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E-MANUAL

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Model _____ Serial No. _____

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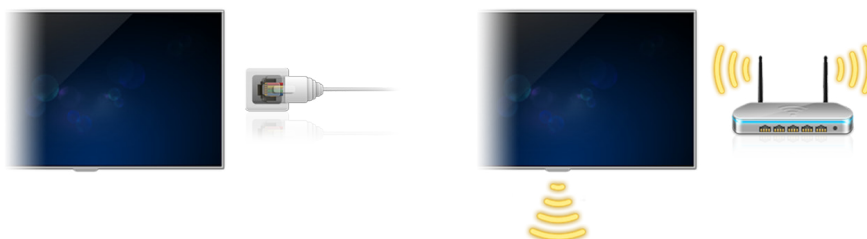
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Using Smart Hub


Connecting to the Internet

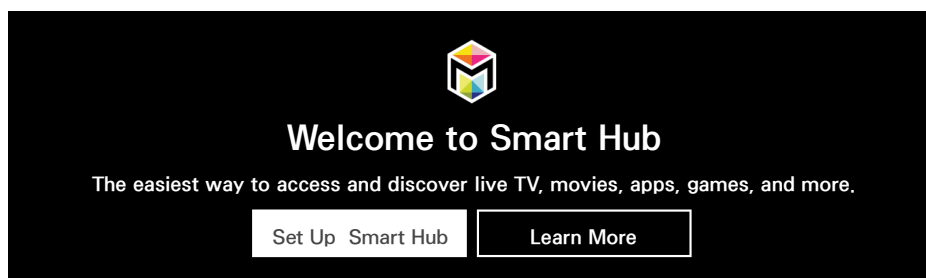
[MENU](#) > [Network](#) > [Network Settings](#)

Connect the TV to the Internet wired or wirelessly.



Setting up Smart Hub

Press the  button on your remote control. When you start **Smart Hub** for the first time, the **Set Up Smart Hub** screen appears. Follow the instructions on the screen to configure the required settings and complete the setup.



Using Smart Hub

Enjoy the multiple functions provided by Smart Hub on a single screen.

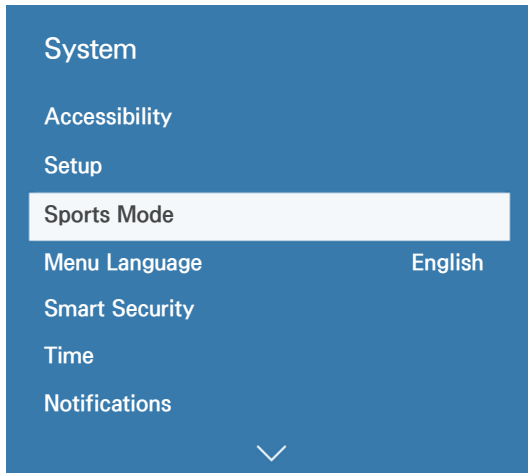
 For more information, refer to "Smart Hub."





Improving the Viewing Experience of Sports Events

Activating Sports Mode

MENU > **System** > **Sports Mode**

Set **Sports Mode** to **On**. The TV automatically configures the picture and sound settings so that they are suitable for soccer events.

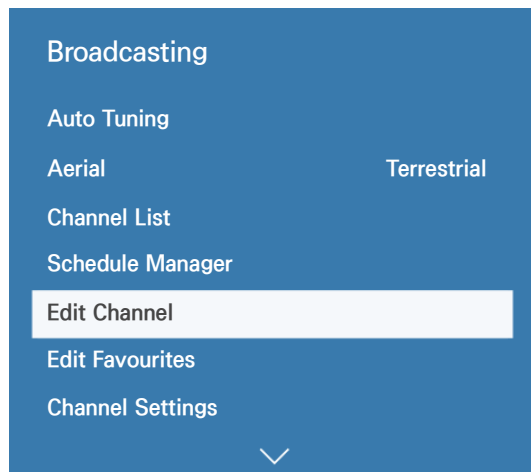


-  You can zoom in the screen while you are using the sports mode. Move the focus to the part of screen to magnify.
-  Your TV's menu may differ from the image above, depending on the model.
-  The actual name may differ from specific geographical areas.
-  For more information, refer to "Making Sports programmes More Realistic with Sports Mode."

Editing Channels

Running the Edit Channel function

MENU > **Broadcasting** > **Edit Channel**



 Your TV's menu may differ from the image above, depending on the model.

Rearranging or deleting channels

MENU > **Broadcasting** > **Edit Channel** > **Change Number** or **Delete**

You can rearrange the order of channels or delete channels. To change the order of a channel, select it and then select **Change Number**. To delete a channel, select it and then select **Delete**.



Connecting an Aerial

Connect the TV to an aerial or a cable outlet to receive broadcast signals.

Connect a cable from an aerial or cable outlet to the ANT IN connector, as shown in the image below.

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



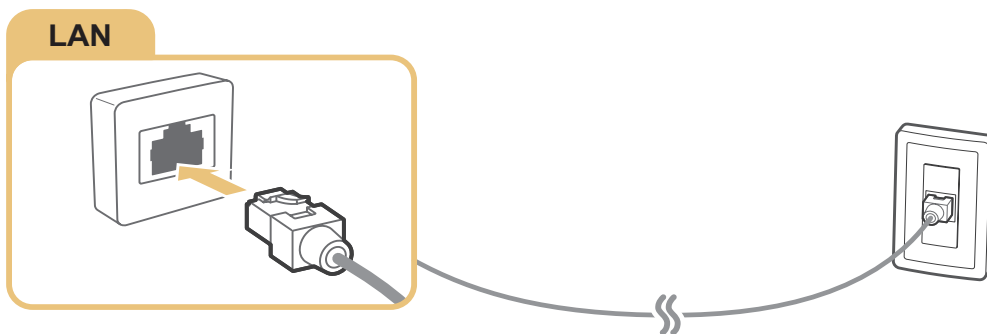
Connecting to the Internet

Establishing a wired Internet connection

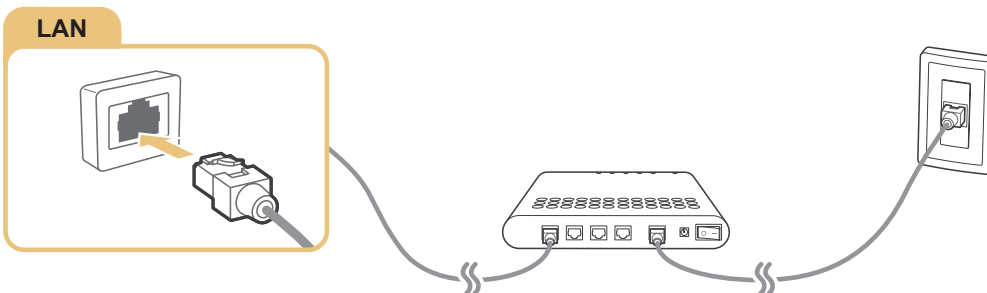
Using LAN cables

There are three ways to connect the TV to your Internet access points, as shown in the following illustrations:

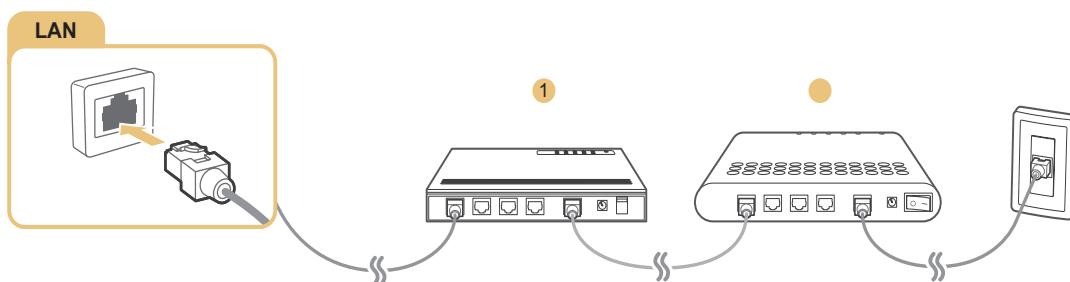
- Wall-mounted LAN Outlet



- External Modem



- ① IP Router + ② External Modem



 We recommend using Cat 7 LAN cables to link your TV to the Internet Access Points.

 The TV will not be able to connect to the Internet if the network speed is below 10Mbps.

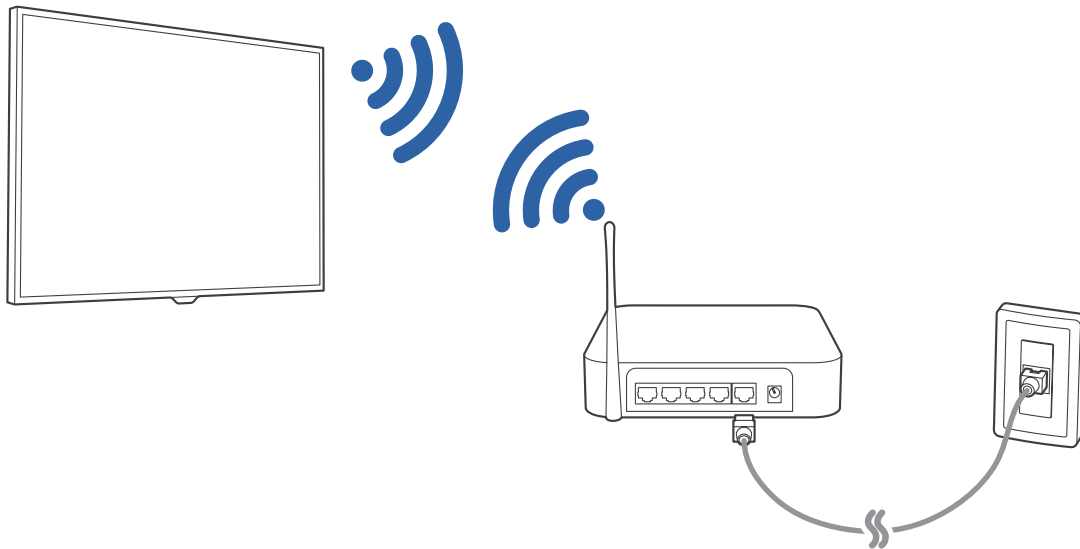
Connecting to a wired Internet network automatically

MENU > Network > Network Settings [Try Now](#)

Automatically connect to an available network.

1. Select **Wired**.
2. Once network connection is successful, you will see a confirmation message. If it fails, try again or connect manually.

Establishing a wireless Internet connection



Connecting to a wireless internet network automatically

MENU > Network > Network Settings

Make sure that you have the wireless router's SSID (name) and password settings before attempting to connect.

1. Select **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select a network. If the network you want doesn't appear in the list, select **Add Network**, and then enter the network's SSID (name) manually.
3. If your network is security enabled, enter the password. If your network is not security-enabled, the TV will bypass the on-screen keyboard and attempt to connect right away.

Connecting to a wireless internet network with WPS

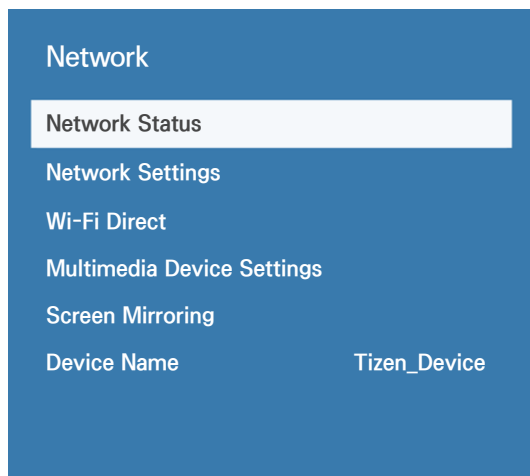
[MENU](#) > [Network](#) > [Network Settings](#)

If the router has a WPS(wi-fi protected setup) push button, you can use it to connect the TV to the router automatically.

1. Select **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select **Stop** and then select **WPS**.
3. Press the WPS or PBC buttons on your wireless router in less than two minutes.
4. The TV is connected to the network automatically.

Checking the internet connection status

[MENU](#) > [Network](#) > [Network Status](#) [Try Now](#)



 Your TV's menu may differ from the image above, depending on the model.

View the current network and Internet status.

Changing the name of the TV on a network





[MENU](#) > [Network](#) > [Device Name](#) [Try Now](#)

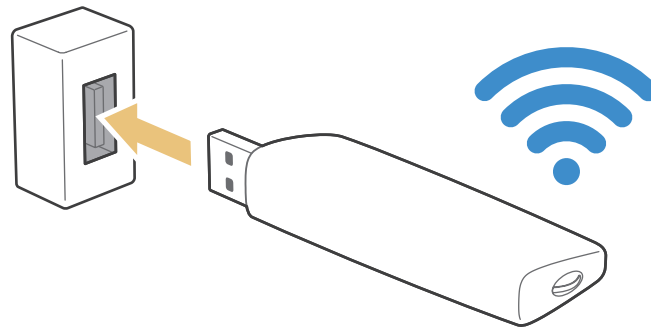
You can change a name for the TV that will appear on mobile devices and laptop computers.

1. Select **Device Name** from the **Network** menu.
2. Select a name from the list that appears. Alternatively, select **User Input** to enter a name manually.

Connecting to a Network via a Mobile Dongle

You can make the TV to connect to a network via a mobile device by connecting a mobile dongle to the TV. Connect the mobile dongle to the USB port in the TV.

-  This function is not available on certain models in specific geographical areas.
-  When you use a large mobile dongle(Data Card), USB devices may not work properly due to interferences among the USB ports, or the wireless network may not work properly due to interferences from the peripherals and surroundings. In this case, use a USB extension cable.
-  **Auto Ticker** is not available when you set up mobile network.
-  If you have any problems using online services, please contact your Internet service provider.



The mobile service providers and their devices that support this function are as follows:

- Glo Bolt (Model No: E303)
- Etisalat (Model No: E303)
- Smart Communication (Model No: E3131S-3)
- Globe Telecom (Model No: E3331, E359S-2)
- Viettel (Model No: E173Eu-1)
- Vinaphone (Model No: E303u-1, E303s-1)
- DTAC (Model No: E3131)
- AIS (Model No: E3131, E303)
- Telcomsel (Model No: E303)
- Indosat (Model No: E303)
- Airtel (E1731, E3276S, E3276s-920, E3272, E8231)
- Idea (Model No: E1732, E8231)
- Tata Docomo (Model No: E177, E8231)
- Open Dongles - Airtel, Idea, TataDocomo, Aircel, Vodafone (Model No: E303C, E303U, E3121B, E3131B, E369 mini, E8221)
- Zain (Model No: E367u-1, E303s-1)
- Orange (Model No: E367u-1, E3131s-2)

Troubleshooting Internet Connectivity Issues

Troubleshooting wired Internet connectivity issues [Try Now](#)

No network cable found

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

IP auto setting failed

Do the following or configure the [IP Settings](#) manually.

1. Make sure that the DHCP server is enabled on the router, and reset the router.
2. If the problem persists, contact your Internet Service Provider.

Unable to connect to the network

1. Check all [IP Settings](#).
2. Make sure 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.

Connected to a local network, but not to the Internet

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

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

If the problem persists, contact your Internet Service Provider.

Troubleshooting wireless Internet connectivity issues

Wireless network connection failed

If a selected wireless router is not found, go to [Network Settings](#) and select the correct router.

Unable to connect to a wireless router

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

IP auto setting failed

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 password if required.
3. If the problem persists, contact your Internet Service Provider.

Unable to connect to the network

1. Check all [IP Settings](#).
2. Enter the correct password if required.
3. If the problem persists, contact your Internet Service Provider.

Connected to a local network, but not to the Internet

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

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

If the problem persists, contact your Internet Service Provider.

Connecting Video Devices

Your TV has a variety of connectors for video input from external devices. Below is a list of featured connectors shown in descending order of picture quality.

