

**PHILIPS**

Television

8209 Series

# User Manual

85PUG8209

Register your product and get support at  
[www.philips.com/TVsupport](http://www.philips.com/TVsupport)

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# 1. Home Screen Overview

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## Sources

Select  **SOURCES** to view and change to available sources in this TV.

To enjoy the benefits of your Smart TV, connect the TV to the Internet. Press  (**Home**) on your remote control to get your Home screen. Like on your smartphone or tablet, the Home screen is the center of your TV. From the Home screen, you can decide what to watch by browsing entertainment options from apps.

The Home screen is organized in rows to let you discover great content from your favorite apps. Apps can list their recommendations (if available) as an individual row on the Home screen.

### Highlights on your home screen

With multiple tabs like **Home**, **Channels**, **Apps** and  **Search**, you can discover movies and shows from your services and popular apps. The **Channels** tab is a collection of free online contents including news, TV and movies, life style, entertainment, sports, music, kids and comedy channels. The **Apps** tab is an app collection that enables you to rent movies online, read newspapers, watch videos and listen to music, as well as shop online and watch TV programs whenever you like with On-line TV. You can also trigger an input field for searching with  **Search** tab.

### Favorite Apps

Your favorite Apps are placed on the first row. This row contains a number of pre-installed apps. The order of these apps is according to business agreements with content service providers. In this row, you will also find apps like **Watch TV**, **Internet Browser**, and **Media** to name a few.


### YouTube and Netflix

This row contains your Recommended, Subscriptions or Trending YouTube and Netflix videos.

### Accessing settings from Home

You can access the **All Settings** menu via the icon at the top-right corner. You can also find the **Frequent settings** and **Quick menu** with common settings in the Philips TV Menu, which can be invoked directly from the remote control.

### TV guide

Select  **TV Guide** to open the TV Guide of your installed TV channels.

## 2. Get Support

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### 2.1. Identify and Register Your TV

#### Identify your TV - TV model number and serial number

You might be asked to provide the TV product model number and serial number. Find these numbers on the packaging label or on the type label on the back or bottom of the TV.

#### Register your TV

Register your TV and enjoy a range of benefits including full support (including downloads), privileged access to information about new products, exclusive offers and discounts, the chance to win prizes and even participate in special surveys about new releases.

Go to [www.philips.com/TVsupport](http://www.philips.com/TVsupport)

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### 2.2. TV Help and User Manual

#### Quick Menu > Help

You can use the Help function to diagnose and get more information about your TV.

- **TV information** - View the Model name, Serial number and Software version of your TV.
- **How to** - You can see instructions on how to install channels, sort channels\*, update TV software, connect external devices and use Smart functions on your TV.
- **TV diagnose** - Run TV diagnose to check the condition of your TV.
- **Self-diagnose** - You can check if the picture, sound, network and other settings are working OK.
- **Update software** - Check available software updates.
- **User manual** - Read the user manual for TV information.
- **Troubleshooting** - Find a solution for frequently asked questions.
- **Factory settings** - Reset all settings to factory settings.
- **Reinstall TV** - Reinstall and redo the complete TV installation.
- **Contact info** - Shows the telephone number or web address for your country or region.

\* Sorting channels is only applicable for certain countries.



\*\* The Ambilight setting is only for models that support the Ambilight function.

### 2.3. TV Diagnose and Self-diagnose

#### TV diagnose

You can run the TV diagnose test to check the condition of your TV. At the end of the diagnosis, the TV will clear the cache memory and close any unused apps to continue the smooth functioning of your TV.



To run the TV diagnose test:

- 1 - Select  **Quick Menu** >  **Help** > **TV diagnose** and press **OK**.
- 2 - Select **Start** to run a series of diagnostic tests.
- 3 - When the test is completed, you can view the status of the following items.
  - Remote control
  - Power
  - Picture
  - Sound
  - Connect external devices
  - Network
  - TV tuner
  - Clear cache memory
  - Apps
- 4 - Select **OK** to close the results page and go back to the **TV diagnose** wizard.
- 5 - Press **← Back** to exit from **TV diagnose**, select **Self-diagnose** to do other diagnostic check, and select **View results** to view the result page again.

#### Self-diagnose

Self-diagnose can help you to troubleshoot your TV by checking the configuration of the TV.

To run Self-diagnose:

- 1 - Select  **Quick Menu** >  **Help** > **Self-diagnose** and press **OK**.
- 2 - Select the following items to check the configurations.
  - **Check the TV** - You can check if the picture, sound and other settings are working OK.
  - **Check the Network** - Check the Network Connection.
  - **Check the remote control** - Perform the test to verify the functionality of the remote control bundled with the TV.
  - **View weak signal history** - Display the list of channel numbers that were automatically saved when the signal strength was weak.

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## 2.4. Consumer Care / Repair

For support and repair, call the Consumer Care hotline in your country. Our service engineers will take care of a repair, if necessary.

Find the telephone number in the printed documentation that came with the TV.

Or consult our website [www.philips.com/TVsupport](http://www.philips.com/TVsupport) and select your country if needed.

### TV model number and serial number

You might be asked to provide the TV product model number and serial number. Find these numbers on the packaging label or on the type label on the back or bottom of the TV.

### Warning

Do not attempt to repair the TV yourself. This may cause severe injury, irreparable damage to your TV or void your warranty.

# 3. Quick Guide

## 3.1. Remote Control

### Key Overview

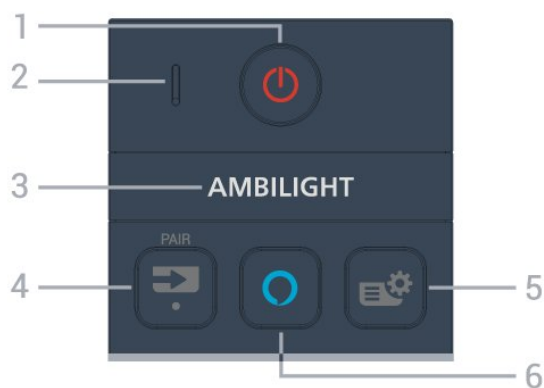
#### Top

#### Hidden keys feature

Hidden keys offer more control functions when pressing the **123 key**. The **123 key** is in the middle of the remote control and is used to turn on/off hidden keys mode. When hidden keys mode is turned on, the **number keys** 0 to 9 and **media play control keys** appear with backlight and trigger the functions. When hidden keys mode is turned off by pressing the **123 key** again or is automatically turned off, the remote control works with the normal keys.

#### ⚠ Warning

Choking Hazard! This TV remote control contains small parts not suitable for children under 5 years old.



#### 1 - ⏻ (Standby / On)

To switch the TV on or back to Standby.

#### 2 - VOICE microphone

#### 3 - AMBILIGHT

To select one of the Ambilight styles.

\* Ambilight setting is only for models which support Ambilight function.

#### 4 - ➡ (SOURCES) (Dot)

- To open the Sources menu.
- To pair the remote control to the TV.
- To enter digital sub-channels.

#### 5 - ⚙ (Quick Menu/MENU)

To open the Quick Menu with typical TV functions. Hold

the **MENU** key to show the Gaming control bar when a game signal is detected and Game Mode enabled.

#### 6 - 🟦 Alexa

Press and hold to talk to Alexa, interrupt an Alexa response, or stop an Alert. When Alexa is responding to your voice or playing media, press again to stop or lower the playback volume.

#### Middle



#### 1 - TV Guide (≡)

To open or close the TV Guide.

#### 2 - OK key

To confirm a selection or setting. To open the channel list while watching TV.

#### 3 - Arrow/navigation keys

To navigate up, down, left or right.

#### 4 - OPTIONS (≡)

To open or close the Options menu.

#### 5 - ⬅ (Back)

To switch back to the previous channel you selected.

To return to the previous menu.

To go back to the previous App/Internet page.

#### 6 - Volume / 🔊 (Mute)

Move down or up to adjust the volume level. Press the middle of the key to mute the sound or to restore it.

#### 7 - 123 key

To turn the hidden function keys on or off and switch the keys between different sets of operations.

#### 8 - INFO (i)

To open or close program info.

#### 9 - Number keys (hidden keys, available by pressing the 123 key)

To select a channel directly.

## 10 - CC

To open **Closed Caption** menu.

## 11 - TV (TV) / EXIT

To switch back to watching TV or to stop an interactive TV application. However, it might not work with some applications; behavior depends on third-party TV apps. This key changes to Number key **0** after pressing the **123** key.

## 12 - Home

To open the Home menu.

## 13 - Channel

Move down or up to switch to the next or previous channel in the channel list. Press the middle of the key to open the channel list.

### Bottom



### 1 - Color keys

Direct selection of options. Press Blue key — to open the **Help**.

### 2 - NETFLIX

- If you have a Netflix subscription, you can enjoy Netflix on this TV. Your TV must be connected to the Internet.
- To open Netflix, press **NETFLIX** to open the Netflix App. You can open Netflix immediately from a TV in standby. [www.netflix.com](http://www.netflix.com)

### 3 - Disney+

To launch the **Disney+** App.

### 4 - YouTube

To launch the **YouTube** app.

### 5 - Eco / Green key

Press to get a message reminding you to enter the **Eco settings** menu; long press to open the **Eco settings** menu directly. Once the **Eco settings** menu is triggered by long pressing the key a few times, the message will no longer appear.

### 6 - Playback (available when the 123 key is pressed)

- Play ►, to play back.
- Pause II, to pause playback
- Rewind ◀◀, to rewind
- Fast forward ▶▶, to fast forward

## 7 - prime video

To launch the Amazon **prime video** App.

## 8 - Quick keys

Press the quick key to launch an app or stream media directly. Quick keys vary between regions and countries.

## 9 - Pluto TV

To launch the **Pluto TV** app.

## 3.2. Pair Your Remote Control to the TV

This remote control uses both Bluetooth® and IR (infrared) to send its commands to the TV.

- You can use this remote control via IR (infrared) for most operations.
- To use Alexa voice control operations, you need to pair (link) the TV with the remote control.

When you started the initial TV installation, the TV invited you to long-press the **PAIR** key, and by doing so, the pairing was done.

Note:

- 1 - Once the remote control has entered pairing mode successfully, the LED indicator around the microphone on the front side of the remote control starts blinking.
- 2 - The remote control must be kept close to the TV (within 3 feet) during pairing in order to ensure success.
- 3 - If the TV does not launch the Alexa voice control operations when pressing **Alexa**, pairing was unsuccessful.
- 4 - It is advisable to wait until the set has fully started up and launched all background processes before pairing mode is entered as the toast message containing further instructions may appear too late, thereby negatively impacting the pairing procedure.

### Pairing or pairing again

If the pairing with the remote control was lost, you can pair the TV with the remote control again.

You can simply long press the **SOURCES (PAIR)** key (approximate for 3 seconds) for pairing.

Alternatively, go to **Home** > **Settings** > **Wireless & network** > **Remote control** > **Pair remote control**, then follow the on-screen instructions.

A message appears when the pairing has been successful.

### Remote Control Software

**Home** > **Settings** > **Wireless & network** > **Remote control** > **Remote control info**

Once the remote control is paired, you can check the current remote control software version.

**Home** > **Settings** > **Wireless & network** > **Remote**



## control > Update remote control software

Check available remote control software for updates.

### 3.3. IR sensor

The TV can receive commands from a remote control that uses IR (infrared) to send commands. If you use such a remote control, always make sure you point the remote control at the infrared sensor on the front of the TV.



#### ⚠ Warning

Do not put any objects in front of IR sensor of the TV as it may block the IR signal.

### 3.4. Batteries and Cleaning

#### Replace batteries

Refer to the **Quick Start Guide** in your product package for detailed information about the remote control batteries.

If the TV does not react to a button being pressed on the remote control, the batteries might be dead.

To replace the batteries, open the battery compartment on the back of the remote control.

1 - Slide the battery door in the direction shown by the arrow.

2 - Replace the old batteries with new batteries. Make sure the + and the - ends of the batteries line up correctly.

3 - Reposition the battery door and slide it back until it clicks.

- Remove the batteries if you are not using the remote control for a long time.
- Safely dispose of your old batteries according to the end of use directions.

For more information, in **Help**, select **Keywords** and look up **End of use**.

#### Cleaning

Your remote control is treated with a scratch-resistant coating.

To clean the remote control, use a soft damp cloth. Never use substances such as alcohol, chemicals or household cleaners on the remote control.

### 3.5. Joystick - Local Control

#### Keys on TV

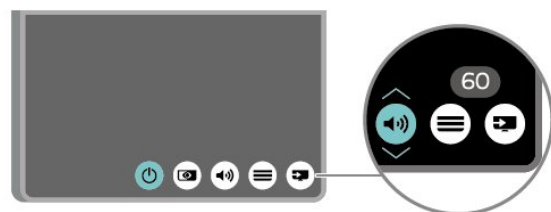
If you lost the remote control or its batteries are empty, you can still do some basic TV operations.

To open the basic menu...



1 - With the TV switched on, press the joystick key at the bottom of the TV to bring up the basic menu.

2 - Press left or right to select Volume, Channel or Sources. Select Demo, to start a demo movie.




3 - Press up or down to adjust the volume or tune to the next or previous channel. Press up or down to go through the list of sources, including the tuner selection.

The menu will disappear automatically.

# 4. Setting Up

## 4.1. Read the Safety Instructions

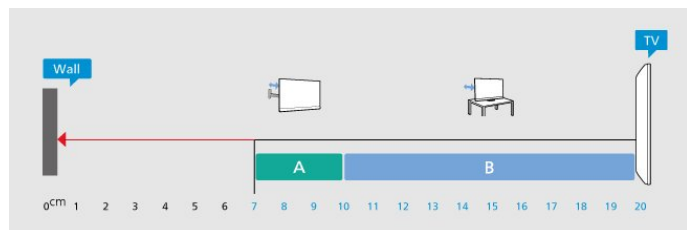
Please read the safety instructions before you use the TV.

To read the instructions, in **Help > User manual**, press the color key  **Keywords** and look up **Safety and Care**.

## 4.2. TV Placement

### Tips on Placement

- Position the TV where light does not shine directly on the screen.
- Dim lighting conditions in the room for best Ambilight effect.
- The ideal distance to watch TV is 2 to 5 times its screen height. When seated, your eyes should be level with the center of the screen.
- Recommended distance to the wall:  
A. When wall mounted, position the TV 7 to 10 cm away from the wall.  
B. When the TV has a stand, position it 10 to 20 cm away from the wall depending on the size of the stand.



#### Note:

Please keep the TV away from dust-producing sources such as stoves. It is suggested to clean the dust regularly to avoid getting dust into the TV.

### TV Stand

You can find the instructions for mounting the TV stand in the Quick Start Guide that came with the TV. In case you lose this guide, you can download it from [www.philips.com/TVsupport](http://www.philips.com/TVsupport).

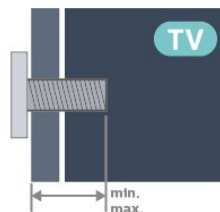
Use the model number of the TV to look for the **Quick Start Guide** to download.

## Wall Mounting

Your TV is also prepared for the wall mount bracket (sold separately).

The wall mount size may vary depending on the different types of back cases; refer to the **Quick Start Guide** in your product package to see which size is for your TV.

Use the following wall mount dimensions when purchasing the wall mount.



- 85PUX8209  
400x600, M8 (min.: 24 mm, max: 28 mm)

#### Caution

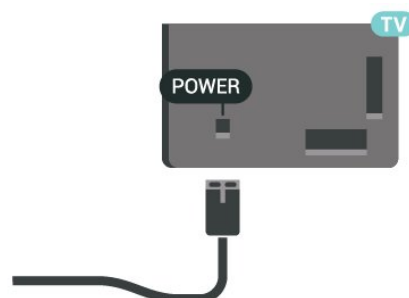
Wall mounting the TV requires special skills and should only be performed by qualified personnel. The TV wall mounting should meet safety standards according to the TV's weight. Also read the safety precautions before positioning the TV.

TP Vision Europe B.V. bears no responsibility for improper mounting or any mounting that results in accident or injury.

## 4.3. Turn on TV

### Connect Power Cable

- Insert the power cable into the **POWER** connector on the back of the TV.
- Make sure the power cable is securely inserted in the connector.
- Make sure that the power plug, in the wall socket, is accessible at all times.
- When you unplug the power cable, always pull the plug, never pull the cable.



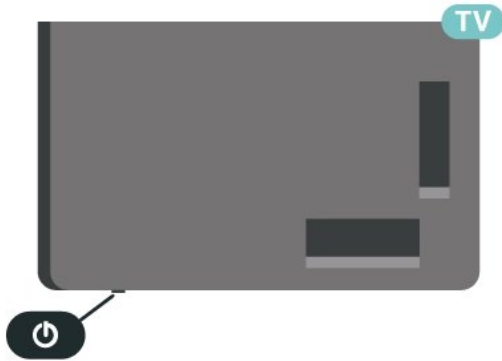
Although this TV has a very low standby power consumption, unplug the power cable to save energy if you do not use the TV for a long period of time.

## On or Standby


Before you switch on the TV, make sure you plugged in the mains power in the **POWER** connector on the back of the TV.

### Switch On

Press the small joystick key at the bottom of the TV.



### Switch to standby

To switch the TV to standby, press  on the remote control. You can also press the small joystick key on the bottom of the TV.

In standby mode, the TV is still connected to the mains power but consumes very little energy.

To turn off the TV completely, disconnect the power plug.

When disconnecting the power plug, always pull the power plug, never the cord. Ensure that you have full access to the power plug, power cord and outlet socket at all times.

