



Television  
6910 Series

# User Manual

32PHG6910  
43PFG6910

# Content


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
# 1. Home Screen Overview

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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, Apps and  Search, you can discover movies and shows from your services and popular apps. 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.

## Sources

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

## 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.



\*\* Ambilight setting is only for models which 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.
  - 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.

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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 (Type 1)

#### 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 key mode is turned on, the Dot key, number keys 0 to 9 and media play control keys will 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 - AMBILIGHT

To select one of the Ambilight styles.

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

#### 3 - (SOURCES) / Dot (hidden keys, available after 123 key is pressed)

- To open the Sources menu.
- To enter digital sub-channels.

#### 4 - (Quick Menu/MENU)

To open the Quick Menu with typical TV functions.

#### 5 - (Search)

- To open the Search tab on Home screen.

- To launch search interface for some supported apps.

#### 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

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 / EXIT

To switch back to watch 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 - 

To launch the Disney+ App.





4 - YouTube

To launch the YouTube app.

5 -  Eco / Green key

Press to invoke a message to remind you to enter the Eco settings menu; long press to invoke 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 (hidden keys, available after 123 key is pressed)

- Play , to playback.
- Pause , to pause playback
- Rewind , to rewind
- Fast forward , to forward quickly

7 - 

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.

## Key Overview (Type 2)

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 key mode is turned on, the Dot key, number keys 0 to 9 and media play control keys will 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 - AMBILIGHT

To select one of the Ambilight styles.


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

3 -  (SOURCES) / Dot (hidden keys, available after 123 key is pressed)

- To open the Sources menu.
- To enter digital sub-channels.

4 -  (Quick Menu/MENU)

To open the Quick Menu with typical TV functions.

5 -  (Search)

- To open the Search tab on Home screen.
- To launch search interface for some supported apps.

## 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

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 / EXIT

To switch back to watch 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 invoke a message to remind you to enter the Eco settings menu; long press to invoke 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 (hidden keys, available after 123 key is pressed)

- Play ▶, to playback.
- Pause ⏸, to pause playback
- Rewind ⏮, to rewind
- Fast forward ⏭, to forward quickly

### 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.

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## 3.2. 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.

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## 3.3. 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, check on **Help > User manual > 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.

## 4. Setting Up

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### 4.1. Read the Safety Instructions

Please read the safety instructions before you use the TV.

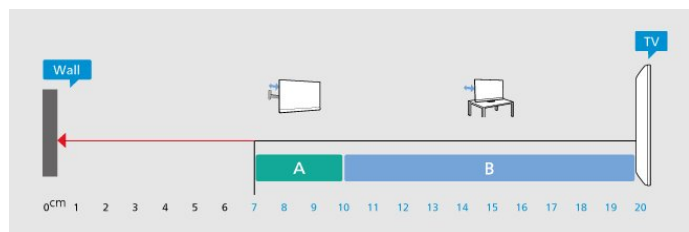
To read the instructions, check on **Help > User manual > Safety and Care**.

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### 4.2. TV Placement

#### Tips on Placement

- Position the TV where light does not shine directly on the screen.
- 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).

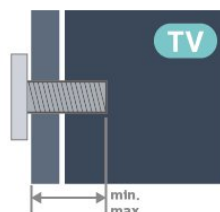
Use the model number of the TV to look for the Quick Start Guide to download.

### 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.



- 32PHx6910  
100x100, M4 (min.: 8 mm, max: 10 mm)
- 43PFx6910  
200x100, M6 (min.: 9 mm, max: 10 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.

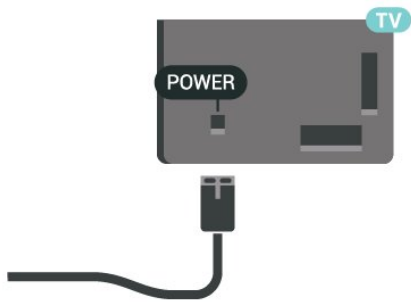
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### 4.3. Turn on TV

#### Connect Power Cable

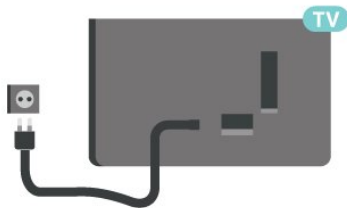
- Insert the power cable into the **POWER** connector on the back of the TV.
- Make sure the power cable is securely inserted in the connector.
- Make sure that the power plug, in the wall socket, is accessible at all times.
- When you unplug the power cable, always pull the plug, never pull the cable.