- HDMI
- Component
- Composite (A/V)

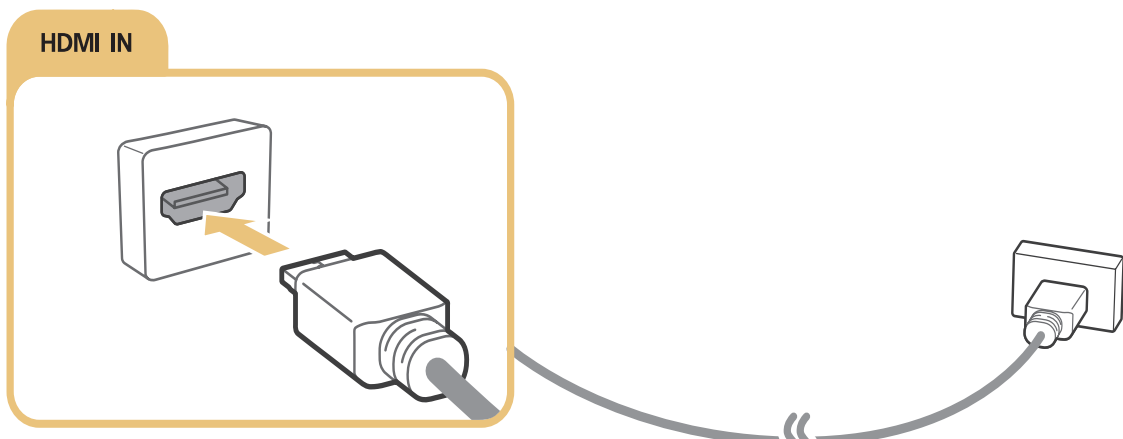
Connect a video device to the TV with an HDMI connector for the best picture quality. If the device does not have an HDMI connector, try a component connector.


Connecting with an HDMI cable

The following types of HDMI cables are recommended:

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

Connect the HDMI cable to the HDMI input connector of the TV and the HDMI output connector of the device as shown in the image below.

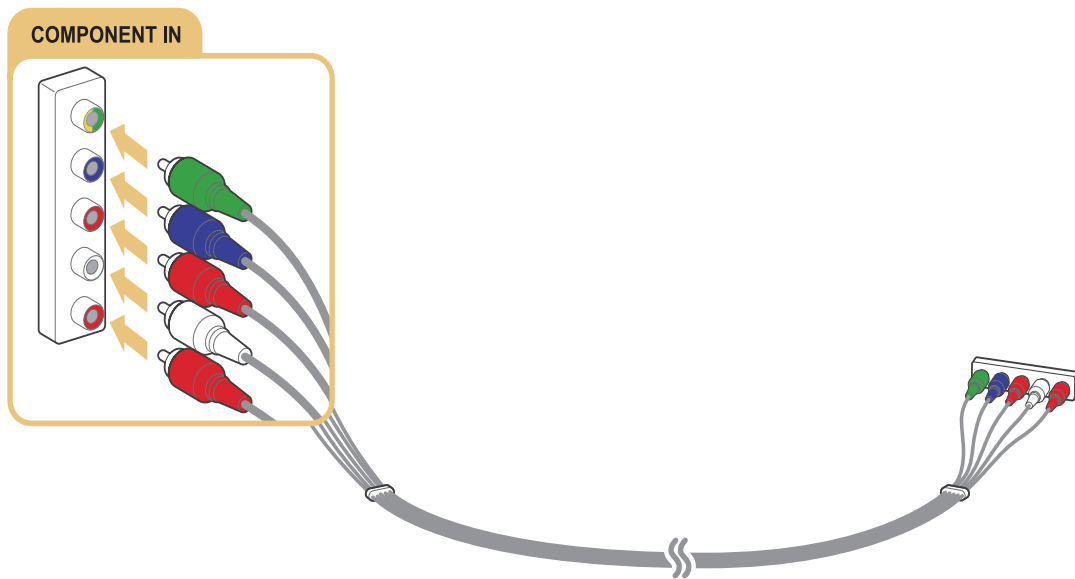


 Set **Edit Device Type** to **DVI PC** for a computer connected with a HDMI-to-DVI cable, and **PC** for a computer connected with HDMI cable. Also, set **Edit Device Type** to **DVI Devices** for an A/V device with a HDMI-to-DVI cable.

Connecting with a component cable

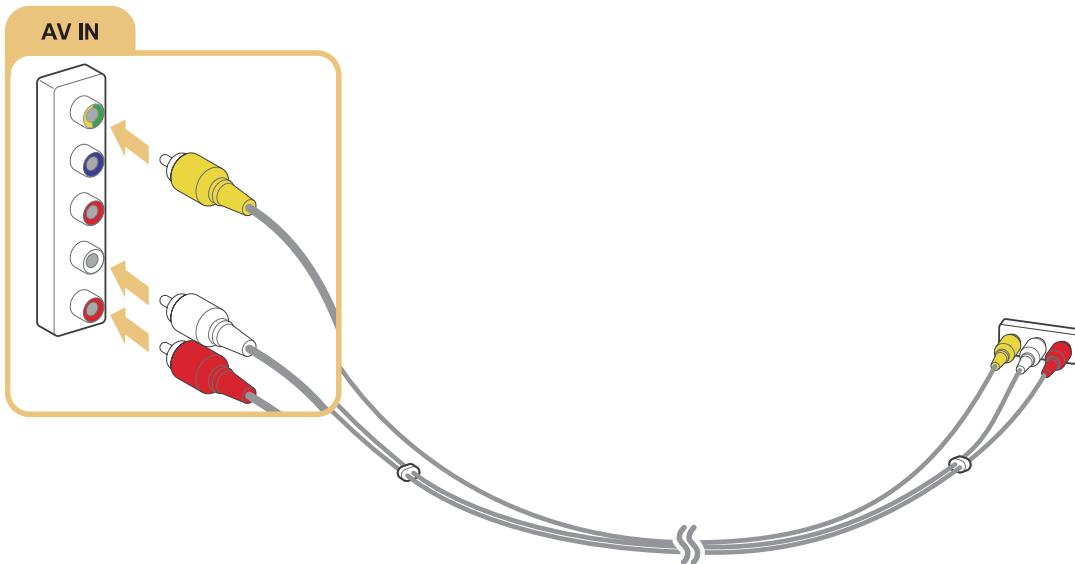
Connect the component cable to the component input connectors of the TV and the component output connectors of the device as shown in the image below.

Make sure the cable colours match the connector colours.



Connecting with a Composite (A/V) cable

Connect the AV cable to the AV input connectors of the TV and the AV output connectors of the device as shown in the image below.



Audio Input and Output Connections

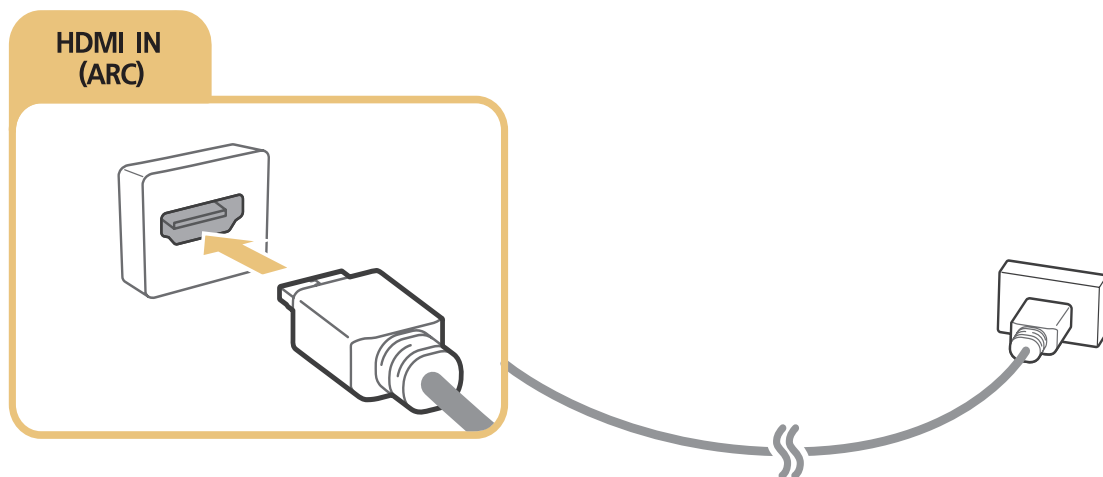
Your TV has a variety of connections for audio input from external devices. The connections are listed below.

- HDMI/ARC (Audio Return Channel)
- Digital Audio (Optical)
- Audio (Analogue)

Connecting with an HDMI (ARC) cable

ARC(Audio Return Channel) lets the TV output digital sound to an audio device and input digital sound from the same audio device through one HDMI cable. ARC is only available through the HDMI (ARC) port and only when the TV is connected to an ARC-enabled AV receiver.

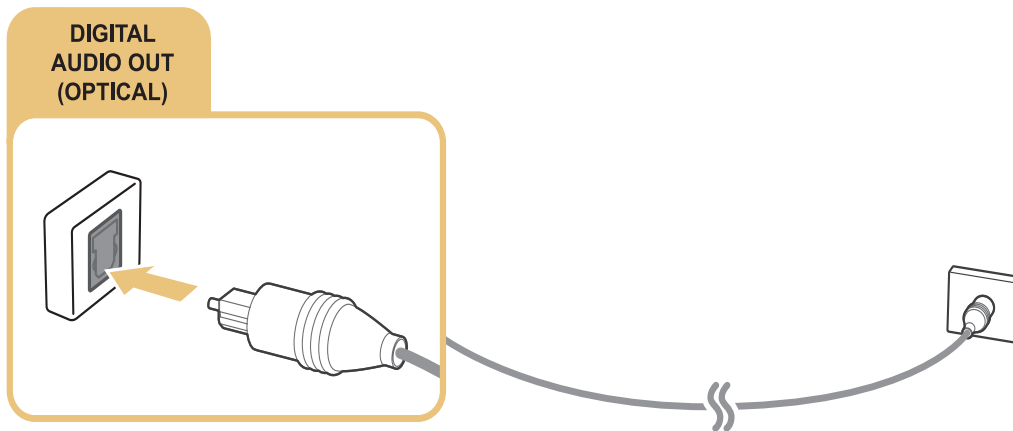
Connect an HDMI cable to the HDMI (ARC) input connector of the TV and the HDMI output connector of the device as shown in the image below.



Connecting with a digital audio (optical) cable

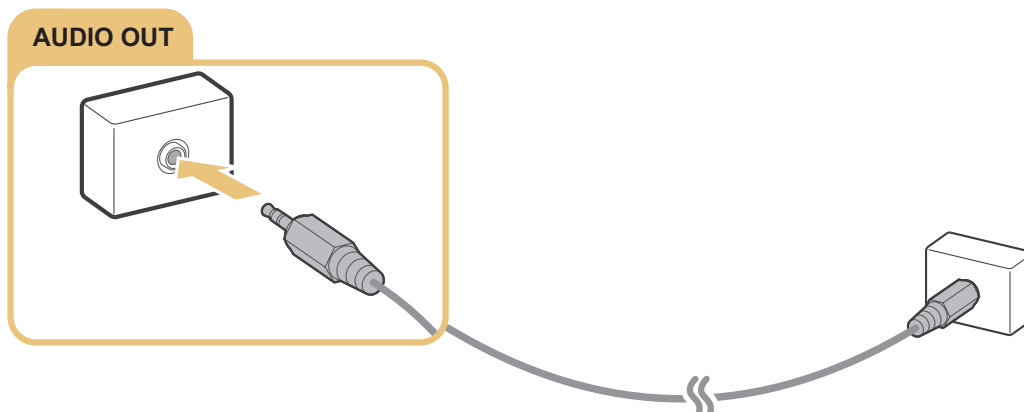
You can listen to digital audio by connecting an AV receiver to the TV via a digital audio (optical) connector.

Connect the optical cable to digital audio output connector of the TV and the digital audio input connector of the device as shown in the image below.



Connecting with a stereo audio cable

If using the AUDIO OUT/COMPONENT IN/AV IN 1 connectors of the TV, connect an audio cable to the AUDIO / COMPONENT / AV Adapter(accessory) and connect it to the AUDIO OUT/COMPONENT IN/AV IN 1 connectors of the TV and the audio output connectors of the device as shown in the image below.



Connecting a Computer

The kinds of connections you can make are listed below.

To use the TV as a computer monitor

- Connect through the HDMI port with an HDMI cable.
- Connect through the HDMI (DVI) port with an HDMI-to-DVI cable.

To view or play the content saved in a computer on the TV

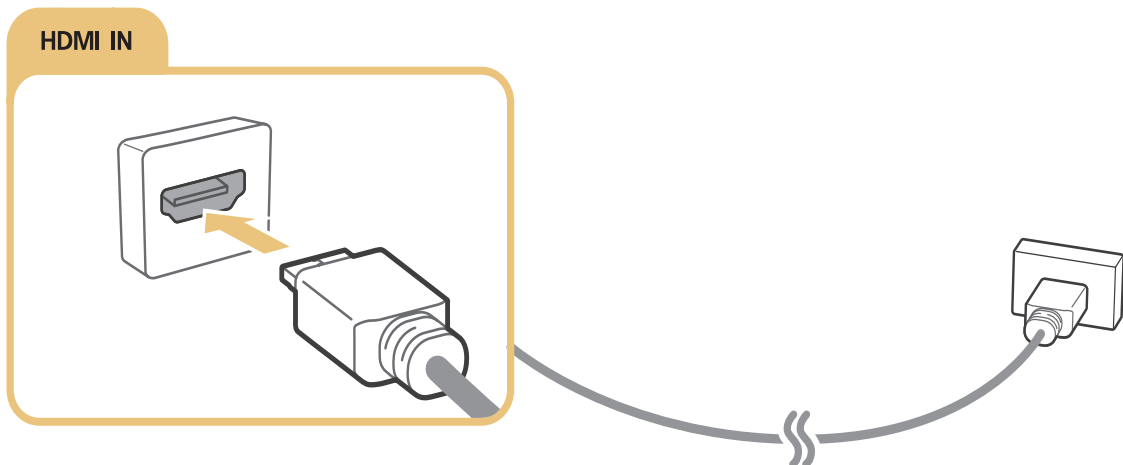
- Connect through using your home network.

Connecting through the HDMI port

For an HDMI connection, we recommend one of the following HDMI cable types:

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

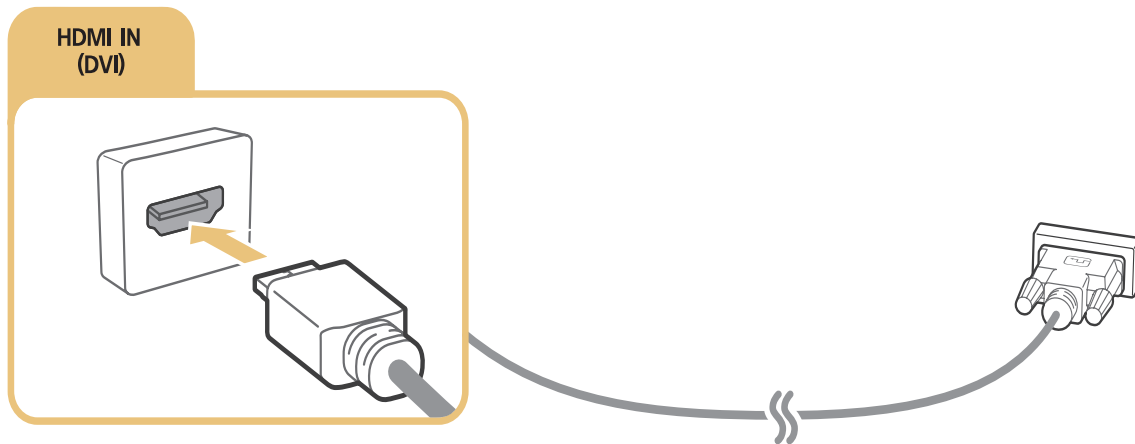
Connect an HDMI cable to the HDMI input connector of the TV and the HDMI output connector of the device as shown in the image below.




Connecting with an HDMI-to-DVI cable

If the graphics adapter of your TV does not support the HDMI interface, connect the computer to the TV with a DVI (Digital Visual Interactive)-to-HDMI cable. Note that the HDMI-to-DVI connection is only supported by the HDMI (DVI) port and does not transmit audio. To listen to the computer sound, connect external speakers to the audio output connector of the computer.

Connect the HDMI-to-DVI cable to the HDMI (DVI) port of the TV and the DVI output port of the computer as shown in the image below.




 For the resolutions supported by the TV, refer to "Read Before Connecting a Computer (Supported Resolutions)."

Connecting through your home network

You can quickly access and play photo, video, and music files stored on a computer on the TV.

