or replaced for free. If the glasses have been damaged due to the fault of the customer or the warranty period has expired, a new pair of glasses will have to be purchased.

- The 3D glasses may not work properly due to interference from other 3D products or electronic devices that operate on the 2.4GHz frequency such as a microwave oven or Internet AP. If the 3D function malfunctions due to interference, please move all other electronic or wireless communication devices as far away from the glasses and the TV as possible.

- The 3D glasses may not work properly due to interference from other 3D products or electronic devices that operate on the 2.4GHz frequency such as a microwave oven or Internet AP. If the 3D function malfunctions due to interference, please move all other electronic or wireless communication devices as far away from the glasses and the TV as possible.

- The vividness of the image may appear degraded if you view 3D video in a place that is exposed to direct sunlight or illumination.

- The 3D glasses may malfunction if there is an electric field or metallic object such as a steel plate nearby. Keep the glasses as far away as possible from electric fields and metallic objects.

- With SSG-3570 model glasses, the glasses may power off if you remain stationary while viewing 3D video for an extended period of time.

- With SSG-3570 model glasses, if the 3D glasses do not function immediately after you put them on when the TV is in 3D mode, take them off and then put them back on.

⚠ Caution

IMPORTANT HEALTH AND SAFETY INFORMATION FOR 3D IMAGES. READ THE FOLLOWING CAUTIONS BEFORE YOU OR YOUR CHILD USE THE 3D FUNCTION.

- Adults should frequently check on children who are using the 3D function. If there are any complaints of tired eyes, headaches, dizziness, or nausea, stop the child from viewing the 3D TV and ensure that they rest.
- Do not use the 3D glasses for other purposes such as general wear, sunglasses, protective goggles, etc.
- Some viewers may experience discomfort such as dizziness, nausea, and headaches while viewing 3D TV. If you experience any of these symptoms, stop viewing the 3D TV, remove the 3D glasses, and rest for awhile.
- Watching 3D pictures for an extended period of time may cause eye strain. If you experience any eye strain, stop viewing the 3D TV, remove the 3D glasses, and rest for awhile.
- Do not use the 3D function or 3D glasses while walking or moving around. Using the 3D function or 3D Active Glasses while moving around may result in injury from running into objects, tripping, and/or falling.
- Do not sleep with the 3D glasses on. You can damage or break the temples.
- The temples on your 3D glasses are not foldable. Forcing the temples to fold will damage the 3D glasses.
- With SSG-3570 model glasses, do not shake your 3D glasses repeatedly. Shaking the glasses will power them on and can cause the battery to discharge faster than it would normally.
- With SSG-5100GB model glasses, there is a danger of explosion if the battery is incorrectly replaced.
- With SSG-5100GB model glasses, make sure to replace the battery with the same type.

⚠ Safety Precautions

The following safety instructions are to ensure your personal safety and prevent property damage. Please read the following to ensure the proper use of the product.

- Do not place the product in a location exposed to direct sunlight, heat, fire, or water. Exposure may result in a product malfunction or fire.
- Do not apply force to the lenses of the 3D glasses. Do not drop or bend the product. Applying force, dropping, or bending may result in a 3D glasses malfunction.
- Keep the components of the 3D glasses out of reach of children. Especially, ensure children do not swallow any of the components. If your child swallows a component, consult your doctor immediately.
- When cleaning the product, do not spray water or cleaner directly onto the surface of the product. Spraying water or cleaner directly onto the glasses may result in fire or electric shock, damage to the product's surface, or cause the indicator labels on the product's surface to come loose.
- Do not apply chemicals containing alcohol, solvent, or surfactant such as wax, benzene, thinner, pesticide, air freshener, lubricant, or cleaner to the product. These chemicals may cause the product's exterior to be discolored or cracked, or labels or instructions to be removed. Use only a soft cloth such as superfine fibers or cotton flannels for cleaning the product as the surface or the lenses easily crack. Because the product can be easily scratched with foreign substances, make sure to dust off the cloth before using.
- Do not disassemble, or attempt to repair or modify your 3D active glasses by yourself.
- Be careful not to let the temple ends of the 3D active glasses harm your eye.
- Do not sleep with the 3D glasses on. You can break the arms.
- Use your hands to put on or remove the 3D glasses.
- Use only the specified standard batteries. When replacing the battery, insert the battery so that its polarity (+, -) is correct. Failing to do so may damage the battery or result in fire, personal injury or environmental damage caused by liquid leaking from the battery. (applicable to the SSG-5100 only).
- Keep the used battery out of the reach of children so that they do not accidently swallow the battery. If your child has swallowed the battery, consult your doctor immediately. (applicable to the SSG-5100 only).
- Swallowing the cylindrical (button type) battery can cause serious damage to your internal organs. If this happens, contact a doctor immediately.