For 32"



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.

For 43"



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.

# 5. Connections

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## 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.

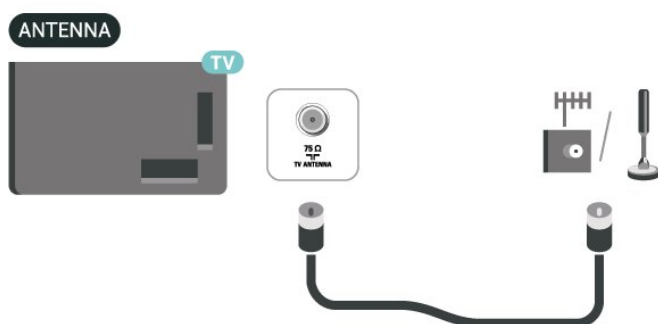
When you connect a device, the TV recognizes its type and gives each device a correct type name. You can change the type name if you wish. If a correct type name for a device is set, the TV automatically switches to the ideal TV settings when you switch to this device in the Sources menu.

---

## 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.

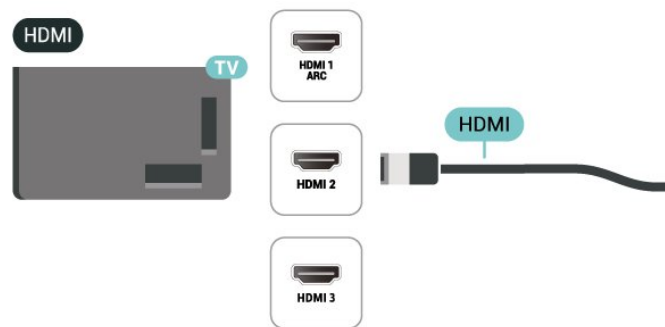


## 5.3. Video Device

### 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).

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## 5.4. Audio Device

### HDMI ARC

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

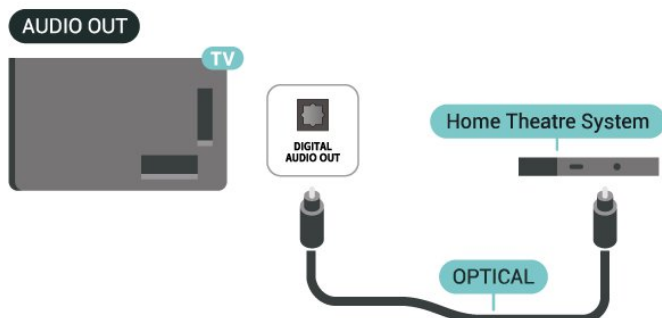
If the device, typically a Home Theater System (HTS), also has the HDMI ARC connection, connect it to any of the HDMI connections on this TV. With the HDMI ARC connection, you do not need to connect the extra audio cable that sends the sound of the TV picture to the HTS. The HDMI ARC connection combines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




## 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. Other Device

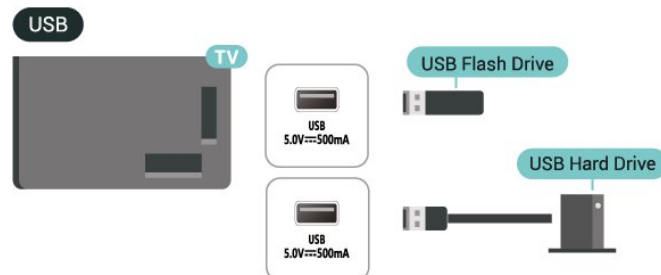
## USB Storage Device

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.

\* **Note:** Connect a USB storage device with a size of less than 2TB.



For more information on watching or playing content from a USB flash drive, check on [Help > User manual > Photos, Videos and Music](#).



## 5.6. Computer

You can connect your computer to the TV and use the TV as a PC monitor. Use an HDMI cable to connect the computer to the TV.


