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8601 series

User Manual

55PUS8601
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PHILIPS

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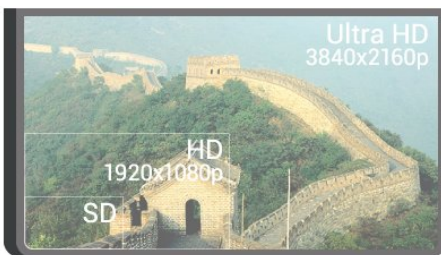
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TV Tour

UltraHD TV

This TV has an **Ultra HD** display. Its resolution is four times as much as normal HD displays. Ultra HD has 8 million pixels ready for the most refined and lifelike picture on TV.

On top, the new **Ultra Pixel HD Engine** continuously converts any incoming TV signal into Ultra HD resolution. So you can enjoy this stunning picture quality the moment you switch on the TV. Or you can watch native Ultra HD videos through an HDMI connection. Ultra HD offers TV viewing that is crisp and sharp even on a big screen.



Philips Android TV

This is a Philips Android TV™ with UHD.

Android TV offers thousands of movies, shows and games from Google Play, YouTube and your favourite apps.*

Voice search and personalised recommendations mean more time being entertained and less time hunting for something good. With Google Cast built in, you can easily cast movies, shows and photos from your Chromebook or Android device to your TV.**

androidtv

With the **Philips TV Remote App** on your smartphone or tablet, you have your TV channels at your fingertips. Send a photo to the large TV screen or follow your favourite cooking show on your tablet in the kitchen. From now on your TV is part of your mobile household.

Connect the TV to your home network and the Internet.

* The TV must be connected to the Internet. Subscriptions might be required for certain content providers.

** Casting optimized for selected services only. Streaming quality for other content might vary. Supported operating systems and devices: Android 2.3 and higher, iOS® 7 and higher, Windows® 7 and higher, Mac OS® 10.7 and higher and Chrome OS (version 38 or higher).

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Watching Channels

Of course, your TV is made for watching TV channels.

On this TV you can create several favourite lists, you can reorder a favourite list or rename a channel. Check out the programme recommendations in **Now on TV** or catch up on a TV series with **TV on Demand**. With **Top Picks**, you can open your personalised TV suggestions. The online TV Guide lets you set reminders or allows you to make recordings*.

* You need a connected USB Hard Drive.

Using Apps

Apps are a great extension of what you can do with your TV.

You can install apps from Philips, free apps ready for TV, or use the apps available for Android or Android TV. Check out the wide variety of apps in the Philips App Gallery or the Google Play Store. To get you started, some practical **Apps** are pre-installed on your TV.

For more information, press the colour key **Keywords** and look up **Apps**.

Playing Games

This TV is your big screen for **gaming**.

You can play a game from a connected Game Console, a game from an installed App or simply an online game on a website. You can set the TV to the ideal settings for gaming, to allow quick and responsive action.

For more information, press the colour


key  **Keywords** and look up **Gaming**.

1.6

Rent a Movie

To get a **rental video**, you don't need to leave the house.

With **Video on Demand** in **Top Picks**, you can select and play your recent favourite movie immediately. The video store will stream the movie to your TV at home. Video on Demand is available in selected countries.

For more information, press the colour key  **Keywords** and look up **Video on Demand**.


1.7

Pause TV and Recording

If you connect a **USB Hard Drive**, you can pause and record a broadcast from a digital TV channel.

Pause your TV and answer that urgent phone call or simply take a break during a sports match, while the TV stores the broadcast on the USB Hard Drive. You can watch it again later.

With a USB Hard Drive connected, you can also record digital broadcasts. You can record while you are watching a programme or schedule a recording of an upcoming programme.

For more information, press the colour key  **Keywords** and look up **Pause TV** or **Recording**.

1.8

Smartphones and Tablets

With this Philips Android TV, you can easily share what's on your smartphone or tablet on the big screen.

Download and install the **Philips TV Remote App**. It's free and available for Android and iOS.

With the TV Remote App on your smartphone or tablet, you master your media around you. Send photos, music or videos to your big TV screen or watch any of your TV channels live on your tablet or phone. Open the TV Guide and schedule a recording for tomorrow. Your TV at home will do the job. Switch on **Ambilight+hue** and set the coziest colour effects in your living room. With the TV Remote App you are in control. You might consider to simply lower the TV volume.

1.9

Ambilight

Ambilight is the most elegant and exclusive feature of your new Philips TV.

A subtle glow of coloured light that comes from behind the screen - expanding your visual experience. With **Ambilight** your eyes relax but your mind is fully taken up by what you see. Select one of the many **Ambilight** styles to follow your mood. You can also neutralise the influence of a coloured wall on the colours of **Ambilight Projection** with **Wall Colour**.

With **Ambilight+hue** you even expand **Ambilight** further. Bringing in the wireless controlled bulbs of **Philips Hue** *. All of them will fill your room with colours that fit what's on TV.

You will miss **Ambilight** when you switch it off.


* Philips Hue is sold separately.

1.10

Bluetooth Connection

Your TV has **Bluetooth** technology inside.

You can connect extra wireless speakers or a wireless headphone. Forget about connecting cables, pairing your device with the TV is enough.

For more information, press the colour key  **Keywords** and look up **Bluetooth** or **Wireless Speakers**.

Setting Up

2.1

Read Safety

Read the safety instructions first before you use the TV.

To read the instructions, press the colour key **—** **Keywords** and look up **Safety Instructions**.

2.2

TV Stand and Wall Mounting

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 lost the Quick Start Guide, you can download it from www.philips.com.

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

Wall Mounting

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.

Your TV is prepared for a VESA-compliant wall mount bracket (sold separately).

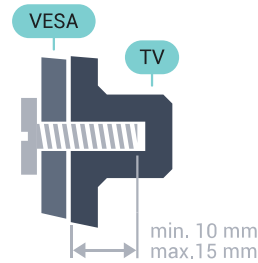
Use the following VESA code when purchasing the wall mount . . .

- 55PUS8601
VESA MIS-F 200x200, M6
- 65PUS8601
VESA MIS-F 200x200, M6

Preparation

First remove the 4 plastic screw caps out of the threaded bushes on the back of the TV.

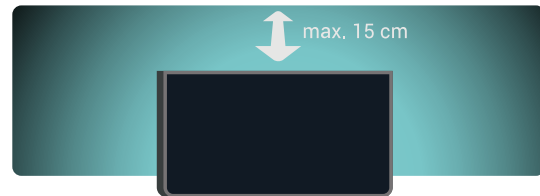
Make sure that the metal screws, to mount the TV to the VESA-compliant bracket, go about 10mm deep inside the threaded bushes of the TV.



2.3

Tips on Placement

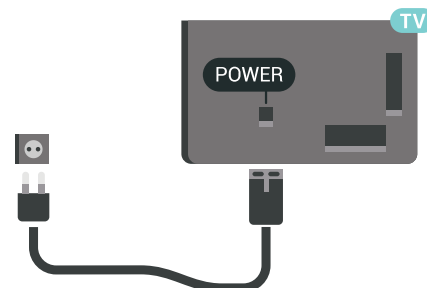
- Position the TV where light does not shine directly on the screen.
- Dim lighting conditions in the room for best Ambilight effect.
- Position the TV up to 15 cm away from the wall.
- The ideal distance to watch TV is 3 times its diagonal screen size. When seated, your eyes should be level with the centre of the screen.



2.4

Power Cable

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



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

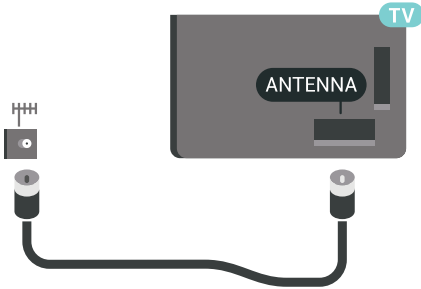
Press the colour key **—** **Keywords** and look up **Switching On and Off** for more information.

Antenna Cable

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.

Use this antenna connection for DVB-T and DVB-C input signals.



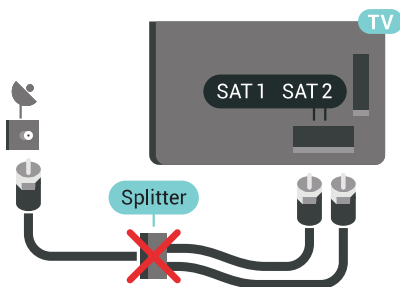
Satellite Dish

Expert Help

Consider asking for expert help when you are setting up a satellite dish system. An existing but unknown setup or local conditions of the satellite reception may complicate the setup of your satellite system. Improper installation may damage the TV electrically.

Warning

When you have a Universal LNB on your satellite dish, do not use coaxial cable splitters unless you are using a Unicable setup.

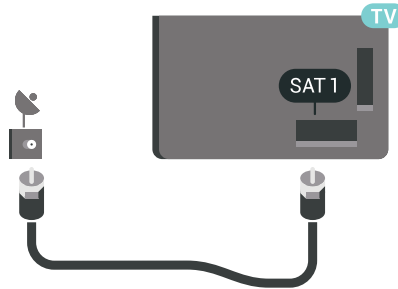


One Tuner

To watch a satellite channel and to record another channel at the same time, you must connect 2 identical cables from your satellite dish to the TV. If you only have 1 cable available, the channel you are recording is the only channel you can watch.

Connect the cable from the satellite dish directly to the **SAT 1** connection. Use a coaxial cable fit for connecting a satellite antenna dish. Make sure your satellite dish is perfectly aligned before you start the installation.

During the satellite installation, select **One Tuner**.

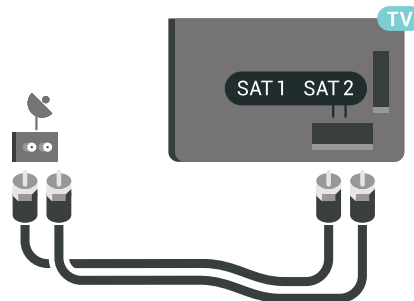


Two Tuner

To watch a satellite channel and to record another channel at the same time, you must connect 2 identical cables from your satellite dish to the TV.

Connect the first cable from the satellite dish directly to the **SAT 1** connection and connect the second cable to **SAT 2**. Use a coaxial cable fit for connecting a satellite antenna dish. Make sure your satellite dish is perfectly aligned before you start the installation.

During the satellite installation, select **Two Tuners**.