1. Connect the TV and the computer to the same router or AP. Once you connect them to the same router or AP, a home network is configured.
2. On 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 the TV to [Allowed].
4. Launch Windows Media Player on a computer. Select [Settings] > [Library Management] and add the location where photo, video, and music files are saved to play them on the TV. For more information about playing content, refer to "Playing multimedia content in a computer or mobile device."

 Alternatively, you can move the files to the default folder specified by Windows Media Player, and then play or view them on the TV.


Connecting a Mobile Device

You can connect a mobile device such as a smartphone or tablet directly to the TV, or connect it to the network and display the mobile device's screen or play its content on the TV. The kinds of connections you can make are listed below.

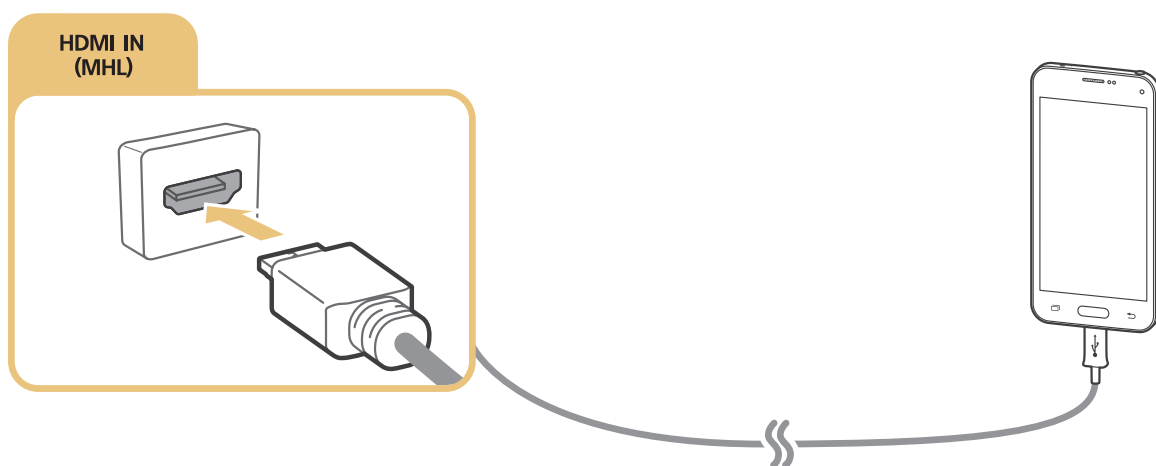
- Connect by mirroring the mobile device's screen on the TV (Screen Mirroring).
- Connect mobile devices without a wireless router (Wi-Fi Direct).
- Connect a mobile device via Samsung Smart View 2.0.

Connecting with an MHL-to-HDMI Cable

You can use the Mobile High-definition Link (MHL) function to display a mobile device's screen 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.

-  If you connect a mobile device to the TV with an MHL-to-HDMI cable, the TV automatically switches the picture size of each content saved on the mobile device to the original picture size of that content.

Connect the MHL-to-HDMI cable to the HDMI (MHL) input connector of the TV and the mobile device's USB port as shown in the image below.




Using Screen Mirroring


[MENU](#) > [Network](#) > [Screen Mirroring](#) [Try Now](#)

You can 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.

Connecting via a mobile device


1. Launch [Screen Mirroring](#) function on your mobile device. The mobile device searches for available devices to connect to.
2. Select the TV from the list. The TV automatically allows the connection and the device connects.
3. Select [Allow](#) to connect the mobile device.

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

 If you select [Deny](#), the device cannot connect. To change the connection status of a denied device, select [MENU](#) > [Network](#) > [Multimedia Device Manager](#), select the device, and select [Allow](#). [Try Now](#)

Connecting by automatically allowing the connection

1. Select [MENU](#) > [Network](#) > [Screen Mirroring](#). You can also start screen mirroring by pressing the [SOURCE](#) button on your remote and selecting [Screen Mirroring](#) from the list at the top of the screen.
2. Launch Screen Mirroring function on your mobile device. The mobile device searches for available devices to connect to.
3. Select the TV from the list. The TV automatically allows the connection and the device connects.

 If the mobile device cannot connect, turn off and on the TV and mobile device.

Connecting mobile devices without a wireless router (Wi-Fi Direct)




[MENU](#) > [Network](#) > [Wi-Fi Direct](#) [Try Now](#)

You can connect a mobile device with the Wi-Fi Direct feature directly to the TV without using a wireless router or AP. By connecting a mobile device to the TV through [Wi-Fi Direct](#), you can play photo, video, and music files saved on the mobile device on the TV.

Enable Wi-Fi Direct on the mobile device, and then run [Wi-Fi Direct](#) on the TV. The TV automatically scans for and displays a list of available devices. The TV's name also appears on the mobile device.


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.

Allow the connection. The TV and mobile device connect.

-  For more information on the multimedia content, refer to "Playing multimedia content in a computer or mobile device."
-  To confirm the mobile devices that allows or denies the connection, select [MENU](#) > [Network](#) > [Multimedia Device Manager](#).
-  When you place the mobile device closer to the TV with Wi-Fi Direct activated, the connection allowance confirmation window appears on the left bottom of the screen so that you can easily connect it.

Managing the connection status of previously connected mobile devices

1. Select [MENU](#) > [Network](#) > [Multimedia Device Manager](#). The TV displays a list of devices that have previously connected to the TV or have tried to connect to the TV and been denied. The status of the connection (Allow/Deny) is also displayed. [Try Now](#)
2. Select a device.
3. Select connection type or delete the device from the list.

-  This function is only available if the devices have previously connected to the TV or have previously attempted to connect and been denied.

Connecting a mobile device via Samsung Smart View 2.0

You can play the mobile device's multimedia content, such as videos, photos, and music, when you install and launch Samsung Smart View 2.0 on a mobile device connected to the TV. You can send text messages or control the TV using the mobile device.

Changing the input signal with external devices

Press the **SOURCE** button to switch between external devices connected to the TV.

- **Options**

To view the options menu, press the down directional button. The functions that appear in the options menu can include any of the following:



The connector names may vary depending on the product.



- **Edit Device Type:** Changes the types of the external devices. Select an external device to change. For example, you can select the name **PC** for a PC connected to an HDMI connection and **Blu-ray** for a Blu-ray player connected to another HDMI connection. When you display the source list, the TV displays the name of each connection and the name of the device connected to each connection.
- **Edit Name:** You can rename devices connected to the TV to facilitate identifying external sources.
- **Anynet+ (HDMI-CEC):** Displays a list of Anynet+ (HDMI-CEC)-compliant devices that are connected to the TV.



This option is only available when **Anynet+ (HDMI-CEC)** is set to **On**.

- **Information:** Displays information about the connected devices.
- **Remove USB Device:** Removes a USB device connected to the TV.
- **Remove Source Thumbnail:** Removes the captured images of the video that you viewed most recently saved on the external device connected to the TV.

Connection Notes!

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

Connection notes for HDMI

- Use an HDMI cable with a thickness of 14mm 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 with coaxial cables standardised by the IEEE.
- Many computer graphics adaptors do not have HDMI ports, but have DVI ports instead. If your computer graphics adaptor has a DVI port, use an HDMI-to-DVI cable to connect the computer to the TV. For more information, refer to "Connecting with an HDMI-to-DVI cable."

Connection notes for audio devices

- For better audio quality, it is a good idea to use an AV receiver.
- Connecting a device using an optical cable does not automatically turn off the TV speakers. To turn off the TV's speakers, set **Speaker Select (MENU > Sound > Speaker Settings > Speaker Select)** to something other than TV Speaker.
- An unusual noise coming from the audio device while you are using it may indicate a problem with the audio device itself. If this occurs, ask for assistance from the audio device's manufacturer.
- Digital audio is only available with 5.1-channel broadcasts.

Connection notes for computers

- For the resolutions supported by the TV, refer to "Read Before Connecting a Computer (Supported Resolutions)."
- As long as file sharing is activated, unauthorised access may occur. When you do not need to access data, disable file sharing.
- Your PC and Smart TV must be connected on the same network.

Connection notes for mobile devices


- 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.
- To use Wi-Fi Direct, the mobile device must support the Wi-Fi Direct function. Please check if your mobile device supports Wi-Fi Direct.
- The mobile device and your Smart TV must be connected with each other in the same network.
- The video or audio may intermittently stop depending on network conditions.

Using the Tools menu on the TV screen

Press the **TOOLS** button to display the Tools menu on the TV's screen. The following menu options are available.

- **Picture Size:** Changes the picture size.
- **Picture Mode:** Changes the picture mode.
- **Network Settings:** Allows you to connect the TV to the Internet in a wired or wireless connection.
- **Speakers:** Allows you to select the speakers that will play the TV's audio.
- **Dual:** When you press the **Dual** button the first time, the current dual mode is displayed on the screen. Press the **Dual** button again to change the dual mode.
- **Sleep Timer:** Shuts off the TV automatically after a preset period of time.
- **e-Manual:** Opens the e-Manual.

 The Tools menu options may differ with the model and geographical area.

 To change the order of the menu options on the first row, select a menu option to move, press and hold the Enter button, and then select the directional buttons displayed to specify a new position.

Controlling the TV with a Keyboard

[MENU](#) > [System](#) > [Device Manager](#) > [Keyboard Settings](#) [Try Now](#)

 Certain models are not compatible with USB HID class keyboards.


Connecting a keyboard

Connecting a USB keyboard

Plug the keyboard cable into the TV's USB port.

Connecting a Bluetooth keyboard



1. Place the Bluetooth keyboard into standby status.
2. Select [MENU](#) > [System](#) > [Device Manager](#) > [Keyboard Settings](#) > [Add Bluetooth Keyboard](#). The TV automatically scans for available keyboards. [Try Now](#)

 If your keyboard was not detected, position the keyboard close to the TV, and then select [Refresh](#). The TV scans 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 using the Bluetooth keyboard. This pairs the Bluetooth keyboard to the TV.

Using the keyboard

You can use the following remote features with the USB or Bluetooth keyboard connected to the TV.

Keyboard	Remote control functions
Directional keys	Moves the focus
Windows key	Displays the menu
Menu list key	Displays the On-Screen Remote
Enter key	Selects or runs a focused item
ESC key	Returns to the previous screen
F1 / F2 / F3 / F4 key	
F5 key	Launches the  button
F6 key	Displays the source screen
F7 key	Launches the Channel List
F8 key	Mutes the sound
F9 / F10 key	Adjusts the volume
F11 / F12 key	Changes the channel

Changing keyboard settings

Select [MENU](#) > [System](#) > [Device Manager](#) > [Keyboard Settings](#) > [Keyboard Options](#). [Try Now](#)

- [Keyboard Language](#)

Displays the languages you can use on your keyboard and lets you select a language.

- [Keyboard type](#)

Displays a list of keyboard types and lets you select a type that matches the Keyboard language you selected.



The list of keyboard type differs depending on the language you selected under [Keyboard Language](#).

- [Switch Input Language](#)

Displays a list of keys you can use to toggle between languages and lets you select a key.

Controlling the TV with a Mouse

[MENU](#) > [System](#) > [Device Manager](#) > [Mouse Settings](#) [Try Now](#)

 Certain models are not compatible with USB HID class mice.

Connecting a USB mouse

Plug the mouse cable into the TV's USB port.

Connecting a Bluetooth mouse

1. Place the Bluetooth mouse in standby status.
2. Select [MENU](#) > [System](#) > [Device Manager](#) > [Mouse Settings](#) > [Add Bluetooth Mouse](#). [Try Now](#)
3. Select the Bluetooth mouse from the scanned list, and then select [Pair and connect](#). This pairs the Bluetooth mouse to the TV.

Using a mouse

You can use a pointer to control the TV in the same way you use a pointer on a computer.

- **Selecting and running an item**
Left-click the mouse.
- **Scrolling the TV menu or screen**
Scroll the mouse wheel up or down.

Changing mouse buttons and pointer speed

[MENU](#) > [System](#) > [Device Manager](#) > [Mouse Settings](#) > [Mouse Options](#) [Try Now](#)

- **Primary Button**


Select which button (left or right) to use when selecting and running items.

- **Pointer Speed**

Adjust the movement speed of the pointer.

Entering Text using the On-Screen QWERTY Keypad

Using additional functions

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

- **Recommend text**

Enables or disables the recommended text feature. The keyboard displays recommended words so that you can enter the text more easily.

- **Reset recommended text data**

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

- **Predict Next Character (when using direction buttons)**

Enables or disables the text prediction feature.

- **Language**

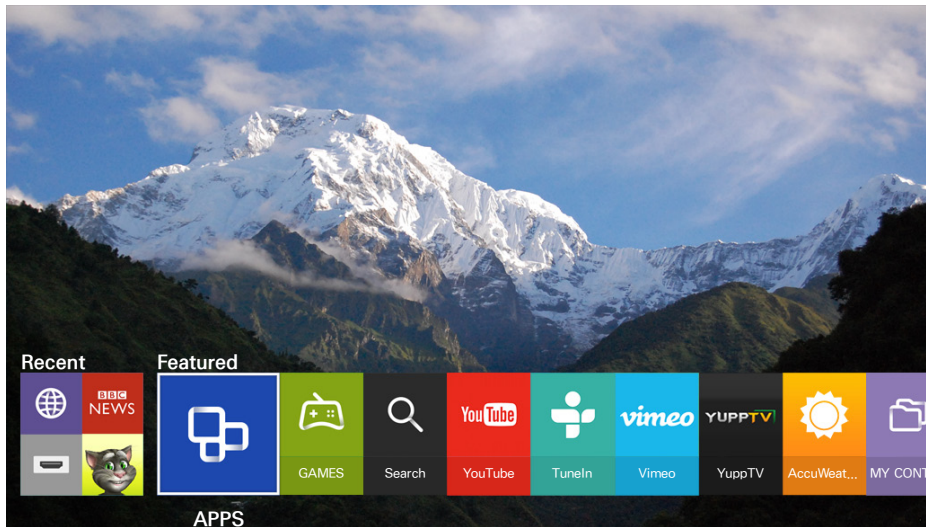
Selects a language from the list.



This function is not available on certain models in specific geographical areas.

Smart Hub

[MENU](#) > [Smart Hub](#) > [Open Smart Hub](#) [Try Now](#)







 The image may differ with the specific model and area.

You can surf the web, download apps with Smart Hub. In addition, you can enjoy photo, video, and music files stored on external storage devices.

 To run **Smart Hub** while you are using a service provided by Smart Hub, go to the same path as described above.

Removing or pinning an item in the Recent group

To remove or pin an item in the **Recent** group, press the  button on the remote control. The following icons are available.

- : Deletes the item. Although you remove an item from the **Recent** group, it is not removed from your TV.
- : Pin the item to the first position. To unpin the item, select  again.

Launching Smart Hub automatically


[MENU](#) > [Smart Hub](#) > [Auto-Start Settings](#) > [Smart Hub](#) [Try Now](#)

You can start Smart Hub automatically when you turn on the TV.

Testing Smart Hub connections

[MENU](#) > [Support](#) > [Self Diagnosis](#) > [Smart Hub Connection Test](#) [Try Now](#)

When Smart Hub is not working, select **Smart Hub Connection Test**. The connection Test diagnoses the problem by checking the internet connection, your ISP, the Samsung server, and the Apps service.

 If Smart Hub continues to have problems after completing the test, contact your Internet Service Provider or a Samsung Service Centre.

Using the Smart Hub tutorial








[MENU](#) > [Support](#) > [Smart Hub Tutorial](#)

You can learn the basics of using Smart Hub and the Smart Hub service in detail.

Resetting Smart Hub

[MENU](#) > [Smart Hub](#) > [Reset Smart Hub](#) [Try Now](#)

You can remove the Samsung accounts saved in the TV and everything linked to them, including apps.

-  Some of the Smart Hub services are for pay services. To use a for paid service, you must have an account with the service provider or a Samsung account. For more information, refer to "Using Smart Hub with a Samsung Account."
-  To use this feature, the TV must be connected to the Internet.
-  Some Smart Hub features may not be available depending on the service provider, language, or region.
-  Smart Hub service outages can be caused by disruptions in your Internet service.
-  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 associated with them. You can view the entire text of the [Terms & Policy](#) by navigating to [MENU](#) > [Smart Hub](#) > [Terms & Policy](#). If you want to stop using Smart Hub, you can cancel the agreement. [Try Now](#)
-  To view help information about Smart Hub, select the  button on the [Recent](#) screen.