Supported Resolutions for each 3D Mode

These specifications apply to the 16:9 display ratio only.

HDMI

- 3D Mode: (L/R), (T/B)

Resolution	Frequency (Hz)
1280 x 720p	50 / 59.94 / 60
1920 x 1080i	50 / 59.94 / 60
1920 x 1080p	23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60
3840 x 2160p (When connecting via UHD)	24 / 25 / 30 / 50 / 60 (When connecting via UHD)

- 3D Mode: (Horizontal Line), (Vertical Line), (Pixel), (Frame)

  UHD TV is not supported.

Resolution	Frequency (Hz)
1280 x 720p	50 / 59.94 / 60
1920 x 1080i	50 / 59.94 / 60
1920 x 1080p	23.98 / 24 / 25 / 29.97 / 30

Component

Resolution	Frequency (Hz)
1280 x 720p	50 / 59.94 / 60
1920 x 1080i	50 / 59.94 / 60
1920 x 1080p	23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60

Digital Channel

Resolution	Frequency (Hz)
1280 x 720p	50 / 59.94 / 60
1920 x 1080i	50 / 59.94 / 60
1920 x 1080p	25

Videos/Photos

Refer to the "Photo, Video, and Music File Limitations" section.

Computer via HDMI Cable.

The optimal resolution for computers connected to the TV via an HDMI cable is 1920 x 1080. If you select another resolution, the TV may not display 3D images correctly and may not be able to display the computer video in full screen.

Supported Resolutions for UHD (When connecting via UHD)

Resolution	Frequency (Hz)
3840 x 2160p 4096 x 2160p	24 / 25 / 30 / 50 / 60

Read Before Using Voice, Motion, or Face Recognition

Precautions for Voice, Motion and Face Recognition

Face Recognition

- This product saves thumbnail images of users' faces for use during the Face Login.
- Logging into the Smart Hub via Face Recognition may be less secure than logging in using an ID and password.

Using the TV Camera

- Under some circumstances and under certain legal conditions, the use/misuse of the TV camera may result in illegal actions. There may be obligations under local privacy laws regarding the protection of individuals concerning personal data and on the free movement of such data, and possibly other laws including criminal laws regulating camera surveillance both in the workplace and elsewhere.
- By using the TV camera, users agree that it will not be used (i) in locations where cameras are generally prohibited (such as bathrooms, locker rooms or changing rooms), (ii) in any manner that will result in an invasion of a person's privacy, or (iii) in violation of any applicable laws, regulations or statutes.

Motion Control

- **Motion Control** uses the camera. For **Motion Control** to work, you must be within the camera's recognition range. The camera's recognition range varies depending on the ambient light level and other factors.
- Run the **Motion Control Environment Test** before using Motion Control to determine the camera's recognition range.
- You may experience physical fatigue when using **Motion Control** for extended periods

Voice Control

- Voice Control does not support signs such as the minus (-) symbol and special characters, neither a word nor sentence that contains numbers or signs. It may be not available for certain languages or dialects, or in some areas. It also differs in performance depending on the selected language, pronunciation, voice sound level, and ambient noise.
- Perform a **Voice Recognition Environment Test** prior to using Voice Control to test the level and clarity and the ambient sound of the surrounding area.
- Voice Text Input requires that you agree to any third-party app's voice privacy policy and that you provide Samsung with the your MAC address and other private information.
- Voice Text Input lets you enter text using voice commands instead of a mouse, keyboard, or remote control. This feature is particularly useful for searching, browsing the web, and using applications.
- You must agree to the following privacy notices before using Interactive Voice Control:
  - Voice Recognition Privacy Notice and Nuance Privacy Notice

Requirements for Using Voice, Motion, or Face Recognition

Requirements for Using Voice Recognition

- Voice Control and the **Turn TV On** voice command should be used within 4m of the TV.