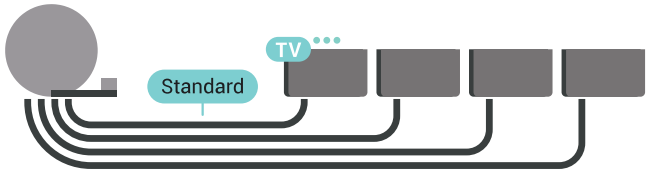
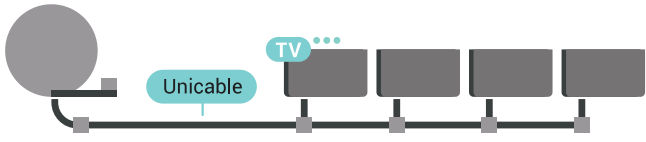


Unicable or MDU

If you use a Unicable system, connect the cable to the **SAT 1** connection. Use a coaxial cable fit for connecting a satellite antenna dish and only use Unicable complaint cable splitters. Make sure your satellite dish is perfectly aligned before you start the installation.

During the satellite installation, select **Two Tuners** and later **Unicable**.

In Help, press the colour key **— Keywords** and look up **Unicable, setup** for more information.



Connect your Android TV

Network and Internet

Home Network

To enjoy the full capabilities of your Philips Android 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

To make a wireless connection...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Connect to Network** and press **OK**.
- 4 - Select **Wireless** and press **OK**.
- 5 - 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 at the bottom of the list, to enter the network name yourself.

6 - Depending on the type of router, enter your encryption key - WEP, WPA or WPA2. If you entered the encryption key for this network before, you can select **OK** to make the connection immediately.

7 - A message will be shown when the connection is successful.

Wi-Fi On/Off

Make sure Wi-Fi is switched on before you try to make the connection...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Wi-Fi On/Off** and press **OK**.
- 4 - If it is switched off, select **On** and press **OK**.

WPS

If your router has WPS, you can directly connect to the router without scanning for networks. If you have devices in your wireless network that use the WEP security encryption system, you cannot use WPS.

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Connect to Network** and press **OK**.
- 4 - Select **WPS** and press **OK**.
- 5 - Go to the router, press the WPS button and return to the TV within 2 minutes.
- 6 - Select **Connect** to make the connection.
- 7 - A message will be shown when the connection is successful.

WPS with PIN Code

If your router has WPS with a PIN code, you can directly connect to the router without scanning for networks. If you have devices in your wireless network that use the WEP security encryption system, you cannot use WPS.

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Connect to Network** and press **OK**.
- 4 - Select **WPS with PIN code** and press **OK**.
- 5 - Write down the 8-digit PIN code shown on screen and enter it in the router software on your PC. Consult the router manual on where to enter the PIN code in the router software.

- 6 - Select **Connect** to make the connection.
- 7 - A message will be shown when the connection is successful.

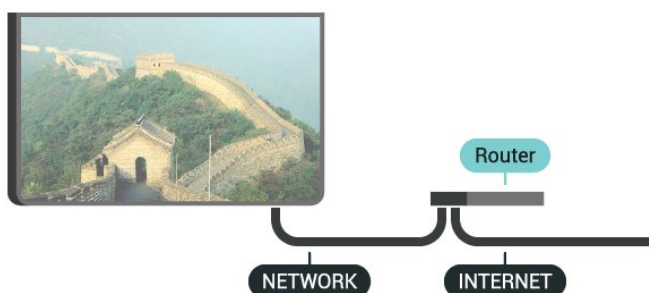
Problems

In Help, press the colour key **Keywords** and look up **Troubleshooting** for more information.

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

To make a wired connection...

- 1 - Connect the router to the TV with a network cable (Ethernet cable**).
- 2 - Make sure that the router is switched on.
- 3 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 4 - Select **Wireless and Networks** and press **>** (right).
- 5 - Select **Wired or Wi-Fi > Connect to Network** and press **OK**.
- 6 - Select **Wired** and press **OK**. The TV constantly searches for the network connection.
- 7 - 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 switched on.

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

Network Settings

View Network Settings

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

To view the current network settings...

- 1 - Connect the router to the TV with a network cable (Ethernet cable**).
- 2 - Make sure that the router is switched on.
- 3 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 4 - Select **Wireless and Networks** and press **>** (right).
- 5 - Select **Wired or Wi-Fi > View Network Settings** and press **OK**.
- 6 - Press **<** (left) to go back one step or press **BACK** to close the menu.

Network Configuration

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

To set the TV to Static IP...

- 1 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **>** (right).
- 3 - Select **Wired or Wi-Fi > Static IP Configuration** and press **OK**.
- 4 - Configure the connection.
- 5 - Press **<** (left) to go back one step or press **BACK** to close the menu.

Switch On with Wi-Fi (WoWLAN)

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

To switch on WoWLAN...

- 1 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **>** (right).
- 3 - Select **Wired or Wi-Fi > Switch on with Wi-Fi (WoWLAN)** and press **OK**.
- 4 - Select **On** and press **OK**.
- 5 - Press **<** (left) to go back one step or press **BACK** to close the menu.

Digital Media Renderer (DMR)

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

To switch on DMR...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Digital Media Renderer** and press **OK**.
- 4 - Select **On** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Wi-Fi Smart Screen

To watch digital TV channels on your smartphone or tablet with the Philips TV Remote App, you must switch on Wi-Fi Smart Screen. Some scrambled channels might not be available on your mobile device.

Legislation or technical regulations in some countries might prohibit Wi-Fi Smart Screen.

To switch on Wi-Fi Smart Screen...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Wi-Fi Smart Screen** and press **OK**.
- 4 - Select **On** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

TV Network Name

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

To change the TV name...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > TV Network Name** and press **OK**.
- 4 - Enter the name with the Remote Control Keyboard.
- 5 - To finish, select **✓** and press **OK**.
- 6 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Clear Internet Memory

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

To clear the Internet memory...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **➤** (right).
- 3 - Select **Wired or Wi-Fi > Clear Internet Memory** and press **OK**.
- 4 - Select **OK** to confirm.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

File Sharing

The TV can connect to other devices in your wireless network, like your computer or smartphone. You can use a computer with Microsoft Windows or Apple OS X.

On this TV, you can open photos, music and videos stored on your computer. Use any recent DLNA certified media server software.

Install the media server software on your computer and set it up to share your media files with the TV. Read the manual of the media server software for more information. This software must be running on your computer to view or play your files on TV.

3.2

Google Account

Sign In

To enjoy the full capabilities of your Philips Android TV, you can sign in to Google with your Google Account.







By signing in you'll be able to play your favourite games across phone, tablet and TV. You'll also get customized video and music recommendations on your TV home screen as well as access to YouTube, Google Play and other apps.

Sign In

Use your existing **Google Account** to sign in to Google on your TV. A Google Account consists of an email address and a password. If you don't have an Google Account yet, use your computer or tablet to create one (accounts.google.com). To play games with

Google Play, you need a Google+ profile. If you did not sign in during the first TV installation, you can always sign in later.







To sign in after you did the TV installation...

- 1 - Press  HOME, scroll down and select  **General Settings** and press OK.
- 2 - Press , select **Android Settings** and press OK.
- 3 - Press  (down) and select **Personal > Add account** and press OK.
- 4 - Press OK on SIGN IN.
- 5 - With the remote control keyboard, enter your email address and press the small OK key at the right of the keyboard.
- 6 - Enter your password and press the same small OK key to sign in.
- 7 - Press  (left) to go back one step or press  BACK to close the menu.

If you want to sign in with another Google Account, first sign out and sign in with the other account.

Sign Out






To sign out of your Google Account...

- 1 - Press  HOME, scroll down and select  **General Settings** and press OK.
- 2 - Press , select **Android Settings** and press OK.
- 3 - Press  (down) and select **Personal > Google** and press OK.
- 4 - Select **Remove account** and press OK.
- 5 - Select OK and press OK.
- 6 - Press  (left) to go back one step or press  BACK to close the menu.

Android Settings

You can set or view several Android specific settings or information. You can find the list of apps installed on your TV and the storage space they need. You can set the language you like to use with Voice. You can configure the onscreen keyboard or allow apps to use your location. Explore the different Android settings. You can go to www.support.google.com/androidtv for more information on these settings.

To open these settings...

- 1 - Press  HOME, scroll down and select  **General Settings** and press OK.
- 2 - Press , select **Android Settings** and press OK.
- 3 - Explore the different Android settings.
- 4 - Press  (left) to go back one step or press  BACK to close the menu.

3.3

Philips App Gallery

Philips Apps





Connect the TV to the Internet to enjoy apps selected by Philips. The **Philips App Gallery** apps are made specially for TV. Downloading and installing App Gallery apps is free of charge.

The Philips App Gallery collection of apps can differ per country or region.

Terms of Use

To install and use the Philips App Gallery apps, you must agree to the Terms of Use. If you did not agree to these terms during the first TV installation, you can always agree to them later. The moment you agree to the Terms of Use, some apps will be available immediately and you can browse the Philips App Gallery to install other apps.

To agree on the Terms of Use after you did the TV installation...





- 1 - Press  HOME and select **Philips Collection > App Gallery** and press OK to open the App Gallery.
- 2 - Press  OPTIONS and select **Terms of Use** and press OK. You can read the Terms of Use or the Privacy Policy.
- 3 - Select **Agree** and press OK. You cannot undo this approval.
- 4 - Press  (left) to go back one step or press  BACK to close the menu.

Privacy Settings

You can set some privacy settings for the Philips App Gallery apps.

- You can allow technical statistics to be send to Philips.
- You can allow personal recommendations.
- You can allow cookies.
- You can switch on the Child Lock for 18+ rated apps.

To set the Philips App Gallery privacy settings...

- 1 - Press  HOME and select **Philips Collection > App Gallery** and press OK to open the App Gallery.
- 2 - Press  OPTIONS and select **Privacy Settings** and press OK.
- 3 - Select each setting and press OK to allow or disallow. You can read about each setting in detail.
- 4 - Press  (left) to go back one step or press  BACK to close the menu.

Connect Devices

4.1

About Connections

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.

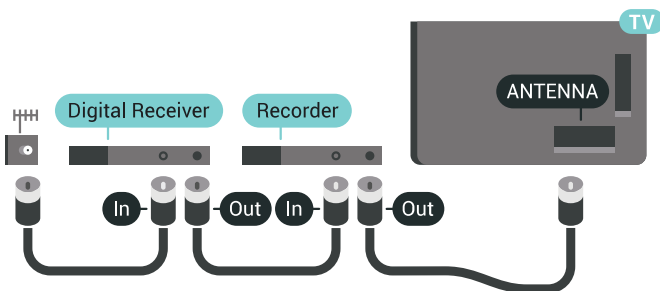
When you connect a device, the TV recognizes its type and gives each device a correct type name. You can change the type name if you wish. If a correct type name for a device is set, the TV automatically switches to the ideal TV settings when you switch to this device in the Sources menu.

If you need help to connect several devices to the TV, you can visit the Philips TV connectivity guide. The guide offers information on how to connect and which cables to use.