# 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

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## 7.1. About Channels and Switch Channels

To watch TV channels

- Press TV / EXIT. The TV tunes to the TV channel you last watched.
- 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.

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## 7.2. Install Channel

### Antenna/Cable Installation

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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 and analog (if available) 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 reinstallation, 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.

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## 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.

---

## Universal Access

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

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

For more information, check on **Help > User manual > Universal Access Settings**.

---

## 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**.

---

## 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 call up 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 channel info.

---

## Ginga

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

Enable or disable the Ginga feature.

---

## 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 / EXIT**, 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.

## Channel List Options

---



### Open the Options Menu

To open the channel list Options menu:

- Press TV / EXIT, to switch to TV.
- Press  Channel list to open the channel list.
- Press OPTIONS to select options.
- Press  Back to close the channel list.


---

### Rename Channel

- 1 - Press TV / EXIT, 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 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 / EXIT, 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 / EXIT > OK > OPTIONS > Create favorites list

Select a channel then press OK to add in a favorites channel list, once completed, press  Done.

TV / EXIT > OK > OPTIONS > Edit favorites

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

---

### Select Channel Range

TV / EXIT > 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 / EXIT > OK > OPTIONS > Select channel list




Select a channel list sorted by type of channel.

---

### Search Channels

TV / EXIT > 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 , to switch to TV.
- 2 - Press  Channel list to open the channel list.
- 3 - Press OPTIONS > Search channel, and press OK to open 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 / EXIT > 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 / EXIT > 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

---

### 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 call up the details of the selected program, press **INFO**.

#### 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

---

## 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. 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 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**.

- View the photo files with the control menu:

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).

- Press the icons on player to:

- Start a slideshow
- Rotate the photo
- Shuffle: play your files in a random order
- Repeat: plays all photos in this folder once or continuously
- Set the speed of the slide show
- Stop the music playing in the background.

### Photo Options

When browsing photo files, press **OPTIONS** to get more options.

#### Slide show

If there are several photos in the same folder, select to start a slide show of all the photos in this folder.

#### Sort

Browse your photos by date, timeline, or file name.

#### List/Thumbnails

View photos with list view or thumbnails view.

#### Shuffle

View the pictures in sequential order, or at random.

#### Repeat

View the pictures repeatedly or once only.

#### Stop music

Stop music playback.

#### Slide show speed

Set the speed of the slide show.

#### Slide Show Transitions

Set the transition from one picture to the next.

#### Info

Show photo file information.

During the photo file viewing, press **OPTIONS** to get more options.

#### Info

Show photo file information.

---

## 9.3. Videos

### Play Videos

To play a video on the TV:

Select **Videos**, select the filename 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 **◀** **Back**.

#### 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 **INFO** to show file information.

- Play a video file with the control menu:

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).

- Press the icons on player to:

- Play one/all videos
- Subtitle: switch subtitles On, Off or On During Mute.
- Subtitle language: select a Subtitle Language

- Select the character set if external subtitles are available.
- Audio language: select an audio language
- Shuffle: play your files in a random order
- Repeat: plays all videos in this folder once or continuously

## Video Options

When browsing video files, press **OPTIONS** to get more options.

### Play All

Play all files in the folder.

### List/Thumbnails

View video files with list view or thumbnail view.

### Shuffle off, Shuffle on

Play videos in sequential order or at random.

### Repeat, Play once

Play videos repeatedly or once.

### Info

Show video file information.

During the video playback, press **OPTIONS** to get more options.

### Subtitle settings

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

### Info

Show video file information.

- Repeat: plays all music in this folder once or continuously

## Music Options

When browsing music files, press **OPTIONS** to get more options.

### Play All

Play all files in the folder.

### List/Thumbnails

View music files with list view or thumbnails view.

### Shuffle off, Shuffle on

Play songs in sequential order or at random.

### Repeat, Play once

Play songs on a loop or just once.

---

## 9.4. 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 **INFO** to show file information.

- Play a music file with the control menu:

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).



- Press the icons on player to:

- Play all music
- Shuffle: play your files in a random order

# 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.
- **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.
- **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.




## 10.2. All Settings

### Picture Settings

---

#### 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 and HDR10, but it is subject to the availability of such HDR format in content providers.