  Availability depends on the specific model and area.

- Perform the **Voice Recognition Environment Test** prior to using Voice Control to test the level and clarity of your voice and the ambient sound level of the surrounding area. Ambient noise can cause Voice Controls to malfunction. (Suitable Ambient Noise Level: Less than 40 dB, *40 dB is the noise level inside a library or on a residential street during the day.) Visit the Samsung website for a list of standard voice commands.
- The voice recognition rate varies depending on the volume/tone, pronunciation, and ambient sound environment (TV sound and ambient noise).

Requirements for Using Motion Recognition

- Before using motion recognition, make sure the TV's camera has been turned on.
- You should be located between 1.5m and 4m from the camera. The actual recognition range may vary depending on the camera angle and other factors.
- Motion Control relies on the TV camera and therefore will not function if the camera is pointed up or down. Adjust the camera's angle using the wheel on the back of the camera. Do not point the camera directly at the sun or any other light source or obstruct its view.
- For the camera to recognise movement, you have to stand out from the background.
- The appropriate ambient brightness is 50 to 500 lux. (100 Lux: Bathroom, 400 Lux: Living Room)
- Avoid direct sunlight when using **Motion Control**.
- Run the **Motion Control Environment Test** to assess the camera's recognition range before using Motion Control.

Requirements for using Face Recognition

- You should be located between 1.5m and 4.0m from the camera. The actual recognition range may vary depending on the camera angle and other factors.
- The appropriate ambient brightness is 50 to 500 lux. (100 Lux: Bathroom, 400 Lux: Living Room)
- Face Recognition can recognise up to 5 different users at a time.
- The TV may have difficulty recognising twins and people with similar faces as two different individuals.
- Note the following when using Face Recognition:
  - Do not cover your face with a hat, a pair of sunglasses, or your hair.
  - Your entire face must be visible to the camera. Avoid shadows over your face. Shadows prevent the camera from recognising your face accurately.
  - Keep your expression as neutral as possible. In addition, keep your mouth closed and as neutral as possible.
  - When you log into your Samsung account, your facial expression must be the same as the facial expression you had when you registered. Facial expression you had during the registration process.

Read Before Using SAMSUNG APPS

- Due to the product characteristics featured on the 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. Some Smart Hub features may also require additional peripheral devices or membership fees. Visit http://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 vary depending on the area.
- For more information about applications, visit the applicable service provider's website.
- An unstable Internet connection may cause delays or interruptions. In addition, applications may terminate automatically depending on the network environment. If this occurs, check your Internet 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 vary depending on 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.

Web Browser Restrictions

- Select **Web Browser**. The browsing screen may differ from the one on your computer.
- The web browser is not compatible with Java applications.
- You cannot download files. If you attempt to download a file, you will receive an error message instead.
- The web browser may not be able to access certain websites.
- Playing Flash videos may be restricted.
- E-commerce for online purchases is not supported.
- With websites that have scrollable windows, scrolling a window can result in corrupted characters.
- ActiveX is not supported.
- Certain options are not accessible in Link Browsing mode. (Switch to Pointer Browsing to activate those options.)
- 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 with certain operating systems.
- The copy and paste operations are not supported.
- When composing an email or a simple message, certain functions such as the font size and colour 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 varies depending on the search conditions and the TV model.

- The web browsing speed will vary depending on the network environment.
- Playing embedded video automatically disables PIP. Video playback may not commence after PIP is disabled. In this case, you will have to reload the page.
- The web browser supports .mp3 audio files only.
- The web browser supports a specific file format for importing and exporting bookmarks. (Compatible Format: Netscape-bookmark file- 1)
- The folder tree information is not included when importing and exporting bookmarks.
- Exporting bookmarks to a USB device connected to the TV saves the bookmarks under a folder named "Samsung SmartTV Bookmark".
- If the **Clock** (**System** > **Time** > **Clock**) has not been set, the browsing history will not be saved.
- The browsing history is saved from latest to oldest, with the oldest entries being overwritten first.
- Depending on the types of video/audio codecs supported, it might not be possible to play certain video and audio files while playing Flash content.
- A sudden change in the picture brightness inside a video window may affect the brightness of the screen. This problem applies to PDP TVs only.
- Video sources from PC-optimised streaming service providers may not play properly on our proprietary web browser.
- Using the on-screen QWERTY keyboard automatically disables PIP. (Except when entering a URL.)