Go to www.connectivityguide.philips.com

Antenna port

If you have a Set-top box (a digital receiver) or Recorder, connect the antenna cables to run the antenna signal through the Set-top box and/or Recorder first before it enters the TV. In this way, the antenna and the Set-top box can send possible additional channels to the Recorder to record.



HDMI ports

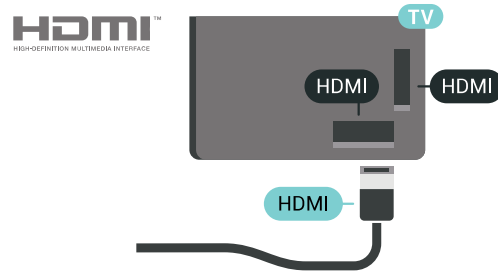
HDMI Quality

An HDMI connection has the best picture and sound quality. One HDMI cable combines video and audio signals. Use an HDMI cable for High Definition (HD) or Ultra HD (UHD) TV signals.

For best signal quality transfer, use a High speed HDMI cable and do not use an HDMI cable longer

than 5 m.

If a device connected with HDMI is not working correctly, check if a different HDMI Ultra HD setting can solve this problem. In Help, press the colour key **— Keywords** and look up HDMI Ultra HD.



Copy protection

HDMI cables support HDCP 2.2 (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).

HDMI ARC

All of the HDMI connections on the TV have HDMI ARC (Audio Return Channel).

If the device, typically a Home Theatre 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.

You can use any HDMI connection on this TV to connect the HTS but ARC is only available for 1 device/connection at a time.

HDMI MHL

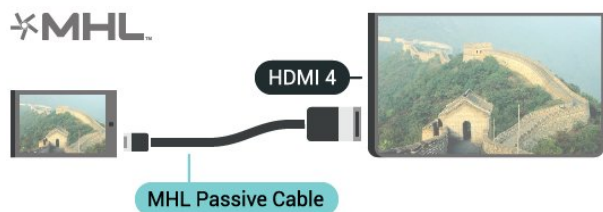
With HDMI MHL, you can send what you see on your Android smartphone or tablet to a TV screen.

The HDMI 4 connection on this TV incorporates MHL 2 (Mobile High-Definition Link).

This wired connection offers great stability and bandwidth, low latency, no wireless interference and good quality sound reproduction. On top of that, the MHL connection will charge the battery of your smartphone or tablet. Although connected, your mobile device will not be charging when the TV is on standby.

Inform yourself about what passive MHL cable is suited for your mobile device. In particular, with the HDMI connector for the TV on one side, the type of connector you need to connect to your smartphone or tablet.

MHL, Mobile High-Definition Link and the MHL Logo are trademarks or registered trademarks of the MHL, LLC.



HDMI Ultra HD

You can watch videos filmed or made in 'native' Ultra HD resolution - 3840x2160 pixels - on this TV. Connect devices that play Ultra HD video to one of the HDMI connectors.

Problems with devices connected with HDMI

This is an Ultra HD TV. Some older devices - connected with HDMI - do not recognise an Ultra HD TV electronically and might not work correctly or show distorted picture or sound. To avoid the malfunctioning of such a device, you can set the signal quality to a level the device can handle. If the device is not using Ultra HD signals, you can switch off Ultra HD for this HDMI connection.

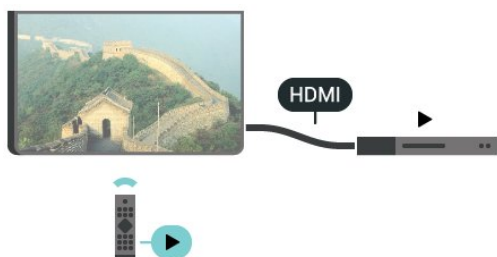
To set the signal quality...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **HDMI Ultra HD** and press **OK**.
- 4 - Select **UHD 4:4:4/4:2:2** (highest UHD quality), **UHD 4:2:0** or **Off** and press **OK**.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️** BACK to close the menu.

HDMI CEC - EasyLink

EasyLink

With EasyLink you can operate a connected device with the TV remote control. EasyLink uses HDMI CEC (Consumer Electronics Control) to communicate with the connected devices. Devices must support HDMI CEC and must be connected with an HDMI connection.



EasyLink setup

The TV comes with EasyLink switched on. Make sure that all HDMI CEC settings are properly set up on the connected EasyLink devices. EasyLink might not work with devices from other brands.

HDMI CEC on other brands

The HDMI CEC functionality has different names on different brands. Some examples are: Anynet, Aquos Link, Bravia Theatre 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.

Operate Devices

To operate a device connected to HDMI and set up with EasyLink, select the device - or its activity - in the list of TV connections. Press **⏻** SOURCES, select a device connected to an HDMI connection and press **OK**.

Once the device is selected, the TV remote control can control the device. However the keys **🏠** HOME and **⊕** OPTIONS and some other TV keys, like **📺** AMBI LIGHT are not forwarded to the device.

If the key you need is not on the TV remote control, you can select the key in the Options menu. Press **⊕** OPTIONS and select **Controls** in the menu bar. On the screen, select the device key you need and press **OK**.

Some very specific device keys might not be available in the Controls menu.

Only devices that support **EasyLink Remote Control** function will respond to the TV remote control.

EasyLink On or Off

You can switch EasyLink on or off. The TV comes with the EasyLink settings switched on.

To switch off EasyLink...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings > EasyLink** and press **OK**.
- 3 - Select **EasyLink** and press **OK**.
- 4 - Select **On or Off** and press **OK**.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️** BACK to close the menu.

EasyLink Remote Control

If you want devices to communicate but you don't want to operate them with the TV remote control, you can switch off EasyLink Remote Control separately.

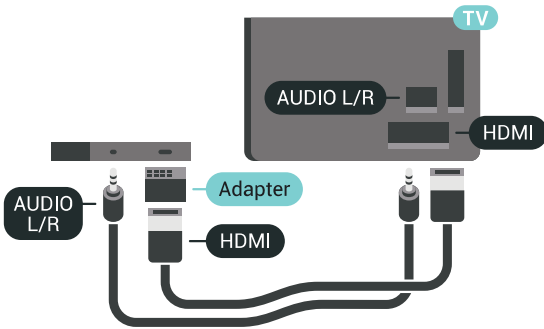
To switch EasyLink Remote Control on or off...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings > EasyLink** and press **OK**.
- 3 - Select **EasyLink Remote Control** and press **OK**.
- 4 - Select **On or Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

DVI to HDMI

If you still own a device that only has a DVI connection, you can connect the device to any of the HDMI connection with a DVI to HDMI adapter.

Connect the audio L/R cable to the **AUDIO IN** connector (mini-jack 3.5mm).

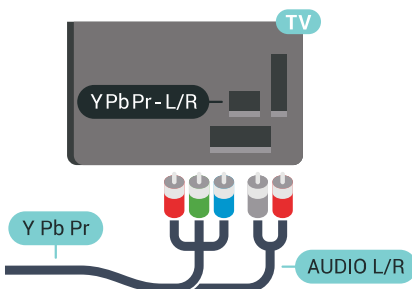


Y Pb Pr - Component

Y Pb Pr - Component Video is a high quality connection.

The YPbPr connection can be used for High Definition (HD) TV signals. Next to the Y, Pb and Pr signals add the Audio Left and Right signals for sound.

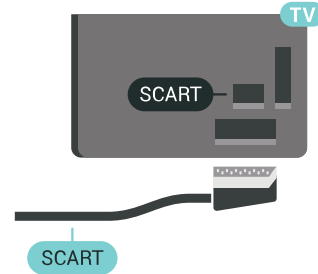
Match the YPbPr (green, blue, red) connector colours with the cable plugs when you connect. Use an Audio L/R cinch cable if your device also has sound.



Scart

SCART is a good quality connection.

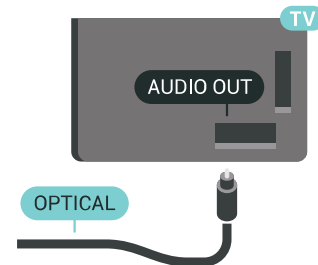
The SCART connection can be used for CVBS and RGB video signals but cannot be used for High Definition (HD) TV signals. The SCART connection combines video and audio signals. The SCART connection also supports NTSC playback.



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 Theatre 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.



You can set the type of the audio out signal to fit the audio capabilities of your Home Theatre System. For more information, press **⏏** Keywords and look up **Audio Out Settings**.

If the sound does not match the video on screen, you can adjust the audio to video synchronisation. For more information, press **⏏** Keywords and look up **Audio to Video Sync**.

4.2

CAM with Smart Card - CI+

CI+

This TV is ready for the CI+ Conditional Access.

With CI+ you can watch premium HD programmes, like movies and sports, offered by digital TV operators in your region. These programmes are scrambled by the TV operator and descrambled with a prepaid CI+ module.

Digital TV operators provide a CI+ module (Conditional Access Module - CAM) and an accompanying smart card, when you subscribe to their premium programmes. These programmes have a high level of copy protection.

Contact a digital TV operator for more information on terms & conditions.



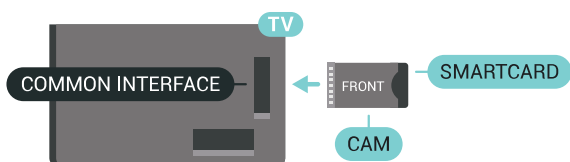
One Smart Card

Digital TV operators provide a CI+ module (Conditional Access Module - CAM) and an accompanying smart card, when you subscribe to their premium programmes.

Insert the smart card into the CAM module. See the instruction you received from the operator.

To insert the CAM in the TV...

- 1 - Look on the CAM for the correct method of insertion. Incorrect insertion can damage the CAM and TV.
- 2 - While looking at the back of the TV, with the front of the CAM facing towards you, gently insert the CAM into the slot **COMMON INTERFACE 1**.
- 3 - Push the CAM in as far as it will go. Leave it in the slot permanently.



When you switch on the TV, it may take a few minutes before the CAM is activated. If a CAM is inserted and subscription fees are paid (subscription methods can differ), you can watch the scrambled channels supported by the CAM smart card.

The CAM and smart card are exclusively for your TV. If you remove the CAM, you will no longer be able to watch the scrambled channels supported by the CAM.

Two Smart Cards

Some Digital TV operators can provide a second CI+ module (CAM) and smart card. A second CAM and smart card is needed when you want to watch one channel while recording another channel from the same TV operator.

If you can watch the same amount of channels with each card, both cards have identical viewing rights. If you can watch less channels with one of the cards, the cards have non-identical viewing rights.

If your smart cards have identical viewing rights, it does not matter which card you put in which slot. If one of the cards has more viewing rights than the other one, insert the card with the most viewing rights in the slot **COMMON INTERFACE 1**. Insert the card with less rights in **COMMON INTERFACE 2**.