Using Smart Hub with a Samsung Account

Creating a Samsung account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) [Try Now](#)

Some of the Smart Hub services are for paid services. To use a for paid service, you must have an account with the service provider or a Samsung account.




You can create a Samsung account using your email address as your ID.

-  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 [MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Terms and Conditions, Privacy Policy](#).
-  You can also create a Samsung account at <http://content.samsung.com>. Once you have an account, you can use the same ID on both the TV and the Samsung website.

Creating a Samsung account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Create Account](#) > [Create a Samsung account](#)


You can create the Samsung account by following the on-screen instructions. Once a Samsung account is created, you are automatically signed in to your Samsung account.

-  If you want to review the Terms and Conditions, select [View Details](#).
-  If you want your account to be protected, select [Password \(Security: High\)](#) in the field below the password field.
-  If you want the TV to log you in to your account automatically when you turn the TV on, tick [Sign me in automatically](#).

Creating a Samsung account using a Facebook account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Create Account](#) > [Create a Samsung account using Facebook](#)

Enter your Facebook ID and password, and then follow the on-screen instructions to complete account setup. Once a Samsung account is created, you are automatically signed in to your Samsung account.

-  Samsung account and Facebook account are automatically linked when you create a Samsung account with your Facebook account.

Signing in to a Samsung account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Sign In](#)

You can automatically sign in to your Samsung account and use the Smart Hub feature.

Registering your Samsung account to the TV


If you already have a Samsung account, you can register that account to the TV. Select **+ > Sign In** on the Samsung account screen and follow the on-screen instructions.

Signing in to a registered Samsung account saved on the TV

If you register a Samsung account, it is saved on the TV. To sign in to a registered Samsung account, just select it on the TV.

Linking your Samsung account to external service accounts

You can launch Smart Hub automatically by signing in to your Samsung account saved on the TV.

 To use [Link Service Accounts](#), you must first log into your Samsung account.

Linking or disconnecting a service account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Link Service Accounts](#)

- **Linking a service account**

Select an account from the list and log in to the account by following the on-screen instructions. The service account is linked to the Samsung account.


- **Disconnecting a linked account**

Select an account from the list and unlink the account by following the on-screen instructions.

Changing and adding information to a Samsung account

[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Edit profile](#)

You can manage your Samsung account. Enter your password with the keyboard displayed on the TV's screen, and then select **Done**. You can perform the following functions on the screen.


 To change the account information, you must be logged in to your Samsung account.

- **Change Your Profile Image**
- **Selecting a Samsung Account sign-in method**
- **Turning auto login on or off**
- **Entering Basic User Information**
- **Subscribing to the Samsung e-Newsletter**

Deleting a Samsung account from the TV

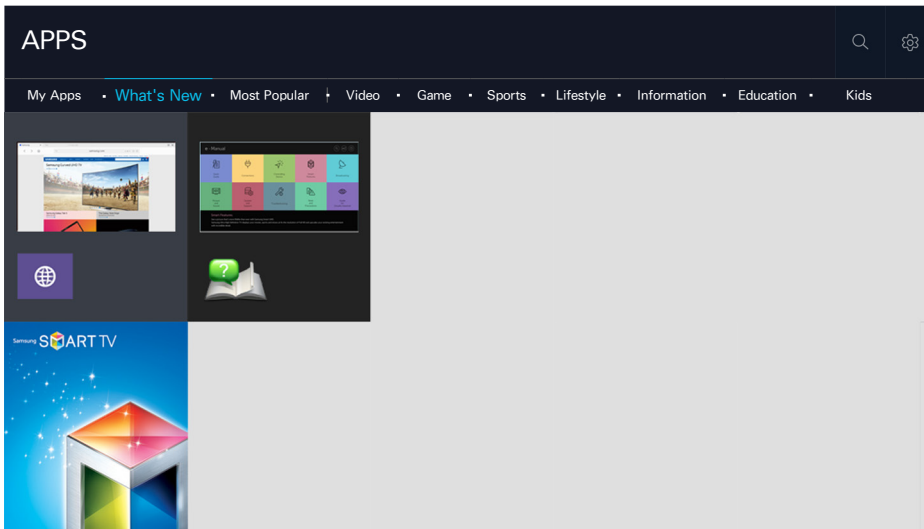
[MENU](#) > [Smart Hub](#) > [Samsung Account](#) > [Remove Accounts from TV](#)

You can remove a Samsung account and password information from your TV. The account information for any external accounts linked to the account is also removed from the TV.

 To remove the account information, you must be logged in to your Samsung account.

Using the Apps Service


 > [Featured](#) > [Apps](#)



 The image may differ with the specific model and area.

You can enjoy a wide range of content including news, sports, weather, and games by installing corresponding apps on your TV. You can download the apps from Smart Hub. Select a category from the top of the screen. You install and run the apps arranged by genres, such as [What's New](#), [Most Popular](#).

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

 When Smart Hub is launched for the first time, the default apps are automatically installed. The default apps may differ with the region.

Managing Apps with the pop-up Options menu

Move the focus to an app in the second row or below, and then press and hold the Enter button. The option menu appears displaying the following functions.






- Delete
- Detail
- Reinstall

 The pop-up menu may differ with the apps.

Installing an app




Installing an app quickly

1. Select a category on the **Apps** screen.
2. Move the focus to an app, and then press and hold the Enter button. The context-sensitive menu appears.
3. Select **Download**. The selected app is installed on the TV.

-  You can view installed apps on the **Apps** screen.
-  You can also, install the app from detailed information screen.
-  When the TV's internal memory is insufficient, you can install an app on a USB device.
-  You can run an app installed on a USB device only when the USB device is connected to the TV. If the USB device is disconnected while an app running, the app is terminated.
-  You cannot run an app installed on the USB device on a PC or another TV.

Launching an app

You can launch an app by selecting an app on the **Apps** screen. The icons below appear in the selected apps and indicate the following:

-  : The app is installed on a USB device.
-  : The app has a password.
-  : The app is installed.


Enabling automatic apps updates

MENU > **Smart Hub** > **App Auto Update**

To update apps automatically, set **App Auto Update** to **On**. Apps will be updated automatically when an update becomes available.

Removing an app from the TV

Select an app to remove on the **Apps** screen and press and hold the Enter button to confirm it. If you want to remove multiple apps, select all the apps to delete and select **Options** from the top of the screen, and then select **Delete My Apps**.

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

Locking and unlocking apps

Select **Options** > **Lock/Unlock My Apps** on the **Apps** screen. The password input screen appears. Enter your password, and then select apps to lock or unlock. When done selecting, select **Save**. All selected apps are locked or unlocked.

Updating apps

Select **Options** > **Update Apps** on the **Apps** screen. The TV searches for app updates, and then displays the list. After scanning, you can update some apps or all apps.

Rearranging apps

Select **Options** > **Sort by** on the **Apps** screen, and then sort the apps by date, time or others by selecting requirements.

Using other app features and functions

MENU > **Smart Hub** > **Auto-Start Settings** > **Channel-bound Apps & Ticker**

You can configure additional app features and functions.

Using channel bound apps

You can receive the information on TV programmes and other relevant services while viewing TV by using an app installed on the TV and linked to a specific channel.

Set **Channel-bound Apps & Ticker** to **On**.

 This function is only available when an app supporting **Channel-bound Apps & Ticker** is installed on the TV.

Using the e-Manual

Launching the e-Manual

MENU > **Support** > **e-Manual**

You can view the embedded e-Manual containing information about your TV's key features. Press the **e-Manual** button.

1. Select a category from the **e-Manual** screen. The contents of the selected category appear on the left side of the screen.
2. Select an item from the list. The corresponding e-Manual topic appears.



On the standard remote control, press the **E-MANUAL** button.




Alternatively, you can download a copy of the e-Manual from Samsung's website.



Words in blue (e.g., **Picture Mode**) indicate a menu item.


Using the buttons in the e-Manual

 **(Search)**: Brings up the search screen. Enter a search term, and then select **Done**. Select an item from the search result to load the corresponding page.

 **(Index)**: Brings up the index screen. Select a topic from the list to navigate to the relevant page.



Availability depends on the area or language.

 **(Recent pages)**: Displays a list of previously read pages. Select a page. The e-Manual jumps to the selected page.

Accessing the associated menu screen from an e-Manual topic page

 **(Try Now)**: Allows you to access the corresponding menu item and try out the feature right away.

 **(Link)**: Allows you to access the corresponding reference page.




The e-Manual cannot be accessed from some menu screens.

Updating the e-Manual to the latest version

You can update the e-Manual in the same way you update apps.


Using the 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 using PIP. Select [Help](#) to view the information of the Internet web browser.

 For a more convenient web browsing experience, use a keyboard and mouse.

 The browsing page may differ from that on a PC.

Browsing preferences

Select  > [Settings](#). Configure the browsing settings to meet you needs.

- **General**

Hides taps or menu bars automatically after a period of inactivity, or resets all user settings.

 The bookmarks and browsing histories that you made will not be reset.

- **Home Page**

Sets the homepage when you launch the web browser.

- **Search Engine**

Searches for information that you entered and display the result web pages.

- **Privacy & Security**

Prevents you from accessing inappropriate web pages or sets not to save the browsing history.

- **Blocked pages**

Blocks or unblocks pages. You can manage a list of pages to block.

- **Approved pages**

Limits to use only the page that you have approved. To use this option, set a password. You can add or remove the approved pages.

- **Encoding**

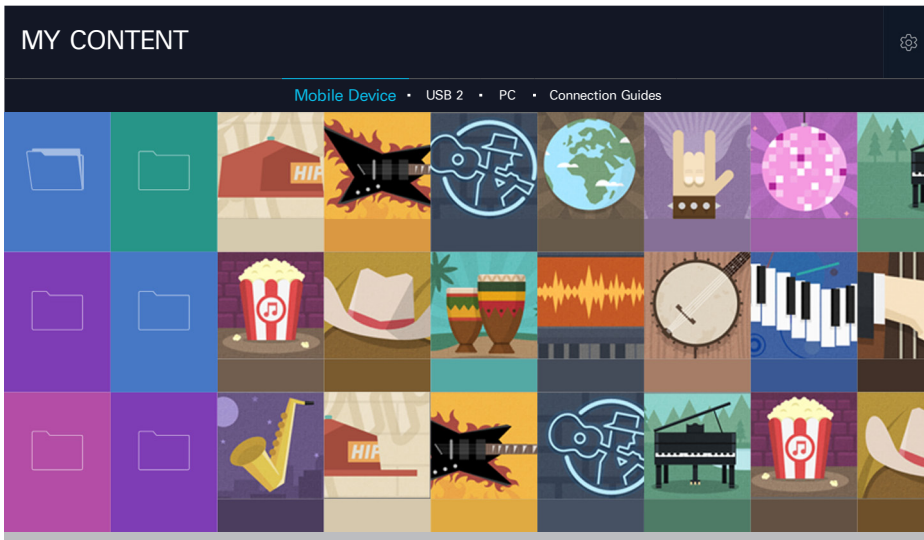
Set the encoding to [Auto](#), or selects an encoding method from the list.

- **About**

Displays the current version of Web Browser.



Using the MY CONTENT Service

> **Featured** > **MY CONTENT** [Try Now](#)






 The image may differ with the specific model and area.

You can play the media content saved on the storage devices, such as a USB device, mobile device, and camera, in the TV. When you connect a storage device to the TV, the TV displays a tab with the name of the connected device. Select the tab to confirm the content saved on the storage device.

-  You cannot play media content if the content or the storage device is not supported by the TV. For more information, refer to "Read Before Playing Photo, Video, or Music Files."
-  Backup important files before connecting a USB device. Samsung is not responsible for damaged or lost files.

Read before playing media content

-  To connect the TV to a computer, refer to "Connecting a Computer."
-  To connect the TV to a USB or external storage device, connect the device to the TV's USB port.
-  To connect the TV to a mobile device, refer to "Connecting a Mobile Device."


Playing multimedia content in a computer or mobile device



 Before connecting to a computer or mobile device, configure the network settings.

Playing multimedia content saved on a computer or mobile device

 > **Featured** > **MY CONTENT**


To play multimedia content located on a computer or mobile device on the TV, you must allow the connection with the computer or mobile device on the TV.

1. Connect a computer or mobile device. The TV displays the devices' name and lists the media contents in the device.
2. Select the media content to play from the list. The selected media content plays.
3. To stop playing media contents, press the  or **RETURN** button.

 Alternatively, move to the media content you want to play, and then press the  button to play the content.


 To connect a computer through your home network, refer to "Connecting a Computer."


 The content shared by a computer or a mobile device may not be played depending on the encoding type and file format of the content.

 The content may not be played smoothly depending on the network status. If this occurs, transfer the content to a USB storage device, and then play the content from the device.

 To connect a mobile device through Smart View 2.0, refer to "Connecting a Mobile Device."

Playing media content saved on a USB device

1. Select a USB device name on the **MY CONTENT** screen. The TV displays a thumbnail list of the media contents saved on a USB device.
2. Select the media content to play from the list. The selected media content plays.
3. To stop playing media contents, press the  or **RETURN** button.

 While video with UHD-level resolution is being played, **Motion Control** is not available.

 Alternatively, if you select a USB device on the **Source** screen, the TV jumps to the **MY CONTENT** screen automatically.




Safely Removing a USB Device

1. Press the **SOURCE** button. The Source screen appears.
2. Select the USB device to remove and press and hold the Enter button.
3. Select **Remove USB Device** in the list.

Buttons and functions available while viewing photos

Press the Enter button while viewing photos to display available options. You can also view the thumbnails of photos saved on the TV while viewing photos. The options disappear when you press the **RETURN** button.

- **Pause / Play**
Start or stop the slideshow. Using slideshow, you can play all the photos in a folder one by one.
- **Previous / Next**
View the previous or the next photo.
- **Pause BGM / Play BGM**
Start or stop background music.
- **Options**

Function	Description
Slideshow Speed	Sets the slideshow speed.
Slideshow Effect	Applies transition effects for the slide show.
Rotate and Zoom	Zooms in by up to a factor of 4. Rotates the photo.
Background Music	Plays background music while the TV displays photos.  The music files must be saved in the same USB device as the photo file.  When background music plays, the music icon appears on the screen. Using the music icon, you can pause the current music file or play another music file.
Sound Mode	Displays a list of Sound Modes and allows you to select a mode.  This mode is supported only when background music is playing.
Select Speakers	Gives you a choice of which speakers to play the background music through. TV Speaker: Plays the background music through the TV speakers. Audio Out: Plays the background music through the external speakers. Speaker Settings: Plays the background music through a speaker that you want. Sound Mode: Changes the sound mode during playback when you play the music through the TV speakers. Equaliser: Allows you to adjust the loudness of specific frequency ranges to control the richness of the sound. To restore the defaults, select Reset .
Picture Mode	Displays a list of Picture Modes and allows you to select a mode.
Information	Displays detailed information about the current photo.

Buttons and functions available while viewing videos

Press the Enter button while viewing videos to display available options. Preview images of the frames at the same time intervals are displayed so that you can move to a specific frame easily. The options disappear when you press the RETURN button.

- **Pause / Play**

Pauses or plays the video. You can use the following functions when the video is paused. With the video paused, the TV does not play audio.

- **Step:** Scans the paused video one frame at a time by pressing the **■** button.
- **Slow Motion:** Plays the video in slow playback speed (1/8, 1/4, 1/2) by pressing the **▶▶** button.

- **Rewind / Fast Forward**

Rewinds or fast forwards the video. To increase the rewind or fast forward speed up to 3 times faster than normal, select the button repeatedly. To restore normal playback speed, press the **▶** button.

- **Previous / Next**

Plays the previous or next video. Press the **◀◀** button twice to play the previous video. Press the **◀◀** button once starts the current video from the beginning.

Press the **▶▶** button to play the next video.

- **Repeat**

Plays the current video file repeatedly or all video files in the same folder repeatedly.