# 5. Connections

## 5.1. Connectivity guide

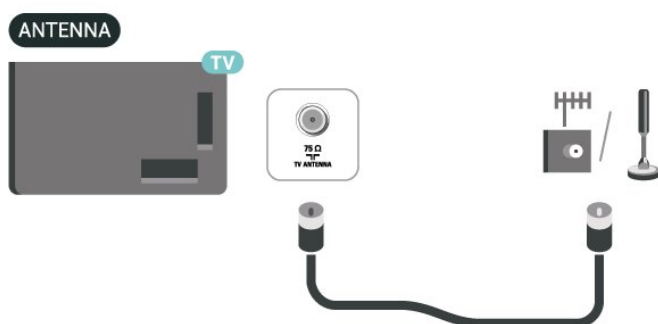
Always connect a device to the TV with the highest quality connection available. Also, use good quality cables to ensure a good transfer of picture and sound.

When you connect a device, the TV recognizes its type and gives each device a correct type name. You can change the type name if you wish. If a correct type name for a device is set, the TV automatically switches to the ideal TV settings when you switch to this device in the Sources menu.

## 5.2. Antenna

Insert the antenna plug firmly into the **Antenna** socket at the back of the TV.

You can connect your own antenna or an antenna signal from an antenna distribution system. Use an IEC Coax 75 Ohm RF antenna connector.

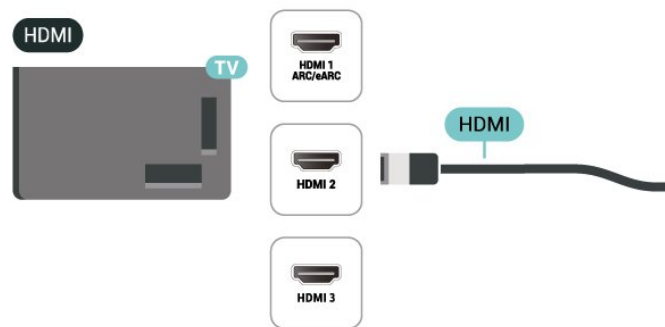


## 5.3. Video Device

### HDMI

An HDMI connection has the best picture and sound quality.

For best signal quality transfer, use a high-speed HDMI cable. Do not use an HDMI cable longer than 16 feet (5 meters). You can connect devices supporting HDR to any of the HDMI connectors.



### Copy protection

HDMI ports support HDCP (High-bandwidth Digital Content Protection). HDCP is a copy protection signal that prevents copying content from a DVD disc or Blu-ray Disc. Also referred to as DRM (Digital Rights Management).

## 5.4. Audio Device

### HDMI ARC/eARC

Only **HDMI 1** has **HDMI ARC** (Audio Return Channel) functionality.

If the device, typically a Home Theater System (HTS), also has the HDMI ARC connection, connect it to any of the HDMI connections on this TV. With the HDMI ARC connection, you do not need to connect the extra audio cable that sends the sound of the TV picture to the HTS. The HDMI ARC connection combines both signals.

**HDMI eARC** (Enhanced Audio Return Channel) is an advancement over the previous ARC. It supports the latest high-bitrate audio formats up to 192kHz, 24-bit, uncompressed 5.1 and 7.1, and 32-channel uncompressed audio.

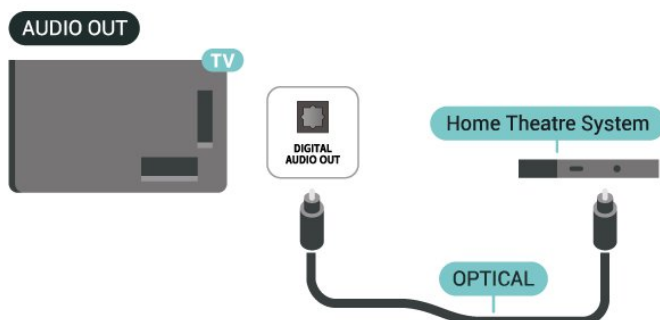
Note: **HDMI eARC** is only available on **HDMI 1**. Use **Ultra High-speed HDMI cable** for eARC. Only one eARC device is available at a time.




## Digital Audio Out - Optical

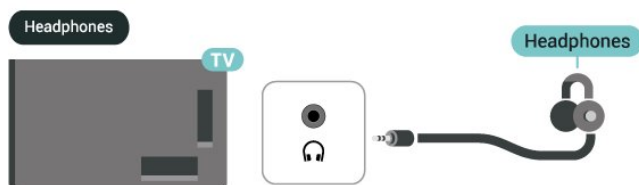
Audio Out - Optical is a high quality sound connection.

This optical connection can carry 5.1 audio channels. If your device, typically a Home Theater System (HTS), has no HDMI ARC connection, you can use this connection with the Audio In - Optical connection on the HTS. The Audio Out - Optical connection sends the sound from the TV to the HTS.



## Headphones

You can connect a set of headphones to the  connection on the side of the TV. The connection is a mini-jack 3.5mm. You can adjust the volume of the headphones separately.



## 5.5. Mobile Device



## Screen Mirroring

### About Screen Mirroring

You can view your photos or play music and videos from a mobile device on your TV with Screen Mirroring. The mobile device and the TV must be within range, which usually means being in the same room.

### Using Screen Mirroring

#### Switch on Screen Mirroring

Press  **SOURCES** >  **Screen Mirroring**

#### Share a Screen on TV

- 1 - Activate Screen mirroring on your mobile device.
- 2 - On your mobile device, select the TV. (This TV will be displayed as the TV model name)
- 3 - Select the TV name on your mobile device. After connection, enjoy using Screen Mirroring.

### Stop Sharing




You can stop sharing a screen from the TV or the mobile device.

#### From the device

With the app you use to start Screen Mirroring, you can disconnect and stop watching the screen of the device on the TV. The TV will switch back to the last selected program.

#### From the TV

To stop watching the screen of the device on TV, you can ...

- press  **EXIT** to watch a TV broadcast
- press  (**Home**) to start another activity on the TV
- press  **SOURCES** to open the Sources menu and select a connected device.

### Block a Device

The first time you receive a request to connect from a device, you can block the device. The request from this device and all its requests in the future will be ignored.

To block a device...

Select **Block...** and press **OK**.

#### Unblock all devices

All previously connected and blocked devices are stored in the Screen Mirroring list of connections. If you clear this list, all blocked devices will be unblocked.

To unblock all blocked devices...

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Reset Screen Mirroring connections.

### Blocking a previously connected device

If you want to block a device that you previously connected to, you need to clear the Screen Mirroring connections list first. If you clear this list, you will have to confirm or block the connection for every device again.

---

### Reset Screen Mirroring connections

All previously connected devices are stored in the Screen Mirroring list of connections.

To clear all connected Screen Mirroring devices:

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Reset Screen Mirroring connections.

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### Screen Delay

The normal delay when sharing a screen with Screen Mirroring is about 1 second. The delay might be longer if you are using older devices with less processing power.

## Casting App

**Casting** app is a streaming mobile app on your TV. It will cast the streaming contents from a mobile device to your TV via **AirServer**.

To cast streaming contents to your TV:

- 1 - Make sure your mobile device and TV are on the same Wi-Fi network.
- 2 - Go to 🏠 (Home) > Apps tab > Video row and select **Casting** app.
- 3 - Launch the **Casting** app and stay on the **AirServer** screen.
- 4 - Launch a casting-enabled app on your mobile device and tap the cast icon .
- 5 - Select **PHILIPS\_TV\_(ModelName)** of your TV to start casting.

## Philips Smart TV app

The **Philips Smart TV** app on your smartphone or tablet is your new TV buddy. The app lets you switch channels and adjust the volume — just like a remote control.

Download the Philips Smart TV app from your favorite app store today.

The Philips Smart TV app is available for iOS and Android and is free of charge.

Alternatively, you can go to 🏠 (Home) > Settings

> **Wireless & networks** > **Wired or Wi-Fi** > **Remote app QR code** and press OK; a QR code will appear on the TV screen. Scan the QR code with your mobile device and follow the instructions to download and install the Philips Smart TV app. When using the app, your mobile device and Philips TV need to connect to the same Wi-Fi network.

### Get connected



[www.philips.com/c-w/country-selectorpage/tv/tv-remote-app.html](http://www.philips.com/c-w/country-selectorpage/tv/tv-remote-app.html)


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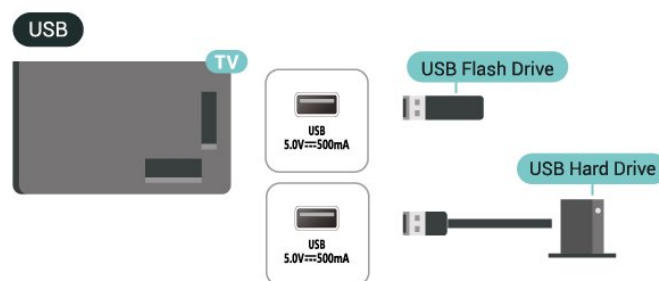
## 5.6. Other Device


### USB Storage Device

You can view photos or play your music and videos from a connected USB flash drive. Insert a USB flash drive in one of the **USB** connections on the TV while the TV is switched on.

The TV detects the flash drive and opens a list showing its content.

If the contents list does not appear automatically, press  **SOURCES** and select **USB**.



For more information on watching or playing content from a USB flash drive, in **Help**, press the color key  **Keywords** and look up **Photos**, **Videos** and **Music**.

---

## 5.7. Bluetooth®

### What You Need

You can connect a wireless device with Bluetooth® to this TV – a wireless speaker or headphones.

To play the TV sound on a wireless speaker, you must pair the wireless speaker with the TV. The TV can only play the sound on one speaker at a time.

#### Attention - Audio to Video synchronization

Many Bluetooth® speaker systems have a high 'latency.' High latency means that the audio lags behind the video, causing unsynchronized 'lip sync.' Before you purchase a wireless Bluetooth® speaker system, find out about the latest models and look for a device with a low latency rating. Ask your dealer for advice.

### Pairing a Device

Position the wireless speaker within 15 feet of the TV. Read the user manual of the device for specific information on pairing and on wireless range. Make sure the Bluetooth® setting on the TV is switched on.

When a wireless speaker is paired, you can select it to play the TV sound. When a device is paired, you do not need to pair it again unless you remove the device.

To pair a Bluetooth® device with the TV:

- 1 - Switch on the Bluetooth® device and place it within range of the TV.
- 2 - Select **⬆ (Home) > Settings > Wireless & Networks** and press **➤ (right)** to enter the menu.
- 3 - Select **Bluetooth > Search Bluetooth Device**, and press **OK**.
- 4 - Select **Search** and press **OK**. Follow the instructions on screen. You will pair the device with the TV and the TV will store the connection. You might need to unpair a paired device first if the maximum number of paired devices was reached.
- 5 - Select the type of device and press **OK**.
- 6 - Press **⬅ (left)** repeatedly if necessary, to close the menu.

### Select a Device

To select a wireless device:

- 1 - Select **⬆ (Home) > Settings > Wireless & Networks** and press **OK**.
- 2 - Select **Bluetooth > Bluetooth devices** and press **OK**.
- 3 - In the list, select the wireless device and press **OK**.
- 4 - Press **⬅ (left)** repeatedly if necessary, to close the menu.

## Remove a Device

You can connect or disconnect a wireless Bluetooth® device. You can also remove a wireless Bluetooth® device. If you remove a Bluetooth® device, the device will be unpaired.

To remove or disconnect a wireless device:

- 1 - Select **⬆ (Home) > Settings > Wireless & Networks** and press **OK**.
  - 2 - Select **Bluetooth > Remove Bluetooth device** and press **OK**.
  - 3 - In the list, select the wireless device and press **OK**.
  - 4 - Select **Disconnect** or **Un-pair** and press **OK**.
  - 5 - Select **OK** and press **OK** to confirm.
  - 6 - Press **⬅ (left)** repeatedly if necessary, to close the menu.
- 

## 5.8. Computer

You can connect your computer to the TV using a high-quality HDMI cable and use the TV as a PC monitor.

\* Note for NVIDIA graphics card users:

If you connect your computer to the TV via HDMI, NVIDIA cards may automatically output Variable Refresh Rate (VRR) video to the TV when the TV's **HDMI Ultra HD** setting is **Optimal (Auto Game)**. Always make sure to turn off the VRR function in graphics card before you change the TV's **HDMI Ultra HD** to **Optimal** or **Standard**; the TV UI selection **Optimal** or **Standard** will turn off VRR support in the TV.

\* Note for AMD Graphics card users:




If you connect your computer to the TV via HDMI, please ensure the following settings in the graphics card used to have proper performance.

- If graphics card output video is 4096 x 2160p or 3840 x 2160p and RGB pixel format is used, RGB 4:4:4 pixel format studio (limited RGB) shall be set in computer graphic card.


# 6. Switch Source

---

## 6.1. Source List

- To open the Sources menu, press  **SOURCES**.
  - To switch to a connected device, select the device with the **Arrow/navigation** keys and press **OK**.
  - To view the technical information of the connected device you are watching, press  **OPTIONS** and select **Device info**.
  - To close the Sources menu without switching to a device, press  **SOURCES** again.
- 

## 6.2. Rename Device

 (Home) > Settings > General settings > Edit input sources > Source

- 1 - Select a device icon; the preset name appears in the text field.
- 2 - Select **Rename** to open the on-screen keyboard.
- 3 - Use the navigation keys to select characters.
- 4 - Select **Close** when finished.



# 7. Channels

---

## 7.1. About Channels and Switch Channels

### To watch TV channels

- Press **TV**. The TV tunes to the TV channel you last watched.
- Press **⬆ (Home) > TV > Channels** and press **OK**.
- Press **≡ +** or **≡ -** to switch channels.
- If you know the channel number, type in the number with the number keys. Press **OK** after you entered the number to switch channels.
- To switch back to the previously tuned channel, press **⬅ Back**.

### To change to a channel from a channel list

- While watching a TV channel, press **OK** to open the channel lists.
- The channel list can have several pages with channels. To view the next or previous page, press **≡ +** or **≡ -**.
- To close the channel lists without switching channels, press **⬅ Back** or **TV EXIT**.

---

## 7.2. Install Channel

### Antenna/Cable Installation

---

#### Search for Channels

##### Update channels

**⬆ (Home) > Settings > Channels > Antenna/Cable installation > Search for channels**

- 1 - Select **Start now** and press **OK**.
- 2 - Select **Update channels** to only add new digital channels.
- 3 - Select **Start** and press **OK** to update channels. This can take a few minutes.

##### Advanced channel reinstall

**⬆ (Home) > Settings > Channels > Antenna/Cable installation > Search for channels**

- 1 - Select **Start now** and press **OK**.
- 2 - Select **Advanced channel reinstall** to do a full reinstall, which takes you through each step.
- 3 - Select **Start** and press **OK** to update channels. This can take a few minutes.

---

#### Service Navigation

**⬆ (Home) > Settings > Channels > Antenna/Cable installation > Service navigation**

- If the Service navigation is set to **On**, you can browse the primary and secondary channels by pressing channel **≡ +** and **≡ -**.
- If the Service navigation is set to **Off**, you can only browse the primary channels using channel **≡ +** and **≡ -**.

---

#### Digital: Reception Test

**⬆ (Home) > Settings > Channels > Antenna/Cable installation > Digital: reception test**

The digital frequency is shown for this channel. If the reception is poor, you can reposition your antenna. To check the signal quality of this frequency again, select **Search** and press **OK**.

To enter a specific digital frequency yourself, use the remote control digit keys. Alternatively, select the frequency, position the arrows on a number with **⬅** and **➡** and change the number with **⬆** and **⬆**. To check the frequency, select **Search** and press **OK**.

---

#### Antenna Connection

**⬆ (Home) > Settings > Channels > Antenna/Cable installation > Antenna Connection**

Select the type of antenna signal you receive with Antenna/Cable Connection.

---

## Channel Options

### Open Options

While watching a channel, you can set some options.

Depending on the type of channel you are watching or depending on the TV settings you made, some options are available.

To open the options menu...

- 1 - While watching a channel, press **OPTIONS**.
- 2 - Press **OPTIONS** again to close.

---

### Program Info

Select **Program info** to view information about the program you are watching.

To call up the details of the selected program...

- 1 - Tune to the channel.
- 2 - Press **INFO** to open or close program info.

- 3 - Alternatively, you can press **OPTIONS**, select **Program Info** and press **OK** to open the program info.
- 4 - Press **← Back** to close the program info.

---

## Audio Language

If the TV channel broadcasts multiple or dual audio languages, you can select your preferred audio language.

- 1 - While you watch TV, press **OPTIONS**.
- 2 - For digital channels, select **Audio language**. For analog channels, select **Alternate audio**. Press **OK** to confirm your selection.
- 3 - Select from the available languages, then press **OK**.

### Note:

If you have selected **Alternate audio** for analog channels, select between:

- **Main**: Primary audio language or
- **SAP**: Secondary audio language

---

## Channel Info

Select **Channel info** to view technical information about the channel.

To see the details of the selected channel...

- 1 - Tune to the channel.
- 2 - Press **OPTIONS**, select **Channel info** and press **OK** to open the channel info.
- 3 - Press **OPTIONS** again or press **← Back** to close the program info.

---

## Closed Caption

To switch on Closed caption, press **OPTIONS** and select **Closed caption**.

Switch **Closed caption On** or **Off** with this option. Select **On during mute** to show closed captions only when the sound is muted.

---

## Caption Service

You can display closed captions at all times or only when the TV is muted.

### Note:

- Not all TV programs, commercials and features include closed captioning information. See your local TV program listings about channels with closed captions. The captioned programs are typically listed with service marks, such as 'CC,' in the TV listings.