Insert the smart cards into the CAM modules. See the instruction you received from the operator.

To insert the CAM in the TV...

- 1 - Look on the CAM for the correct method of insertion. Incorrect insertion can damage the CAM and TV.
- 2 - While looking at the back of the TV, with the front of the CAM facing towards you, gently insert the CAM into the slot.
- 3 - Push the CAM in as far as it will go. Leave it in the slot permanently.

When you switch on the TV, it may take a few minutes before the CAM is activated. If a CAM is inserted and subscription fees are paid (subscription methods can differ), you can watch the scrambled channels supported by the CAM smart card.

The CAM and smart card are exclusively for your TV. If you remove the CAM, you will no longer be able to watch the scrambled channels supported by the CAM.

Passwords and PIN codes

For some CAMs, you must enter a PIN code to watch its channels. When you set the PIN code for the CAM, we recommend you to use the same code you are using to unlock the TV.

To set the PIN code for the CAM...

- 1 - Press **SOURCES**.
- 2 - Select the channel type you are using the CAM for, **Watch TV** or **Watch Satellite**.
- 3 - Press **OPTIONS** and select **Common Interface**.
- 4 - Select the Common Interface slot (slot 1 or 2) you

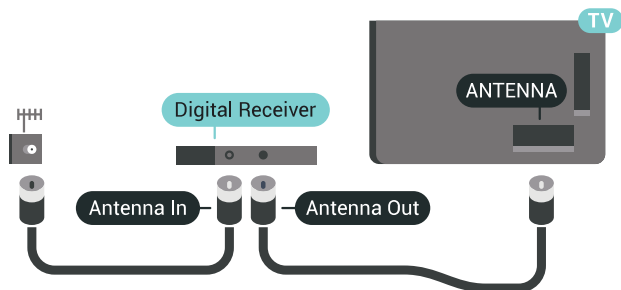
use for this CAM and press **>** (right).
 5 - Select the operator of the CAM and press **OK**. The following screens come from the TV operator. Look up the PIN code setting.

4.3

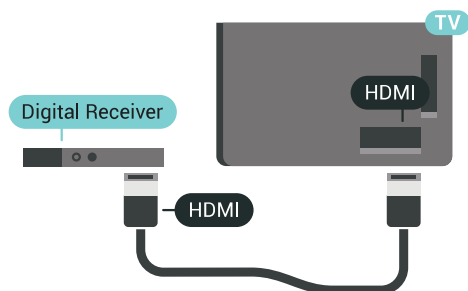
Receiver - Set-Top Box

Cable Box

Use 2 antenna cables to connect the antenna to the Set-top box (a digital receiver) and the TV.



Next to the antenna connections, add an HDMI cable to connect the Set-top box to the TV. Alternatively, you can use a SCART cable if the Set-top box has no HDMI connection.



Switch Off Timer

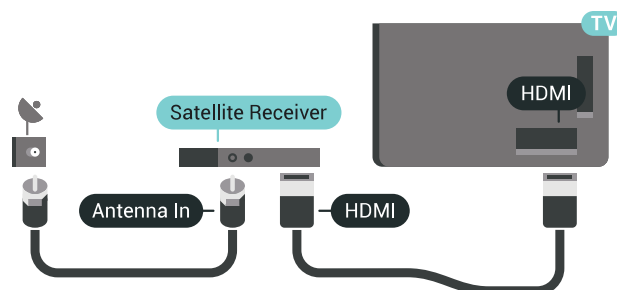
Switch off this automatic timer, if you only use the remote control of the Set-top box. Switch this timer off to prevent the TV from switching off automatically after a 4 hour period without a key press on the remote control of the TV.

In **Help**, press the colour key **— Keywords** and look up **Switch Off Timer** for more information.

Satellite Tuner

Connect the dish antenna cable to the Satellite receiver.

Next to the antenna connection, add an HDMI cable to connect the device to the TV. Alternatively, you can use a SCART cable if the device has no HDMI connection.



Switch Off Timer

Switch off this automatic timer, if you only use the remote control of the Set-top box. Switch this timer off to prevent the TV from switching off automatically after a 4 hour period without a key press on the remote control of the TV.

In **Help**, press the colour key **— Keywords** and look up **Switch Off Timer** for more information.

4.4

Home Theatre System - HTS

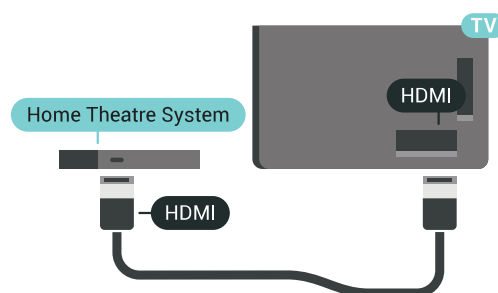
Connect with HDMI ARC

Use an HDMI cable to connect a Home Theatre System (HTS) to the TV. You can connect a Philips Soundbar or an HTS with a built-in disc player.

HDMI ARC

If your Home Theatre System has an HDMI ARC connection, you can use any HDMI connection on the TV to connect. With HDMI ARC, you do not need to connect the extra audio cable. The HDMI ARC connection combines both signals.

All HDMI connections on the TV can offer the Audio Return Channel (ARC) signal. But once you have connected the Home Theatre System, the TV can only send the ARC signal to this HDMI connection.



Audio to video synchronisation (sync)

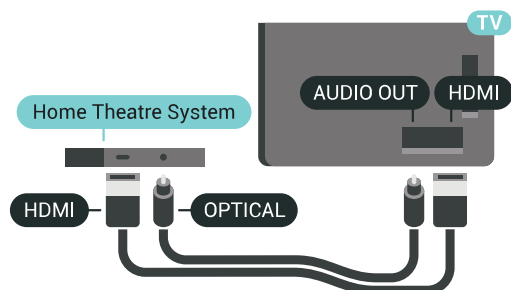
If the sound does not match the video on screen, you can set a delay on most Home Theatre Systems with a disc player to match the sound with the video.

For more information, press the colour key **— Keywords** and look up **Audio to Video Sync**.

Connect with HDMI

Use an HDMI cable to connect a Home Theatre System (HTS) to the TV. You can connect a Philips Soundbar or an HTS with a built-in disc player.

If the Home Theatre System has no HDMI ARC connection, add an optical audio cable (Toslink) to send the sound of the TV picture to the Home Theatre System.



Audio to video synchronisation (sync)

If the sound does not match the video on screen, you can set a delay on most Home Theatre Systems with a disc player to match the sound with the video.

For more information, press the colour key **■** **Keywords** and look up **Audio to Video Sync**.

Audio Out Settings

Audio Out Delay

With a Home Theatre System (HTS) connected to the TV, the picture on TV and the sound from the HTS should be synchronised.

Automatic audio to video sync

With recent Philips Home Theatre Systems, the audio to video sync is done automatically and always correct.

Audio sync delay

For some Home Theatre Systems you might need to adjust the audio sync delay to synchronise the audio to the video. On the HTS, increase the delay value until there is a match between picture and sound. A delay value of 180ms may be required. Read the user manual of the HTS. With a delay value set up on the HTS, you need to switch off Audio Out Delay on the TV.

To switch off the Audio Out Delay...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **➤** (right).
- 3 - Select **Advanced > Audio Out Delay** and press **OK**.
- 4 - Select **Off** and press **OK**.

- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Audio Out Offset

If you cannot set a delay on the Home Theatre System, you can set the TV to sync the sound. You can set an offset that compensates for the time necessary for the Home Theatre System to process the sound of the TV picture. You can set the value in steps of 5ms. Maximum setting is -60ms.

The Audio Out Delay setting should be switched on.

To synchronise the sound on the TV...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **➤** (right).
- 3 - Select **Advanced > Audio Out Offset** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Audio Out Format

If you have a Home Theatre System (HTS) with multichannel sound processing capabilities like Dolby Digital, DTS® or similar, set the Audio Out Format to Multichannel. With Multichannel, the TV can send the compressed multichannel sound signal from a TV channel or connected player to the Home Theatre System. If you have a Home Theatre System without multichannel sound processing, select Stereo.

To set the Audio Out Format...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **➤** (right).
- 3 - Select **Advanced > Audio Out Format** and press **OK**.
- 4 - Select **Multichannel** or **Stereo** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Audio Out Levelling

Use the Audio Out Levelling setting to level the volume (loudness) of the TV and the Home Theatre System when you switch over from one to another. Volume differences can be caused by differences in sound processing.

To level the difference in volume...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **➤** (right).
- 3 - Select **Advanced > Audio Out Levelling** and

press OK.

4 - If the volume difference is large, select **More**. If the volume difference is small, select **Less**.

5 - Press **OK**.

6 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Audio Out Levelling affects both the Audio Out - Optical and HDMI ARC sound signals.

Problems with HTS sound

Sound with loud noise

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

Press **⚙** for **All Settings > Sound > Advanced > Audio Out Format**.

No sound

If you cannot hear the sound from the TV on your Home Theatre System, check if you connected the HDMI cable to an **HDMI ARC** connection on the Home Theatre System. All HDMI connections on the TV are HDMI ARC connections.

4.5

Phones and Tablets

To connect a smartphone or tablet to the TV, you can use a wireless or wired connection.

Wireless

For a wireless connection, on your smartphone or tablet download the Philips TV Remote App from your favourite app store. In Help, press the colour key **— Keywords** and look up **Philips TV Remote App** for more information.

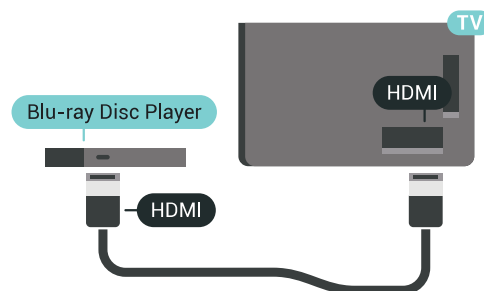
Wired

For a wired connection, use the HDMI 4 MHL connection on the back of the TV. In Help, press the colour key **— Keywords** and look up **HDMI MHL** for more information.

4.6

Blu-ray Disc Player

Use a **High speed HDMI** cable to connect the Blu-ray Disc player to the TV.



If the Blu-ray Disc player has EasyLink HDMI CEC, you can operate the player with the TV remote control.

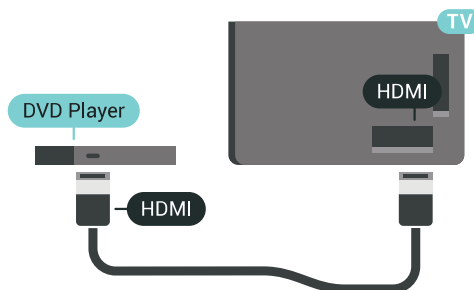
In Help, press the colour key **— Keywords** and look up **EasyLink HDMI CEC** for more information.