- Options

Function	Description
Picture Size	Changes the size of the screen. The supported picture sizes differ with the video.
Subtitles	Controls the subtitles of the video. Subtitles: Turns the subtitles on or off. Language: Sets the subtitle language. Sync: Adjusts the synchronisation when the video and the subtitles are not synchronised. Reset Sync: Resets the subtitle synchronisation adjustment to 0. Size: Changes the font size for the subtitles. Encoding: Changes the encoding language when the subtitles are displayed incorrectly.
Rotate	Rotates the video.
Picture Mode	Displays a list of Picture Modes and allows you to select a mode.
Sound Mode	Displays a list of Sound Modes and allows you to select a mode.
Speaker List	TV Speaker: Plays the background music through the TV speakers. Audio Out: Plays the background music through the external speakers. Speaker Settings: Plays the background music through a speaker that you want. Sound Mode: Changes the sound mode during playback when you play the music through the TV speakers. (Sound > Sound Mode) Equaliser: Allows you to adjust the loudness of specific frequency ranges to control the richness of the sound. To restore the defaults, select Reset .
Audio Language	Selects a audio language. This function is only available when the video supports multi-track sound.
Information	Displays detailed information about the video.

Buttons and functions available while playing music

- **Pause / Play**

Pauses or resumes the music.

- **Previous / Next**

Plays the previous or next music file. Press the **⏮** button twice to play the previous music file. Press the **⏮** button once starts the current music file from the beginning.

Press the **⏭** button to play the next music file.

- **Repeat**

Plays the current music file repeatedly or all music files in the same folder repeatedly.

- **Shuffle**

Plays the music files in random order.

- **Speaker List**

- **TV Speaker:** Plays the music through the TV speakers.
- **Audio Out:** Plays the music through the external speakers.
- **Speaker Settings:** Plays the music through a speaker that you want.
- **Sound Mode:** Changes the sound mode during playback when you play the music through the TV speakers.
- **Equaliser:** Allows you to adjust the loudness of specific frequency ranges to control the richness of the sound. To restore the defaults, select **Reset**.








- **Picture Off**

Plays the music files only with the screen off.

Listening to music in HD quality

You can enjoy HD music in HD native quality. Move to **MY CONTENT** service and select a music file to play in HD quality.

Set **HD Audio** (**MENU** > **Sound** > **Additional Settings** > **HD Audio**) to **On** before playing HD Audio format.

-  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** mode and use normal audio mode instead.
-  Some external audio players connected via HDMI, Bluetooth, or Wi-Fi networks are not able to play the HD audio signals.
-  If a music file supports the HD audio format, the HD icon appears in the list.
-  Select the music file, and then select ▶ to play it.
-  When you set **HD Audio** mode to **Off** during playback, the next music file is played with standard audio signals.
-  When you play an HD music file while the **Multi-Link Screen** is running, **Multi-Link Screen** is automatically terminated.

Functions on the media content list screen

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

- **Filter By**

Filters the media content to display the type of media you want.

- **Sort By**

Sorts the content list. The sorting methods change depending on the type of content you have selected.

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

- **Delete**

Deletes the recorded media content from the media content list.

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

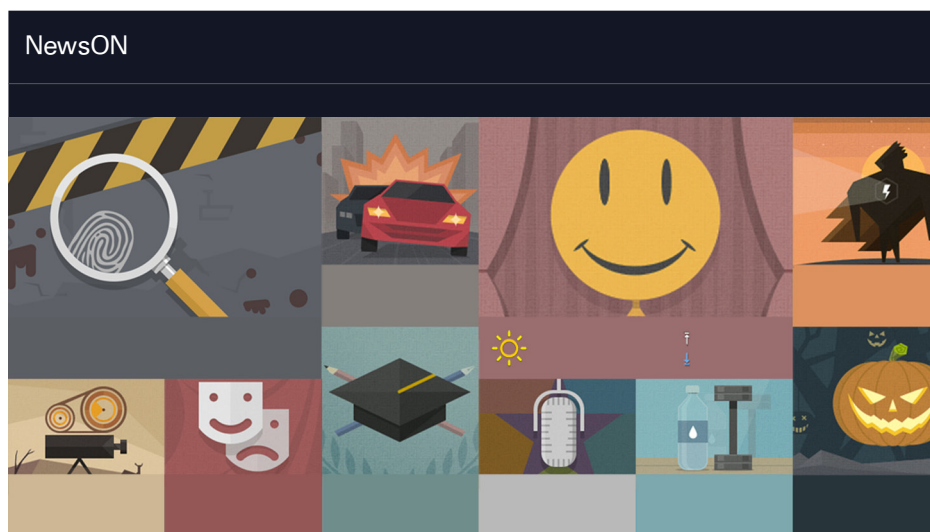
- **Play Selected**

Plays the selected media content from the media content list.

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


Using the NewsON Service


 > [Featured](#) > [NewsON](#)



 The image may differ with the specific model and area.

You can find daily information on a wide variety of topics in a smart and convenient way, updated in real time. [NewsON](#) brings you the latest headlines, top stories, popular issues, and weather forecasts.

 Before you use the [NewsON](#) service, check if the TV is connected to the Internet.

 This service or some of functions is not available on all countries or region.

News


Select an article on the screen. The selected article will be displayed on the screen in detail. The articles are updated in real time.


Weather

Select a weather-related item on the screen. The selected item will be displayed in detail.

 The weather information is provided for major cities of your country.

Setting Up a Schedule Viewing

The  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 ([MENU](#) > [System](#) > [Time](#) > [Clock](#)).

Setting up a schedule viewing for a channel

Setting up a schedule viewing for analogue channel

[MENU](#) > [Broadcasting](#) > [Schedule Manager](#) [Try Now](#)

You can set up a scheduled viewing for an analogue channel. Select [Schedule](#) > [Schedule Viewing](#). Specify the [Source](#), [Channel](#), [Repeat](#), and [Start Time](#) options for the programme you want to watch, and then select [OK](#) to finish.

Editing a schedule viewing

[MENU](#) > [Broadcasting](#) > [Schedule Manager](#)

On the [Scheduled](#) screen, select a schedule viewing. A pop-up menu appears. Select [Edit](#). Change the time, days, or channel. Select [OK](#) when done.

Cancelling a schedule viewing

[MENU](#) > [Broadcasting](#) > [Schedule Manager](#)

On the [Scheduled](#) screen, select a schedule viewing. A pop-up menu appears. Select [Delete](#). Select [OK](#) in the pop-up menu. The schedule viewing is removed.




 You can set up a maximum total of 30 [Schedule Viewing](#) entries.

Using the Channel List


[MENU](#) > [Broadcasting](#) > [Channel List](#) [Try Now](#)



By using the **Channel List**, you can change the channel or check programmes on other digital channels while watching TV.

The **Channel List** screen contains the following icons:

-  : An analogue channel
-  : A favourite channel
-  : A locked channel

Press the  button. The following functions are available:



- **History**
Displays a list of channels that you viewed recently.
- **Add a New List**
Allows you to create a new channel list by adding channels from a favourites list.
 This option is available only if you have registered one or more channels to at least one favourites list.
- **All / Free / Analogue / Data/Other / Favourites 1 ~ Favourites 5**
Displays the selected channel list.
- **Options**

Option	Description
Aerial	Allows you to choose between Terrestrial and Cable .  This option is only available on certain models in specific geographical areas.
Edit Channel Lists	Allows you to rearrange the order of channels in the channel list or remove channels from the channel list.
Edit Channel	Allows you to remove channels from the channel index, restore removed channels, and rename analogue channels.
Edit Favourites	Sets favourite channels.  For more information, refer to "Creating a Personal Favourites List."

Registering, Removing, and Editing Channels

[MENU](#) > [Broadcasting](#) > [Edit Channel](#) [Try Now](#)

The [Edit Channel](#) screen icons indicate the following:

- **A** : An analogue channel
-  : A favourite channel
-  : A locked channel

Registering and removing channels

Removing registered channels

You can remove a registered channel or all channels from the channel index. To remove a channel, select it, and then select [Delete](#). To remove all channels, select [Options](#) > [Select All](#), and then select [Delete](#).

Editing registered channels

You can access the following options by selecting **Options** on the screen. The available options may differ with the broadcast signal.

- **Select All / Deselect All**

Selects or deselects all channels displayed on the **Edit Channel** screen.

- **Category**

Displays the channels of a selected category in the list. The channels stored in the TV are grouped into the following categories: **All**, **TV**, **Radio**, **Analogue**, and **Free**.

- **Edit Favourites**

Sets favourite channels.



For more information, refer to "Creating a Personal Favourites List."

- **Rename channel**

Renames analogue channels. The new name can be up to 5 characters long.

- **Information**

Displays detailed information about the current programme.

Enabling / Disabling password protection on channels

MENU > **Broadcasting** > **Edit Channel**

You can enable password protection on the channels that you don't want your children to view.

 Before enabling password protection, ensure that **Channel Lock** (**MENU** > **Broadcasting** > **Channel Lock**) is set to **On**.

Locking / Unlocking channels

You can lock or unlock 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.

Creating a Personal Favourites List

Favourite channels are highlighted in the [Edit Channel](#) and [Channel List](#) screens with the  symbol. You can create up to 5 favourite channel lists.

Registering channels as favourites

[MENU](#) > [Broadcasting](#) > [Edit Favourites](#) [Try Now](#)


You can register multiple channels as favourites at the same time.

1. Select the channels that you want to add to your Favourites list(s) from the list in the screen.
2. Select [Change Fav.](#) on the screen to select a favourites list.
3. Select [Add](#) on the screen. The TV adds the channels you selected to the Favourites list you chose.

Viewing and selecting channels on favourites lists only

[MENU](#) > [Broadcasting](#) > [Channel List](#)

You can flip through only the favourite list channels and select a channel using the channel up/down buttons.

1. Press the  button. A favourites list appears.
2. Highlight a channel from the selected favourites list using the channel up/down buttons, and then select it. The channel changes.

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

Editing a Favourites List

[MENU](#) > [Broadcasting](#) > [Edit Favourites](#)

Using the Edit Favourites screen menu items

You can access the following options by selecting [Options](#) on the [Edit Favourites](#) screen.

- [Select All / Deselect All](#)

Selects or deselects all channels saved on the TV.

- [Copy to favourites](#)

Copies channels from one favourite channels list to another.



This option is available only if you have registered one or more channels to at least one favourites list.

- [Rename Favourites](#)

Rename an existing favourite channels list.



For more information, refer to "Renaming a favourites list"



This option is available only if you have registered one or more channels to at least one favourites list.

- [Aerial](#)

Allows you to choose between [Terrestrial](#) and [Cable](#).



This option is only available on certain models in specific geographical areas.

- [Edit Channel](#)

Allows you to manage the channels saved on the TV.



For more information, refer to "Registering, Removing, and Editing Channels"

Removing registered channels from a favourites list

Select **Edit Favourites** > **Change Fav.** to move to the favourites list that has the channels you want to remove. Select the channels, and then select **Delete**.

Rearranging a favourites list

Select **Edit Favourites** > **Change Fav.** to move to the favourites list that has the channels you want to rearrange. Select the channels, and then select **Change order**. The Change order highlight appears. Press the up/down arrow buttons to indicate the new location for the channels. Press the Enter button to set the channels into their new location.

Renaming a favourites list

Select **Edit Favourites** > **Options** > **Rename Favourites**. Select the favourites list you want to rename. Enter a new name using the on-screen keyboard that appears, and then select **Done**. Select **OK**.

Copying channels from one favourites list to another

Select **Edit Favourites** > **Change Fav.** to move to the source favourites list, and then select the channels to copy. Select **Options** > **Copy to favourites**. Select the destination favourites list, and then select **OK**. Select **OK** again.



Copy to favourites is only available if there are channels in at least one favourites list.

Making Sports programmes More Realistic with Sports Mode

[MENU](#) > [System](#) > [Sports Mode](#) [Try Now](#)

You can use **Sports Mode** to get optimal picture and sound settings for sports events, making them appear and sound as if you are there.

 This function is not available on certain models in specific geographical areas.

Enabling sports mode

[MENU](#) > [System](#) > [Sports Mode](#) > [Sports Mode](#)

You can set **Sports Mode** to **On** to make the picture and sound modes of the TV optimised automatically for sports events.

 Enabling **Sports Mode** changes **Picture Mode** to **Stadium** and **Sound Mode** to **Stadium**, and disables some **Picture** and **Sound** menus.

Extracting highlights automatically

[MENU](#) > [System](#) > [Sports Mode](#) > [Auto Highlights](#) [Try Now](#)


You can set **Auto Highlights** to **On** to configure the TV to extract highlights of a sports match automatically.

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

- Switching the input signal using the **SOURCE** button
- When **Audio Description** is on
- When you are viewing the content in **MY CONTENT**
- When the **Screen Mirroring** function is running

 This function is not available on certain models in specific geographical areas.

 The performance of **Auto Highlights** depends on the characteristics of the transmitted signal.



 It is advisable to use **Auto Highlights** only while watching a soccer game. If you use this function for other sporting events, it may display irrelevant picture frames.

TV-Viewing Support Features

Scanning for available channels

[MENU](#) > [Broadcasting](#) > [Auto Tuning](#) > [Auto Tuning](#) [Try Now](#)

You can make the TV automatically scan and index all channels received through the TV's aerial input connector. Select **Start**.



-  This function is not available on certain models in specific geographical areas.
-  If the TV is connected to a cable box or satellite receiver, you do not need to do this.

Using the Channel Settings

Setting the Area

[MENU](#) > [Broadcasting](#) > [Channel Settings](#) > [Area](#)

When you enter your PIN number, you can select your country so that the TV can correctly auto-tune the broadcasting channels.

-  This function is not available in all geographical areas.
-  The list of countries (areas) displayed on the TV's screen may differ with the geographical area.

Tuning broadcast signals manually

[MENU](#) > [Broadcasting](#) > [Channel Settings](#) > [Manual Tuning](#) [Try Now](#)

You can scan for all the channels manually and store the scanned channels in the TV. To stop scanning, select **Stop**.

 This function is not available on certain models in specific geographical areas.

Tuning analogue channels

[MENU](#) > [Broadcasting](#) > [Channel Settings](#) > [Manual Tuning](#) > [Analogue Channel Tuning](#)

Select **New** and configure **Programme**, **Colour System**, **Sound System**, **Channel**, and **Search** to scan for analogue channels. Then, select **Store** to store the scanned channels in the TV.

 This function is only available for analogue broadcasts.

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

[MENU](#) > [Broadcasting](#) > [Channel Settings](#) > [Fine Tune](#) [Try Now](#)

When analogue pictures become shaky and full of noise, fine-tune the signal to clear up the picture.

 This function is only available for analogue broadcasts.

Transferring channel list

[MENU](#) > [Broadcasting](#) > [Channel Settings](#) > [Transfer Channel List](#)

 You can import or export the channel list to a USB storage.

- **Import from USB:** Imports channel list from a USB storage.
- **Export to USB:** Exports channel list saved in the TV to a USB storage.

 This function is not available on certain models in specific geographical areas.

 This function is available when USB is connected.

Adjusting the Picture Quality

Choosing a picture mode

[MENU](#) > [Picture](#) > [Picture Mode](#) [Try Now](#)

You can select the picture mode that provides the best viewing experience.

- **Dynamic**
Makes the picture clearer when the ambient lighting is so bright that it makes the picture difficult to see.
- **Standard**
Is the default mode suitable for most environments.
- **Natural**
Reduces eye strain.
- **Movie**
Darkens the screen, reduces glare, and relieves eye fatigue. Use this mode while viewing the TV in a darkened room or watching a movie.
- **Entertain**
Sharpens images for a more dynamic viewing experience.
- **Stadium**
When you turn **Sports Mode** ([MENU](#) > [System](#) > [Sports Mode](#)) to **On**, **Picture Mode** is set to **Stadium** automatically to configure the picture settings suitable to sports events.

 **Standard** and **Entertain** modes are only available when a PC is connected to the TV.

Adjusting the picture quality

MENU > Picture

You can adjust the following picture quality settings manually for each combination of an input source and picture mode.

- **Backlight** [Try Now](#)

Adjusts the brightness of individual pixels. Decrease this brightness to reduce power consumption.

- **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.

 The TV saves the adjusted values for the current input source and picture mode and applies these values each time you select the same input 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.

Applying the current picture settings to other input sources

MENU > Picture > Apply Picture Mode [Try Now](#)

You can apply the picture quality settings to the current source and other input sources.

- **All Sources**

Applies the settings to all external devices connected to the TV.

- **Current Source**

Applies the settings to the current source only.