### Switch on closed caption

- 1 - While you watch TV, press **OPTIONS**.

- 2 - Select **Closed caption > On** and press **OK**.

### Select type of closed caption

- 1 - While you watch TV, press **OPTIONS**.
- 2 - Select **Caption service**.
- 3 - Select the correct type of closed captions and press **OK**.

---

## Universal Access

Only available when **Universal access** is set to **On**.

**⬆ (Home) > Settings > Universal access > Universal access > On.**

To read more information, in Help, press the color key **— Keywords** and look up **Universal Access**.

---

## Ginga

**⬆ (Home) > Settings > Channels > Ginga**

Enable or disable the Ginga feature.

\* Note: Ginga is for Brazil only.

---

## Channel Logos

**⬆ (Home) > Settings > Channels > Channel logos**

In some countries, the TV can show the channel logos. If you do not want these logos to appear, you can switch them off.

# 7.3. Channel List

## Open Channel List

To open the current channel list...

- 1 - Press **tv**, to switch to TV.
- 2 - Press **OK** to open the channel list if Interactive Service is not available, or press **≡ Channel list** to open the channel list.
- 3 - Press **≡ OPTIONS > Select channel list**.
- 4 - Select one channel list you want to watch.
- 5 - Press **← Back** to close the channel list.

The channels displayed in All Channel list are listed based on genre\*. For example: Premium, Premium News, Premium Local, Children, Sport and etc. The Premium genre is top broadcast channels positioned with market share above 3%.

## Channel List Options

---

### Open the Options Menu

To open the channel list options menu:

- Press **TV**, to switch to TV.
- Press **≡ Channel list** to open the channel list.
- Press **≡ OPTIONS**, and select one of options.
- Press **← Back** to close the channel list.

---

### Rename Channel

- 1 - Press **TV**, to switch to TV.
- 2 - Press **≡ Channel list** to open the channel list.
- 3 - Select one channel you want to rename.
- 4 - Press **≡ OPTIONS > Rename channel**, and press **OK** to open the on-screen keyboard.
- 5 - Use the navigation keys to select characters.
- 6 - Select **Enter** when finished.
- 7 - Press **← Back** to close the channel list.

---

### Select Channel Filter

- 1 - Press **TV**, to switch to TV.
- 2 - Press **≡ Channel list** to open the channel list.
- 3 - Press **≡ OPTIONS > Digital/Analog**
- 4 - Select one of channel combinations showing in the channel list.

---

### Create or Edit Favorites Channel List

**TV > OK > ≡ OPTIONS > Create favorites list**

Select a channel then press **OK** to add in a favorites channel list; when finished, press **— Done**.

**TV > OK > ≡ OPTIONS > Edit favorites**

Select a channel then press **OK** to add in or remove from a favorites channel list; once finished, press **— Done**.

---

### Select Channel Range

**TV > OK > ≡ OPTIONS > Select channel range**

Select a range of channels in a channel list. Press **OK** to mark the beginning of range and then press **OK** again to end the range selection. The selected channels will be marked as favorites.

---

### Select Channel List

**TV > OK > ≡ OPTIONS > Select channel list**

Select a channel list sorted by type of channel.

---

### Search Channels

**TV > OK > ≡ OPTIONS > Search channel**

You can search for a channel to find it in a long list of channels. The search will return the matching channel name with the result arranged in alphabetical order.

- 1 - Press **TV**, to switch to TV.
- 2 - Press **≡ Channel list** to open the channel list.
- 3 - Press **≡ OPTIONS > Search channel**, and press **OK** to open the on-screen keyboard.
- 4 - Use navigation keys to select a character, then press **OK**.
- 5 - Select **Enter** when finished.
- 6 - Press **← Back** to close the channel list.

---

### Lock or Unlock Channel

**TV > OK > ≡ OPTIONS > Lock channel, Unlock channel**

To prevent children from watching a channel, you can lock a channel. To watch a locked channel, you must enter the 4-digit **Child Lock** PIN code first. You cannot lock programs from connected devices.

The locked channel will have **🔒** next to the channel logo.

---

### Remove Favorites List

**TV > OK > ≡ OPTIONS > Remove favorites list**

To remove existing favorite list, select **Yes**.

## 7.4. Favorite Channels



### About favorite Channels

You can create a favorite channel list that only holds the channels you want to watch. With the Favorite channel list selected, you will only see your favorite channels when you switch through channels.

### Create a favorites List

- 1 - While watching a TV channel, press **≡ Channel list** to open the channel list.
- 2 - Select the channel, and press **— Mark as favorites** to mark as favorite.
- 3 - The selected channel is marked with a **♥**.
- 4 - To finish, press **← Back**. The channels are added to the Favorites list.

## Remove Channel from the Favorites List

To remove a channel from the favorites list, select the channel with , then press  **Unmark as favorite** again to unmark as favorite.

# 8. TV Guide

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## 8.1. What You Need

With the TV guide you can view a list of the current and scheduled TV programs of your channels. Depending on where the TV guide information (data) is coming from, analog and digital channels or only digital channels are shown. Not all channels offer TV guide information.

The TV can collect TV guide information for the channels that are installed on the TV (e.g. the channels you watch with Watch TV). The TV cannot collect the TV guide information for channels viewed from a digital receiver.

---

## 8.2. Using the TV Guide

### Open the TV Guide

To open the TV guide, press **≡ TV GUIDE**.

Press **≡ TV GUIDE** again to close.

The first time you open the TV Guide, the TV scans all TV channels for program information. This may take several minutes. TV guide data is stored on TV.

### Tune to a program

#### Switch to a program

- From the TV guide, you can switch to a current program.
- To select a program, use the arrow keys to highlight the program name.
- Navigate to the right to view programs scheduled later that day.
- To switch to the program (channel), select the program and press **OK**.

#### View program details

To view the details of the selected program, press **ℹ INFO**.

### Update TV Guide

You can update the TV guide to get the latest program information.

To update the TV guide, press **≡ OPTIONS** and select **Update TV guide**. It may take few minutes to complete the update.

### Change Day

If the TV guide information comes from the broadcaster, you can press **Channel up** to view the schedule for the upcoming days. Press **Channel down** to go back to the previous day.

Alternatively, you can press **≡ OPTIONS** and select **Change day**.

### Search by Genre

If the information is available, you can look up scheduled programs by genre like movies, sports, etc.

To search for programs by genre, press **≡ OPTIONS** and select **Search by genre**.

Select a genre and press **OK**. A list with the found programs appears.

# 9. Videos, Photos and Music

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## 9.1. From a USB Connection

You can view your photos or play your music and videos from a connected USB flash drive or USB Hard Drive.

With the TV switched on, plug in a USB flash drive or a USB Hard Drive to one of the USB connections.

Press **SOURCES**, then select **USB**; you can browse your files in the folder structure you have on the USB Hard Drive.

---

## 9.2. From a Computer or NAS

You can view your photos or play your music and videos from a computer or a NAS (Network Attached Storage) in your home network.

The TV and computer or NAS must be in the same home network. On your computer or NAS, you need to install Media Server Software. Your Media Server must be set to share your files with the TV. The TV shows your files and folders as they are organized by the Media Server or as they are structured on your computer or NAS.

The TV does not support subtitles on video streams from a computer or NAS.

If the Media Server supports searching for files, a search field is available.

To browse and play the files on your computer...

- 1 - Press **SOURCES**, select **Network** and press **OK**.
  - 2 - Once a device is connected, the **Network device** item is replaced by the connected device name.
  - 3 - You can browse and play your files.
  - 4 - To stop playing videos, photos or music, press **EXIT**.
- 

## 9.3. Photos

### View Photos

- 1 - Press **SOURCES**, select **USB** and press **OK**.
- 2 - Select **USB Flash Drive** and then select the USB device you need.
- 3 - Select **Photo**; you can press **Sort** to browse your photos by day, month or year.
- 4 - Select one of photos, and press **OK** to view the selected photo.

- To view photos, select **Photos** in the menu bar, select a photo thumbnail and press **OK**.
- If there are several photos in the same folder, select a photo and press **Slide show** to start a slide show of all the photos in this folder.

- Show a photo and press **INFO** to show the following:

Progress bar, Playback control bar, **◀** (Jump to the previous photo in a folder), **▶** (Jump to the next photo in a folder), **▶** (Start slideshow playback), **||** (Pause the playback), **▶** (Start slideshow), **↺** (Rotate photo)

When viewing a photo file, press **≡ OPTIONS** to...

#### Shuffle off, Shuffle on

View the pictures in sequential order, or at random.

#### Repeat, Play once

View the pictures repeatedly or once only.

#### Stop music

Stop music playback.

#### Slideshow speed

Set the speed of the slideshow.

#### Slideshow transitions

Set the transition from one picture to the next.

### Photo Options

When browsing photo files, press **≡ OPTIONS** to...

#### List/Thumbnails

View photos with list view or thumbnails view.

#### Shuffle off, Shuffle on

View the pictures in sequential order, or at random.

#### Repeat, Play once

View the pictures repeatedly or once only.

#### Stop music

Stop music playback.

#### Slideshow speed

Set the speed of the slideshow.

#### Slideshow transitions

Set the transition from one picture to the next.

---

## 9.4. Videos


### Play Videos

To play a video on the TV:

Select  **Videos**, select the file name, and press **OK**.

- To pause the video, press **OK**. Press **OK** again to continue.
- To rewind or fast-forward, press **⏮** or **⏭**. Press the keys several times to speed up - 2x, 4x, 8x, 16x, 32x.
- To jump to the next video in a folder, press **OK** to pause and select **▶** on screen and press **OK**.
- To go back to the folder, press **⏪**.

#### Open video folder


1 - Press  **SOURCES**, select **USB** and press **OK**.

2 - Select **USB Flash Drive** and then select the USB device you need.

3 - Select **Videos** and select one of video, you can press **OK** to play the selected video.

- Select a video and press **i** **INFO** to show file information.
- Play back a video and press **i** **INFO** to show the following:

Progress bar, Playback control bar, **⏮** (Jump to the previous video in a folder), **▶** (Jump to the next video in a folder), **▶** (Playback), **⏮** (Rewind), **⏭** (Fast forward), **⏸** (Pause the playback), **⏮** (Play All/Play one), **⏭** (Shuffle on/Shuffle off)

During video playback, press  **OPTIONS** to...

#### Subtitles

Display the subtitles if available, select **On**, **Off**, or **On during mute**.

#### Subtitle language

Select subtitle language, if available.

#### Character set

Select the character set if external subtitles are available.

#### Audio language

Select audio language, if available.

#### Status

Display video file information.

#### Repeat, Play once

Play videos repeatedly or once.

#### Subtitle settings

Set the Font size, Subtitle color, Subtitle position and Time sync offset if the options are available.

## Video Options

When browsing video files, press  **OPTIONS** to...

#### List/Thumbnails

View video files with list view or thumbnail view.

#### Subtitles

Display the subtitles if available, select **On**, **Off**, or **On during mute**.

#### Shuffle off, Shuffle on

Play videos in sequential order or at random.

#### Repeat, Play once


Play videos repeatedly or once.

---

## 9.5. Music

### Play Music

Open music folder

1 - Press  **SOURCES**, select **USB** and press **OK**.

2 - Select **USB Flash Drive** and press **➤** (right) to select the USB device you need.

3 - Select **Music** and select one of music, you can press **OK** to play the selected music.

- Select music and press **i** **INFO** to show file information.
- Play music and press **i** **INFO** to show the following:  
Progress bar, Playback control bar, **⏮** (Jump to the previous music in a folder), **▶** (Jump to the next music in a folder), **▶** (Playback), **⏮** (Rewind), **⏭** (Fast forward), **⏸** (Pause the playback), **⏮** (Play All/Play one)

During music playback, press  **OPTIONS** to...

#### Repeat, Play once

Play songs on a loop or just once.

## Music Options

When browsing music files, press  **OPTIONS** to...

#### Shuffle off, Shuffle on

Play songs in sequential order or at random.



#### Repeat, Play once

Play songs on a loop or just once.

# 10. Open TV Setting Menus

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## 10.1. Quick Menu and Frequent Settings

Press  Quick Menu/MENU key on the remote control to find the **Quick Menu**, then press the arrows  (Left) to find the **Frequent settings**.

\* Note: the options in **Quick menu** and **Frequent settings** may vary depending on the product feature or use case.


### Quick Menu:

- **Help** - Diagnose and get more information about your TV.
- **All settings** - View all settings menu.
- **Sources** - To open the Sources menu.
- **Sunrise alarm\*** - To launch the **Sunrise alarm**.
- **Watch TV** - To switch back to watch TV.
- **TV Guide** - To open the TV Guide.
- **Channels** - To open the channel list.
- **Eco settings** - To open the Eco settings menu.
- **Media** - To launch the media file player to play files from a USB drive or the network.
- **Demo Me** - To manage demo files.


### Frequent settings:

- **Picture style** - Select one of preset picture styles for ideal picture viewing.
- **Picture format** - Select one of preset picture format which fits the screen.
- **Sound style** - Select one of preset sound styles for ideal sound settings.
- **EasyLink 2.0** - Control and adjust the settings of the EasyLink 2.0-compliant HDMI sound system.
- **Audio out** - Set the TV to play the sound on TV or on the connected audio system.
- **Bluetooth® devices** - Setting for Bluetooth® devices.
- **Personalized sound** - Personalize your TV speaker sound.
- **Ambilight style\*** - Select a preset Ambilight style.
- **Ambisleep\*** - Turn on or adjust the settings of Ambisleep, which simulates sunset to help you unwind before you fall asleep.
- **Install channels** - Update channels or start a complete new channel installation.
- **Wireless and networks** - Connect to your home network or adjust the network settings.
- **Screen off** - If you only listen to music on TV, you can switch off the TV screen.
- **Sleep timer** - Set the TV to switch to standby automatically after a preset time.

- **Update software** - Check for TV software update.

You can press  **Customize** to enable or disable the items from the list of Frequent settings.

### All settings menu:

Press  (**Home**) key on the remote control to go back to the Home screen. You can access the **Settings** menu via the settings icon at the top-right corner on the Home screen.

\*Ambilight setting is only for models which support the Ambilight function.

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


## 10.2. All Settings

### Picture Settings

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#### About the Picture Settings Menu

The picture setting menu provides an easy flow to access multi-level picture settings from general to advanced. For some picture settings, values can be changed by breakaway menu to let you view all the setting values and preview the effects that will be applied.

On the first level of the Picture setting menu, you can always select an item and press the **OK** key to go to the next level of options. If a breakaway menu appears, you can slide or select a box to choose the setting values and preview the effect and then press **OK** to confirm the change. If there are other setting options on the same level, you can press the  (up) or  (down) key to scroll to them without leaving the breakaway menu. Once you have finished changing the settings, you can keep pressing the  **Back** key to leave or close the setting menus.

---

#### Picture Style

##### Select a style

For easy picture adjustment, you can select a preset picture style.

 (**Home**) > **Settings** > **Picture** > **Picture style**, press **OK** to change to the next available option.

The available Picture styles are:

- **Personal** - The picture preferences you set during the first start up.
- **Crystal Clear** - Ideal for daylight viewing.
- **Home Cinema** - Ideal for daily movie home entertainment experience.
- **ECO** - Most energy conscious setting



- **Movie** - Ideal for watching movies with original studio effect.
- **Game\*** - Ideal for playing games.
- **Monitor\*\*** - Ideal for computer application display. Original video is displayed with minimum processing.

\* Picture style - Game is only available in HDMI video and streaming video apps application.

\*\* Picture style - Monitor is only available when HDMI source video is applicable for PC application.

- The TV can play HDR programs from any HDMI connection, broadcast, Internet source (e.g. Netflix) or connected USB memory device.
- The TV will automatically switch to HDR mode with indication. TV supports following HDR formats: Hybrid Log Gamma, HDR10, and HDR10+ but it is subject to the availability of such HDR format in content providers.

**For HDR content (Hybrid Log Gamma, HDR10 and HDR10+)**

The styles for HDR (Hybrid Log Gamma, HDR10 and HDR10+) content are:

- HDR Personal
- HDR Crystal Clear
- HDR Home Cinema
- HDR ECO
- HDR Movie
- HDR Game
- HDR Monitor

### Restore picture style

To restore the style to its original setting, go to **⬆️ (Home) > Settings > Picture > Picture style**, then select **Restore picture style** or press **⏮️ Restore style**.

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## Contrast Settings

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### Brightness

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#### Ambient Light Level Optimization

**⬆️ (Home) > Settings > Picture > Contrast > Brightness > Ambient light level optimization.**

Switch on to automatically reduce eye strain under different ambient light conditions.

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### Backlight Contrast

**⬆️ (Home) > Settings > Picture > Contrast > Brightness > Backlight contrast.**

Adjust the contrast value of the picture. You can

decrease contrast value to reduce power consumption.

---

### Contrast Mode

**⬆️ (Home) > Settings > Picture > Contrast > Brightness > Contrast mode.**

Select **Normal**, **Optimized for picture**, **Optimized for energy saving** to set the TV to automatically reduce the contrast for lower power consumption or the best picture experience, or select **Off** to switch off the adjustment.

---

### Video Level

**⬆️ (Home) > Settings > Picture > Contrast > Brightness > Video level.**

Adjust the video contrast level.

---

### Dark Details

#### Gamma

**⬆️ (Home) > Settings > Picture > Contrast > Dark details > Gamma.**

To set a nonlinear setting for picture luminance and contrast.

**Note:** Not available for some models when **Ambient dark detail optimization** or **Dark detail optimization** is set to **On**.