4.7

DVD Player

Use an HDMI cable to connect the DVD player to the TV.

Alternatively, you can use a SCART cable, if the device has no HDMI connection.



If the DVD player is connected with HDMI and has EasyLink CEC, you can operate the player with the TV remote control.

For more information on EasyLink, press the colour key **— Keywords** and look up **EasyLink HDMI CEC**.

4.8

Bluetooth - Speakers and Gamepads

What You Need

You can connect a wireless device with Bluetooth® to this TV – a wireless speaker, a subwoofer, a sound bar or headphones. You can also connect a wireless gamepad with Bluetooth LE.

To play the TV sound on a wireless speaker, you must pair the wireless speaker with the TV. You can pair some wireless speakers and a maximum of 4 Bluetooth LE (low energy) devices. The TV can only play the sound on one speaker at a time. If you connect a subwoofer, the sound is played on the TV and the subwoofer. If you connect a sound bar the sound is played on the sound bar only.

Attention - Audio to Video synchronisation

Many Bluetooth speaker systems have a high, so called, 'latency'. High latency means that the audio lags behind the video, causing unsynchronised 'lip sync'. Before you purchase a wireless Bluetooth speaker system, inform yourself about the newest models and look for a device with a low latency rating. Ask your dealer for advice.

For more information on how to pair a wireless speaker, press the colour key **Keywords** and look up **Bluetooth, pairing**.

Pairing a Device

Position the wireless speaker within a distance of 5 meters from the TV. Read the user manual of the device for specific information on pairing and on wireless range. Make sure the Bluetooth setting on TV is switched on.

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

To pair a wireless speaker with the TV...

- 1 - Switch on the wireless speaker and place it within range of the TV.
- 2 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 3 - Select **Wireless and Networks > Bluetooth > Search Bluetooth Device** and press **OK**.
- 4 - Select **Start** and press **OK**. Follow the instructions on screen. You will pair the device with the TV and the TV will store the connection. You might need to unpair a paired device first if the maximum number of paired devices was reached.
- 5 - Select the type of device (headphone, subwoofer, ...) and press **OK**.
- 6 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

For more information on how to select the wireless speaker, press the colour key **Keywords** and look up **Speakers, select speaker**.

Select a Device

Once a wireless Bluetooth speaker is paired, you can select it to play the TV sound.

To select a speaker to play the TV sound...

- 1 - Press **SETTINGS**, select **Speakers** and press **OK**.
- 2 - Select the loudspeaker system you want and press **OK**.
- 3 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

Remove a Device

You can connect or disconnect a wireless Bluetooth device. When a Bluetooth device is connected, you can use the gamepad or hear the TV sound through the wireless speaker. You can also remove a wireless Bluetooth device. If you remove a Bluetooth device, the device will be unpaired.

To remove or disconnect a wireless device...

- 1 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Wireless and Networks** and press **OK**.
- 3 - Select **Bluetooth**, select **Remove Device** and press **OK**.
- 4 - In the list, select the wireless device and press **OK**.
- 5 - Select **Disconnect** or **Remove** and press **OK**.
- 6 - Select **OK** and press **OK** to confirm.
- 7 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

4.9

PTA860 Wireless Speaker Stands

About the PTA860

With the Philips PTA860 Wireless Detachable Speaker Stands* you can position your side speakers further away from your TV screen. The sound will be more spacious and will better fit the large screen viewing experience. The minimalistic design of the stands match the design of the slim speakers perfectly. On these stands, the speakers are connected wirelessly to the TV.



You can use the PTA860 together with the wireless SUB100 Subwoofer * for a rich, deeper and spatial sound.

* The PTA860 and SUB100 are sold separately.

Setting Up

Before you start setting up both PTA860 speaker stands, make sure you have 2 spare power outlets available. One for each stand.

For an ideal sound reproduction, place the speaker stands not more than 1 meter away from the TV. Make sure you position the Left speaker at the left and the Right speaker at the right side of the TV. The speakers stands are marked on the bottom.

To mount the speakers on the speaker stands...

- 1 - With the TV switched off, disconnect the speaker plugs from the connectors on the back of the TV.
- 2 - Pull the speaker away from the side of the TV. The speakers are attached magnetically.
- 3 - To detach the cable and cap from the speaker, take the speaker in one hand and the small cable in the other and gently, but with some force, pull the cable away in line with the loudspeaker. You will detach the internal connector pin from the speaker.
- 4 - Slide the bottom opening of the loudspeaker over the connector pin of the stand column. Make sure you turn the speaker with the small notch at one side on the bottom to fit the tab on the stand column. Gently push the speaker down on the column until both units match perfectly.
- 5 - Plug in the PTA860 USB dongle in one of the **USB** connectors on the back of the TV and connect the green mini-jack connector to the **WIRELESS AUDIO** connection.
- 6 - Connect the power cords to both speaker stands and plug them in both power outlets.

For your convenience, the PTA860 USB dongle and both speaker stands are already paired in the factory.

You can use the adjustable feet of the speaker stand to correct the column if it is tilted or to fix its stability.



Pairing

For your convenience, the PTA860 USB dongle and both speaker stands are already paired in the factory. When you set up the stands there's no need to pair them. The LED light, on the USB dongle and both the stands, light up white to indicate that all 3 are powered and connected.

Pairing or pairing again

If for any reason the USB dongle and speaker stands do not connect and one or all LEDs blink red, you need to pair again.


To pair again...

- 1 - Press the small pairing button  on the USB dongle for 5 seconds and do the same on each speaker stand to start the pairing process. You have the time to do this one after the other. All LEDs will slowly blink white.
- 2 - The system will try to pair the USB dongle to both speaker stands.
- 3 - If the USB dongle and both speaker stands are paired, their LEDs light up white.
- 4 - If a LED on one of the speaker stands keeps blinking red, press the pairing button  on the USB dongle again for 5 seconds and do the same on this one speaker stand. The system will try to connect again.

When you switch the TV to standby, both detachable speaker stands will also go to standby. Their LEDs will light up red.


4.10

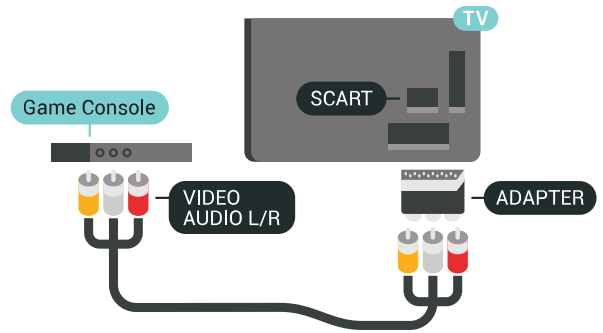
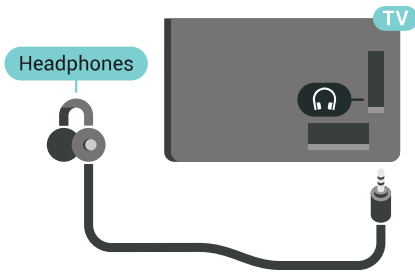
Headphones

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

Do not use the mini-jack connectors in both bottom corners on the back side of the TV - these connectors are meant for the detachable side speakers.

To adjust the volume...

- 1 - Press  **SETTINGS**.
- 2 - Select **Headphones Volume** and press **➤** (right).
- 3 - Press **▲** (up) or **▼** (down) to adjust the value.
- 4 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

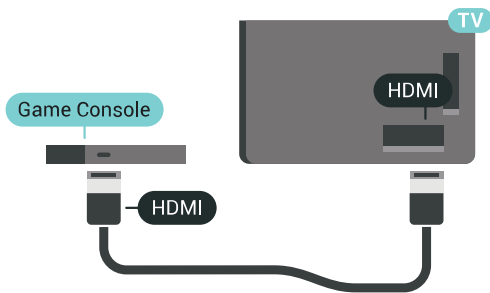


4.11

Game Console

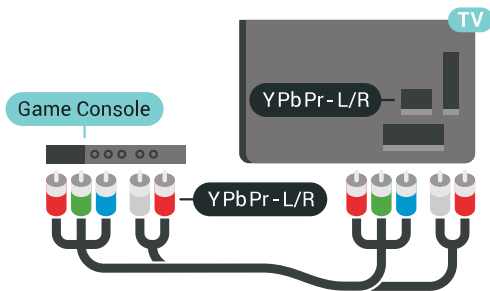
HDMI

For best quality, connect the game console with a High speed HDMI cable to the TV.



Y Pb Pr

Connect the game console with a component video cable (Y Pb Pr) and an audio L/R cable to the TV.



Scart

If your game console only has Video (CVBS) and Audio L/R output, use a Video Audio L/R to SCART adapter (sold separately) to connect to the SCART connection.

Ideal Setting

Before you start playing a game from a connected game console, we recommend to set the TV in the ideal setting **Game**.

In Help, press the colour key **Red** **Keywords** and look up **Game** or **Computer** for more information.

4.12

Gamepad

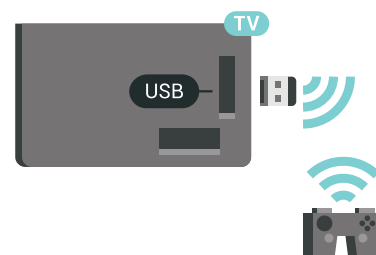
Connect a Gamepad

To play games from the Internet on this TV, you can connect a selected range of wireless Gamepads. You can use Gamepads with a USB nano receiver or gamepads with Bluetooth.

To connect a Gamepad with a USB nano receiver...

- 1 - Plug in the small nano receiver in one of the USB connections on the side of the TV. The wireless nano receiver comes with the Gamepad.
- 2 - If the Gamepad is switched on, you can use the Gamepad.

You can connect a second Gamepad in the second USB connection on the side of the TV.



Bluetooth

To connect a wireless gamepad with Bluetooth, press the colour key **Red** **Keywords** and look up **Bluetooth**, **Pairing**.

Suitable Gamepads

A selected range of wireless Gamepads are suited and tested for use on this TV. Other Gamepads might not be fully compatible.

The suited Gamepads are...

- Logitech F710
- Logitech F510
- Xbox 360 Wireless Controller for Windows
- Speedlink Strike FX Wireless Gamepad
- Sony Play Station wired
- Mad Catz C.T.R.L. Mobile Gamepad for Android
- Ipega, PG-9023
- Ipega, PG-9025
- PhoneJoy gamepad

Problems

To solve possible interference with other wireless devices on TV...

- Use a USB extension cord and move the nano receiver about 1 meter away from the TV.
- Alternatively, you can use a powered USB hub connected to the TV and plug in the nano receivers in the USB hub.

4.13

USB Hard Drive

What You Need

If you connect a USB Hard Drive, you can pause or record digital TV broadcasts (DVB broadcasts or similar).