Photo, Video, and Music File Limitations

- The TV supports MSC (Mass Storage Class) USB devices only. MSC is a class designation for mass USB Drives. 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 TV's USB port. The TV may not be able to recognise the USB device or read the files on the device if it is connected to the TV via a USB extension cable. Do not disconnect the USB device while transferring files.
- When connecting an external hard drive, use the USB (HDD) port. We recommend that you use an external hard drive with its own power adapter.
- 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 recognise some or all the devices. USB devices that use high-power input should be connect the USB [5V, 1A] port.
- The TV supports the FAT, exFAT, and NTFS file systems.
- After sorting files in the Folder view mode, the TV can display up to 1000 files per folder. If the USB device contains more than 8,000 files and folders, however, some files and folders might not be accessible.
- The PTP (pier to pier) connection mode is available only for digital cameras. If you connect a smartphone or tablet to the TV using PTP mode, the TV will not recognise it.

Storage Device File Transfers

Storage device containing media content	Target device
USB Device	DLNA Device, SugarSync, Dropbox, SkyDrive, Mobile Device
Camera	DLNA Device
DLNA Device	USB Device
SugarSync, Dropbox, SkyDrive	USB Device
Mobile Device	USB Device

Supported External Subtitles

Certain files, depending on how they were encoded, may not play on the TV.

Name	Format
MPEG-4 Timed text	.ttxt
SAMI	.smi
SubRip	.srt
SubViewer	.sub
Micro DVD	.sub or .txt
SubStation Alpha	.ssa
Advanced SubStation Alpha	.ass
Powerdivx	.psb
SMPTE-TT Text	.xml

Supported Internal Subtitles

Certain files, depending on how they were encoded, may not play on the TV.

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

Certain files, depending on how they were encoded, may not play on the TV.

File Extension	Format	Resolution
*.jpg *.jpeg	JPEG	15360x8640
*.png	PNG	4096x4096
*.bmp	BMP	4096x4096
*.mpo	MPO	15360x8640

Supported Music Formats and Codecs

Certain files, depending on how they were encoded, may not play on the TV.

File Extension	Format	Codec	Note
*.mp3	MPEG	MPEG1 Audio Layer 3	
*.m4a *.mpa *.aac	MPEG4	AAC	
*.flac	FLAC	FLAC	Supports up to 2 channels
*.ogg	OGG	Vorbis	Supports up to 2 channels
*.wma	WMA	WMA	Supports up to 10 Pro 5.1 channels WMA lossless audio is not supported Supports up to the M2 profile
*.wav	wav	wav	
*.mid *.midi	midi	midi	Supports type 0 and type 1 "Seek" not supported Available only on USB storage devices
*.ape	ape	ape	NonSmart not supported
*.aif *.aiff	AIFF	AIFF	
*.m4a	ALAC	ALAC	

Supported Video Codecs (LED / PDP TV)

- Codec availability depends on the specific model.
- Certain files, depending on how they were encoded, may not play on the TV.

File Format	Container	Video Codecs	Resolution	Frame Rate (fps)	Bitrate (Mbps)	Audio Codec
*.avi *.mkv *.asf *.wmv *.mp4 *.mov *.3gp *.vro *.mpg *.mpeg *.ts *.tp *.trp *.mov *.flv *.vob *.svi *.m2ts *.mts *.divx	AVI MKV ASF MP4 3GP MOV FLV VRO VOB PS TS SVAF	HEVC(H.265)	1920x1080	FHD: MAX 30 HD: MAX 60	8	Dolby Digital LPCM ADPCM(IMA, MS) AAC HE-AAC WMA Dolby Digital Plus MPEG(MP3) DTS(Core, LBR) G.711(A-Law, μ-Law)
		Motion JPEG			30	
		H.264 BP / MP / HP				
		DivX 3.11 / 4 / 5 / 6				
		MPEG4 SP/ASP				
		Window Media Video v9(VC1)				
		MVC				
		MPEG2				
		MPEG1				
		Microsoft MPEG-4 v1, v2, v3		MAX 30		
		H.263 Sorrenson				
		Window Media Video v7(WMV1) ,v8(WMV2)				
		VP6				
*.webm	WebM	VP8	1920x1080	6~30	20	Vorbis