Adjusting advanced settings

[MENU](#) > [Picture](#) > [Advanced Settings](#) [Try Now](#)

You can fine-tune how images are displayed on the TV screen for the Standard and Movie picture modes.

- [Dynamic Contrast](#) [Try Now](#)

Automatically adjusts the screen contrast for an 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 colour that can be displayed on the screen.

- **Auto**: Automatically adjusts the colour space to match the input signal.
- **Native**: Applies a range of colours that is wider than the input signal.
- **Custom**: Allows you to adjust the colour space manually. Select a colour, and then change its **Red**, **Green**, and **Blue** saturations. **Reset** allows you to restore the default values for **Colour Space**.



You can configure the **Colour** function only when **Colour Space** is set to **Custom**.



The availability of **Custom** depends on the specific model and area.

- **White Balance** Try Now

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

- **2 Point:** Allows you to adjust red, green, and blue luminosity with the offset menu and brightness with the gain menu. Reset allows you to restore the default values.
- **10 Point:** Divides red, green, and blue into 10 sections each, and allows you to modify the white balance by adjusting the brightness of each section. Level allows you to select the section to adjust.

 You can use the **10 Point** function only when **Picture Mode** is set to **Movie**. This function may not be supported by some external devices.

Adjust each colour's luminosity with the offset menu and the brightness with the gain menu. To restore the default values, select Reset.


- **R-Offset / G-Offset / B-Offset:** Adjust each colour's (red, green, blue) darkness.
- **R-Gain / G-Gain / B-Gain:** Adjust each colour's (red, green, blue) brightness.

 This function is not available on certain models in specific geographical areas.

- **Gamma** Try Now

Adjusts the primary colour intensity.

 **Advanced Settings** is only available when **Picture Mode** is set to **Standard** or **Movie**.

 **White Balance** and **Gamma** are only available when the TV is connected to a computer with an HDMI-to-DVI cable.

Adjusting picture options

[MENU](#) > [Picture](#) > [Picture Options](#) [Try Now](#)

You can adjust the picture options to optimise your viewing experience. Select a picture mode and then adjust the picture options.

- [Colour Tone](#) [Try Now](#)

Adjusts the colour tone. The colour tone you select is stored in the TV's memory. When you change the current picture mode, the stored colour tone is applied to the new picture mode automatically.

 [Cool](#) and [Standard](#) are only available when [Picture Mode](#) is set to [Dynamic](#).

 [Colour Tone](#) is only available when the TV is connected to a computer via an HDMI-to-DVI cable.

- [Digital Clean View](#) [Try Now](#)

Reduces static and ghosting caused by a weak signal. When you select [Auto Visualisation](#), it displays the signal strength on the bottom of the screen. Green indicates the best possible signal.


 This function is available for analogue channels only.

- [MPEG Noise Filter](#) [Try Now](#)

Reduces MPEG noise and improves video quality.

- [HDMI Black Level](#) [Try Now](#)

Compensates for effects caused by a low black level, such as low contrasts and dull colours.

 This function 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.

 This function is only available when the input signal is TV, AV, Component (480i, 1080i), or HDMI (1080i).

- **LED Clear Motion**

Controls LED backlight duty to move picture more clearly.

 This function is not available on certain models in specific geographical areas.

- **Auto Motion Plus** [Try Now](#)

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** to **On** for a sharper LED image. To return to the default settings, select **Reset**.

 When **LED Clear Motion** is set to **On**, the screen appears darker than when it is **Off**.

 If **LED Clear Motion** is set to **On**, at 60Hz video signal, the screen may flicker.

- **Analogue Clean View**

Reduces noise in the form of a diagonal line that occurs due to interferences between signals.

 This function is only supported for analogue broadcasts.

Picture Support Functions

Viewing a picture-in-picture (PIP)

[MENU](#) > [Picture](#) > [PIP](#) [Try Now](#)

While viewing video from an external device such as a Blu-ray player on the main screen, you can view a TV broadcast in a picture-in-picture (PIP) window.

- **PIP**

Activates/deactivates PIP.

- **Source**

Selects the PIP sub-picture source.



This function is not available on certain models in specific geographical areas.

- **Channel**

Selects the PIP channel.

- **Size**

Sets the PIP window size.

- **Position**

Sets the PIP window position.

- **Sound Select**

Selects the audio source.



Playing a game or using the karaoke function on the main screen can result in lower PIP picture quality.



The PIP function is only available under the following conditions: 1) The main screen's source is a Component or HDMI connection, 2) The input resolution is less than FHD (Full HD).



The PIP window supports digital channels only.

Changing the picture size and position


Changing the picture size

Picture > Picture Size > Picture Size [Try Now](#)

You can change the size of the picture displayed on the TV screen.

- **16:9**
Sets the picture size to the 16:9 wide screen format.
- **Zoom**
Magnifies 16:9 pictures vertically. A magnified picture can be moved up and down.
- **Custom**
Magnifies or shrinks 16:9 pictures vertically and/or horizontally. A magnified or shrunk picture can be moved left, right, up, and down.
- **4:3**
Sets the picture size to the basic 4:3 mode.

⚠ Do not watch TV in 4:3 mode for an extended period of time. This action may cause black bars to appear and rest for a while at the top, bottom, left, and right sides of the screen. Note that this information is not presented on the Warranty.

 Supported picture sizes differ with the input signal. For more information about supported picture sizes, refer to "Picture sizes and input signals."

Fitting the picture to the screen

[MENU](#) > [Picture](#) > [Picture Size](#) > [Fit to screen](#) [Try Now](#)


You can configure the TV so that the full picture fits the screen without any cutoff in the size you have chosen.

 This function is not available when you set the **Picture Size** to the **4:3** mode.

Adjusting the picture position

[MENU](#) > [Picture](#) > [Picture Size](#) > [Zoom/Position](#) [Try Now](#)

Magnifies or shrinks 16:9 pictures vertically and/or horizontally. A magnified or shrunk picture can be moved left, right, up, and down.

 This function is only available when **Picture Size** is set to **Zoom** or **Custom**. However, you cannot change the picture position when **Picture Size** is set to **Custom**.

Listening to audio only (Picture Off)

[MENU](#) > [Picture](#) > [Picture Off](#) [Try Now](#)

You can turn off the screen and play only the audio through the speakers. To turn the screen back on, press any button other than the Power and Volume buttons.

Resetting the picture mode settings

[MENU](#) > [Picture](#) > [Reset Picture](#) [Try Now](#)

You can reset the current picture mode to its factory defaults. This action does not affect the settings of other picture modes.

Adjusting the Sound Quality

Choosing a sound mode

[MENU](#) > [Sound](#) > [Sound Mode](#) [Try Now](#)

You can select a sound mode to optimise your listening experience.

- **Standard**
Is the default mode suitable for most environments.
- **Music**
Emphasises music instead of voices.
- **Movie**
Provides the best sound for movies.
- **Clear Voice**
Emphasises voices.
- **Amplify**
Increases the overall intensity of high-frequency sound to help hearing-impaired listeners.
- **Stadium**
When you turn **Sports Mode** ([MENU](#) > [System](#) > [Sports Mode](#)) to **On**, **Sound Mode** is set to **Stadium** automatically so that the sound settings are fixed at settings most suitable for sporting events.

 This mode is set automatically by the TV. You cannot set this mode manually.

 This function is not available when you are listening to audio through external speakers.

Applying sound effects

MENU > Sound > Sound Effect [Try Now](#)

You can apply sound effects to alter how the TV emits sound.

- **Virtual Surround** [Try Now](#)
Produces sound that makes you feel like you are sitting in a movie theatre or concert hall.
- **Dialog Clarity** [Try Now](#)
Increases voice intensity to make dialog clearer.
- **Headphone Surround**
Produces sound that, through your headphones, will make you feel like you are sitting in a home theatre.
- **Balance** [Try Now](#)
Allows you to adjust the sound settings of the left and right speakers for a better sound balance. To restore the defaults, select **Reset**.
- **Equaliser** [Try Now](#)
Allows you to adjust the loudness of specific frequency ranges to control the richness of the sound. To restore the defaults, select **Reset**.

 This function is not available when you are listening to audio through external speakers.


 This function is only available when **Sound Mode** is set to **Standard**.

Using the Sound Support Functions

Selecting speakers

[MENU](#) > [Sound](#) > [Speaker Settings](#) > [Speaker Select](#) [Try Now](#)

You can select which speakers the TV uses for audio output.

 When **Speaker Select** is set so that sound comes from external speakers only, Volume and Mute buttons and some Sound functions are disabled.

Specifying the TV's installation type

[MENU](#) > [Sound](#) > [Speaker Settings](#) > [TV Installation Type](#)

You can specify the TV's installation type, either **Wall Mount** or **Stand**, to optimise the TV's sound automatically.

Listening to TV sound through a Samsung Bluetooth audio device

[MENU](#) > [Sound](#) > [Speaker Settings](#) > [TV SoundConnect](#)


You can connect Samsung Bluetooth audio devices to the TV. They must be paired using the TV's Bluetooth function. For more information on pairing, refer to the Samsung Bluetooth audio device's operating manual.

- **Add New Device**

Adds a new device to the list of paired devices. If **Add New Device** is set to **Off**, the connection signals from new devices are ignored.

- **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.

 This function is only available for Samsung audio devices that support **TV SoundConnect**.

 **TV SoundConnect**, **Surround**, and Bluetooth headphones can't be used simultaneously.

 Before using a Bluetooth device, refer to "Read Before Using Bluetooth Devices."

Listening to the TV through Bluetooth headphones


[MENU](#) > [Sound](#) > [Speaker Settings](#) > [Bluetooth Headphones](#)

You can connect Bluetooth headphones to the TV. They must be paired using the TV's Bluetooth function. For more information on pairing, refer to the Bluetooth headphone's operating manual.

- **Bluetooth headphone List**

Displays a list of Bluetooth headphones that can be paired with the TV. Select a Bluetooth headphone to display its menu options. From this menu, you can activate/deactivate (i.e., pair/unpair) the Bluetooth headphone or remove it from the list.


 If the TV fails to find a headphone, place the headphone closer to the TV, and then select **Refresh**.


 When you turn on a paired Bluetooth headphone, the TV detects it automatically, and then displays a pop-up window. Use this pop-up window to activate/deactivate the Bluetooth headphone.

- **Multi-output Audio**

Allows you to listen to audio through the TV's speakers and the connected Bluetooth headphones simultaneously.

 If the TV fails to find a headphone, place the headphone closer to the TV, and then select **Refresh**.

 When you turn on a paired Bluetooth headphone, the TV detects it automatically, and then displays a popup window. Use this pop-up window to activate/deactivate the Bluetooth headphone.

 Before using a Bluetooth device, refer to "Read Before Using Bluetooth Devices."

Listening to TV sound through a Samsung Multiroom Link compatible speaker

[MENU](#) > [Sound](#) > [Speaker Settings](#) > [Multiroom Link](#) > [Multiroom Link Settings](#)

You can connect a Samsung Multiroom Link compatible speaker to the TV to enjoy a richer sound.

- **Settings**

Sets the Samsung Multiroom Link compatible speaker(s) to one of the following options.

- **Surround**

Select this option when you want to enjoy a surround system using multiple Samsung Multiroom Link compatible speakers in a single space or room.

- **SoundBar+Surround**

Select this option when you want to enjoy a surround sound system by connecting a soundbar and two speakers to the TV in one space or room.

- **Volume Level**









Adjusts the volume of the speakers selected in the list.

- **Speaker Test**

Sends a test sound to each speaker to make sure that your Multiroom Link system works properly.

- **Edit Name**

Allows you to give a name to each speaker.

-  This function is not available on certain models in specific geographical areas.
-  The **Multiroom Link** function is only available when at least one Samsung Multiroom Link compatible speaker is connected to the TV.
-  The **Multiroom Link** function is deactivated when you activate **Screen Mirroring**.
-  The networked speakers may disconnect on their own, depending on your network environment.
-  The sound quality may be affected by the condition of your wireless network.
-  Audio and video may become out of sync depending on your TV model.
-  The audio from the secondary device(s) may lag behind the audio and video of the main device which is playing the source content.
-  For more information, refer to the Multiroom Link manual on the Samsung web site. (www.samsung.com > OWNERS & SUPPORT > Manuals & Downloads)


Enabling digital audio output

[MENU](#) > [Sound](#) > [Additional Settings](#) [Try Now](#)

Since this Smart TV is Sony/Philips Digital Interface Format (S/PDIF)-enabled, you can make the TV provide digital audio output to various digital audio devices, such as speakers, A/V receivers, and home theatres, by adjusting the following settings.

- **DTV Audio Level**

Allows you to adjust the volume when you are viewing digital broadcasts on the TV through an A/V receiver.

 The volume can be adjusted between 0 db and 10 db. However, this volume range may differ with the broadcast signal.

 For the MPEG / HE-AAC broadcast signal, the volume can be adjusted between 0 db and 10 db.

- **HDMI Audio Format**

Sets the audio input signal format suitable for the external device connected to the TV's HDMI port.

- **Audio Format** [Try Now](#)

Selects the digital audio output (S/PDIF) format. The available formats are dependent on the input source.

- **Audio Delay** [Try Now](#)

Helps correct timing mismatches between the audio and video tracks when you are watching TV and listening to audio through a digital audio device. You can adjust the delay by up to 250 ms.

- **Dolby Digital Comp** [Try Now](#)

Sets the Dolby Digital compression mode.

- **HD Audio**

Provides the TV sound resampled at HD audio 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 incompatible receivers, deactivate this mode 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](#)

Automatically adjusts the TV's volume level when you change channels, video sources or content so that the volume level remains the same for all sources. **Auto Volume** can modify the volume up to 12 dB to equalise the sound. **Normal** can applies a normal level of volume adjustment, and **Night** can applies a slightly lower volume level. This option 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 **Auto Volume**. When you use **Auto Volume** with a source device, the device's volume control may not function properly.

Resetting all sound settings

[MENU](#) > [Sound](#) > [Reset Sound](#) [Try Now](#)

Resets all sound settings to the factory defaults.

Setting the Time and Using the Timer

Setting the current time

[MENU](#) > [System](#) > [Time](#) > [Clock](#) [Try Now](#)

You can set the clock manually or automatically.

Set the **Date** and **Time** manually or automatically. You can set the current date and time using your remote.

- To view the time after the clock is set: To view the time after the clock is set: Standard remote control: Press the **INFO** button.

 The clock must be reset every time the power is disconnected.

Using the timers

Using the sleep timer

[MENU](#) > [System](#) > [Time](#) > [Sleep Timer](#) [Try Now](#)

You can use this function to automatically shut off the TV after a pre-configured period of time. You can set the timer for 30 minute increments, for up to 3 hours.

Turning on the TV using the on timer

[MENU](#) > [System](#) > [Time](#) > [On Timer](#) [Try Now](#)

You can set [On Timer](#) to make the TV turn on automatically at a specific time. You can use up to three separate configurations: [On Timer 1](#), [2](#), and [3](#). [On Timer](#) is only available when [Clock Set](#) has already been set.

- [Setup](#)

If you select [Manual](#), you can highlight and select each day to select the specific days that you want [On Timer](#) to turn on the TV.

- [Time](#)

- [Volume](#)

- [Source](#)

From the list, select a signal source for the TV to use when it turns on. If you want to play content saved in a USB device or content from an HDMI or Component source, such as a DVD player, Blu-ray player, or set-top box, connect the device to the TV before you start [On Timer](#) setup. Then, do not disconnect the device from the TV.







- [Aerial](#)

- [Channel](#)

Allows you to select a channel, when [Source](#) is set to [TV](#).

- **Music / Photo**

Allows you to specify a USB device folder containing music files in the music field and/or a folder containing photos in the photo field, when **Source** is set to **USB**. If you select both a folder that contains music files and a folder that contains photo files, the TV plays the music files and displays the photos at the same time.

-  If the folder that you choose has sub-folders, you can select a sub-folder in the same fashion.
-  This function does not work properly if the selected USB device does not contain media contents or a folder has not been specified.
-  No slideshow starts if there is only one image file on the USB device.
-  Folders with long names cannot be selected.
-  Make sure to use different folder names for multiple USB devices.
-  Use a USB memory stick or multi-card reader. **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 the off timer

MENU > **System** > **Time** > **Off Timer** [Try Now](#)

You can set **Off Timer** to turn off the TV automatically at a specified time. You can set up three separate configurations: **Off Timer 1**, **2** and **3**. **Off Timer** is only available when **Clock Set** has already been set.