If you connect a USB Hard Drive, you can use it to extend the TV memory to store more apps.

Minimum Disk Space

To pause a broadcast, you need a USB 2.0 compatible Hard Drive with a minimum of 32GB disk space.

To pause and record a broadcast, you need a minimum of 250GB disk space. According to the total disk space available, fixed partitions are formatted for Pause TV, Recordings and app storage.

For more information on how to install a USB Hard Drive, press the colour key **— Keywords** and look up **USB Hard Drive, formatting**.

Formatting

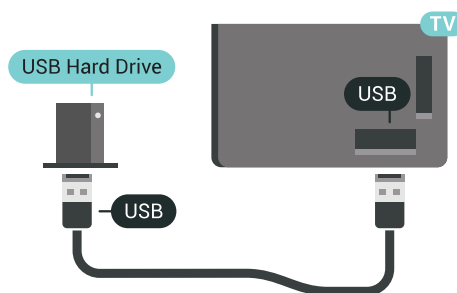
Before you can pause or record a broadcast, or store apps, you must connect and format a USB Hard Drive. Formatting removes all files from the USB Hard Drive. If you want to record broadcasts with TV Guide data from the Internet, you must setup the Internet connection first before you install the USB Hard Drive.

Warning

The USB Hard Drive is formatted exclusively for this TV, you cannot use the stored recordings on another TV or PC. Do not copy or change recording files on the USB Hard Drive with any PC application. This will corrupt your recordings. When you format another USB Hard Drive, the content on the former will be lost. A USB Hard Drive installed on your TV will need reformatting for use with a computer.

To format a USB Hard Drive...

- 1 - Connect the USB Hard Drive to one of the **USB** connections on the TV. Do not connect another USB device to the other USB ports when formatting.
- 2 - Switch on the USB Hard Drive and the TV.
- 3 - When the TV is tuned to a digital TV channel, press **||** (Pause). Trying to pause will start the formatting. Follow the instructions on screen.
- 4 - The TV will ask if you want to use the USB Hard Drive to store apps, agree to the question if you do.
- 5 - When the USB Hard Drive is formatted, leave it connected permanently.



In Help, press the colour key **— Keywords** and look up **Pause TV** or **Recording** for more information.

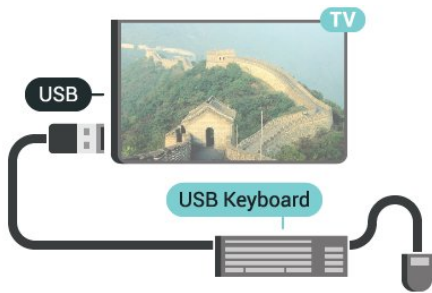
4.14

USB Keyboard

Connect

Connect a USB keyboard (USB-HID type) to enter text on your TV.

You can connect a keyboard and a mouse to the TV. Use one of the **USB** connections to connect.



Configure

Install the keyboard

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. If you select a Cyrillic or Greek keyboard layout first, you can select a secondary Latin keyboard layout.

To change the keyboard layout setting when a layout was selected...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **➤** (right).
- 3 - Select **USB Keyboard Settings** to start the keyboard setup.

Special Keys

Keys for entering text

- Enter key = **OK**
- Backspace = delete character before cursor
- Arrow keys = navigate within a text field
- To switch between keyboard layouts, if a secondary layout is set, press the **Ctrl + Spacebar** keys simultaneously.

Keys for apps and Internet pages

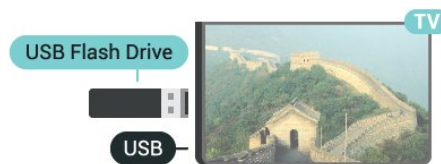
- Tab and Shift + Tab = Next and Previous
- Home = scroll to the top of the page
- End = scroll to the bottom of the page
- Page Up = jump one page up
- Page Down = jump one page down
- + = zoom in one step
- - = zoom out one step
- * = fit the web page to the screen width

4.15

USB Flash Drive

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**.

To stop watching the USB flash drive content, press **TV** or select another activity.

To disconnect the USB flash drive, you can pull out the flash drive anytime.

Ultra HD on USB

You can view photos in Ultra HD resolution from a connected USB device or flash drive. The TV will downscale the resolution to Ultra HD if the resolution of the photo is higher.

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

4.16

Photo Camera

To view photos stored on your digital photo camera, you can connect the camera directly to the TV.

Use one of the **USB** connections on the TV to connect. Switch on the camera after you made the connection.



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

Your camera might need to be set to transfer its content with PTP (Picture Transfer Protocol). Read the user manual of the digital photo camera.

Ultra HD on USB

You can view photos in Ultra HD resolution from a connected USB device or flash drive. The TV will downscale the resolution to Ultra HD if the resolution of the photo is higher. You cannot play a native Ultra HD video on any of the USB connections.

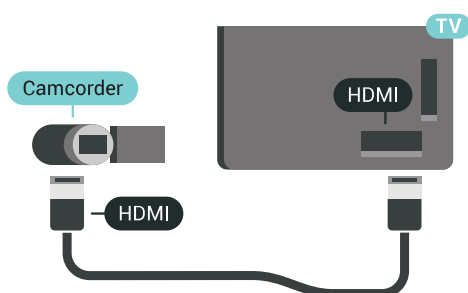
For more information on viewing photos, press the colour key **— Keywords** and look up **Videos**, **Photos** and **Music**.

4.17

Camcorder

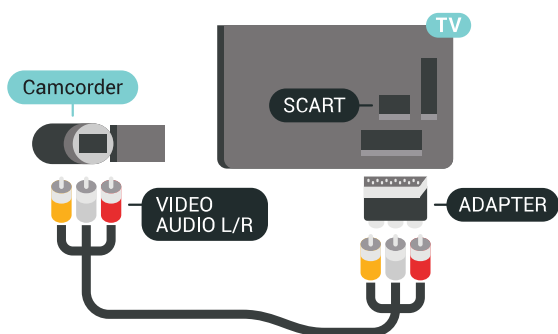
HDMI

For best quality, use an HDMI cable to connect the camcorder to the TV.



Audio Video LR / Scart

You can use an HDMI, YPbPr or SCART connection to connect your camcorder. If your camcorder only has Video (CVBS) and Audio L/R output, use a Video Audio L/R to SCART adapter (sold separately) to connect to the SCART connection.



4.18

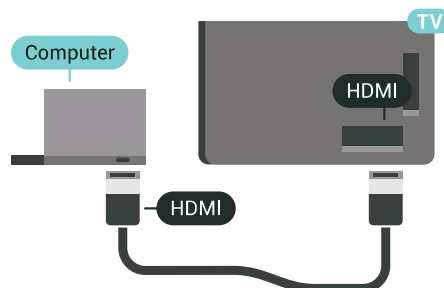
Computer

Connect

You can connect your computer to the TV and use the TV as a PC monitor.

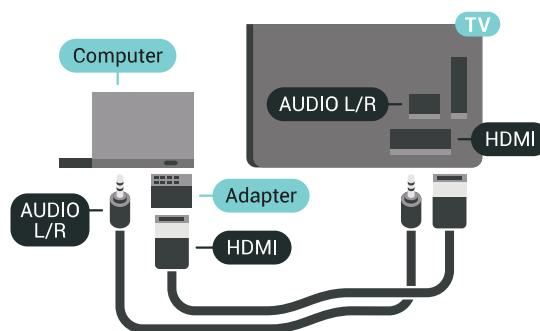
With HDMI

Use an HDMI cable to connect the computer to the TV.



With DVI to HDMI

Alternatively, you can use a DVI to HDMI adapter (sold separately) to connect the PC to HDMI and an audio L/R cable (mini-jack 3.5mm) to AUDIO IN L/R on the back of the TV.



Ideal Setting

To use the TV as a computer monitor, we recommend to set the TV in the ideal setting **Computer**.



In Help, press the colour key **— Keywords** and look up **Game** or **Computer** for more information.

Switching On and Off


On, Standby or Off

Make sure the TV is connected to the mains AC power. Connect the supplied power cord to the **AC** in connector at the back of the TV. The indicator light at the bottom of the TV lights up.

Switch on

Press  on the remote control to switch the TV on. Alternatively, press  HOME. You can also press the small joystick key on the back of the TV to switch the TV on in case you can't find the remote control or its batteries are empty.

Switch to standby

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



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


To switch 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.

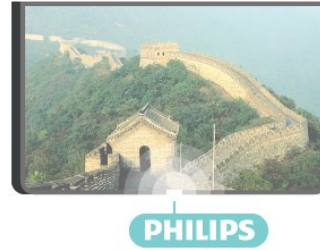
Philips Logo Brightness

You can switch off or adjust the brightness of the Philips logo on the front of the TV.

To adjust or switch off...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and select **Philips Logo Brightness**.
- 3 - select **Maximum, Medium, Minimum** or





select **Off** to switch off the lighting of the logo.
4 - Press  (left) to go back one step or press  BACK to close the menu.



Keys on TV

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

To open the basic menu...

- 1 - With the TV switched on, press the joystick key on the back of the TV to bring up the basic menu.
- 2 - Press left or right to select  Volume,  Channel or  Sources. Select  Demo, to start a demo movie.
- 3 - Press up or down to adjust the volume or tune to the next or previous channel. Press up or down to go through the list of sources, including the tuner selection. Press the joystick key to start the demo movie.
- 4 - The menu will disappear automatically.



To switch the TV on standby, select  and press the joystick key.



Sleep Timer

With the Sleep Timer, you can set the TV to switch to Standby automatically after a preset time.

To set the Sleep Timer...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings**, select **Sleep Timer** and press  (right). With the slider bar you can set the time to up to 180 minutes in increments of 5 minutes. If set to 0 minutes, the Sleep Timer is switched off. You can always switch off your TV earlier or reset the

time during the countdown.

3 - Press ◀ (left) to go back one step or press ←
BACK to close the menu.

5.5

Switch Off Timer

If the TV receives a TV signal but you don't press a key on the remote control during a 4 hour period, the TV switches off automatically to save energy. Also, if the TV does not receive a TV signal nor a remote control command for 10 minutes, the TV switches off automatically.

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 remote control of the TV, you should deactivate this automatic switch off.

To deactivate the Switch Off Timer ...

1 - Press ⚙️ SETTINGS, select **All Settings** and press OK.

2 - Select **Eco Settings**, select **Switch Off Timer** and press ▶ (right). Press up or down to adjust the value. The value 0 (Off) deactivates the automatic switch off.

3 - Press ◀ (left) to go back one step or press ←
BACK to close the menu.