Other Restrictions

- Codecs may not function properly if there is a problem with the content data.
- 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 wrong, the Seek (Jump) function does 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 player.
- HEVC codec is only available in MKV /MP4 / TS containers.

Video Decoders

- Supports up to FHD.264, Level 4.1 (does not support FMO/ASO/RS)
- VC1 AP L4 is not supported.
- All video codecs excluding WMV v7, v8, MSMPEG4 v3, MVC, and VP6:

  Below 1280x720: 60 frame max

  Above 1280x720: 30 frame max
- GMC 2 or above is not supported.
- SVAF supports Top/Bottom, Side by side, and Left/Right view sequence types (2 ES).
- This can only support the BD MVC specifications.

Audio Decoders

- WMA is supported up to 10 Pro 5.1 channels. Supports up to the M2 profile. This does not support WMA lossless audio.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 2 channels.
- Dolby Digital Plus is supported for up to 5.1 channels.
- The DTS LBR codec is only available for MKV / MP4 /TS containers.

Supported Video Codecs (UHD TV)

File Format	Container	Video Codecs	Resolution	Frame Rate (fps)	Bitrate (Mbps)	Audio Codec
*.avi *.mkv *.asf *.wmv *.mp4 *.mov *.3gp *.vro *.mpg *.mpeg *.ts *.tp *.trp *.mov *.flv *.vob *.svi *.m2ts *.mts *.divx	AVI MKV ASF MP4 3GP MOV FLV VRO VOB PS TS SVAF	H.264 BP/MP/HP	4096x2160	4096X2160: MAX 30 3840X2160: MAX 60	UHD : 80 FHD : 30	Dolby Digital LPCM ADPCM(IMA, MS) AAC HE-AAC WMA Dolby Digital Plus MPEG(MP3) DTS(Core, LBR) G.711(A-Law, μ-Law)
		HEVC(H.265)		FHD: MAX 30 HD: MAX 60	UHD : 80 FHD : 8	
		Motion JPEG		MAX 30	UHD : 80 FHD : 30	
		MVC	1920x1080	FHD: MAX 30 HD: MAX 60	60	
		Divx 3.11 / 4 / 5 / 6			30	
		MPEG4 SP/ASP				
		Window Media Video v9(VC1)				
		MPEG2				
		MPEG1				
		Microsoft MPEG-4 v1, v2, v3		MAX 30		
		Window Media Video v7(WMV1) ,v8(WMV2)				
		H.263 Sorrenson				
		VP6				
*.webm	WebM	VP8	1920x1080	6~30	20	Vorbis

Other Restrictions

- Codecs may not function properly if there is a problem with the content data.
- 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 wrong, the Seek (Jump) function does 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 player.
- HEVC codec is only available in MKV /MP4 / TS containers.

Video Decoders

- Supports up to FHD.264, Level 4.1 (does not support FMO/ASO/RS)
- Supports up to UHD.264, Level 5.1
- Supports up to HEVC UHD, Level 5.1, supports up to HEVC FHD, Level 4.1
- VC1 AP L4 is not supported.
- All video codecs excluding WMV v7, v8, MSMPEG4 v3, MVC, and VP6:

  Below 1280x720: 60 frame max

  Above 1280x720: 30 frame max
- GMC 2 or above is not supported.
- SVAF supports Top/Bottom, Side by side, and Left/Right view sequence types (2 ES).
- This can only support the BD MVC specifications.

Audio Decoders

- WMA is supported up to 10 Pro 5.1 channels. Supports up to the M2 profile. This does not support WMA lossless audio.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 2 channels.
- Dolby Digital Plus is supported for up to 5.1 channels.
- The DTS LBR codec is only available for MKV / MP4 /TS containers.