For HDR content (Hybrid Log Gamma and HDR10)

The styles for HDR (Hybrid Log Gamma 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**, then select **Restore picture style**.

---

#### 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. The function is only available when **Settings > Picture > Contrast > Brightness > Contrast mode** is set to **Off**.

---

##### 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

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##### 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 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. The adjustment only applies to NTSC signal.

### 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 picture style is **Monitor** / **HDR Monitor**

### 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**.

When **Whitepoint** is set to **Custom**, you can make further adjustments for the whitepoint alignment.

---

## 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 Noise

**Note:** Picture noise settings are not available when Picture style is set to **Monitor/HDR Monitor** or **Game/HDR Game**.

### Noise reduction

🏠 (Home) > Settings > Picture > Picture noise > **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.

### Artifact reduction

🏠 (Home) > Settings > Picture > Picture noise > **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.

---

## Auto Pixel Shift

🏠 (Home) > Settings > Screen > Auto pixel shift

Switch On to automatically shift pixels position over time to reduce pixel stress. It is highly recommended that you switch it on to reduce the risk of image retention.

## 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:

- **Entertainment** - Ideal for watching movies
- **Music** - Ideal for listening to music
- **Dialog** - Ideal for speech
- **Personal** - Select to adjust your preferred sound settings

---

### Personal Sound Settings

Clear dialog

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

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

Equalizer

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

Adjust the equalizer settings.

Restore style

🏠 (Home) > Settings > Sound > Personal settings > Restore style

Select to restore the style setting.

---

### 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. The setting options vary depending on the support capabilities of the EasyLink 2.0 HDMI sound system.

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. The option is available when **Sound style** is not set

to Custom.

### Adjust treble level

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

Press the Arrow/navigation keys to adjust the treble level. The option is available when Sound style is not set to Custom.

### 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 / Surround Mode

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.

\* Some of the EasyLink 2.0 HDMI sound system only supports Surround Mode to switch on or off virtual surround.

### 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.

### Subwoofer

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

Adjust subwoofer level.

### Dolby Atmos

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Dolby Atmos.

Adjust Dolby Atmos height loudness.

### DTS TruVolume

🏠 (Home) > Settings > Sound > EasyLink 2.0 > DTS TruVolume.

Select consistent volume level.

### Night Mode

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Night Mode.

Select comfortable quiet listening level.

### Auto Volume

🏠 (Home) > Settings > Sound > EasyLink 2.0 > Auto Volume.

Control the sound listening level.

### Display

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

Set to turn off display automatically.

### 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.

---

## 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.

---

## 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 will be played through headphones.
- If you select **Optical**, the TV speakers are switched off and the sound will be played 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.

---

## 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.

## 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.

### Connect to Network

#### 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.

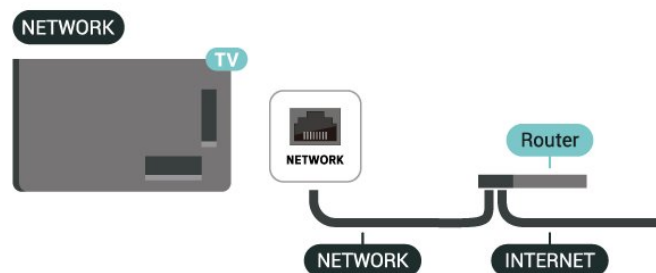
##### Turn Wi-Fi On or Off

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

### 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.

### Wireless and Network Settings

##### Check the network

🏠 (Home) > Settings > Wireless & networks > Wired or Wi-Fi > Check the network

Check the network connection status.

##### 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

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

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

### 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 LAN

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

You can switch this TV on from your smartphone or tablet if the TV is in Standby. The setting Switch on with LAN must be 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.

### 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.

## 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

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#### 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  Volume + or - and 123 key) 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

## 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.

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## 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

Turn On/Off the Demo Me autostart.

---

## 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 by 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

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### 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 will be 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 - and 123 key) 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. Smart TV and Apps

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## 11.1. 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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## 11.2. 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.

# 12. 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)

# 13. 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).

# 14. 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).

# 15. Software

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## 15.1. 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.