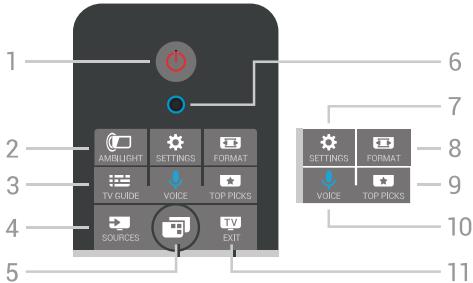
The icon 🗑️ is shown in front of Switch Off Timer when it is active.

For more information on environmentally friendly TV settings, press the colour key 🟠 **Keywords** and look up **Eco Settings**.

Remote Control

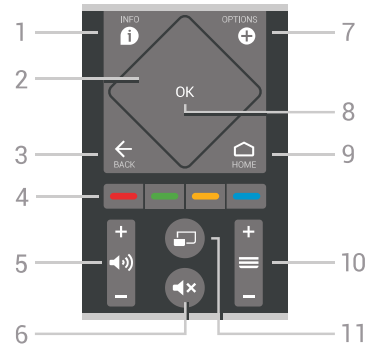
Key Overview

Top



- 1 - Standby / On
To switch the TV on or back to Standby.
- 2 - AMBLIGHT
To switch Ambilight on or off and to switch Ambilight on from Standby.
- 3 - TV GUIDE
To open or close the TV Guide.
- 4 - SOURCES
To open or close the Sources menu.
- 5 - TV Menu
To open the TV Menu with typical TV functions.
- 6 - VOICE microphone
- 7 - SETTINGS
To open the Frequent Settings menu and All Settings.
- 8 - FORMAT
To open or close the Picture Format menu.
- 9 - TOP PICKS
To open the menu with recommended programmes, Video on Demand (Rental Videos) or Online TV (Catch Up TV).
- 10 - VOICE
To start speaking your voice commands.
- 11 - TV EXIT
To switch back to watch TV. To stop an interactive TV application (like HbbTV).

Middle



- 1 - INFO
To open or close programme info.
- 2 - Touch pad / Navigation keys
To navigate up, down, left or right. To swipe through a list.
- 3 - BACK
To switch back to the previous channel you selected. To close a menu without changing a setting. To go back to the previous App/Internet page.
- 4 - Colour keys
Direct selection of options. Blue key , opens Help.
- 5 - Volume
To adjust the volume level.
- 6 - Mute
To mute the sound or to restore it.
- 7 - OPTIONS
To open or close the Options menu.
- 8 - OK key
To confirm a selection or setting. To open the channel list while watching TV.
- 9 - HOME
To open or close the Home menu.
- 10 - Channel
To switch to the next or previous channel in the channel list. To open the next or previous page in Text (Teletext). To start the next or previous chapter on a disc.
- 11 - Multi View
To open a small screen in the big screen.

Bottom



1 - Number keys

To select a channel directly.

2 - SUBTITLE

To switch subtitles on, off or to show automatically.

3 - Playback and Record

- Play ►, to playback.
- Pause ||, to pause playback
- Stop ■, to stop playback
- Rewind ◀◀, to rewind
- Fast forward ▶▶, to go fast forward
- Record ●, to start recording

4 - TEXT

To switch on Text/Teletext.

6.2

Touch Pad

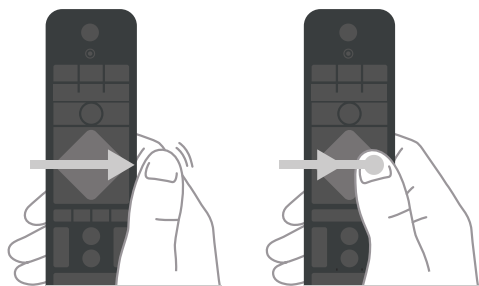
The diamond shaped area of the navigation keys on the remote control - the keys for up, down, left and right - is also a small touch pad. You can use this touch pad to swipe through long lists or to go through a list step by step.

How to use the touch pad...

- 1 - Open any kind of TV menu with a list, e.g. the Home menu or Channel list.
- 2 - Use your thumb to swipe across the touch pad and towards the direction the list must scroll. Up or down, or left to right. If you swipe the touch pad, the highlight will move 1 step. If you swipe and then hold your thumb on the touch pad (no need to press), the highlight will scroll through the list until you lift your thumb from the touch pad.

Take some time to learn this swipe or swipe and hold gesture. It's really helpful to go through long lists.

You cannot switch off the touch pad.

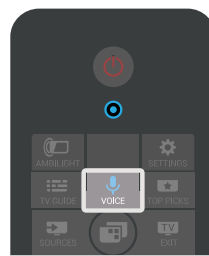


6.3

Voice

Using Voice

You can search for videos, music or anything else on the Internet by simply using your voice. You can speak into the microphone on the remote control. Alternatively, you can use the remote control keyboard to enter text.



To use Voice...

- 1 - Press ► VOICE. The blue light on the remote control lights up and the search field opens. As long as the ► icon is red on screen, the microphone is active.
- 2 - Speak out clearly what you are looking for. You can speak for 10 seconds before the microphone switches off. It might take some time for the results to appear.
- 3 - In the list of search results, you can select the item you want.
- 4 - Press ◀ BACK to close the search results if necessary.

To use the remote control keyboard to search...

- 1 - Press ► VOICE to open the search field.
- 2 - Press ► (right) to highlight the text field.
- 3 - Turn the remote control keyboard facing upwards and type what you are looking for.
- 4 - Press ◀ BACK to hide the onscreen keyboard.
- 5 - In the list of search results, you can select the item you want.
- 6 - Press ◀ BACK to close the search results if necessary.

See also www.support.google.com/androidtv

Voice Settings

You can set the language you like to use with Voice.

To set the language for Voice...

- 1 - Press ◀ HOME, scroll down and select ⚙ General Settings and press OK.
- 2 - Press ► (right), select Android Settings and press OK.
- 3 - Select Preferences > ► Speech and press OK.
- 4 - Select the language you want to use and press OK.
- 5 - Press ◀ (left) to go back one step or press ◀ BACK to close the menu.

Keyboard

Writing Text

With the keyboard on the back of the remote control, you can write text in any text field on screen.

To write text...

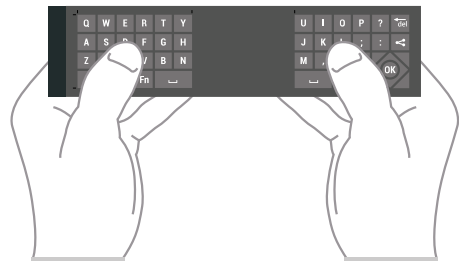
- 1 - Select a text field if it is not yet selected.
- 2 - Turn the remote control keyboard facing upwards to activate the keyboard keys. Hold the remote control with two hands and type with both thumbs.
- 3 - To hide the on screen keyboard, press **←** BACK.
- 4 - Press **OK** to confirm the text.

Onscreen Keyboard

If you use the onscreen keyboard to enter text, you can configure the keyboard layout to a layout you are used to.

To open these settings...

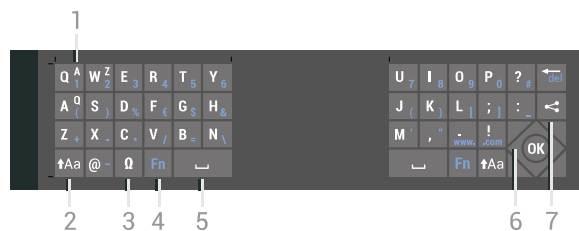
- 1 - Press **HOME**, select **General Settings** and press **OK**.
- 2 - Press **▶** (right), select **Android Settings** and press **OK**.
- 3 - Select **Preferences > Keyboard** and press **OK**.
- 4 - Select **Language** and press **OK**. You can set your language keyboard layout here.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.



Key Overview

Qwerty and Azerty

Overview of a Qwerty/Azerty keyboard.*



1 - Azerty character

Character position if the keyboard layout is set to Azerty.

2 - **↑Aa** Shift

To type uppercase characters.

3 - **☒** Special characters

To open the onscreen keyboard to select accented characters or symbols.

4 - **Fn** key

To type a number or punctuation character.

5 - **↵** Spacebar

6 - Navigation and **OK**

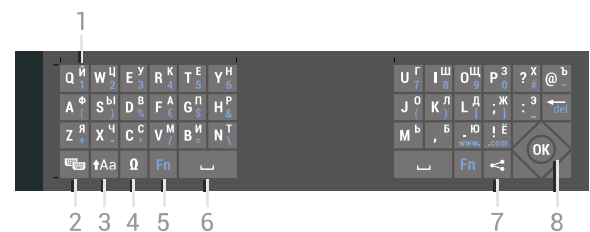
7 - **↻** Share this

To share online what you are watching at the moment.

* Your remote control has a Qwerty / Azerty or a Qwerty / Cyrillic keyboard, depending on your region.

Qwerty and Cyrillic

Overview of a Qwerty/Cyrillic keyboard.*



1 - Cyrillic characters

Characters available when the keyboard is switched to Cyrillic.

2 - **☒** Cyrillic keyboard switch

To switch the keyboard to the Cyrillic characters or back to Qwerty.

3 - **↑Aa** Shift

To type uppercase characters.

4 - **☒** Special characters

To open the onscreen keyboard to select accented characters or symbols.

5 - **Fn** key

To type a number or punctuation character

6 - **↵** Spacebar

7 - **↻** Share this

To share online what you are watching at the moment.

8 - Navigation and **OK**

* Your remote control has a Qwerty/Azerty or a Qwerty/Cyrillic keyboard, depending on your region.

Uppercase and Lowercase

To type an uppercase character, press the **↑Aa** (Shift) key just before you type the character.

To type several uppercase characters consecutively, press and hold the **↑Aa** key while typing.

To type uppercase constantly, press the **↑Aa** key for 2 seconds to switch the keyboard in uppercase mode.

To switch out of uppercase mode, press the **↑Aa** key again. If no keys are pressed for 20 seconds, the uppercase mode switches off automatically. Also, if you press another modifier key, like **Fn** or **↵**, you switch out of uppercase mode.

Numbers and Punctuation Characters

To type a number or punctuation character, press the **Fn** key just before you type the number or punctuation character you need. You can switch the **Fn** mode on or off as you do for the uppercase mode.

Internet

You can use the **Fn** key to enter **www.** or **.com**.

Accented Letters and Symbols

Accented characters and symbols are not directly available on the Remote Control Keyboard.

To type such a character, you can open the onscreen keyboard.

To open the onscreen keyboard, press **↵**. In the onscreen keyboard, you can navigate to the character you need. Switch the keyboard layout with the colour keys. Press **OK** to enter a character. The onscreen keyboard disappears when you press a character on the Remote Control Keyboard.

Qwerty, Azerty and Cyrillic Keyboard

The standard layout of the Remote Control Keyboard is Qwerty.