Restrictions

Requirements for Aerial Connection

Availability depends on the specific model and area.

It is best to connect the both connectors using a Multi-Switch or Diseqc. Switch, etc and to set **Aerial Connection Type** to **Dual**.

Restrictions to PIP (Picture-in-Picture)

- PIP cannot be used while **Smart Hub** or **3D** is active.
- Turning off the TV automatically disables PIP.
- Playing a game or using the karaoke feature on the main screen can result in lower PIP picture quality.
- To watch TV as a picture-in-picture, the main screen's source must be set to Component or HDMI. The PIP window supports TV signals only.

  Availability depends on the specific model and area.

  PIP is not supported in UHD source.

Read After Installing the TV

Picture Sizes and Input Signals

Picture Size	Input Signal
Auto Wide	ATV, EXT, AV, DTV (576i/p, 720p), DTV (1080i, 1080p)
16:9	ATV, EXT, AV, DTV (576i/p, 720p, 1080i, 1080p), Component (480i/p, 576i/p, 720p, 1080i, 1080p), HDMI (480i/p, 576i/p, 720p, 1080i, 1080p), HDMI (4096 x 2160p) (When connecting via UHD)
Wide Zoom, Zoom	ATV, EXT, AV, DTV (576i/p, 720p, 1080i, 1080p), Component (480i/p, 576i/p, 720p, 1080i, 1080p), HDMI (480i/p, 576i/p, 720p, 1080i, 1080p)
4:3	ATV, EXT, AV, DTV (576i/p, 720p, 1080i, 1080p), Component (480i/p, 576i/p, 720p, 1080i, 1080p), HDMI (480i/p, 576i/p, 720p, 1080i, 1080p)
Smart View 1	HDMI (480i/p, 576i/p, 720p, 1080i, 1080p)
Smart View 2	DTV (576i/p, 720p, 1080i, 1080p), HDMI (480i/p, 576i/p, 720p, 1080i, 1080p)
Screen Fit	DTV (1080i, 1080p), Component (1080i, 1080p), HDMI (720p, 1080i, 1080p), HDMI (3840 x 2160p, 4096 x 2160p) (When connecting via UHD)

The **Picture Size** setting is applied to the current source. The applied **Picture Size** will remain in effect whenever you select that source unless you change it.

The **Picture Size** option is not available for images in the UHD resolution because the supported screen size is fixed. (When connecting via UHD)

Installing an Anti-Theft Kensington Lock

Availability depends on the specific model and area.

A Kensington Lock is a physical device that can be used to protect the TV against theft. Look for the Kensington 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 Kensington slot. The lock is sold separately.

The method of using a Kensington Lock may differ for each TV model. Refer to the Kensington Lock manual for more information.

Read Before Setting Up a Wireless Internet Connection

Wireless Internet Precautions

- This TV supports the IEEE 802.11a/b/g /n communication protocols. Samsung recommends using IEEE 802.11n. Video files stored on a device connected to the TV via DLNA may not play back smoothly.
- To use wireless Internet, the TV must be connected to a wireless router or modem. If the wireless router 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 in use for the wireless router. If the channel set for the wireless router is currently being used by another device, the result is usually interference and/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 security key using characters and numbers. This security key is then needed to connect to a security-enabled AP.

Wireless Security Protocols

The TV only supports the following wireless network security protocols and is unable to connect to non-certified wireless routers:

- Authentication Modes: WEP, WPAPSK, WPA2PSK
- Encryption Types: WEP, TKIP, AES

In compliance with the newest 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 router 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.

Computer Connection Precautions - 1920x1080

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 or on the next page. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolution is 1920 x1080.

Choosing a resolution not included in the tables can result in a blank screen or just the power indicator turning on. Refer to the user manual of your graphics card for compatible resolutions.