---

### Black Level

**⬆️ (Home) > Settings > Picture > Contrast > Dark details > Black level.**

To set the black level of the picture.

**Note:** Setting the black level far from reference value (50) may result in lower contrast (dark detail disappears or black picture becomes gray).

---

### Contrast Enhancement

#### Dynamic Enhancement Level

**⬆️ (Home) > Settings > Picture > Contrast > Contrast enhancement > Dynamic enhancement level.**

Select **Off**, **Maximum**, **Medium**, or **Minimum** to set the level at which the TV automatically enhances the details in the dark, middle and light areas of the picture.

**Note:** Not available when an HDR signal is detected. Not available in **Monitor** mode.

---

## HDR Control

---

### HDR Effect Settings

🏠 (Home) > Settings > Picture > Contrast > HDR control > HDR10/ HDR10+ effect / HLG effect.

You can adjust the HDR effect level to **Off**, **More details**, **Balanced** or **More brightness** for HDR content.

---

### Color Settings

🏠 (Home) > Settings > Picture > Color.

#### Saturation

🏠 (Home) > Settings > Picture > Color > Saturation.

To adjust the value of saturation for the colors.

**Note:** not available when picture style is **Monitor** or **HDR Monitor**.

#### Adjust the tint setting

🏠 (Home) > Settings > Picture > Color > Tint.

To adjust the tint setting value.

#### Adjust the color enhancement

🏠 (Home) > Settings > Picture > Color > Color enhancement.

Select **Maximum**, **Medium**, **Minimum** or **Off** to set the level of the color intensity and the details in bright colors.

**Note:** not available when a Dolby Vision signal is detected and the picture style is **Monitor** / **HDR Monitor**

#### Adjust the wide color gamut

🏠 (Home) > Settings > Picture > Color > Wide color gamut.

To switch wide color gamut on/off. Applicable to some TV models only.

#### Adjust color temperature

🏠 (Home) > Settings > Picture > Color > Color temperature > Whitepoint.

Select **Warm**, **Normal**, **Cool** or **Custom** to set the color temperature for your preference.

🏠 (Home) > Settings > Picture > Color > Color temperature > 2 whitepoint alignment or 20 whitepoint alignment.

Customize the whitepoint alignment based on the

selected color temperature of the picture.

### Color control

🏠 (Home) > Settings > Picture > Color > Color control.

The **Color control** setting is only available when **Color enhancement** is set to **Off**. To adjust or reset to default values for **Hue**, **Saturation** and **Intensity** for the color **Red**, **Yellow**, **Green**, **Cyan**, **Blue** and **Magenta**. If you want to reset all values to default, select **Reset all to default**.

---

### Sharpness

#### Enhancement

🏠 (Home) > Settings > Picture > Sharpness > Enhancement.

To adjust the sharpness value of the picture.

#### Texture enhancement

🏠 (Home) > Settings > Picture > Sharpness > Texture enhancement.

Switch on to have superior sharpness in line edges and details.

---

### Picture Clean

#### Noise reduction

🏠 (Home) > Settings > Picture > Picture clean > Noise reduction

Select **Off**, **Maximum**, **Medium**, **Minimum** to set the level for removing noise from video content. Noise is mostly visible as small moving dots in the picture.

\* Note: The **Noise reduction** settings are not available when input source frame rate is higher than 120Hz.

#### Artifact reduction

🏠 (Home) > Settings > Picture > Picture clean > Artifact reduction

Select **Off**, **Maximum**, **Medium**, **Minimum** to have different degrees of artifact smoothing in digital video content. Artifacts are mostly visible as small blocks or jagged edges in images.

\* Note: The **Artifact reduction** settings are not available when input source is 4K resolution.

---

## Quick Picture Settings

### 🏠 (Home) > Settings > Picture > Quick picture settings

- During the first installation, you made some picture settings in a few easy steps. You can redo these steps in the **Quick picture settings** menu.
- Select the picture setting you prefer and go to the next setting.
- To do these steps, make sure the TV can tune to a TV channel or can show a program from a connected device.

---

## Screen Settings

### Picture Format

#### 🏠 (Home) > Settings > Screen > Picture format

If the picture is not filling the whole screen, if black bars are showing on the top or bottom or at both sides, you can adjust the picture to fill the screen completely.

To select one of the basic settings to fill the screen...

- **Wide screen** – automatically zooms in on the picture to 16:9 full screen. Picture content aspect ratio may change.
- **Fill screen** – automatically enlarges the picture to fill the screen. Picture distortion is minimal, subtitles remain visible. Not suitable for PC input. Some extreme picture formats can still show black bars. Picture content aspect ratio may change.
- **Fit to screen** – automatically zooms in on the picture to fill the screen without distortion. Black bars may be visible. Not supported for PC input.
- **Original** – automatically zooms in on the picture to fit the screen at the original aspect ratio. No content lost visible.

#### 🏠 (Home) > Settings > Screen > Picture format > Advanced

To format the picture manually...

- **Shift** – select on the arrows to shift the picture. You can only shift the picture when it is zoomed in.
- **Zoom** – select on the arrows to zoom in.
- **Stretch** – select on the arrows to stretch the picture vertically or horizontally.
- **Undo** – select to return to the picture format you started with.

Some Picture format setting selections may not be available in some conditions. For example, in video streaming, Android app application, gaming mode, etc.

---

## Sound Settings

### Sound Style

#### Select a style


For easy sound adjustment, you can select a preset sound style.

#### 🏠 (Home) > Settings > Sound > Sound style

The available sound styles are:

- **AI mode** - Select AI mode for intelligent switching of sound style based on audio content.
- **Original** - Most neutral sound setting
- **Entertainment** - Ideal for watching movies
- **Music** - Ideal for listening to music
- **Spatial Music** - Ideal for gaming
- **Dialog** - Ideal for speech
- **Personal** - Select to adjust your preferred sound settings

#### Restore Personal settings

- 1 - Set the sound style to Personal.
- 2 - Press the color key  **Restore Style**, and press OK. The style is restored.

---

### Personal Sound Settings

#### Speaker virtualizer

##### 🏠 (Home) > Settings > Sound > Personal settings > Speaker virtualizer

Select **On** or **Auto (Dolby Atmos)** to enable Dolby Atmos, which can add height dimension in sound. With height dimension, sound can be precisely placed and moved in three-dimensional space.

#### Clear dialog

##### 🏠 (Home) > Settings > Sound > Personal settings > Clear dialog

Select **On** to improve the sound for speech. Ideal for news programs.

#### AI Equalizer

##### 🏠 (Home) > Settings > Sound > Personal settings > AI Equalizer

Select **On** to enable intelligent equalizer adjustment based on audio content and custom settings.

#### Custom AI Equalizer

##### 🏠 (Home) > Settings > Sound > Personal

## settings > Custom AI Equalizer

Press the **Arrow/navigation** keys to adjust the equalizer settings.

\* Note: To restore the **Personal settings** to their original setting, select Back to **Sound style**, then press **Restore style**.

---

## TV Placement

⬆️ (Home) > Settings > Sound > TV placement

Select **On a TV stand** or **On the wall** to have best sound reproduction according to the setting.

---

## Personalized Sound

### Personalized sound settings

⬆️ (Home) > Settings > Sound > Personalized sound.

### Personalize your TV speakers sound

Personalized sound settings allow you to create a personal profile based on your hearing abilities by taking a hearing test. You can choose your preferred sound settings so that you can hear more clearly and experience better sound, thereby enhancing your TV viewing experience.

### How do I test my hearing and set up my hearing profile?

Start the hearing test from **⬆️ (Home) > Settings > Sound > Personalized sound > Configure**. Create your own hearing profile with a short hearing test.

Before the test, you need to switch your current audio out to **TV speakers** as the setup affects the TV speakers only. The hearing test works best when carried out in silence; make sure your environment is quiet when testing.

Select **Start** and enter a profile name to start the test.

During the test:

- You will hear a beep sound increasing in volume.
- Press **OK** button when you hear the beep sound.
- Then, you will hear a beep sound decreasing in volume.
- Press **OK** button when you don't hear the beep sound.
- The test will repeat 5 times with different tones.

Once the test is complete, your hearing test results will be presented, and you can then select **Save and exit** to store the profile. You can apply the current profile or create other profiles, with a maximum of 3 profiles. You can also **Rename profiles** or **Remove profiles** when needed.

---

## EasyLink 2.0

Control the sound settings of the HDMI sound system via EasyLink 2.0

⬆️ (Home) > Settings > Sound > EasyLink 2.0.

You can adjust the individual sound settings of the HDMI sound system via **Frequent settings** or **Settings > Sound > EasyLink 2.0**. This is only applicable to EasyLink 2.0-compliant HDMI sound systems. To switch on the control, make sure the **EasyLink 2.0 sound control** menu item is set to **On** under **General settings > EasyLink > EasyLink 2.0 sound control**.

### Select sound style

⬆️ (Home) > Settings > Sound > EasyLink 2.0 > Sound style.

Switch between the preset sound styles. There are ideal styles for watching movies, listening to music and other sound content.

- **Movie** - Ideal sound style for watching movies.
- **Music** - Optimized for listening to music.
- **Voice** - Enhances the dialog in the vocals.
- **Stadium** - Gives the feel of a large open-air stadium.
- **Custom** - Personalized sound mode. This setting is only available when the connected device is compatible with the TV.

### Adjust bass level

⬆️ (Home) > Settings > Sound > EasyLink 2.0 > Bass.

Press the **Arrow/navigation** keys to adjust the bass level.

### Adjust treble level

⬆️ (Home) > Settings > Sound > EasyLink 2.0 > Treble.

Press the **Arrow/navigation** keys to adjust the treble level.

### Custom Equalizer

⬆️ (Home) > Settings > Sound > EasyLink 2.0 > Custom Equalizer.

Adjust the frequency bands when the **Sound style** is set to **Custom**. Press the **Arrow/navigation** keys to adjust the AI Equalizer level. This setting is only available when the connected device is compatible with the TV.

### Surround Sound

⬆️ (Home) > Settings > Sound > EasyLink 2.0 > Surround Sound.

Select a surround effect from the preset types.

- Upmix - Upmix to take full advantage of all speakers.
- Standard - Speaker output through the original channels.
- Surround AI - Optimum surround effect using AI analysis.

## DRC

🏠 (Home) > Settings > Sound > EasyLink 2.0 > DRC.

Select the preferred Dynamic Range Control (DRC).

- Auto - Dynamic range is automatically adjusted.
- On - Optimize the dynamic range.
- Off - Turn off dynamic range adjustment.

## Height speakers

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Height speakers.

Select the preferred height speakers movement. This setting is only available when the connected device is compatible with the TV.

- Auto - Dynamic movement depending on content.
- On - Always elevated.
- Off - Flat position.

## Select sound stage

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Sound stage.

Select a listening experience. This setting is only available when the connected device is compatible with the TV.

- Auto - Dynamic setting changes depending on content.
- On - Immersive Sound Stage, good for watching movies.
- Off - Crystal Sound Stage, good for listening to music and dialog.

## Reset all to default

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Reset all to default.

Reset all the EasyLink 2.0 sound settings back to the original factory settings.

---

## Room Calibration

### Room calibration

🏠 (Home) > Settings > Sound > Room calibration.

This calibration enables the TV to determine the acoustics in your room and provide optimized sound quality with the TV speakers, best matching the acoustics.

You need to pair your remote control with the TV before starting the setup and make sure the TV **Audio out** setting is **TV speakers**. For a more accurate result, please keep the room quiet.

To start the room calibration:

- 1 - Hold your remote control at the listening position and point it toward the TV during the tuning process.
- 2 - Select **Calibrate now** or **Calibrate again** to start the calibration.
- 3 - A test sound will be played and measured through your remote control. Hold your remote control and point it toward the TV; this can take several seconds.
- 4 - Once your TV speakers are successfully calibrated, select **Test** to listen to the sound before and after the TV speakers are calibrated. Select **Apply** to accept the setting, select **Try again** to redo the calibration, or select **Cancel** to abort the calibration.

When room calibration setup is successful and applied, you can go to 🏠 (Home) > Settings > Sound > **Room calibration** and select **Apply calibration** Off/On to disable/enable the calibrated settings.

---

## Advanced sound settings

### Volume Control

#### Auto volume

🏠 (Home) > Settings > Sound > Advanced > Auto volume

Select **On** to automatically level out sudden volume differences. Typically when you are switching channels. Select **Night mode** for a more comfortable, quiet listening experience.

#### Delta volume

🏠 (Home) > Settings > Sound > Advanced > Delta volume

The Delta volume setting can be used to adjust and balance the sound level difference between the TV channel and the HDMI source input. Press the **Arrow / navigation** keys to adjust the delta value for TV speaker volume.

\* Note: Delta volume is available when the input source is set to HDMI or Analog sources and the Audio out is set to **TV speakers** or **HDMI sound system**.

---

## Audio Out Settings

🏠 (Home) > Settings > Sound > Advanced > Audio out

Set the TV to play the sound on TV or on the connected audio system.

You can select where you want to hear the TV sound and how you want to control it.

- If you select **TV Speakers**, the TV speakers are always on. All the sound-related settings are applicable to this mode.
- If you select **Wired headphones**, the sound plays through headphones.
- If you select **Optical**, the TV speakers are switched off and the sound plays through the device connected to Digital Audio Out - Optical.
- If you select **TV Speakers + Wired headphones**, the sound plays through the TV speakers and headphones.

With an audio device connected with HDMI CEC, select **HDMI sound system**. The TV will switch off the TV speakers when the device is playing the sound.

To adjust the volume of TV speakers or headphones, press **Volume** and press the arrows **➤** (right) or **➤** (left) to select the output source you want to adjust. Press **Volume +** or **-** to adjust the volume level of the selected output source.

---

## eARC

### eARC setting

⬆ (Home) > Settings > Sound > Advanced > eARC

Set eARC mode to **Automatic** or **Off**. HDMI eARC (Enhanced Audio Return Channel) is an advancement over the previous ARC. It supports the latest high-bitrate audio formats up to 192kHz, 24-bit, uncompressed 5.1 and 7.1, and 32-channel uncompressed audio.

**HDMI eARC** is only available on **HDMI 1**.

---

## Digital Output Settings

Digital output settings are available for SPDIF output (optical) and HDMI ARC sound signals.

### Digital out format

⬆ (Home) > Settings > Sound > Advanced > Digital out format

Set the audio out signal of the TV to fit the sound capabilities of the connected Home Theater System.

- **Stereo (uncompressed)**: If your audio playback devices have no multichannel sound processing, select to only output stereo content to your audio playback devices.
- **Multichannel**: Select to output multichannel audio content (compressed multichannel sound signal) or stereo audio content to your audio playback devices.
- **Multichannel (bypass)**: Select to send the original bitstream from HDMI ARC to the connected HDMI sound system.

- Make sure your audio playback devices support Dolby Atmos feature.

- SPDIF output (DIGITAL AUDIO OUT) will be disabled when streaming Dolby Digital Plus content.

### Digital out leveling

⬆ (Home) > Settings > Sound > Advanced > Digital out leveling

Adjust the loudness level from device which is connected to digital audio output (SPDIF) or HDMI.

- Select **More** to have louder volume.
- Select **Less** to have softer volume.

### Digital out delay

⬆ (Home) > Settings > Sound > Advanced > Digital out delay

For some Home Theater Systems, you might need to adjust the audio sync delay to synchronize the audio to the video. Select **Off** if a sound delay is set on your Home Theater System.

### Digital out offset (Only available when Digital out delay set to On)

⬆ (Home) > Settings > Sound > Advanced > Digital out offset

- If you cannot set a delay on the Home Theater System, you can set the TV to sync the sound.
- You can set an offset that compensates for the time necessary for the Home Theater System to process the sound of the TV picture.
- You can set the value from 0 to 60ms.

---

## Ambilight

### Ambilight Style

⬆ (Home) > Settings > Ambilight > Ambilight style

You can select the way Ambilight follows sound or video or select **Off** to turn off the Ambilight.

Select one of the styles that follow the dynamics of the picture on your TV screen.

- **Standard** - Ideal for day-to-day TV watching.
- **Sports** - Ideal for sports programs.
- **Cinema** - Ideal for movies and home-entertainment experiences.
- **Gaming** - Ideal for playing games.
- **Music** - Listening to music and following the dynamics of the sound.
- **Fixed color** - Select a static color of your choice.

## Follow App

🏠 (Home) > Settings > Ambilight > Ambilight style > Follow app

This function is available when you control Ambilight with the **Philips Smart TV app**.

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## Ambilight Personalization

### Ambilight personalization

🏠 (Home) > Settings > Ambilight > Ambilight personalization / Ambilight personalization (current selected style)

You can customize the current style to your preference.

- Eco room adaptive - Enabling or disabling automatic brightness adjustments, linked to the room conditions.
- Brightness - To set the Ambilight brightness level.
- Saturation - To set the Ambilight saturation level.
- Dynamics - To set the Ambilight dynamic effect speed.
- Ambilight On dark content - Select the minimum Ambilight brightness while dark content is displayed.

Restore style - Press  **Reset all** to restore the Ambilight style to default.

When **Ambilight style** is set to **Fixed color**, you can customize the style:

- Fixed color selection - Select your preferred static color from the color palette and tune it to your preference via color sliders.
- Dynamic effects - Add dynamic effects to the selected color.

When the **Ambilight style** is set to **Music**, you can select predefined Ambilight music profiles from **Music style selection**:

- Lumina - Ideal for watching music videos.
- Disco - Ideal for listening to loud retro music.
- Rhythm - Ideal for listening to rhythmic music.