- **Setup**

Sets days of the week that the TV is turned off automatically. If you select **Manual**, you can highlight and select each specific day.

- **Time**

Sets the time for the TV to turn off automatically.

Using the Screen Burn Protection and Energy Saving Functions

Preventing screen burn

[MENU](#) > [System](#) > [Auto Protection Time](#) [Try Now](#)

You can use the Screen Burn Protection function to protect the screen. Still images can leave burned-in after-images if left on the screen for a long period of time. Select a time setting from the list. If a still image is shown on the screen for longer than the time that you selected, the TV automatically activates the Screen Burn Protection function.

Reducing the energy consumption of the TV

[MENU](#) > [System](#) > [Eco Solution](#) [Try Now](#)

You can adjust the brightness level of the TV and prevent overheating to reduce overall power consumption.

- [Energy Saving](#) [Try Now](#)

Allows you to select a brightness setting from the list to reduce the TV's power consumption.

- [Eco Sensor](#) [Try Now](#)

Automatically adjusts the brightness level of the TV, according to the ambient light level, to reduce power consumption. If the Eco Sensor has adjusted the screen's brightness level, you can select the [Min. Backlight](#) to manually adjust the minimum screen brightness.

 When the [Eco Sensor](#) is set to [On](#), the screen is darker than usual.

- [No Signal Power Off](#) [Try Now](#)


Allows you to select a time from the list. If no signal has been received for a specified duration, the TV automatically cuts off the power to reduce power consumption.

- [Auto Power Off](#) [Try Now](#)

Automatically turns off the TV to prevent overheating when the TV remains on for the specified period of time without any user input.

- [Motion Lighting](#) [Try Now](#)

Adjusts the brightness in response to on-screen movements to reduce power consumption.

 This function is only available when [Picture Mode](#) is set to [Standard](#).

 This function is deactivated when you adjust a picture quality setting, such as [Contrast](#) and [Brightness](#).

Using Anynet+ (HDMI-CEC)

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

Setting up Anynet+ (HDMI-CEC)

MENU > System > Anynet+ (HDMI-CEC) [Try Now](#)

- **Anynet+ (HDMI-CEC)** [Try Now](#)

You can enable or disable Anynet+ (HDMI-CEC). Set to **Off** or **On** to disable or enable all Anynet+ related functions.

- **Auto Turn Off** [Try Now](#)

When set to **Yes**, turns off Anynet+ compatible external devices when the TV is turned off.



This function is not supported by some Anynet+ compatible devices.

- **Search for Devices** [Try Now](#)

Automatically searches for and identifies Anynet+ (HDMI-CEC) compatible external devices that are connected to the TV.

Using Anynet+ (HDMI-CEC)

Selecting an external device

After connecting external devices to the TV, select **MENU > System > Anynet+ (HDMI-CEC) > Search for Devices**. The TV displays a list of Anynet+ (HDMI-CEC)-compliant devices that you can set up as Anynet+ (HDMI-CEC)-enabled devices (i.e., devices that can be controlled with the TV's remote control). To set up an Anynet+ (HDMI-CEC)-compliant device as an Anynet+ (HDMI-CEC)-enabled device, you must select it on the Source screen. Follow the instructions in the next section.

Setting up as an Anynet+ (HDMI-CEC)-enabled device








1. Press the **SOURCE** button. The **Source** screen appears. Select a connected device, and then press the down directional button.
2. Select **Anynet+ (HDMI-CEC)** from the **Tools** list. The selected device is set up as an Anynet+ (HDMI-CEC)-enabled device. The following menu options are available.

 The menu options available in the pop-up menu may differ with the external device.

- **Anynet+ (HDMI-CEC)**

Sets up the selected device as an Anynet+ (HDMI-CEC)-enabled device and then displays a list of Anynet+ (HDMI-CEC)-compliant devices connected to the TV. Select **View TV** to exit Anynet+ (HDMI-CEC), and start watching TV.

Read before connecting an Anynet+ (HDMI-CEC)

-  Anynet+ cannot be used to control external devices that do not support HDMI-CEC.
-  Anynet+ devices must be connected to the TV with an HDMI cable. Note that some HDMI cables may not support Anynet+ (HDMI-CEC).
-  The TV remote control may not work under certain circumstances. If this occurs, select the Anynet+ device again.
-  Anynet+ (HDMI-CEC) works only 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 only one system can be controlled.
-  To listen to 5.1-channel audio from an external device, connect the device to the TV via an HDMI cable and connect the home theatre system directly to the TV's digital audio output connector.
-  A home theatre system that has been connected to the TV with an HDMI cable and an optical cable only supports 2-channel audio. 5.1-channel audio is, however, available for digital broadcasts with 5.1-channel audio.

Updating the TV's Software



[MENU](#) > [Support](#) > [Software Update](#) [Try Now](#)

You can view your TV's software version and update it if necessary.

Updating the TV's software to the latest version

[MENU](#) > [Support](#) > [Software Update](#) > [Update now](#) [Try Now](#)

You can update your TV's software by downloading the update from the Internet directly to your TV or copying the update from a USB device that contains it to your TV.




-  This function requires an Internet connection.
-  Save the update package in the USB device's top-level folder. Otherwise, the TV will not be able to locate the update package.

⚠ DO NOT turn off the TV's power until the update is complete. The TV turns off and on automatically after completing the software update. All video and audio settings return to the default settings after a software update.

Updating the TV automatically

[MENU](#) > [Support](#) > [Software Update](#) > [Auto update](#) [Try Now](#)

If the TV is connected to the Internet, you can have the TV's software update itself automatically while you are watching the TV. When the background update is completed, it is applied the next time the TV is used.

-  This function may take a longer time if a different networking function is running concurrently.
-  This function requires an Internet connection.
-  If you agree to the Smart Hub terms and conditions, **Auto update** is set to **On** automatically. If you do not want the TV's software to update itself automatically, set **Auto update** to **Off**.

Protecting the TV from Hacking and Malicious Code

[MENU](#) > [System](#) > [Smart Security](#) [Try Now](#)

You can use [Smart Security](#) to protect the TV from hacking and malicious code when connected to the Internet.

Checking the TV and connected storage for malicious code


[MENU](#) > [System](#) > [Smart Security](#) > [Scan](#) [Try Now](#)

You can scan the TV and connected media to detect the presence of malicious code. If there is no malicious code detected, a notification window appears on the screen.

If malicious code is detected.

If malicious code is found, the results of the scan will appear on the screen. This result window displays all malicious code found. You can quarantine (isolate) the code from executing.

1. Select all the malicious code to quarantine.
2. Select [Isolate](#). These options relocate the selected malicious code to the [Isolated List](#).

 The [Isolated List](#) displays all quarantined malicious codes.

Configuring additional functions

[MENU](#) > [System](#) > [Smart Security](#) > [Settings](#) [Try Now](#)


- **Antivirus**
Monitors the TV in real-time to prevent viruses from infecting the TV.
- **Network Security**
Protects the TV from hacking to minimize a leaks of private information.
- **Camera**
Permits the cameras connected to the TV to be used.
- **Microphone**
Permits the microphones connected to the TV to be used.
- **Auto Scan**
Makes the TV automatically scan itself and connected storage media when it is turned on.
- **Auto Isolate**
Adds malicious codes found during the scanning process to the Isolated List automatically.

Using Other Functions

Running the accessibility functions quickly

[MENU](#) > [System](#) > [Accessibility](#) [Try Now](#)


This function is not available when **PIP** or **MY CONTENT** is active.

 Even if **Voice Guide** is set to **Off** or the Mute mode is activated, you can run the Voice Guide function from the [Accessibility Shortcuts](#) menu.

Enabling voice guides for the visually impaired

[MENU](#) > [System](#) > [Accessibility](#) > [Voice Guide](#) [Try Now](#)

You can activate Voice Guides that describe the menu options aloud to aid the visually impaired. To activate this function, set **Voice Guide** to **On**. Then the TV provides Voice Guides for focus movement, channel change, volume change, programme information, schedule viewing, programme recording, other TV functions, and various content on the [Web Browser](#), [Search](#) or [MY CONTENT](#).

 The Voice Guide is provided in the language that is specified on the [Menu Language](#) screen. However, some languages are not supported by Voice Guide even though they are listed in the [Menu Language](#) screen. **English** is always supported.

Changing the volume, speed, and pitch of the voice guide


You can configure the volume, speed, pitch and level of the Voice Guide.

- **Volume**
Changes the Voice Guide's volume level.
- **Pitch**
Tunes the pitch of the Voice Guide.
- **Speed**
Changes the Voice Guide's tempo.

Adjusting the menu transparency

[MENU](#) > [System](#) > [Accessibility](#) > [Menu Transparency](#) [Try Now](#)

You can adjust the menu's transparency.

 Setting **High Contrast** to **On** automatically switches the menu display mode to opaque. You cannot manually change the **Menu Transparency** settings.

White text on black background (high contrast)

[MENU](#) > [System](#) > [Accessibility](#) > [High Contrast](#) [Try Now](#)

You can change major service screens to white text on a black background or change the transparent TV menus to opaque so that text can be more easily read. To activate this function, set **High Contrast** to **On**.

Enlarging font (for the visually impaired)

[MENU](#) > [System](#) > [Accessibility](#) > [Enlarge](#) [Try Now](#)

You can zoom in the font on the screen. To activate this function, set **Enlarge** to **On**.

Learning about the remote control (for the visually impaired)


[MENU](#) > [Support](#) > [e-Manual](#) > [Learn About your Remote Control](#) [Try Now](#)

This function helps individuals with a visual impairment to learn the positions of the buttons on the remote control. When this function is activated, you can press a button on the remote control and the TV will tell you its name. To return to the previous screen, press the **RETURN** button twice. To exit, press the **EXIT** button twice.

Listening to the TV through Bluetooth headphones (for the hearing impaired)

[MENU](#) > [Sound](#) > [Speaker Settings](#) > [Bluetooth Headphones](#) > [Multi-output Audio](#)

You can turn on both of the TV speaker and Bluetooth headphones at the same time. The audibly impaired can adjust the TV volume, you can set the volume of the Bluetooth headphones to be louder than TV speaker.

 When you connect the Bluetooth headphones to the TV, **Multi-output Audio** menu is activated. For more information about connecting Bluetooth headphones to the TV, refer to "Listening to the TV through Bluetooth headphones"

Using the Indian Cinema Mode

[MENU](#) > [System](#) > [Indian Cinema Mode](#)

When you set **Indian Cinema Mode** to **On**, the TV provides an optimal picture and sound for popular content.

 This function is only available in specific geographical areas.

Changing the menu language

[MENU](#) > [System](#) > [Menu Language](#) [Try Now](#)


You can use this function to change the menu language. Choose a language from the list.

Setting up a password

[MENU](#) > [System](#) > [Change PIN](#) [Try Now](#)

You can set a Personal Identification Number (PIN) to lock channels, reset the TV, and change TV settings.

The PIN input window appears. Enter a PIN. Enter it again to confirm it. The default PIN is 0000.

 If you forget your PIN, you can reset it with your remote control. With the TV turned on, press the following buttons on the remote control to reset the PIN to 0000: **MUTE** → **+**(Volume Up) → **RETURN** → **-**(Volume Down) → **RETURN** → **+** → **RETURN**.

Checking Notifications

[MENU](#) > [System](#) > [Notifications](#) [Try Now](#)

You can 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.





 To delete all notifications, select **Delete All**.

 To check the SMART TV's service notifications in a web browser, select **Service Notice**.

Enabling game mode

[MENU](#) > [System](#) > [General](#) > [Game Mode](#) [Try Now](#)

You can enable the game mode to optimise the TV's settings for playing video games with a gaming console, such as a PlayStation™ or Xbox™.

-  The game mode is not available for normal TV viewing.
-  The screen may shake somewhat.
-  When the **Game Mode** is enabled, **Picture Mode** and **Sound Mode** are switched to **Game** automatically.
-  To use a different external device, first disconnect the game console and disable the **Game Mode**.

Richer colours and superior picture quality (BD Wise)

[MENU](#) > [System](#) > [General](#) > [BD Wise](#) [Try Now](#)

You can enhance colours and picture quality if you connect a Samsung DVD player, Blu-ray player, or home theatre system that supports **BD Wise**. When BD Wise is enabled, it automatically optimises the TV's resolution.

-  This function is only available when the external device is connected via an HDMI cable.

Enabling/Disabling sound feedback

[MENU](#) > [System](#) > [General](#) > [Sound Feedback](#) [Try Now](#)

You can use Sound Feedback to get audio cues as you navigate through menus and select menu options. You can set it to **Low**, **Medium**, **High**, or **Off**.

Locking/Unlocking the Control Stick

[MENU](#) > [System](#) > [General](#) > [Panel Lock](#) [Try Now](#)

You can lock and unlock the front panel buttons (menu, channel, and volume) of the TV and the control stick on the back of the TV.

Showing/Hiding the Samsung logo while booting

[MENU](#) > [System](#) > [General](#) > [Boot Logo](#) [Try Now](#)

You can enable or disable the Samsung logo display that appears when the TV starts up.


 This function is not available when **Samsung Instant On** is set to **On**.


Enabling the TV to boot faster

[MENU](#) > [System](#) > [General](#) > [Samsung Instant On](#) [Try Now](#)

You can set **Samsung Instant On** to **On** so that the TV boots up faster.

 When **Samsung Instant On** is set to **On**, the use history of the apps that you used on the TV may be stored in the TV.

 The **Samsung Instant On** function works when you turn on the TV while its power cable is still connected after you set **Samsung Instant On** to **On**. If you disconnect, reconnect the power cable, and then turn on the TV, this function does not work.

 Even if the **Samsung Instant On** function is on, the power consumption while the TV is turned off meets the standby power consumption specification presented on the product label.

Removing Flickering

[MENU](#) > [System](#) > [General](#) > [Anti Flicker](#)




Change the power frequency for the cable to stop the camera from flickering.

 This function is not available on certain models in specific geographical areas.

Registering the TV as a DivX-certified device (watching for pay DivX movies)

[MENU](#) > [System](#) > [DivX® Video On Demand](#)

You can watch DivX DRM protected movies on the TV, only if it is registered as a DivX-certified device.

-  Digital Rights Management (DRM) functions as a technical security mechanism to protect the content provider's copyright.
-  You can watch recorded movies or free DivX movies without registration.
-  Visit the DivX website (<http://www.divx.com>) and log in to your user account before registering the TV as a DivX-certified device. If you do not have an account, create one.

Restoring the TV to the factory settings

[MENU](#) > [Support](#) > [Self Diagnosis](#) > [Reset](#) [Try Now](#)

You can restore all TV settings (excluding the Internet and network settings) to the factory defaults.



1. Select **Reset**. The security PIN entry window appears.
2. Enter the security PIN and select **Yes**. All settings are then reset. The TV turns off and on again automatically and displays the **Setup** screen.

 For more information on **Setup**, refer to the user manual that came with the TV.

Using the TV as a display model (for retail stores)

[MENU](#) > [Support](#) > [Use Mode](#) [Try Now](#)


You can turn the TV into a display model for retail environments by setting this mode to **Store Demo**.


-  For all other uses, select **Home Use**.
-  With **Store Demo**, some functions are disabled, and the TV automatically resets itself after a preset amount of time.


Teletext Feature


 This function is not available on certain models in specific geographical areas.


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.

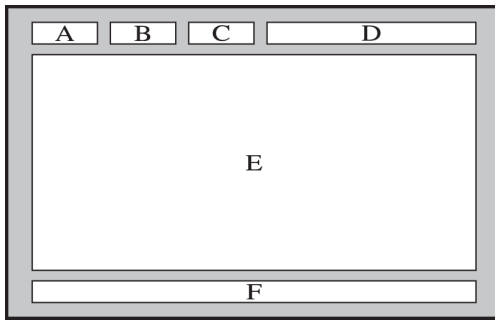
 **Page down:** Displays the previous Teletext page.

 **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

Support through Remote Management

[MENU](#) > [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 contact information for service

[MENU](#) > [Support](#) > [Contact Samsung](#)

You can view the address of the Samsung website, the call centre phone number, your TV's model number, your TV's software version, the Smart Hub info, and other information you may need to get service support from a Samsung call agent or the Samsung website.