IBM

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720x400	70Hz	31.469	70.087	28.322	-/+

MAC

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	67Hz	35.000	66.667	30.240	-/-
832x624	75Hz	49.726	74.551	57.284	-/-
1152x870	75Hz	68.681	75.062	100.000	-/-

VESA DMT

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	60Hz	31.469	59.940	25.175	-/-
640x480	72Hz	37.861	72.809	31.500	-/-
640x480	75Hz	37.500	75.000	31.500	-/-
800x600	60Hz	37.879	60.317	40.000	+/+
800x600	72Hz	48.077	72.188	50.000	+/+
800x600	75Hz	46.875	75.000	49.500	+/+
1024x768	60Hz	48.363	60.004	65.000	-/-
1024x768	70Hz	56.476	70.069	75.000	-/-
1024x768	75Hz	60.023	75.029	78.750	+/+
1152x864	75Hz	67.500	75.000	108.000	+/+
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x800	60Hz	49.702	59.810	83.500	-/+
1280x1024	60Hz	63.981	60.020	108.000	+/+
1280x1024	75Hz	79.976	75.025	135.000	+/+
1366x768	60Hz	47.712	59.790	85.500	+/+
1440x900	60Hz	55.935	59.887	106.500	-/+
1600x900RB	60Hz	60.000	60.000	108.000	+/+
1680x1050	60Hz	65.290	59.954	146.250	-/+
1920x1080	60Hz	67.500	60.000	148.500	+/+

Computer Connection Precautions - 3840 x 2160

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 or on the next page. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolution is 1920 x1080.

Choosing a resolution not included in the tables can result in a blank screen or just the power indicator turning on. Refer to the user manual of your graphics card for compatible resolutions.

IBM

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720x400	70Hz	31.469	70.087	28.322	-/+

MAC

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	67Hz	35.000	66.667	30.240	-/-
832x624	75Hz	49.726	74.551	57.284	-/-
1152x870	75Hz	68.681	75.062	100.000	-/-

VESA DMT

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	60Hz	31.469	59.940	25.175	-/-
640x480	72Hz	37.861	72.809	31.500	-/-
640x480	75Hz	37.500	75.000	31.500	-/-
800x600	60Hz	37.879	60.317	40.000	+/+
800x600	72Hz	48.077	72.188	50.000	+/+
800x600	75Hz	46.875	75.000	49.500	+/+
1024x768	60Hz	48.363	60.004	65.000	-/-
1024x768	70Hz	56.476	70.069	75.000	-/-
1024x768	75Hz	60.023	75.029	78.750	+/+
1152x864	75Hz	67.500	75.000	108.000	+/+
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x800	60Hz	49.702	59.810	83.500	-/+
1280x1024	60Hz	63.981	60.020	108.000	+/+
1280x1024	75Hz	79.976	75.025	135.000	+/+
1366x768	60Hz	47.712	59.790	85.500	+/+
1440x900	60Hz	55.935	59.887	106.500	-/+
1600x900RB	60Hz	60.000	60.000	108.000	+/+
1680x1050	60Hz	65.290	59.954	146.250	-/+
1920x1080	60Hz	67.500	60.000	148.500	+/+
1920x1200	60Hz	74.556	59.885	193.250	-/+

Supported Video Resolutions (LED / PDP TV)

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720(1440)x480i	60Hz	15.734	59.940	27.000	-/-
720(1440)x576i	50Hz	15.625	50.000	27.000	-/-
720x480	60Hz	31.469	59.940	27.000	-/-
720x576	50Hz	31.250	50.000	27.000	-/-
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x720	50Hz	37.500	50.000	74.250	+/+
1920x1080i	60Hz	33.750	60.000	74.250	+/+
1920x1080i	50Hz	28.125	50.000	74.250	+/+
1920x1080	60Hz	67.500	60.000	148.500	+/+
1920x1080	50Hz	56.250	50.000	148.500	+/+
1920x1080	30Hz	33.750	30.000	74.250	+/+
1920x1080	25Hz	28.125	25.000	74.250	+/+
1920x1080	24Hz	27.000	24.000	74.250	+/+

Supported Video Resolutions (UHD TV)