---

## Lounge Light

The lounge light mode of your TV allows you to switch on the Ambilight when the TV is in standby. So you can light up your room with Ambilight.

### Enable lounge light mode

🏠 (Home) > Settings > Ambilight > Lounge light > Auto start on standby.

Switch on to allow lounge light mode to be activated when TV is on standby.

After putting your TV on standby, if you want to switch on the Ambilight lounge light, follow these steps:

- 1 - Press the **AMBILIGHT** key on the remote control to activate the Ambilight lounge light.
- 2 - Press the navigation keys **<** (left) or **>** (right) to change different light effects.
- 3 - Press the navigation keys **▲** (up) or **▼** (down) to adjust the brightness.
- 4 - To switch off the Ambilight lounge light, press the **AMBILIGHT** key again.

### Lounge light color selection

🏠 (Home) > Settings > Ambilight > Lounge light > Lounge light color selection.

Select your preferred Lounge light color from the color palette and tune it via color sliders to your preference.

### Dynamic effects

🏠 (Home) > Settings > Ambilight > Lounge light > Dynamic effects.

Activate dynamic effects for your selected color.

### Brightness

🏠 (Home) > Settings > Ambilight > Lounge light > Brightness.

Lounge light brightness level selection.

### Duration

🏠 (Home) > Settings > Ambilight > Lounge light > Duration.

Set the duration (in minutes) of Lounge light mode.

---

## Ambisleep

Ambisleep simulates sunset to help you unwind before you fall asleep. At the end of simulation, the TV will automatically switch to standby.

### Start Ambisleep

🏠 (Home) > Settings > Ambilight > Ambisleep > Start Ambisleep.

Select to turn on Ambisleep.

### Ambisleep color selection

🏠 (Home) > Settings > Ambilight > Ambisleep >



## Ambisleep color selection.

Select your preferred Ambisleep color from the color palette and tune it via color sliders to your preference.

### Brightness

🏠 (Home) > Settings > Ambilight > Ambisleep > Brightness.

Set the starting brightness of the Ambisleep.

### Duration

🏠 (Home) > Settings > Ambilight > Ambisleep > Duration.

Set the duration (in minutes) of the Ambisleep.

### Sound

🏠 (Home) > Settings > Ambilight > Ambisleep > Sound.

Select the nature sound you like to use during Ambisleep.

The available nature sounds are:

- Campfire
- Rain
- Rainforest
- Tropical beach
- Waterfall
- Silent

---

## Advanced Ambilight Settings

### Wall color behind the TV

🏠 (Home) > Settings > Ambilight > Advanced > Wall color behind the TV

- Neutralize the influence of a colored wall on the Ambilight colors
- Select the color of the wall behind the TV and the TV will modify the Ambilight colors to appear as they are intended.

### Fade out to off

🏠 (Home) > Settings > Ambilight > Advanced > Fade out to off

Set Ambilight to switch off immediately or slowly fade out when you switch off the TV. The slow fade out gives you some time to switch on the lights in your living room.


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## Sunrise Alarm

Sunrise alarm uses Ambilight, music and weather information for a new wake-up experience.

- TV wakes up at the selected time and day set by you.
- Lights up Ambilight with fade-in colored screen and music.
- Slowly transit to weather forecast with matching backdrop.



To enter the Sunrise alarm setting menu:




1 - Press  **Quick Menu/MENU** key to open **Quick Menu**.

2 - Select **Sunrise alarm** and press **OK** to open it.

- **Alarm**: set multiple alarms up to 5, for repeat/select days, On/Off settings.
- **Backdrop**: follow weather or select from photo categories.
- **Music**: music track to play during wake up.
- **Switch on volume**: music volume to set during wake up.
- **Weather**: settings for local weather forecast.
- **Preview**: you can preview the wake up effect.

If the TV is in standby and the alarm time is reached, the TV will wake up from standby. Wake-up screen fade-in, Ambilight is On, music fade-in and then show weather information with backdrop.

To exit Sunrise alarm, press  **Standby / On**,  **Back** or  **(Home)** key on remote control.

-  **Standby / On**: exits the Sunrise app and switches TV to standby.
-  **Back**: exits the Sunrise app and switches to last viewed TV source.
-  **(Home)**: exits the Sunrise app and switches to launcher.
- If Sunrise alarm has not exited to another application within 30 min after Sunrise wake-up, the TV will auto shutdown to standby.

### Note:

Keep the network connection alive for Sunrise alarm to function properly. Sunrise alarm cannot operate when the TV clock mode is set to manual. Go to the settings menu and change the clock mode to automatic. Alarm will not work if Location is set to Shop.

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## Wireless and Networks

### Home Network

To enjoy the full capabilities of your Philips Smart TV, your TV must be connected to the Internet.

Connect the TV to a home network with a high-speed Internet connection. You can connect your TV wirelessly or wired to your network router.



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## Connect to Network

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### Wireless Connection

#### What You Need

To connect the TV to the Internet wirelessly, you need a Wi-Fi router with a connection to the Internet. Use a high-speed (broadband) connection to the Internet.



#### Make the Connection - Wireless

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Connect to network > Wireless (Wi-Fi)

- 1 - In the list of found networks, select on your wireless network. If your network is not in the list because the network name is hidden (you switched off the SSID broadcast of the router), select Add New Network to enter the network name yourself.
- 2 - Enter your encryption key. If you entered the encryption key for this network before, you can select **OK** to make the connection immediately.
- 3 - A message will be shown when the connection is successful.

#### Turn Wi-Fi On or Off

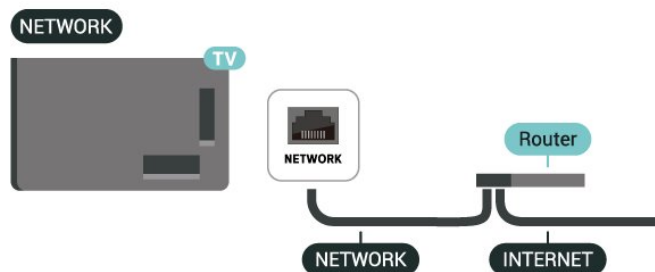
🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Wi-Fi On/Off

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### Wired Connection

#### What You Need

To connect the TV to the Internet, you need a network router with a connection to the Internet. Use a high-speed (broadband) connection to the Internet.



#### Make the Connection

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Connect to network > Wired

- 1 - Connect the router to the TV with a network cable (Ethernet cable\*\*).
- 2 - Make sure that the router is turned on.
- 3 - The TV constantly searches for the network connection.
- 4 - A message will be shown when the connection is successful.

If the connection fails, you can check the DHCP setting of the router. DHCP should be turned on.

\*\*To fulfill EMC regulations, use a shielded FTP Cat. 5E Ethernet cable.

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### Wireless and Network Settings

#### View Network Settings

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > View network settings

You can view all current network settings here. The IP and MAC address, signal strength, speed, encryption method, etc.

#### Network Configuration - Static IP

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Network Configuration > Static IP

If you are an advanced user and want to install your network with Static IP addressing, set the TV to **Static IP**.

#### Network Configuration - Static IP Configuration

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Static IP configuration

- 1 - Select **Static IP configuration** and configure the connection.
- 2 - You can set the number for the **IP Address, Netmask, Gateway, DNS 1, or DNS 2**.

## Switch On with Wi-Fi (WoWLAN)

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Switch On with Wi-Fi (WoWLAN)

You can switch this TV on from your smartphone or tablet if the TV is in Standby. The setting **Switch On with Wi-Fi (WoWLAN)** must be switched on.

## Digital Media Renderer - DMR

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Digital Media Renderer - DMR

If your media files do not play on your TV, make sure that the Digital Media Renderer is switched on. As a factory setting, DMR is switched on.

## Switch on Wi-Fi connection

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Wi-Fi On/Off

You can switch on or off Wi-Fi connection on your TV.

## Reset Screen Mirroring connection

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Reset Screen Mirroring connection

Clear the list of connected and blocked devices that are used with Screen Mirroring.

## TV network name

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > TV network name

If you have more than one TV in your home network, you can give the TV a unique name.

## Terms of use

🏠 (Home) > Settings > General settings > Terms of use

View the Terms of Use, which are displayed when you first connect your TV to the Internet.

## Privacy settings

🏠 (Home) > Settings > General settings > Privacy settings

View the Privacy settings, which are displayed when you first connect your TV to the Internet.

## Netflix settings

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Netflix settings

With **Netflix settings**, you can view the ESN number or deactivate the Netflix device.

## Clear Internet Memory

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Clear Internet Memory

With Clear Internet Memory, you can clear your Philips server registration and parental rating settings, video store app logins, all Philips App Gallery favorites, Internet bookmarks and history. Interactive MHEG applications can also save cookies on your TV. These files will also be cleared.

---

## TV Control with Matter

### Connect your TV to a Matter smart home network

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > TV Control with Matter

Matter is the foundation for connected things and a protocol to connect compatible devices and systems. You can add your TV to a Matter smart home network by scanning the QR code or entering the setup code.

---

## Connects with Control4®

### Switch to enable connection with Control4®

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Connects with Control4

Control4® is a provider of personalized automation and control solutions, helping to control multiple devices in your home. To connect your Philips Smart TV to Control4®, make sure your Control4® environment and devices are properly set.

## General Settings

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### Connection Related Settings

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#### USB Keyboard Settings

🏠 (Home) > Settings > General settings > USB keyboard settings

To install the USB keyboard, switch on the TV and connect the USB keyboard to one of the USB connections on the TV. When the TV detects the keyboard for the first time, you can select your keyboard lay-out and test your selection.

---

## Mouse Settings

🏠 (Home) > Settings > General settings > Mouse settings

Adjust the motion speed of the USB mouse.

---

## Power and Energy

### Set the Power-on behavior

🏠 (Home) > Settings > General settings > Power and energy > Power-on behavior

Set the TV to stay on the **Home** screen or the **Last source** when you power on the TV.

### Set screen off to save energy consumption

🏠 (Home) > Settings > General settings > Power and energy > Screen off

Select **Screen off**; the TV screen is switched off. To switch the TV screen back on, press any key (except **AMBILIGHT**, **Volume +** or **-**, **123** key and **navigation** keys) on the remote control.

### Set the TV to switch to Standby automatically after a preset time

🏠 (Home) > Settings > General settings > Power and energy > Sleep timer

Set the TV to switch to Standby automatically after a preset time. You can set the time to up to 180 minutes in increments of 10 or 30 minutes. If set to **Off**, the sleep timer is switched off. You can always switch off your TV earlier or reset the time during the countdown.

### Set TV switch off timer

🏠 (Home) > Settings > General settings > Power and energy > Switch off timer

Set the Switch off timer for the TV to switch off automatically to save energy. The setting **Off** deactivates automatic switch off.

- TV switches off if receiving a TV signal but you don't press a key on the remote control during a 4 hour period.
- TV switches off if not receiving a TV signal nor a remote control command for 10 minutes.
- If you use the TV as a monitor or use a digital receiver to watch TV (a Set-Top Box - STB) and you do not use the TV remote control, you should deactivate automatic switch off by setting it to **Off**.

### Set timer to switch off automatically when TV has no signal

🏠 (Home) > Settings > General settings > Power and energy > No signal timer

Your TV switches off automatically if there is no signal available after **10/15/20 minutes**.

---

## HDMI-CEC Connection - EasyLink

Connect HDMI CEC-compatible devices to your TV. You can operate them with the TV remote control. EasyLink HDMI CEC must be switched on, both on the TV and the connected device.



### Switch on EasyLink

🏠 (Home) > Settings > General settings > EasyLink > On

### Operate HDMI CEC-compatible devices with TV remote control

🏠 (Home) > Settings > General settings > EasyLink remote control > On

### EasyLink 2.0 sound control

🏠 (Home) > Settings > General settings > EasyLink 2.0 sound control > On

Slide to turn **On/Off** to control the sound settings of the HDMI sound system. You can adjust these settings via **Frequent settings** or **Settings > Sound > EasyLink 2.0**. This is only applicable to EasyLink 2.0-compliant HDMI sound systems.

### Note:

- EasyLink might not work with devices from other brands.
- The HDMI CEC functionality has different names depending on the brand. Some examples are: Anynet, Aquos Link, Bravia Theater Sync, Kuro Link, Simplink and Viera Link. Not all brands are fully compatible with EasyLink. Example HDMI CEC branding names are property of their respective owners.

---

## Screensaver Settings

🏠 (Home) > Settings > General settings > Screensaver settings > Screensaver

Select **Backdrop** to enable the Screensaver. Select **Off** to disable the Screensaver.

🏠 (Home) > Settings > General settings > Screensaver settings > When to start

Set the duration (in minutes) when TV is in idle state before activating the screensaver.

🏠 (Home) > Settings > General settings > Screensaver settings > Preview

Press **OK** to preview the screensaver.

---

## Location - Home or Shop

🏠 (Home) > Settings > General settings > Location

- Select the location of your TV
- Select **Shop**; the picture style is switched back to **Crystal Clear**, and you can adjust the shop settings.
- Shop mode is for in-store promotion.

---

## Shop Setup

🏠 (Home) > Settings > General settings > Shop setup

If the TV is set to **Shop**, you can view feature logos or set the availability of a specific demo for in-store use.

## Adjust picture and audio

🏠 (Home) > Settings > General settings > Shop setup > Picture and audio

Select **Optimized to shop** or **Custom settings** for picture and audio settings.

## Logos and banner

🏠 (Home) > Settings > General settings > Shop setup > Logos and banner

Set to display **Feature logos** and **Promotional banner**.

## Demo Me autostart

🏠 (Home) > Settings > General settings > Shop setup > Demo Me autostart / Ambilight Demo autostart

Turn **On/Off** the Demo Me or Ambilight Demo autostart.

---

## HDMI Ultra HD

Set the signal quality for each HDMI connector

🏠 (Home) > Settings > General settings > HDMI Ultra HD > HDMI (port)

This TV can display Ultra HD signals. Some devices - connected with HDMI - do not recognize a TV with Ultra HD and might not work correctly or show distorted picture or sound.

To avoid the malfunctioning of such a device, you can adjust **HDMI Ultra HD** setting when the TV is in the HDMI source. The recommended setting for legacy devices is **Standard**.

- The setting **Optimal** allows maximum up to Ultra HD (50Hz or 60Hz) RGB 4:4:4 or YCbCr 4:4:4/4:2:2/4:2:0 signals.
- The setting **Standard** allows maximum up to Ultra HD (50Hz or 60Hz) YCbCr 4:2:0 signals.

Maximum supported video timing format for HDMI Ultra HD options:

- Resolution: 3840 x 2160
- Frame rate (Hz): 50Hz, 59.94Hz, 60Hz
- Video data sub-sampling (bit-depth)
  - 8 bit: YCbCr 4:2:0, YCbCr 4:2:2\*, YCbCr 4:4:4\*, RGB 4:4:4\*
  - 10 bit: YCbCr 4:2:0\*, YCbCr 4:2:2\*
  - 12 bit: YCbCr 4:2:0\*, YCbCr 4:2:2\*

\* Supported only when **HDMI Ultra HD** is set to **Optimal**, or **Optimal (Auto Game)** / **Optimal (Auto Game 120Hz Pro)**.

Select **Standard** if the picture or sound is distorted.

- Set **Optimal (Auto Game)** / **Optimal (Auto Game 120Hz Pro)** to enable TV to support the HDMI Variable Refresh Rate\* video (on some models only and the **Picture style** setting is not **Monitor**). This option also enables TV to automatically set Picture/Sound style to Game whenever it is informed by the HDMI device connected to the TV.

\* With HDMI Variable Refresh Rate supported, the TV changes its refresh rate in real time according to the frame rate signal to synchronize with every picture. It is applied to reduce the lag, judder and frame tearing for better gaming experience.

### Note:

To watch HDR10+ content from an HDMI source, you may need to power off your player and power on again when the player is connected to a TV playing such content for the first time. HDR10+ content is supported only when **HDMI Ultra HD** is set to **Optimal** or **Optimal (Auto Game)** / **Optimal (Auto Game 120Hz Pro)**.

---

## Auto Movie Mode

### Set the Auto movie mode

🏠 (Home) > Settings > General settings > Auto movie mode

Set **Auto movie mode** to **On** if you want the TV to automatically set **Picture style** to **Movie** whenever it is informed by the HDMI device connected to the TV.

---

## Manage Demos

🏠 (Home) > Apps > Demo me > Manage demos

If the TV is set to **Shop**, you can manage the demo videos in the **Demo me** app.

### Play demo video

🏠 (Home) > Apps > Demo me > Manage demos > Play  
Select a demo video file and play.

### Copy demo file

🏠 (Home) > Apps > Demo me > Manage demos > Copy to USB  
Copy demo file to USB drive.

### Delete demo file

🏠 (Home) > Apps > Demo me > Manage demos > Delete  
Delete demo file from your TV.

### Configuration of demo

🏠 (Home) > Apps > Demo me > Manage demos > Configuration  
Set the TV to **Main TV** or **Sub TV**.

### Download new demo file

🏠 (Home) > Apps > Demo me > Manage demos > Download new  
If the **Configuration** is set to **Main TV**, you can download a new demo file.

### Auto delay setting

🏠 (Home) > Apps > Demo me > Manage demos > Auto delay setting  
Set the Auto delay time from **15 seconds** to **5 minutes**.

### Auto loop selection

🏠 (Home) > Apps > Demo me > Manage demos > Auto loop selection  
Select a demo file for auto loop playing.