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## 15.2. Software Version

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

To view the current TV software version.

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## 15.3. 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.

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## 15.4. 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.

# 16. Environmental

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## 16.1. 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.

### DISPOSAL OF BATTERIES AND CELLS



After use, batteries and/or cells should be taken to the business establishment or approved service center network.

# 17. Specifications

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## 17.1. 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 100-240V
- Ambient temperature: 5°C to 35°C (40°F to 95°F)

## 17.2. 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)

## 17.3. Display Resolution

### Diagonal screen size

- 80 cm / 32 inch
- 108 cm/43 inch

### Display resolution

- PHx: 1366 x 768
- PFx: 1920 x 1080

## 17.4. 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

### Supported Video only resolution

#### Resolution — Refresh rate

Video Inputs (TV can be Video or Game Mode)

- 480i - 60Hz
- 576i - 50Hz
- 1080i - 50Hz, 60Hz
- 720p - 50Hz, 60Hz
- 1080p - 24Hz, 25Hz, 30Hz, 50Hz, 60Hz

## 17.5. Sound

- Output power (RMS): 32" - 10W; 43" - 16W
- Dolby MS12
- Dolby Volume Leveler/Night mode
- Dolby Bass Enhancement
- Dolby Dialog Enhancement
- Clear Dialog
- AI Sound
- AI EQ

## 17.6. Multimedia

### Connections

- USB 2.0
- Ethernet LAN RJ-45
- Wi-Fi 802.11n, Single Band

### 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

### Wifi Certified

This TV is a Wi-Fi Certified device.

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## 17.7. Connectivity

### TV Side

- HDMI 1 input - ARC
- HDMI 2 input
- HDMI 3 input
- USB 1 - USB 2.0

### TV Bottom

- USB 2 - USB 2.0
- Antenna (75 ohm)
- Headphones - Stereo mini-jack 3.5mm
- Network LAN - RJ45
- Audio out - Optical Toslink

# 18. Troubleshooting

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## 18.1. Tips

If you cannot find a solution for your TV problem in Troubleshooting, you can go to **Help > User manual** to find 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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## 18.2. 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) 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 reoccurs, check on **Help > Contact info** and contact Philips TV Consumer Care.

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

---

## 18.3. 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.
- 

## 18.4. Channels

No digital channels found during the installation

- Check if the TV is 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 is 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, search for the channel you are missing. If the channel is still available, you can put it back in the favorites list.

## 18.5. 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**.
- To restore **Picture style** to its original setting, go to **⬆️ (Home) > Settings > Picture**, then select **Restore picture 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** and 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.

## 18.6. 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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## 18.7. HDMI

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.
- 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.

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.
- 

## 18.8. 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, check on **Help > User manual > Specifications > 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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## 18.9. 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.
- 

## 18.10. 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) 8 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.

# 19. Safety and Care

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## 19.1. 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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## 19.2. 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.

# 20. Terms of Use

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2025 © 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

In certain circumstances of very dark color images or black background, the TV may display uneven color on screen, especially when the TV is in a dark environment with little natural light or artificial light. This is a common effect known as "MURA," "CLOUDING," or "LIGHT LEAK". Liquid Crystal Displays (LCD) are equipped with a backlight that acts as a light source to allow the image displayed on the screen to be optimal in terms of colors, brightness, and contrast. Due to the type of display (LCD) and the type of lighting it receives, it may sometimes display certain areas brighter than others. In this situation, uneven backlighting is not considered a defect or deterioration of the TV, and the product is within specifications. All Philips TVs undergo strict testing before reaching our customers. The "MURA," "CLOUDING," or "LIGHT LEAK" effects are not considered a product failure and will not be covered under warranty or free service, replacement or refund.

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.

# 21. Copyrights

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## 21.1. 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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## 21.2. 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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## 21.3. Dolby Audio

Manufactured under license from Dolby Laboratories. Dolby, Dolby Audio, and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.



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## 21.4. Wi-Fi Alliance

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



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## 21.5. Other Trademarks

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

# 22. Open Source

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## 22.1. 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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## 22.2. 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/libc/>

gstreamer (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/>

## **23. Disclaimer regarding services and/or software offered by third parties**

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