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720(1440)x480i	60Hz	15.734	59.940	27.000	-/-
720(1440)x576i	50Hz	15.625	50.000	27.000	-/-
720x480	60Hz	31.469	59.940	27.000	-/-
720x576	50Hz	31.250	50.000	27.000	-/-
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x720	50Hz	37.500	50.000	74.250	+/+
1920x1080i	60Hz	33.750	60.000	74.250	+/+
1920x1080i	50Hz	28.125	50.000	74.250	+/+
1920x1080	60Hz	67.500	60.000	148.500	+/+
1920x1080	50Hz	56.250	50.000	148.500	+/+
1920x1080	30Hz	33.750	30.000	74.250	+/+
1920x1080	25Hz	28.125	25.000	74.250	+/+
1920x1080	24Hz	27.000	24.000	74.250	+/+
3840x2160	24Hz	54.000	24.000	297.000	+/+
3840x2160	25Hz	56.250	25.000	297.000	+/+
3840x2160	30Hz	67.500	30.000	297.000	+/+
3840x2160	50Hz	112.500	50.000	594.000	+/+
3840x2160	60Hz	135.000	60.000	594.000	+/+
4096x2160	24Hz	54.000	24.000	297.000	+/+
4096x2160	25Hz	56.250	25.000	297.000	+/+
4096x2160	30Hz	67.500	30.000	297.000	+/+
4096x2160	50Hz	112.500	50.000	594.000	+/+
4096x2160	60Hz	135.000	60.000	594.000	+/+

HDMI

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
3840x2160	30Hz	67.500	30.000	297.000	+/+
3840x2160	25Hz	56.250	25.000	297.000	+/+
3840x2160	24Hz	54.000	24.000	297.000	+/+
4096x2160	24Hz	54.000	24.000	297.000	+/+

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Glossary

- **480i/480p/720p/1080i/1080p**

  Generally refers to the number of effective scanning lines that determines the screen's resolution. There are two scanning methods: interlaced and progressive.

  – Scanning

    Sequential projection of pixels to form images. The higher the number of pixels, the clearer and more vivid the images.

  – Progressive

    A sequential scanning method that scans every line, one after another.

  – Interlaced

    A staggered scanning method that scans every other line until the end of the screen and then fills in the remaining lines.

  Example) If the number of horizontal scan lines is 480i

  Scans 240 lines from start to finish and then scans the remaining 240 lines for a total of 480 lines.

  * General differences between 480i and 480p are as follows:

	480i	480p
Horizontal Frequency	15.75Khz	31.5Khz
FPS	30	60
Lines on Screen	480	480

- **ARC (Audio Return Channel)**

  Generally, a separate RCA or optical cable needs to be connected in order for the TV audio to be heard through an AV receiver. With receivers that support ARC, however, digital audio can be transmitted via the HDMI cable only.

- **DVI (Digital Visual Interface)**

  Connecting the TV's DVI connector to a computer's DVI connector via an HDMI-to-DVI cable lets you use the TV as a computer monitor. However, HDMI-to-DVI cables deliver video signals only. You must connect a set of speakers to the computer using a separate cable to hear the computer's audio.

- **HDMI (High Definition Multimedia Interface)**

  HDMI is a method of transmitting both video and audio signals via a single cable.

- **Dynamic versus Static IP Addresses**

  If the network requires a dynamic IP address, use an ADSL modem or router that supports the Dynamic Host Configuration Protocol (DHCP). Modems and routers that support DHCP automatically provide the IP address, subnet mask, gateway and DNS values the TV needs to access the Internet, so they do not have to be entered manually. Most home networks use a dynamic IP address.

  If the network requires a static IP address, enter the IP address, subnet mask, gateway, and DNS values manually when setting up the network connection. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

  If the network requires a static IP address, use an ADSL modem that supports DHCP. ADSL modems that support DHCP also allow static IP addresses.

- **Ethernet**

  Ethernet is a LAN (Local Area Network) that uses coaxial cables standardised by the IEEE.

- **Component Connection**

  Component connections are mostly used for game consoles and transmit the video signal by splitting it into a luminance signal (Y) and two colour signals (Pb and Pr). The connector is marked as [Component IN]_(Pr, Pb, Y) on the back of the TV. On some devices, it is sometimes marked as Cr, Cb, Y. Cb and Cr are the digital conversions of the Pb and Pr signals.

  The connectors are normally colour-coded red (R), blue (B), and green (G) and offer the best picture quality possible for an analogue connection.