---

## Reset TV Settings and Reinstall TV

### Reset all settings value to original TV settings

🏠 (Home) > Settings > General settings > Factory settings

### Redo full TV installation , and set TV status back to the first time you switch on

🏠 (Home) > Settings > General settings > Reinstall TV

Enter PIN code and select **Yes**; the TV will reinstall completely. All settings will be reset, and installed channels will be replaced. The installation can take a few minutes.

## Universal Access Settings

🏠 (Home) > Settings > Universal access

With **Universal Access** switched on, the TV is prepared for use for the deaf, hard of hearing, blind or partially sighted people.

### Switch on universal access settings

🏠 (Home) > Settings > Universal access > Universal access > On.

### Universal access for blind or partially sighted people

🏠 (Home) > Settings > Universal access > Audio description > Audio description > On

Digital TV channels can broadcast special audio commentary describing what is happening on screen.

🏠 (Home) > Settings > Universal access > Audio description > Mixed volume, Audio effects, Speech

- Select **Mixed volume**; you can mix the volume of the normal audio with the audio commentary. Press the arrows **➤** (Right) or **➤** (Left) to adjust the value.
- Set **Audio effect** to **On** for extra audio effects in the commentary audio, like stereo or fading sound.
- Select **Speech** to set speech preference, **Descriptive** or **Subtitles**.

## Lock Settings

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### Set Code and Change Code

🏠 (Home) > Settings > Child lock > Set code, Change code

Set new code or reset change code. The child lock code is used to lock or unlock channels or programs.

**Note:** If you forgot your PIN code, you can override the current code; use **8888** and enter a new code.

---

### Content and Age Rating Lock

🏠 (Home) > Settings > Child lock > Content rating lock / Age ratings lock

To prevent children from watching a program not suitable for them, you can set a lock to block the rated programs. Digital channels can have their programs rated by content. To watch a locked program, you must enter the Child lock code first.

---

### App lock

🏠 (Home) > Settings > Child lock > App lock

You can lock apps unsuited for children. The app lock asks for a PIN code when you try to start an 18+ rated app. This lock is only valid for 18+ rated apps from the Philips apps.

---

## Region and Language Settings

### Menu Language

🏠 (Home) > Settings > Region and language > Menu language

Change the language of the TV menu.

---

### Clock

🏠 (Home) > Settings > Region and language > Clock

#### Correct clock automatically

🏠 (Home) > Settings > Region and language > Clock > Auto clock mode

- The standard setting for the TV clock is **Automatic**. The time information comes from the broadcasted UTC - Coordinated Universal Time information.
- If the time is incorrect, you can use **Time Zone** to adjust it.

#### Correct clock manually

🏠 (Home) > Settings > Region and language > Clock > Auto clock mode > Manual

🏠 (Home) > Settings > Region and language > Clock > Date, Time

Go to previous menu, and select **Date** and **Time** to adjust the value.

#### Note:

- If none of the automatic settings display the time correctly, you can set the time manually.
- The Auto clock mode setting returns to Automatic after the TV power is turned off and then on again.

#### Set time zone or set a time offset for your region

🏠 (Home) > Settings > Region and language > Clock > Time zone


Select one of the time zones.

---

## 10.3. Eco Settings

### Settings for Energy saving


MENU > Eco settings > Energy saving

Press the **MENU** key on the remote control to open the **Quick Menu** and select **Eco settings** to set the options. Select and confirm to apply the Eco settings. This may reset some picture settings to original values and reduce some brightness of the Ambilight.\* Note that the TV experience might be affected by this setting. The  green leaf icon is appended when Eco settings are applied.

\*Ambilight setting is only for models which support the Ambilight function.

#### Set screen off to save energy consumption

MENU > Eco settings > Screen off

Select **Screen off**; the TV screen is switched off. To switch the TV screen back on, press any key (except **AMBILIGHT**,  **Volume +** or **-**, **123** key and navigation keys) on the remote control.

#### Set TV switch off timer

MENU > Eco settings > Switch off timer

Set the Switch off timer for the TV to switch off automatically to save energy. The setting **Off** deactivates

automatic switch off.

- TV switches off if receiving a TV signal but you don't press a key on the remote control during a 4 hour period.
- TV switches off if not receiving a TV signal nor a remote control command for 10 minutes.
- If you use the TV as a monitor or use a digital receiver to watch TV (a Set-Top Box - STB) and you do not use the TV remote control, you should deactivate automatic switch off by setting it to **Off**.

**Set timer to switch off automatically when TV has no signal**

**MENU > Eco settings > No signal timer**

Your TV switches off automatically if there is no signal available after **10/15/20 minutes**.

# 11. Gaming Control Bar

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The Gaming control bar is an integrated center for information display and settings control while playing games. It is available for the HDMI source when **Picture style** is set to **Game/HDR Game/Dolby Vision Game**.

When TV auto switch to Game mode (via game detection) is activated, the TV will show a message to inform you that Game mode is enabled and the gaming control bar can be enabled by long pressing the **MENU** key.

## Activation and deactivation

Long press the **MENU** key to launch the gaming control bar while in **Game** mode. To deactivate the gaming control bar, you can press **← Back** or it closes automatically after 25 seconds without interaction.

The Gaming control bar contains **Dashboard** and **Settings**; you can press the arrows **➤** (Right) or **➤** (Left) to switch between **Dashboard** and **Settings**.

## Dashboard

The **Dashboard** shows the key information for the gaming:

**Input lag**: current input lag status

**Frame rate**: current FPS (frame per second)

**Resolution**: video source resolution

**Content type**: video content is General or Movie or VRR/Freesync/G-Sync

**SDR/HDR format**: the supported source HDR or SDR type

**Color space**: supported source color space type

## Settings

The **Settings** contain related settings that can improve your gaming experience. Select and press **OK** on the setting icons to change the following settings:

**Crosshair**: select **On/Off** to show or hide the dial point.

**Shadow control**: select **Off** to use the current black level in **Picture settings**; select **On** to change the setting to a higher black level.

**Color temperature**: select the color temperature for your preference.

**Audio out**: select the device to output the sound.

**Ambilight\* style**: select **On** to turn on the Ambilight with gaming style; select **Off** to turn off the Ambilight.

\*Ambilight setting is only for models which support the Ambilight function.



# 12. Smart TV and Apps

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## 12.1. Setup Smart TV

The first time you open Smart TV, you need to configure your connection. Read and agree to the terms and conditions to continue.

The Smart TV Home screen is your link to the Internet. You can rent movies online, read newspapers, watch videos and listen to music, as well as shop online and watch TV programs whenever you like with On-line TV.

TP Vision Europe B.V. bears no responsibility regarding the content and the quality of the content provided by the content service providers.

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## 12.2. Store of Apps

Open the **Apps** tab on the Home screen to browse apps, a collection of tailored websites for TV.

Find the app for YouTube videos, a national newspaper, an online photo album, etc. There are apps to rent a video from an online video store and apps for watching programs you missed. If you cannot find the app you are looking for in **Apps**, search the Internet on the TV.

### Categories of Apps

You can sort the apps in **Apps** by category, such as **New**, **Video**, **Entertainment**, **News** and **Lifestyle**.

### Featured Apps

In this area, Philips presents a range of recommended apps for you. You can select and install them to enrich your Smart TV life.

### Internet

The Internet App opens the World Wide Web on your TV.

On your TV, you can view any Internet website but most of them are not tailored for a TV screen.

- Some plug-ins (e.g. to view pages or videos) are not available on your TV.
- Internet pages are shown one page at a time and full screen.

# 13. Netflix

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If you have a Netflix subscription, you can enjoy Netflix on this TV. Your TV must be connected to the Internet.


To open Netflix, press **NETFLIX** to open the Netflix App. You can open Netflix immediately from a TV in standby.

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

# 14. Amazon Prime Video

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With Amazon Prime membership, you gain access to thousands of popular movies and TV show, including exclusive Prime Originals.

Press the  key to open the Amazon Prime Video app. Your TV must be connected to the Internet to use the app. For more information about Amazon Prime Video, please visit [www.primevideo.com](http://www.primevideo.com).

# 15. YouTube

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YouTube provides a platform to connect to the world. Watch and discover popular videos uploaded by YouTube users around the world. Use the YouTube app to explore the latest topics on music, news, and more.

Press the app icon to open the YouTube app. Your TV must be connected to the Internet to use the app. For more information about YouTube, please visit [www.youtube.com](http://www.youtube.com).

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# 16. Alexa

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## 16.1. About Alexa

Your TV supports Amazon Alexa\* voice control operations.

### About Alexa

Alexa is a cloud-based voice service available on Alexa Echo devices from Amazon and device manufacturers. With Alexa working on your TV, you can change channels, change volume and more.

To control your TV with Alexa, you will need:

- Philips Smart TV that supports Alexa
- Amazon account
- Alexa app\* (mobile/tablet version)
- Wireless or wired network connection

Amazon, Alexa and all related logos are trademarks of Amazon.com, Inc., or its affiliates. Amazon Alexa is available in selected languages and countries.

Service availability depends on region. A part or all the software/services installed into or accessible through the product may be changed, discontinued, removed, suspended, or terminated without notice.

---

## 16.2. Using Alexa

To use Alexa, you need to first set up the Alexa client service on your Philips Smart TV. Start the setup by launching the "Amazon Alexa" app from the Home screen of your TV. Follow the instructions and complete the following steps:

- Select an Amazon account and sign in.
- On your mobile device, link account and discover your devices.
- Return to your TV to complete setup.

### Setup on TV for Alexa

- 1 - Press **Home** and open "Amazon Alexa" app.
- 2 - You need the Alexa app (on mobile device or web version) to be ready to start the setup.
- 3 - Follow the instructions on-screen to sign into your Amazon account and accept Privacy Policy terms.
- 4 - On your mobile device, sign in with the same Amazon account in the Amazon Alexa app.
- 5 - At the end of the setup screen, select **Finished** to start using Alexa.

---

## 16.3. Alexa Voice Commands

Here are some things to try:

"Alexa, what's the weather today?"

"Alexa, play a song"

"Alexa, read my audiobook"

"Alexa, show my to-do list"

"Alexa, set a 5-minute timer"

"Alexa, how big is Earth?"

"Alexa, what is the news?"

"Alexa, what did I miss?"

### SUPPORTED COUNTRIES

United Kingdom, Ireland, France, Germany, Austria, Italy, Spain, Portugal, Denmark, Netherlands, Norway, Sweden, Finland, Switzerland, Belgium, Luxembourg, Poland, Turkey, Colombia, Chile, Argentina, Costa Rica, Peru, Ecuador.

### SUPPORTED LANGUAGES

English (GB), English (US), French, German, Italian, Spanish, Portuguese (BR), Spanish (ES), Spanish (US).

### CHANGE CHANNEL

"Alexa, next channel on TV"

"Alexa, change channel to 5 on TV"

### CHANGE VOLUME

"Alexa, set volume to 15 on Living Room TV"

"Alexa, turn down the volume"

"Alexa, volume up"

### MUTE OR UNMUTE TV

"Alexa, mute Living Room TV"

"Alexa, unmute"

### CHANGE INPUT SOURCE

"Alexa, switch input to Blu-ray on Living Room TV"

"Alexa, switch input to HDMI 1"

### CONTROL PLAYBACK

"Alexa, play on TV"

"Alexa, pause TV"

### LAUNCH APPLICATIONS OR SHORTCUTS

"Alexa, launch Prime Video on Living Room TV"

"Alexa, go to Settings on Kitchen TV"

"Alexa, go to Home on TV"

### NAVIGATE MENUS

"Alexa, go right"

"Alexa, move down"

"Alexa, select this"

### SEARCH VIDEO CONTENT

"Alexa, show me hot news on YouTube"

"Alexa, search for Mr. Bean"

# 17. Google Assistant

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Your TV can work with Google Assistant. Google Assistant enables you to use your voice to control your TV – e.g., changing volume, channels and more.

**Note:** Google Assistant is not available in all languages and countries.

To enable Google Assistant on your TV, you need:

- A Google Home device, like Google Home Mini
- Internet connection on the TV
- Google account
- Google Home app (mobile/tablet version)

## Setting Up TV Control with Google Assistant

1 - Follow the instructions on-screen to accept the Privacy Policy for the use of the Google Assistant voice control feature on this TV.

2 - Choose a name for the TV so that Google Assistant can recognize it.

3 - Sign in to your Google account. If you already have a Google account, please sign in. If not, create an account and sign in. After you have signed in successfully, select "Get Code" to get the device code for this TV for device registration.

4 - On your mobile/tablet, search for the "Google Home" app in the store (iOS and Android). Download and open the Google Home app. Sign in with the same Google account you used to register the TV. You need to continue the setup in the Google Home app in your mobile/tablet to control your TV with voice commands.

5 - In the Google Home app, select "Set up device," select 'Works with Google' and search for Philips Smart TV. Sign in to link to your Google account and enable TV control in the Google Home app.

6 - You can use Google Assistant to turn on your TV using voice command. For this, the TV needs to remain in a special power mode, which may result in slightly higher power consumption during standby.

You are ready to use your Google Home device to control this TV. Here are some things to try:

- "Turn off TV"
- "Switch to channel 10 on TV"
- "Channel down on TV"
- "Increase volume on TV"
- "Mute TV"

**Note:** If you log out of Google Assistant, you will no longer be able to use voice commands on this TV. You will need to redo the Setup TV control with Google Assistant to use the feature again.

Google Assistant is available in selected languages and countries, with English-UK and German-DE being supported from the start. The list of supported languages/countries will expand over time. For the latest list of languages and countries supported, contact our consumer care.

Service availability depends on region. A part or all the software/services installed into or accessible through the product may be changed, discontinued, removed, suspended, or terminated without notice.

# 18. Software

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## 18.1. Update Software


### Search for Updates

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#### Update from Internet

🏠 (Home) > Settings > Update software > Search for updates > Internet (Recommended)

Look for a software update yourself.

- If the TV is connected to the Internet, you may receive a message to update the TV software. You need a high-speed (broadband) Internet connection. If you receive this message, we recommend you to carry out the update.
- During the software update, there is no picture and the TV will switch off and on again. This might happen several times. The update can take a few minutes.
- Wait until the TV picture comes back on. Do not press the power switch  on the TV or on the remote control during the software update.

---

#### Update from USB

🏠 (Home) > Settings > Update software > Search for updates > USB

- You need a computer with a high-speed Internet connection and a USB memory device to upload the software on the TV.
- Use a USB memory device with 750MB of free space. Make sure that write protection is switched off.

##### 1 - Start the update on TV

Select **Update software > Search for updates > USB**, then press **OK**.

##### 2 - Identify the TV

Insert the USB memory into one of the USB connections of the TV.

Select **Start** and press **OK**. An identification file is written on the USB memory device.

##### 3 - Download the TV software

- Insert the USB memory into your computer.
- On the USB memory device, locate the file **update.html** and double-click it.
- Click on **Send ID**.
- If new software is available, download the .zip file.
- After the download, unzip the file and copy the file **autorun.upg** onto the USB memory device.
- Do not place this file in a folder.


##### 4 - Update the TV software

Insert the USB memory into the TV again. The update starts automatically.

The TV switches itself off for 10 seconds, and then back

on again. Please wait.

Do not . . .

- use the remote control
- remove the USB memory device from the TV
- press  twice
- press the power switch on the TV

The TV switches itself off (for 10 seconds) and then back on again. Please wait.

The TV software has been updated. You can use the TV again.

To prevent an accidental update of the TV software, delete the **autorun.upg** file from the USB memory device.

### Local Updates

🏠 (Home) > Settings > Update software > Search for updates > USB > Local updates.

For dealers and expert users.

---

## 18.2. Software Version

🏠 (Home) > Settings > Update software > Current software info

To view the current TV software version.

---

## 18.3. Automatic Software Update

🏠 (Home) > Settings > Update software > Automatic software update

To switch on Automatic software update to update your TV software automatically. Leave the TV on standby.

When the setting is enabled, the upgrade gets downloaded when the TV is powered ON and installed 15 minutes after the TV enters standby (as long as there is no alarm scheduled).

When the setting is disabled, the "Upgrade Now"/"Later" OSD is shown.

---

## 18.4. View Software Update History

🏠 (Home) > Settings > Update software > View software update history

Display the list of software versions that are successfully

updated on the TV.



# 19. Environmental

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## 19.1. End of Use

### Disposal of your old product and batteries

Your product is designed and manufactured with high quality materials and components, which can be recycled and reused.



When this crossed-out wheeled bin symbol is attached to a product, it means that the product is covered by European Directive 2012/19/EU.



Please inform yourself about the local separate collection system for electrical and electronic products.

Please act according to your local rules and do not dispose of your old products with your normal household waste. Correct disposal of your old product helps prevent potential negative consequences for the environment and human health.

Your product contains batteries covered by European Regulation (EU) 2023/1542 and cannot be disposed with normal household waste.



Please find out for yourself about the local rules on separate collection of batteries because correct disposal will help prevent negative consequences for the environment and human health.