 To view the Open Source Licence, press the **A** button.

There Is a Problem with the Picture




Testing the picture

[MENU](#) > [Support](#) > [Self Diagnosis](#) > [Picture Test](#) [Try Now](#)

Before you review the list of problems and solutions below, use [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.

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 (MENU > System > Eco Solution > Energy Saving) or Eco Sensor (MENU > 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 (MENU > Support > Self Diagnosis > Picture Test) . If the test results indicate that the problem is not caused by the TV, do the following: <ul style="list-style-type: none">• Confirm that the TV's video input connectors are connected to the correct external device video output connectors.• 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. <ul style="list-style-type: none">• Go to the Picture menu and adjust the Backlight, Contrast, Brightness, Sharpness, Colour, and Tint (G/R) settings.
Ghosting, Blurring, or Juddering	If you notice ghosting or blurring on the screen, use the Auto Motion Plus function(MENU > Picture > Picture Options > Auto 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 functions. See if Sleep Timer (MENU > 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 (MENU > System > Eco Solution > No Signal Power Off) or Auto Power Off (MENU > 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 aerial 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	If your TV is not connected to a cable box or satellite box, run Setup (MENU > System > Setup) or Auto Tuning (Broadcasting > Auto Tuning) .

The problem	Try this!
<p>The TV image does not look as good as it did in the store.</p>	<p>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.</p> <ul style="list-style-type: none"> • Cable/Satellite Subscribers: Try HD channels from the channel lineup. • Aerial connection: Try HD channels after running the Auto Tuning function. <p>Adjust the cable/satellite box's video output resolution to 1080i or 720p.</p>
<p>The picture is distorted.</p>	<p>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 1m) may cause noise in analogue.</p>
<p>The colour is wrong or missing.</p>	<p>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.</p>
<p>The colour is poor or the picture is not bright enough.</p>	<p>Go to the Picture menu and then adjust the Picture Mode, Brightness, Sharpness, and Colour settings. See if Energy Saving (MENU > System > Eco Solution > Energy Saving) has been enabled. Try resetting the picture. (MENU > Picture > Reset Picture)</p>
<p>There is a dotted line on the edge of the screen.</p>	<p>Change Picture Size to 16:9. Change the cable/satellite box resolution.</p>
<p>The picture is black and white.</p>	<p>If you are using AV composite input, connect the video cable (yellow) to the TV's green component jack.</p>

-  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.

I Can't Hear the Sound Clearly

Testing the sound

[MENU](#) > [Support](#) > [Self Diagnosis](#) > [Sound Test](#) [Try Now](#)

If the TV plays the Sound Test melody without distortion, there may be a problem with an external device or the broadcast signal's strength.

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 MENU > Sound > Speaker Settings > Speaker Select 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. If your TV has a headphone jack, make sure there is nothing plugged into it. Reboot the connected device by disconnecting and then reconnecting the device's power 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 aerial or cable connections, check the signal information. A low signal level may cause sound distortions. Run Sound Test (MENU > Support > Self Diagnosis > Sound Test).

There Is a Problem with the Broadcast

The problem	Try this!
The TV is not receiving all channels.	<ul style="list-style-type: none">• Confirm that the coaxial cable is securely connected to the TV.• Run Setup (MENU > System > Setup) or Auto Tuning (MENU > Broadcasting > Auto Tuning).• If you are using an aerial, verify it is positioned correctly and the all the connections are secure.
The picture is distorted.	<p>The compression of the video content may cause picture distortions. This is especially true with fast moving pictures from sports programmes and action movies.</p> <p>A weak signal can cause picture distortions. This is not a problem with the TV.</p>

My 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 an HDMI-to-DVI cable, a separate audio cable is required.

I Can't Connect to the Internet

The problem	Try this!
The wireless network connection failed.	Confirm your wireless modem/router is on and connected to the Internet.
The software update over the Internet has failed.	Check the network connection status (MENU > Network > Network 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.

Anynet+ (HDMI-CEC) Isn't Working

The problem	Try this!
Anynet+ does not work.	<p>Confirm that the device is an Anynet+ device. The Anynet+ system supports Anynet+ devices only.</p> <p>Check if the power cord of the Anynet+ device is properly connected.</p> <p>Check the cable connections of the Anynet+ device.</p> <p>Go to Anynet+ (HDMI-CEC) (MENU > System > Anynet+ (HDMI-CEC)) and see if Anynet+ (HDMI-CEC) has been set to On.</p> <p>Check whether the TV remote control is in TV mode.</p> <p>Check whether the remote control is Anynet+ compatible.</p> <p>Anynet+ may not function when some other functions are active, including Channel Search, Smart Hub, Plug & Play, etc.</p> <p>If you have disconnected and then reconnected the HDMI cable, scan for devices again or turn your TV off and on.</p>
I want to start Anynet+.	<p>Check if the Anynet+ device is properly connected to the TV, and then select the Anynet+ (HDMI-CEC) (MENU > System > Anynet+ (HDMI-CEC)) menu to see if Anynet+ (HDMI-CEC) is set to On.</p>
I want to exit Anynet+.	<p>Select View TV from the Anynet+ menu.</p> <p>Select a non-Anynet+ device from the Source list.</p>
The message "Connecting to Anynet+ device." or "Disconnecting from Anynet+ device" appears on the screen.	<p>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.</p>
The Anynet+ device won't play.	<p>You cannot use the play function when Setup is in progress.</p>
The connected device is not displayed.	<p>Check whether the device supports Anynet+.</p> <p>Check whether the HDMI cable is properly connected.</p> <p>Go to Anynet+ (HDMI-CEC) (MENU > System > Anynet+ (HDMI-CEC)) and see if Anynet+ (HDMI-CEC) has been set to On.</p> <p>Scan for Anynet+ devices again.</p> <p>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+.</p> <p>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.</p>
The TV audio is not being played through the receiver.	<p>Connect an optical cable to the TV and the receiver.</p> <p>ARC enables the TV to output digital sound via the HDMI (ARC) port.</p> <p>However, ARC is only available when the TV is connected to an audio receiver that supports ARC.</p>

I Have 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	MENU > Support > Self Diagnosis > Reset	Reset Picture , Sound , Channel , Smart Hub , and all other settings, except for the network settings, default settings.
Resetting Smart Hub	MENU > Smart Hub > Reset Smart Hub	Resets all Smart Hub settings to their factory defaults and deletes all information related to Samsung accounts, linked service accounts, Smart Hub service agreements, and Smart Hub applications.

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 TV's supported resolutions and adjust the external device's output resolution accordingly.
The Subtitles item in the TV menu is greyed out.	You cannot select the Subtitles menu if you have selected a source connected to the TV via HDMI or Component. To view captions, turn on the external device's caption function.
The TV smells of plastic.	This smell is normal and will dissipate over time.
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 you watch TV using a cable box or satellite receiver.
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 (MENU > 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 problem	Try this!
The PIP menu is not available.	PIP functionality is only available when you are viewing video from an HDMI or Component source on the main screen.
A POP (TV's internal banner ad) appears on the screen.	Change the Use Mode (MENU > 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.

Read Before Using 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 differ with 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 differ with the version of the application installed on the TV.
- An application's functionality may change in future versions of the application. If this occurs, run the application's tutorial or visit the service provider's website.
- Depending on the service provider's policies, certain applications may not support multitasking.

Read Before Using the 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 differs with the search conditions and the TV model.
- The web browsing speed will differ with 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.
- If the **Clock Set (MENU > 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.
- 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.)

Read Before Playing Photo, Video, or Music Files

Limitations on use of photo, video, and music files

- The TV supports MSC (Mass Storage Class) USB devices only. MSC is a class designation for mass storage devices. Types of MSC devices include external hard drives, flash card readers, and digital cameras. (USB hubs are not supported.) These kinds of devices must be connected directly to the 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 (Picture Transfer Protocol) 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.
- Be sure to connect a USB or external Hard Drive, supporting USB 3.0, to the USB 3.0 port.
- Certain files, depending on how they were encoded, may not play on the TV.
- Certain files are not available depending on the model.

Supported external subtitles

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

Name	Container
Xsub	AVI
SubStation Alpha	MKV
Advanced SubStation Alpha	MKV
SubRip	MKV
VobSub	MKV
MPEG-4 Timed text	MP4
TTML in smooth streaming	MP4
SMPTE-TT text	MP4
SMPTE-TT PNG	MP4

Supported image formats and resolutions

File extension	Format	Resolution
*.jpg *.jpeg	JPEG	15360x8640
*.png	PNG	4096x4096
*.bmp	BMP	4096x4096
*.mpo	MPO	15360x8640

Supported music formats and codecs

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 is not supported. Supports USB device only.
*.ape	ape	ape	
*.aif *.aiff	AIFF	AIFF	
*.m4a	ALAC	ALAC	

Supported video codecs

File format	Container	Video codecs	Resolution	Frame rate (fps)	Bitrate (Mbps)	Audio codecs
*.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	1920x1080	60	40	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 - Main Profile only)		30		
		Motion JPEG				
		MVC		60		
		DivX 3.11 / 4 / 5 / 6				
		MPEG4 SP/ASP		30		
		Window Media Video v9(VC1)				
		MPEG2		30		
		MPEG1				
		Microsoft MPEG-4 v1, v2, v3		30		
		Window Media Video v7(WMV1) ,v8(WMV2)				
		H.263 Sorrenson		30		
		VP6				
VP8	90	Vorbis				

Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV / MP4 / TS containers.

Video decoders

- H.264 FHD is supported up to Level 4.1. (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.
- Supports SVAF Top/Bottom, Side by Side, and Left/Right view sequence type (2ES) only.
- Supports BD MVC specs only.

Audio decoders

- WMA 10 Pro supports up to 5.1 channels. Supports up to the M2 profile. WMA lossless audio is not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital Plus is supported for up to 5.1 channels.
- The DTS LBR codec is only available for MKV / MP4 / TS containers.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ by the codec.


Read After Installing the TV

Picture sizes and input signals

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.

Input signal	Picture size
Component	16:9, Zoom, Custom, 4:3
Component (1080i, 1080p)	16:9, Zoom, Custom, 4:3
HDMI (720p)	16:9, Zoom, Custom, 4:3
HDMI (4096 x 2160p)	16:9, Zoom, Custom

Installing an anti-theft lock

- An anti-theft lock is a physical device that can be used to protect the TV against theft. Look for the lock slot on the back of the TV. The slot has a  icon next to it. To use the lock, wrap the lock cable around an object that is too heavy to carry and then thread it through the TV's lock slot. The lock is sold separately.
- The method of using an anti-theft lock may differ for each TV model. Refer to the lock's user manual for more information.



This function is not available on certain models in specific geographical areas.

Read before setting up a wireless Internet connection

Precautions for wireless Internet

- 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 Home Network 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 password using characters and numbers. This password is then needed to connect to a security-enabled AP.

Wireless security protocols

- The TV only supports the following wireless network security protocols.
 - 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.
- The TV cannot connect to non-certified wireless routers.

Read Before Connecting a Computer (Supported Resolutions)

- 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 x 1080 at 60 Hz.
- 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 (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720 x 400	70 Hz	31,469	70,087	28,322	- / +

MAC

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
640 x 480	67 Hz	35,000	66,667	30,240	- / -
832 x 624	75 Hz	49,726	74,551	57,284	- / -
1152 x 870	75 Hz	68,681	75,062	100,000	- / -

VESA DMT

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
640 x 480	60 Hz	31.469	59.940	25,175	- / -
640 x 480	72 Hz	37.861	72,809	31,500	- / -
640 x 480	75 Hz	37,500	75,000	31,500	- / -
800 x 600	60 Hz	37.879	60.317	40,000	+ / +
800 x 600	72 Hz	48.077	72,188	50,000	+ / +
800 x 600	75 Hz	46.875	75,000	49,500	+ / +
1024 x 768	60 Hz	48.363	60.004	65,000	- / -
1024 x 768	70 Hz	56.476	70,069	75,000	- / -
1024 x 768	75 Hz	60.023	75,029	78,750	+ / +
1152 x 864	75 Hz	67,500	75,000	108,000	+ / +
1280 x 720	60 Hz	45,000	60,000	74,250	+ / +
1280 x 800	60 Hz	49,702	59,810	83,500	- / +
1280 x 1024	60 Hz	63,981	60,020	108,000	+ / +
1280 x 1024	75 Hz	79,976	75,025	135,000	+ / +
1366 x 768	60 Hz	47,712	59,790	85,500	+ / +
1440 x 900	60 Hz	55,935	59,887	106,500	- / +
1600 x 900RB	60 Hz	60,000	60,000	108,000	+ / +
1680 x 1050	60 Hz	65,290	59,954	146,250	- / +
1920 x 1080	60 Hz	67,500	60,000	148,500	+ / +

Supported Resolutions for Video Signals

CEA-861 (HDMI)

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720(1440) x 480i	60 Hz	15.734	59.940	27.000	- / -
720(1440) x 576i	50 Hz	15.625	50.000	27.000	- / -
720 x 480	60 Hz	31.469	59.940	27.000	- / -
720 x 576	50 Hz	31.250	50.000	27.000	- / -
1280 x 720	60 Hz	45.000	60.000	74.250	+ / +
1280 x 720	50 Hz	37.500	50.000	74.250	+ / +
1920 x 1080i	60 Hz	33.750	60.000	74.250	+ / +
1920 x 1080i	50 Hz	28.125	50.000	74.250	+ / +
1920 x 1080	60 Hz	67.500	60.000	148.500	+ / +
1920 x 1080	50 Hz	56.250	50.000	148.500	+ / +
1920 x 1080	30 Hz	33.750	30.000	74.250	+ / +
1920 x 1080	25 Hz	28.125	25.000	74.250	+ / +
1920 x 1080	24 Hz	27.000	24.000	74.250	+ / +

CEA-861 (DVI)

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720 x 480	60 Hz	31.469	59.940	27.000	- / -
720 x 576	50 Hz	31.250	50.000	27.000	- / -
1280 x 720	60 Hz	45.000	60.000	74.250	+ / +
1280 x 720	50 Hz	37.500	50.000	74.250	+ / +
1920 x 1080	60 Hz	67.500	60.000	148.500	+ / +
1920 x 1080	50 Hz	56.250	50.000	148.500	+ / +

Read Before Using Bluetooth Devices

Restrictions on using Bluetooth

- The Samsung Bluetooth Speaker is only available when a device is supporting [TV SoundConnect](#).
- You can't use Bluetooth Devices, [Speaker Select \(MENU > Sound > Speaker Settings > Speaker Select\)](#) and Surround features simultaneously.
- Compatibility issues may occur, depending on the Bluetooth Devices. (A Mobile exclusive headphone may not be available, depending on the environment.)
- Lip-sync errors may occur.
- The TV and Bluetooth Devices may disconnect, depending on the distance between them.
- A Bluetooth device may hum or malfunction
 - When a part of your body is in contact with the receiving/transmitting system of the Bluetooth device or the TV.
 - When the device is subject to electrical variation from obstructions caused by a wall, corner, or office partitioning.
 - When the device is exposed to electrical interference from same frequency-band devices including medical equipment, microwave ovens, and wireless LANs.
- If the problem persists, be sure to use a Digital Sound Output (Optical) port or HDMI (ARC) port.

Licence

DIVX[®] **HD**

This DivX Certified[®] device has passed rigorous testing to ensure it plays DivX[®] video.

To play purchased DivX movies, first register your device at vod.divx.com. Find your registration code in the DivX VOD section of your device setup menu.

DivX Certified[®] to play DivX[®] video up to HD 1080p, including premium content.

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Covered by one or more of the following U.S. patents: 7,295,673; 7,460,668; 7,515,710; 7,519,274.

This device supports DivX Plus Streaming[®] for enjoying HD movies and TV shows with advanced features (multi-language subtitles, multiple audio tracks, chapters, smooth FF/RW, etc.) streamed to your device.



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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)**

ARC lets the TV output digital sound to an audio device and input digital sound from the same audio device through one HDMI cable. However, ARC is only available through the HDMI (ARC) port and only when the TV is connected to an ARC-enabled AV receiver.

- **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.

- **Bluetooth**

Bluetooth is a short-distance wireless communication protocol allowing information exchange between connected mobile phones, laptops, earphones and headphones with Bluetooth-compatible devices. It is mostly used for low-power consuming wireless connections within a very short-distance of 10m.

- **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.