# 20. Specifications

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## 20.1. Power

Product specifications are subject to change without notice. For more specification information for this product, see [www.philips.com/TVsupport](http://www.philips.com/TVsupport)

### Power

- Mains power: AC 110-240V +/-10%
  - Ambient temperature: 5°C to 35°C (40°F to 95°F)
- 

## 20.2. Reception

- Antenna input: 75 ohm coaxial (F-type)
  - Tuner bands: Hyperband, UHF, VHF
  - ISDBT
  - Video playback: PAL
  - Digital video playback: MPEG2 SD/HD (ISO/IEC 13818-2), MPEG4 SD/HD (ISO/IEC 14496-10)
  - Digital audio playback (ISO/IEC 13818-3)
- 

## 20.3. Display Resolution

### Diagonal screen size

- 108 cm/43 inch
- 121 cm/48 inch
- 126 cm/50 inch
- 139 cm/55 inch
- 164 cm/65 inch
- 189 cm/75 inch
- 194 cm/77 inch
- 215 cm/85 inch

### Display resolution

- 3840 x 2160
- 

## 20.4. Supported Input Resolution

### Supported Computer/Video resolution

Resolution — Refresh rate

Video Inputs - Max frame rate is 60Hz (TV can be in Video/Game/Computer mode)

- 640 x 480 - 60 Hz
- 576p - 50Hz
- 720p - 50Hz, 60Hz
- 1920 x 1080p - 24Hz, 25Hz, 30Hz, 50Hz, 60Hz
- 2560 x 1440 - 60Hz
- 3840 x 2160p - 24Hz, 25Hz, 30Hz, 50Hz, 60Hz

### Supported Video only resolution

Resolution — Refresh rate

Video Inputs (TV can be Video or Game Mode )

- 480i - 60Hz (when **HDMI Ultra HD** is set to **Standard**)
- 576i - 50Hz (when **HDMI Ultra HD** is set to **Standard**)
- 1080i - 50Hz, 60Hz
- Variable refresh rate video 1080p, 1440p, 2160p with frame rate up to 48-60Hz when **HDMI Ultra HD** is set to **Optimal (Auto Game)**

\* Note: Some resolutions and frame rates may not be supported for all input sources.

---

## 20.5. Sound

- Output power (RMS): 20W
  - Dolby MS12 V2.6.2
  - Dolby Atmos
  - DTS:X
  - Surround Virtualizer + Height Virtualizer
  - Dolby Volume Leveler/Night mode
  - Dolby Bass Enhancement
  - Dolby Dialog Enhancement
  - Clear Dialog
  - AI Sound
  - AI EQ
- 

## 20.6. Multimedia

### Connections

- USB 2.0
- Ethernet LAN RJ-45
- Wi-Fi 802.11ac, Dual Band
- Bluetooth® 5.2

### Supported USB file systems

- FAT, NTFS

### Playback formats

- Video Codec: AVI, MKV, HEVC, H.264/MPEG-4 AVC, MPEG1, MPEG2, MPEG4, VP9, HEVC (H.265), AV1
- Audio Codec: MP3, WAV, AAC, FLAC
- Subtitles:
  - Format: SRT, SMI, SSA, SUB, ASS, TXT
  - Character encodings: Western Europe, Turkish, Central

Europe, Cyrillic, Greek, UTF-8 (Unicode), Hebrew, Arabic, Baltic

- Maximum Supported Data Rate:

- MPEG-4 AVC (H.264) is supported up to High Profile @ L5.1. 30Mbps

- H.265 (HEVC) is supported up to Main/Main 10 Profile up to Level 5.1 40Mbps

- Image Codec: JPEG, GIF, PNG, BMP, HEIF

#### **Wifi Certified**

This TV is a Wi-Fi Certified device.

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## 20.7. Connectivity

#### **TV Side**

- USB 2 - USB 2.0
- Headphones - Stereo mini-jack 3.5mm
- HDMI 3 in - UHD - HDR

#### **TV Bottom**

- Audio out - Optical Toslink
- USB 1 - USB 2.0
- Network LAN - RJ45
- Antenna (75 ohm)
- HDMI 1 in - ARC/eARC - UHD - HDR
- HDMI 2 in - UHD - HDR

# 21. Troubleshooting

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## 21.1. Tips

If you cannot find a solution for your TV problem in **Troubleshooting**, you can use **Keywords** in **Help > User manual** to find the information you are looking for. Select a keyword to go to the most relevant page in the user manual.

If the user manual does not answer your question, you can go to the Philips support website.

To solve any Philips TV related problem, you can consult our online support. You can select your language and enter your product model number.

Go to [www.philips.com/TVsupport](http://www.philips.com/TVsupport).

On the support site you can find your country's telephone number to contact us as well as answers to frequently asked questions (FAQs). In some countries, you can chat with one of our collaborators and ask your question directly or send a question by email. You can download new TV software or the manual to read on your computer.

### TV Help on your tablet, smartphone or computer

To carry out extended sequences of instructions more easily, you can download the TV Help in PDF format to read on your smartphone, tablet or computer. Alternatively, you can print the relevant Help page from your computer.

To download the Help (user manual) go to [www.philips.com/TVsupport](http://www.philips.com/TVsupport)

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## 21.2. Switch On

### The TV does not switch on

- Disconnect the power cable from the power outlet. Wait for one minute then reconnect it. Make sure that the power cable is securely connected. Try switching the TV on again.
- Connect the TV to another wall mains socket and try switching on.
- Disconnect all connected devices from the TV and try switching on.
- If the standby light on TV is on, the TV might not respond to the remote control.

### Creaking sound at startup or switch off

When you turn the TV on or the TV enters standby, you hear a creaking sound from the TV chassis. The creaking

sound is due to the normal expansion and contraction of the TV as it cools and warms up. This does not affect performance.

### The TV goes back to standby after showing the Philips startup screen

When the TV is in standby, a Philips startup screen is displayed, then the TV returns to standby mode. This is normal behavior. When the TV is disconnected and reconnected to the power supply, the startup screen is displayed at the next startup. To switch on the TV from standby, press **Standby / On** on the remote control or the TV.

### The standby light keeps on blinking

Disconnect the power cable from the power outlet. Wait 5 minutes before you reconnect the power cable. If the blinking happens again, contact Philips TV Consumer Care.

In **Help > User manual**, press the color key **Keywords** and look up **Contact Info**.

### TV switches off by itself

If the TV switches off suddenly, the setting **Switch off timer** might be switched on. With **Switch off timer**, the TV switches off after 4 hours if no remote control signals were received. To avoid this automatic switch off, you can deactivate the switch off. In **Help > User manual**, press the color key **Keywords** and look up **Switch Off Timer**.

Also, if the TV does not receive a TV signal or a remote control command for 10 minutes, the TV switches off automatically.

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## 21.3. Remote Control

### TV does not respond to the remote control

- The TV requires some time to start up. During this time, the TV does not respond to the remote control or TV controls. This is normal behavior.
- The batteries of the remote control might be empty. Replace the batteries with new ones.

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## 21.4. Channels

### No digital channels found during the installation

- Check if the TV was connected with an antenna or is using a provider signal. Check the cable connections.
- Check if the country where you install the TV, has digital channels available.
- Check if you selected the correct broadcast system.

- Redo the installation and check if you select the correct country and system.

#### No analog channels found during the installation




- Check if the TV was connected with an antenna. Check the cable connections.
- Check if you selected the correct broadcast system.
- Redo the installation and select **Digital and Analog Channels** during the installation.

#### Some channels disappeared, cannot find all or some previously installed channels



- Check if you selected the correct **Channel list** or **Favorites list** you normally use.
- Some channels might be moved or even deleted by the broadcaster. In the normal channels list, try to search for the channel you're missing. If the channel is still available, you can put it back in the favorites list.

## 21.5. Picture

### No picture/distorted picture

- Check if the TV is connected with an antenna or is using a provider signal. Check the cable connections.
- Check if the correct source/input is selected in the Sources menu. Press  **Sources** and select the source/input you need.
- Check if the external device or source is properly connected.
- Check if the reception is poor.
- Check if the picture is set to a minimal value. Select **Picture style**, select a style and press **OK**.
- To check if the TV is broken, try to play a video clip. Press  **Quick Menu** >  **Help** > **TV diagnose** > **Check the TV**. If the video clip stays black, call Philips. Wait until the clip ends and select **Contact info** in the Help menu. Call the telephone number for your country.

### Sound but no picture

- Change to other video sources and then change back to current source.
- Select **Picture style**, select a style, and press **OK**.
- Restore picture style, select back to **Picture style**, then press  **Restore style**.
- Reset all TV settings; go to  **(Home)** > **Settings** > **General settings** > **Reinstall TV**.
- Check the connections of the source/input devices.


### Poor reception

If the TV picture is distorted or variable in quality, the input signal might be poor. A weak digital signal is seen as a picture that is breaking up in square blocks and freezes occasionally. Much sooner than a bad analog signal, a bad digital signal will fall away.

- Check if the antenna cable is properly connected.
- Large loudspeakers, ungrounded audio devices, neon lights, high buildings and other large objects can

influence reception quality when you are using an antenna. Try to improve the reception by changing the antenna direction or moving devices away from the TV. Bad weather might deteriorate the reception.

- Check if all connections, to and from your devices, are properly connected.
- If reception on only one channel is poor, fine-tune the channel with **Analog: manual installation**. (Only for analog channels)


- Check if the incoming digital signal is sufficiently strong. While watching a digital channel, press  **OPTIONS**, select **Status**, and press **OK**. Check the **Signal strength** and **Signal quality**.

### Poor picture from a device

- Make sure that the device is connected properly. Make sure that the device's output video setting is the highest possible resolution, if applicable.
- Restore picture style or change to another picture style.

### Picture settings change after a while

Make sure that **Location** is set to **Home**. You can change and save settings in this mode.




 **(Home)** > **Settings** > **General settings** > **Location**

### A banner appears

If an on-screen promotion banner appears occasionally or the **Picture style** automatically switches back to **Vivid** at startup, the TV is in **Shop** location. Set the TV to **Home** location for use at home.

 **(Home)** > **Settings** > **General settings** > **Location**

### Picture does not fit the screen / Wrong or unstable picture size / Picture position is incorrect



- If the picture size - its aspect ratio - does not fit the screen, with black bars on the top and bottom or left and right side of the screen, press  **(Home)** > **Settings** > **Picture** > **Picture Format** > **Fill screen**.
- If the picture size changes all the time, press  **(Home)** > **Settings** > **Picture** > **Picture Format** > **Fit to screen**.
- If the position of the picture is incorrect on the screen, try to check the signal resolution and output type of the connected device; press  **(Home)** > **Settings** > **Picture** > **Picture Format** > **Original**.

### Computer picture is not stable

Make sure that your PC uses the supported resolution and refresh rate.

## 21.6. Sound

### No sound or poor sound quality

- Check if the sound settings of the TV are OK; press the  volume or  mute key.
- If you use a digital receiver (set-top box), check if the

volume on this receiver is not set to zero or mute.

- Check if the TV - the audio signal - is properly connected with the Home Theater System, if you use such a system for the TV sound. Check if you connected the HDMI cable to an **HDMI ARC/eARC** connection on the Home Theater System.
- Make sure that the TV audio output is connected to the audio input on the Home Theater System. Sound should be heard from the HTS (Home Theater System) speakers.

#### Sound with loud noise

If you watch a video from a plugged in USB flash drive or connected computer, the sound from your Home Theater System might be distorted. This noise is heard when the audio or video file has DTS sound but the Home Theater System has no DTS sound processing. You can fix this by setting the **Digital out format** of the TV to **Stereo**.

Press **⬆ (Home) > Settings**

**> Sound > Advanced > Digital out format**

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## 21.7. HDMI - UHD

### HDMI

- Note that HDCP (High-bandwidth Digital Content Protection) support can delay the time taken for a TV to display content from an HDMI device.
  - If the TV does not recognize the HDMI device and no picture is displayed, switch the source from one device to another and back again.
  - This is an Ultra HD TV. Some older devices - connected with HDMI - do not recognize an Ultra HD TV electronically and might not work correctly or show distorted picture or sound. To avoid the malfunctioning of such a device, you can set the signal quality to a level the device can handle. If the device is not using Ultra HD signals, you can switch off Ultra HD for this HDMI connection.
- If the picture and sound of a device connected with HDMI is distorted, check if a different **HDMI Ultra HD** setting can resolve this problem. In **Help > User manual**, press the color key **— Keywords** and look up **HDMI Ultra HD**.
- If there are intermittent sound disruptions, make sure that output settings from the HDMI device are correct.

#### HDMI EasyLink does not work

- Check if your HDMI devices are HDMI-CEC compatible. EasyLink features only work with devices that are HDMI-CEC compatible.

#### HDMI eARC is not working well

- Make sure the HDMI cable is connected to **HDMI 1**.
- Make sure an **Ultra High-Speed HDMI cable** is used for eARC connection.
- Only one eARC device is available at a time.

#### No volume icon shown

- When an HDMI-CEC audio device is connected and you use the TV Remote Control to adjust the volume level from the device, this behavior is normal.

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## 21.8. USB

### Photos, videos and music from a USB device do not show

- Check if the USB storage device is set to Mass Storage Class compliant, as described in the storage device's documentation.
- Check if the USB storage device is compatible with the TV.
- Check if the audio and picture file formats are supported by the TV. For more information, in **Help**, press the color key **— Keywords** and look up **Multimedia**.

### Choppy playback of USB files

- The transfer performance of the USB storage device may limit the data transfer rate to the TV which causes poor playback.

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## 21.9. Wi-Fi and Internet

### Wi-Fi network not found or distorted

- Check if the firewalls in your network allow access to the TV's wireless connection.
- If the wireless network does not work properly in your home, try the wired network installation.

### Internet does not work

- If the connection to the router is OK, check the router connection to the Internet.

### The PC and Internet connection are slow

- Look in your wireless router's user manual for information on indoor range, transfer rate and other factors of signal quality.
- Use a high-speed (broadband) Internet connection for your router.

### DHCP

- If the connection fails, you can check the DHCP (Dynamic Host Configuration Protocol) setting of the router. DHCP should be turned on.

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## 21.10. Wrong Menu Language

Change the language back to your language

1 - Press **⬆** Home and select **Settings** via the icon at the top-right corner.

2 - Press **⬇** (down) 9 times and press **OK**.

3 - Press **OK** again to enter **Language**, select the first item **Menu language** and press **OK**.

4 - Select your language and press **OK**.

# 22. Safety and Care

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## 22.1. Safety

### Important

Read and understand all safety instructions before you use the TV. If damage is caused by failure to follow instructions, the warranty does not apply.

### Risk of Electric Shock or Fire

- Never expose the TV to rain or water. Never place liquid containers, such as vases, near the TV. If liquids are spilt on or into the TV, disconnect the TV from the power outlet immediately. Contact Philips TV Consumer Care to have the TV checked before use.
- Never expose the TV, remote control or batteries to excessive heat. Never place them near burning candles, naked flames or other heat sources, including direct sunlight.
- Never insert objects into the ventilation slots or other openings on the TV.
- Never place heavy objects on the power cord.
- Avoid force coming onto power plugs. Loose power plugs can cause arcing or fire. Ensure that no strain is exerted on the power cord when you swivel the TV screen.
- To disconnect the TV from the mains power, the power plug of the TV must be disconnected. When disconnecting the power, always pull the power plug, never the cord. Ensure that you have full access to the power plug, power cord and outlet socket at all times.

### Risk of Injury or Damage to the TV

- Two people are required to lift and carry a TV that weighs more than 25 kg or 55 lbs.
- If you mount the TV on a stand, only use the supplied stand. Secure the stand to the TV tightly. Place the TV on a flat, level surface that can support the weight of the TV and the stand.
- When wall mounted, ensure that the wall mount can safely bear the weight of the TV set. TP Vision bears no responsibility for improper wall mounting that results in accident, injury or damage.
- Parts of this product are made of glass. Handle with care to avoid injury or damage.

#### Risk of damage to the TV!

Before you connect the TV to the power outlet, ensure that the power voltage matches the value printed on the

back of the TV. Never connect the TV to the power outlet if the voltage is different.

### Stability Hazards

This product is designed and intended for consumers and personal use in a domestic home environment, unless agreed otherwise with the manufacturer in writing. Failure to follow this recommendation or the instructions provided in the product user manual and the product support documentation can cause damage to the product and will void the warranty in such cases.

A television set may fall, causing serious personal injury or death. Many injuries, particularly to children, can be avoided by taking simple precautions such as:

- ALWAYS ensure the television set is not overhanging the edge of the supporting furniture.
- ALWAYS use cabinets or stands or mounting methods recommended by the manufacturer of the television.
- ALWAYS use furniture that can safely support the television.
- ALWAYS educate children about the dangers of climbing on furniture to reach the television or its controls.
- ALWAYS route cords and cables connected to the television so that they cannot be tripped over, pulled or grabbed.
- NEVER place a television in an unstable location.
- NEVER place the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and television to a suitable support.
- NEVER place the television on cloth or other materials that may be located between the television and supporting furniture.
- NEVER place items that might tempt children to climb, such as toys and remote controls, on the top of the television or furniture on which the television is placed.

If the existing television is going to be retained and relocated, the same considerations as above should be applied.

### Risk of Batteries

- Do not ingest the battery. Chemical burn hazard.
- The remote control may contain a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- Keep new and used batteries away from children.
- If the battery compartment does not close securely, stop using the product and keep it away from children.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- Risk of fire or explosion if the battery is replaced by an incorrect type.



- Replacement of a battery with an incorrect type that can defeat a safeguard (e.g. in the case of some lithium battery types).
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

## Risk of Overheating

Never install the TV in a confined space. Always leave a space of at least 8 inches (20 cm) around the TV for ventilation. Ensure curtains or other objects never cover the ventilation slots on the TV.

## Lightning Storms

Disconnect the TV from the power outlet and antenna before lightning storms.  
During lightning storms, never touch any part of the TV, power cord or antenna cable.

## Risk of Hearing Damage

Avoid using earphones or headphones at high volumes or for prolonged periods of time.

## Low Temperatures

If the TV is transported in temperatures below 5°C or 41°F, unpack the TV and wait until the TV temperature reaches room temperature before connecting the TV to the power outlet.

## Humidity

In rare occasions, depending on temperature and humidity, minor condensation can occur on the inside of the TV glass front (on some models). To prevent this, do not expose the TV to direct sunlight, heat or extreme humidity. If condensation occurs, it will disappear spontaneously while the TV is playing for a few hours. The condensation moisture will not harm the TV or cause malfunction.

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## 22.2. Screen Care

### Clean

- Never touch, push, rub or strike the screen with any object.
- Unplug the TV before cleaning.
- Clean the TV and frame with a soft damp cloth and wipe gently. Never use substances such as alcohol, chemicals or household cleaners on the TV.
- To avoid deformations and color fading, wipe off water drops as quickly as possible.
- Avoid stationary images as much as possible. Stationary images are images that remain onscreen for extended periods of time. Stationary images include onscreen menus, black bars, time displays, etc. If you must use stationary images, reduce screen contrast and brightness to avoid screen damage.

# 23. Terms of Use

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2024 © TP Vision Europe B.V. All rights reserved.

This product was brought to the market by TP Vision Europe B.V. or one of its affiliates, hereinafter referred to as TP Vision, which is the manufacturer of the product. TP Vision is the warrantor in relation to the TV with which this booklet was packaged. Philips and the Philips Shield Emblem are registered trademarks of Koninklijke Philips N.V.

Specifications are subject to change without notice. Trademarks are the property of Koninklijke Philips N.V or their respective owners. TP Vision reserves the right to change products at any time without being obliged to adjust earlier supplies accordingly.

The written material packaged with the TV and the manual stored in the memory of the TV or downloaded from the Philips website [www.philips.com/TVsupport](http://www.philips.com/TVsupport) are believed to be adequate for the intended use of the system.

The material in this manual is believed adequate for the intended use of the system. If the product, or its individual modules or procedures, are used for purposes other than those specified herein, confirmation of their validity and suitability must be obtained. TP Vision warrants that the material itself does not infringe any United States patents. No further warranty is expressed or implied. TP Vision cannot be held responsible neither for any errors in the content of this document nor for any problems as a result of the content in this document. Errors reported to Philips will be adapted and published on the Philips support website as soon as possible.

Terms of warranty - Risk of injury, damage to TV or void of warranty!

Never attempt to repair the TV yourself. Use the TV and accessories only as intended by the manufacturer. The caution sign printed on the back of the TV indicates risk of electric shock. Never remove the TV cover. Always contact Philips TV Customer Care for service or repairs. Find the telephone number in the printed documentation that came with the TV. Or consult our website [www.philips.com/TVsupport](http://www.philips.com/TVsupport) and select your country if needed. Any operation expressly prohibited in this manual, or any adjustments and assembly procedures not recommended or authorized in this manual, shall void the warranty.

Pixel characteristics

This TV product has a high number of color pixels. Although it has effective pixels of 99.999% or more, black dots or bright points of light (red, green or blue) may appear constantly on the screen. This is a structural property of the display (within common industry standards) and is not a malfunction. Therefore, please

note that this is not subject to repair, exchange or refund within and/or out of the warranty period.

Backlight characteristics

All Philips TVs have undergone stringent tests and checks before shipment to you. You can rest assured that we place utmost importance on the quality of our TVs so you don't suffer any viewing displeasure while watching your TV. However, please note that backlight bleeding (the 'Mura effect') and/or background light unevenness that can only be observed in dark images or in a very dark and dim room are considered to be within normal TV specifications. Such occurrences do not represent deterioration nor should be regarded as a defect of the TV. Hence, we regret that claims of this nature for warranty cover, free-of-charge service, replacements or refunds cannot be accepted within and/or outside of the warranty period.

TP Vision is committed to developing, producing and marketing products that cause no adverse health effects. TP Vision confirms that, as long as its products are handled properly for their intended use, they are safe to use according to scientific evidence available today. TP Vision plays an active role in the development of international safety standards, enabling TP Vision to anticipate further developments in standardization for early integration in its products.

## 24. Copyrights

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### 24.1. HDMI

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade Dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.



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### 24.2. HEVC Advance

Covered by one or more claims of the HEVC patents listed at [patentlist.accessadvance.com](http://patentlist.accessadvance.com).  
Future proof with advanced HEVC decoding.



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### 24.3. DTS:X

For DTS patents, see <http://patents.dts.com>.  
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### 24.4. Dolby Atmos

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### 24.5. Wi-Fi Alliance

The Wi-Fi CERTIFIED™ Logo is a registered trademark of Wi-Fi Alliance®.



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### 24.6. Other Trademarks

All other registered and unregistered trademarks are the property of their respective owners.

# 25. Open Source

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## 25.1. Open Source Software

This television contains open source software. TP Vision Europe B.V. hereby offers to deliver, upon request, a copy of the complete corresponding source code for the copyrighted open-source software packages used in this product for which such offer is requested by the respective licenses.

This offer is valid up to three years after product purchase to anyone in receipt of this information. To obtain the source code, please write in English to . . .

[open.source@tpv-tech.com](mailto:open.source@tpv-tech.com)

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## 25.2. Open Source License

### About Open Source License

README for the source code of the parts of TP Vision Europe B.V. TV software that fall under open source licenses.

This is a document describing the distribution of the source code used on the TP Vision Europe B.V. TV, which fall either under the GNU General Public License (the GPL), or the GNU Lesser General Public License (the LGPL), or any other open source license. Instructions to obtain copies of this software can be found in the Directions for Use.

TP Vision Europe B.V. MAKES NO WARRANTIES WHATSOEVER, EITHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THIS SOFTWARE. TP Vision Europe B.V. offers no support for this software. The preceding does not affect your warranties and statutory rights regarding any TP Vision Europe B.V. product(s) you purchased. It only applies to this source code made available to you.

### Open Source

apr (1.7.0)

The Apache Portable Runtime Library provides a predictable and consistent interface to underlying platform-specific implementations, with an API to which software developers may code and be assured of predictable if not identical behavior

regardless

of the platform on which their software is built, relieving them of

the need to code special-case conditions to work around or take

advantage of platform-specific deficiencies or features.

Source: <https://github.com/apache/apr>

bind ( 9.11.36)

BIND (Berkeley Internet Name Domain) is a complete, highly portable implementation of the Domain Name System (DNS) protocol.

Source: <https://github.com/isc-projects/bind9>

busybox (1.31.1)

BusyBox combines tiny versions of many common UNIX utilities into a single small executable. It provides replacements for most of the utilities you usually find in GNU fileutils, shellutils, etc. The utilities in BusyBox generally have fewer options than their full-featured GNU cousins; however, the options that are included provide the expected functionality and behave very much like their GNU counterparts. BusyBox provides a fairly complete environment for any small or embedded system.

Source: <https://www.busybox.net/downloads/>

binutils (2.31.510)

The GNU Binutils are a collection of binary tools. The main ones are:

ld - the GNU linker.

as - the GNU assembler.

Source: <https://www.gnu.org/software/binutils/>

bzip2 (1.0.6)

bzip2 is a free and open-source file compression program that uses the Burrows–Wheeler algorithm. It only compresses single files and is not a file archiver. It was developed by Julian Seward, and maintained by Mark Wielaard and Micah Snyder.

Source: <https://sourceware.org/bzip2/>

c-ares (1.10.1)

c-ares is a C library for asynchronous DNS requests (including name resolves)

Source: <https://c-ares.org/>

cairo (1.16.0)

Cairo is a 2D graphics library with support for multiple output devices. Currently supported output targets include the X Window System (via both Xlib and XCB), Quartz, Win32, image buffers, PostScript, PDF, and SVG file output. Experimental backends include OpenGL, BeOS, OS/2, and DirectFB.

source <https://www.cairographics.org/>

dbus (1.11.2)

D-Bus is a simple system for interprocess communication and coordination.

The "and coordination" part is important; D-Bus provides

a bus daemon that does things like:

- notify applications when other apps exit
- start services on demand
- support single-instance applications

Source: <https://github.com/freedesktop/dbus>

e2fsprogs (1.43.3)

e2fsprogs (sometimes called the e2fs programs) is a set of utilities for maintaining the ext2, ext3 and ext4 file systems. Since those file systems are often the default for Linux distributions, it is commonly considered to be essential software

Source: <http://e2fsprogs.sourceforge.net/>

expat (2.2.9)

xml parser; Expat is an XML parser library written in C. It is a stream-oriented parser in which an application registers handlers for things the parser might find in the XML document (like start tags). An introductory article on using.

This piece of software is made available under the terms and conditions of the Expat license, which can be found below.

Source: <http://expat.sourceforge.net/>

fuse (2.9.7)

JBoss Fuse is an open source ESB with capabilities based on Apache Camel, Apache CXF, Apache ActiveMQ, Apache Karaf and Fabric8 in a single integrated distribution.

Source <https://github.com/jboss-fuse/fuse>

gdb (8.2.1)

GDB, the GNU Project debugger, allows you to see what is going on 'inside' another program while it executes -- or what another program was doing at the moment it crashed.

Source: <https://www.sourceware.org/gdb/>

glibc (2.30.0)

Any Unix-like operating system needs a C library: the library which defines the "system calls" and other basic facilities such as open, malloc, printf, exit...The GNU C library is used as the C library in the GNU system and most systems with the Linux kernel

This piece of software is made available under the terms and conditions of the glibc license, which can be found below.

Source: <http://www.gnu.org/software/glibc/>

gststreamer (1.18.3)

The GStreamer team is excited to announce a new major feature release of your favourite cross-platform multimedia framework!

Source: <https://gstreamer.freedesktop.org/>

libasound (1.1.8)

The Advanced Linux Sound Architecture (ALSA) provides audio and MIDI functionality to the Linux operating system. ALSA has the following significant features:

Efficient support for all types of audio interfaces, from consumer sound cards to professional multichannel audio interfaces.

Fully modularized sound drivers.

SMP and thread-safe design (PLEASE READ THIS).

User space library (alsa-lib) to simplify application programming and provide higher level functionality.

Support for the older Open Sound System (OSS) API, providing binary compatibility for most OSS programs.

Source: [https://www.alsa-project.org/wiki/Main\\_Page](https://www.alsa-project.org/wiki/Main_Page)

Libcurl (7.79.1)

HTTP client; libcurl is a free and easy-to-use client-side URL transfer library, supporting FTP, FTPS, HTTP, HTTPS, SCP, SFTP, TFTP, TELNET, DICT, LDAP, LDAPS, FILE, IMAP, SMTP, POP3 and RTSP. libcurl supports SSL certificates, HTTP POST, HTTP PUT, FTP uploading, HTTP form based upload, proxies, cookies, user+password authentication (Basic, Digest, NTLM, Negotiate, Kerberos4), file transfer resume, http proxy tunneling and more!

This piece of software is made available under the terms and conditions of the Libcurl license, which can be found below.

Source: <http://curl.haxx.se/>

libevent (1.4.13)

The libevent API provides a mechanism to execute a callback function when a specific event occurs on a file descriptor or after a timeout has been reached.

Furthermore, libevent also support callbacks due to signals or regular timeouts.

source: <https://libevent.org/>

libjpeg-turbo (2.1.1)

libjpeg-turbo is a JPEG image codec that uses SIMD instructions (MMX, SSE2, AVX2, Neon, AltiVec) to accelerate baseline JPEG compression and decompression on x86, x86-64, Arm, and PowerPC systems, as well as progressive JPEG compression on x86 and x86-64 systems. On such systems, libjpeg-turbo is generally 2-6x as fast as libjpeg, all else being equal. On other types of systems, libjpeg-turbo can still outperform libjpeg by a significant amount, by virtue of its highly-optimized Huffman coding routines. In many cases, the performance of libjpeg-turbo rivals that of proprietary high-speed JPEG codecs.

Source: <https://libjpeg-turbo.org/>

libjpg (6b)

This library is used to perform JPEG decoding tasks.

This piece of software is made available under the terms and conditions of the libjpg license, which can be found below.

Source: <http://www.ijg.org/>

libpng (1.0.1)

libpng -THE reference library for reading, displaying, writing and examining png Image Network Graphics.

This piece of software is made available under the terms and conditions of the libpng license, which can be found

below.

Source: <http://sourceforge.net/projects/libpng/files/>

#### libffi (3.2.1)

Compilers for high level languages generate code that follows certain conventions. These conventions are necessary, in part, for separate compilation to work. One such convention is the "calling convention". The "calling convention" is a set of assumptions made by the compiler about where function arguments will be found on entry to a function. A "calling convention" also specifies where the return value for a function is found.

Source: <https://sourceware.org/libffi/>

#### libjansson (2.13.1)

Jansson is a C library for encoding, decoding and manipulating JSON data. Its main features and design principles are:

Simple and intuitive API and data model

Comprehensive documentation

No dependencies on other libraries

Full Unicode support (UTF-8)

Extensive test suite

Source: <https://github.com/akheron/jansson>

#### libmicrohttpd (0.9.73)

GNU libmicrohttpd is a small C library that is supposed to make it easy to run an HTTP server as part of another application. GNU Libmicrohttpd is free software and part of the GNU project

Source: <https://www.gnu.org/software/libmicrohttpd/>

#### libupnp (1.6.10)

The portable SDK for UPnP™ Devices (libupnp) provides developers with an API and open source code for building control points, devices, and bridges that are compliant with Version 1.0 of the Universal Plug and Play Device Architecture Specification and support several operating systems like Linux, \*BSD, Solaris and others.

Source: <https://pupnp.sourceforge.io/>

#### libuuid (1.3.0)

This library is free software; you can redistribute it and/or modify it under the terms of the Modified BSD License.

The complete text of the license is available at the Documentation/licenses/COPYING.BSD-3 file

Source: <https://sourceforge.net/projects/libuuid/>

#### Libxml2 (2.9.12)

The "libxml2" library is used in AstroTV as a support for the execution of NCL application. This library was developed for the GNOME software suite and is available under a "MIT" license.

Source: <http://www.xmlsoft.org>

#### linux\_kernel (4.19)

The Linux kernel is a mostly free and open-source,[11] monolithic, modular, multitasking, Unix-like operating system kernel. It was originally authored in 1991 by Linus Torvalds for his i386-based PC, and it was soon adopted

as the kernel for the GNU operating system, which was written to be a free (libre) replacement for UNIX.

Source: <https://www.kernel.org/>

#### mbed TLS (2.26.0)

Mbed TLS is a C library that implements cryptographic primitives, X.509 certificate manipulation and the SSL/TLS and DTLS protocols. Its small code footprint makes it suitable for embedded systems.

Source: <https://github.com/ARMmbed/mbedtls>

#### ncurses (6.1)

The ncurses (new curses) library is a free software emulation of curses in System V Release 4.0 (SVr4), and more. It uses terminfo format, supports pads and color and multiple highlights and forms characters and function-key mapping, and has all the other SVr4-curses enhancements over BSD curses. SVr4 curses is better known today as X/Open Curses.

Source: <http://www.gnu.org/software/ncurses/>

#### nghttp2 (1.6.3)

nghttp2 is an implementation of HTTP/2 and its header compression algorithm HPACK in C

Source: <https://nghttp2.org/>

#### NTFS-3G (7.8)

NTFS-3G is an open source cross-platform implementation of the Microsoft Windows NTFS file system with read-write support. NTFS-3G often uses the FUSE file system interface, so it can run unmodified on many different operating systems. It is runnable on Linux, FreeBSD, NetBSD, OpenSolaris, BeOS, QNX, WinCE, Nucleus, VxWorks, Haiku, MorphOS, and Mac OS X. It is licensed under either the GNU General Public License or a proprietary license. It is a partial fork of ntfsprogs and is under active maintenance and development.

This piece of software is made available under the terms and conditions of the NTFS-3G Read/Write Driver license, which can be found below.

Source: <http://www.tuxera.com>

#### openssl (1.1.1l)

OpenSSL is an open source implementation of the SSL and TLS protocols. The core library (written in the C programming language) implements the basic cryptographic functions and provides various utility functions. Wrappers allowing the use of the OpenSSL library in a variety of computer languages are available.

Source: <http://www.openssl.org/>

#### pcre (8.45)

The PCRE library is a set of functions that implement regular expression pattern matching using the same syntax and semantics as Perl 5. PCRE has its own native API, as well as a set of wrapper functions that correspond to the POSIX regular expression API. The PCRE library is free, even for building proprietary software.

<https://www.pcre.org/>

### procps (ps, top) (3.3.15)

procps is the package that has a bunch of small useful utilities that give information about processes using the /proc filesystem.

The package includes the programs ps, top, vmstat, w, kill, free, slabtop, and skill.

Source: <http://procps.sourceforge.net/index.html>

### SQLite3 (3.36.0)

SQLite is a in-process library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine.

This piece of software is made available under the terms and conditions of the SQLite3 license, which can be found below.

Source: <http://www.sqlite.org/>

### util-linux-ng (2.35.2)

Various system utilities.

Source: <http://userweb.kernel.org/~kzak/util-linux-ng/>

### wpa\_supplicant (2.9)

wpa\_supplicant is a WPA Supplicant for Linux, BSD, Mac OS X, and Windows with support for WPA and WPA2 (IEEE 802.11i / RSN). It is suitable for both desktop/laptop computers and embedded systems.

Supplicant is the IEEE 802.1X/WPA component that is used in the client stations. It implements key negotiation with a WPA Authenticator and it controls the roaming and IEEE 802.11 authentication/association of the wlan driver.

Source: [https://w1.fi/wpa\\_supplicant/](https://w1.fi/wpa_supplicant/)

### zlib (1.2.8)

The 'zlib' compression library provides in-memory compression and decompression functions, including integrity checks of the uncompressed data.

This piece of software is made available under the terms and conditions of the zlib license, which can be found below.

Source: <http://www.zlib.net/>

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