Azerty keyboard

Depending on your region, the Remote Control Keyboard can be set to Azerty. The Azerty characters are shown at the top right of the relevant keys.

To set the keyboard layout to Azerty...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language > Remote Control Keyboard**.
- 3 - Select **Azerty** or **Qwerty** and press **OK**.

- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Cyrillic keyboard

Depending on your region, the Remote Control Keyboard can be switched to Cyrillic characters. The Cyrillic characters are shown at the top right of the keyboard keys.

To write Cyrillic characters...

- 1 - Press **🇷🇺** on the remote control.
- 2 - Press **🇷🇺** again to switch back to Qwerty.

6.5

Pairing the Remote Control

This remote control uses Bluetooth to send its commands to the TV. Contrary to remote controls using infrared signals, you don't have to point the remote control at the TV. For the remote control to communicate with the TV, both TV and remote control should be paired (linked) with each other. Once paired, you cannot use the remote control to control another TV.

Pairing

When you started the initial TV installation, the TV invited you to press the **OK** key, and by doing so, the pairing was done. If the TV does not react on any remote control key press, pairing was unsuccessful.

Pair again

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

To start pairing...

- 1 - On the back of the TV, standing in front of the TV at the right, press the joystick power key **⏻** in for 3 seconds. A message will show that the TV is ready to pair.
- 2 - Press the colour keys **■** (red) and **■** (blue) simultaneously for 1 second. A message appears when the pairing is successful.

When you switch off the TV, the pairing is stored.

This TV can be paired with one remote control only. To unpair the remote control from this TV, you must pair it with another TV.

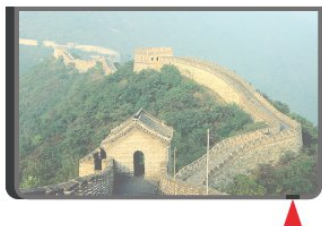
6.6

IR Sensor

The remote control of the TV uses Bluetooth to send its commands to the TV. With Bluetooth, you do not need to point the remote control at the TV.

However, the TV can also 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.



6.7

Batteries

The TV will notify you when the battery power of the remote control is low.

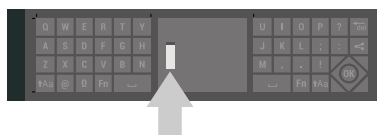
To replace the batteries, open the battery compartment on the keyboard side of the remote control.

- 1 - Use a small coin or other small, blunt object and press the rectangular shaped release button to open the battery lid.
- 2 - Slide the battery in the direction of the metal spring and pull the opposite end of the battery out.
- 3 - Replace the old batteries with 2 type **AA-LR6-1.5V** alkaline batteries. Make sure the + and the - ends of the batteries line up correctly.
- 4 - Reposition the battery door and push it down 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, press **— Keywords** and look up **End of use**.



6.8

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.

TV Channels



Channel Lists

About Channel Lists


After a channel installation, all channels appear in the channel list. Channels are shown with their name and logo if the TV is connected to the Internet and this information is available.

For each type of tuner - Antenna/Cable (DVB-T/C) or Satellite (DVB-S) - there is a channel list with all installed channels. You can filter this list to only show TV or only Radio channels. Or when you have several satellites installed, you can filter the channels per satellite.

For each type of tuner - Antenna/Cable (DVB-T/C) or Satellite (DVB-S) - you can create 4 different lists of favourite channels for easy channel zapping. You can name each of these favourite lists individually. Only in these favourite lists you can reorder channels.

With a channel list selected, you only tune to the channels in that list when using the  + or  - keys.

Channel icons

After an Automatic Channel Update of the channel list, newly found channels are marked with a ★ (star). If you lock a channel, it will be marked with a  (lock).

The 3 most popular channels being watched by others at this moment are marked with a 1, 2 or 3.


Radio stations

If digital broadcasting is available, digital radio station are installed during installation. Switch to a radio channel just like you switch to a TV channel. A Cable (DVB-C) channel installation usually places radio stations from channel number 1001 onwards

Open a Channel List

Next to the list with all channels for each tuner, Antenna/Cable or Satellite tuner, you can select a filtered list or you can select one of the favourite lists you created.

To open the current channel list...

- 1 - Press  TV, to switch to TV.
- 2 - Press **OK** to open the current channel list.
- 3 - Press **←** BACK to close the channel list.


To select one of the channel lists...

- 1 - With a channel list open on screen, press **+** OPTIONS.
- 2 - Select **Select Channel List** and press **OK**.
- 3 - In the list menu, select one of the available channel lists and press **OK**.

Alternatively, you can select the list name at the top of the channel list and press **OK** to open the list menu.

Tip

You can easily switch between the two tuners in the **Sources** menu.


Press  **SOURCES** and select **Watch TV** to switch to the Antenna/Cable tuner. Select **Watch Satellite** to switch to the satellite tuner.

The TV will always open the last selected channel list for the selected tuner.

Filter a Channel List

You can filter a list with all channels. You can set the channel list to show only TV channels or only Radio stations. For Antenna/Cable channels you can set the list to show the Free-to-Air or the Scrambled channels. When you have several satellites installed, you can filter the satellite channel list per satellite.

To set a filter on a list with all channels...


- 1 - Press  TV.
- 2 - Press **OK** to open the current channel list.
- 3 - Press **+** OPTIONS.
- 4 - Select **Select Channel List** and press **OK**.
- 5 - Select **Filter Antenna Channels**, **Filter Cable Channels** or **Filter Satellite Channels** according to the list you want to filter.
- 6 - In the **Options** menu, select the filter you want and press **OK** to activate. The name of the filter appears as part of the channel list name on top of the channel list.
- 7 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Search for a Channel

You can search for a channel to find it in a long list of channels.

The TV can search for a channel within one of the 3 main channel lists - the Antenna, Cable or Satellite channel list.

To search for a channel...

- 1 - Press  TV.
- 2 - Press **OK** to open the current channel list.
- 3 - Press **+** OPTIONS.
- 4 - Select **Select Channel List** and press **OK**.
- 5 - Select **Filter Antenna Channels** or **Filter Cable**

Channels or Filter Satellite Channels and press **OK**.
6 - Select **Search Channel** and press **OK** to open a text field. You can use the remote control keyboard or the onscreen keyboard to enter text.
7 - Enter a number, a name or part of a name and select **Apply** and press **OK**. The TV will search for matching channel names in the list you selected.

Search results are listed as a channel list - see the list name at the top. The search results disappear once you select another channel list or close the list with search results.

7.2

Watching channels

Tune to a Channel

To start watching TV channels, press **TV** TV. The TV tunes to the channel you last watched.

Tune to a channel

To tune to another channel, press **≡ +** or **≡ -**. If you know the channel number, type in the number with the number keys. Press **OK** after you entered the number to tune immediately.

If the information is available from the Internet, the TV shows the current programme name and details followed by the next programme name and details.

Previous channel

To tune back to the previous channel, press **← BACK**.

You can also tune to channels from a **Channel List**.

Lock a Channel

Lock and Unlock a 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 programmes from connected devices.

To lock a channel...

- 1 - Press **TV** TV.
- 2 - Press **OK** to open the channel list. If necessary change the channel list.
- 3 - Select the channel you want to lock.
- 4 - Press **+ OPTIONS** and select **Lock Channel** and press **OK**.
- 5 - Enter your 4 digit PIN code if the TV asks for it. A locked channel is marked with a **🔒** (lock).
- 6 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

To unlock a channel...

- 1 - Press **TV** TV.
- 2 - Press **OK** to open the channel list. If necessary change the channel list.
- 3 - Select the channel you want to unlock.
- 4 - Press **+ OPTIONS** and select **Unlock Channel** and press **OK**.
- 5 - Enter your 4 digit PIN code if the TV asks for it.
- 6 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

If you lock or unlock channels in a channel list, you only have to enter the PIN code just once until you close the channel list.

In Help, press the colour key **— Keywords** and look up **Child Lock** for more information.

Parental Rating

To prevent children from watching a programme not suitable for their age, you can set an age rating.

Digital channels can have their programmes age rated. When the age rating of a programme is equal to or higher than the age you have set as age rating for your child, the programme will be locked. To watch a locked programme, you must enter the **Child Lock** PIN code first.

To set an age rating...

- 1 - Press **⚙️ SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Child Lock > Parental Rating**.
- 3 - Enter the 4-digit Child lock PIN code. If you did not set a code yet, select **Set code** in **Child Lock**. Enter a 4-digit Child lock PIN code and confirm. Now you can set an age rating.
- 4 - Back in **Parental Rating**, select an age and press **OK**.
- 5 - Press **←** (left) to go back one step or press **← BACK** to close the menu.

To switch off the parental age rating, select **None**. However, in some countries you must set an age rating.

For some broadcasters/operators, the TV only locks programmes with a higher rating. The parental age rating is set for all channels.

Channel Options

Open Options

While watching a channel, you can set some options.

Depending on the type of channel you are watching (analogue or digital) 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 **+** again to close.

Subtitles

Switch On

Digital broadcasts can have subtitles for their programmes.

To show the subtitles...

Press **SUBTITLE**.

You can switch subtitles **On** or **Off**. Alternatively you can select **Automatic**.

Automatic

If language information is part of the digital broadcast and the broadcasted programme is not in your language (the language set on TV), the TV can show subtitles automatically in one of your preferred subtitle languages. One of these subtitle languages must also be part of the broadcast.

You can select your preferred subtitle languages in **Subtitle Language**.

Subtitles from Text

If you tune to an analogue channel, you need to make the subtitles available for each channel manually.

- 1 - Switch to a channel and press **TEXT** to open Text.
- 2 - Enter the page number for subtitles, usually **888**.
- 3 - Press **TEXT** again, to close Text.

If you select **On** in the Subtitle menu when watching this analogue channel, subtitles will be shown if available.

To know if a channel is analogue or digital, switch to the channel and open **Channel Info** in **+** OPTIONS.

Subtitle Language

Preferred Subtitle Languages

A digital broadcast can offer several subtitle languages for a programme. You can set a preferred primary and secondary subtitle language. If subtitles in one of these languages are available, the TV will show the subtitles you selected.

To set the primary and secondary subtitle language...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Languages > Primary Subtitles** or **Secondary**

Subtitles.

- 3 - Select the language you need and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Select a Subtitle Language

If none of the preferred subtitle languages are available, you can select another subtitle language if available. If no subtitle languages are available, you cannot select this option.

To select a subtitle language when none of your preferred languages are available...

- 1 - Press **+** OPTIONS.
- 2 - Select **Subtitle Language** and select one of the languages as subtitles temporarily.

Audio Language

Preferred Audio Languages

A digital broadcast can offer several audio languages (spoken languages) for a programme. You can set a preferred primary and secondary audio language. If audio in one of these languages is available, the TV will switch to the audio language.

To set the primary and secondary audio language...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Languages > Primary Audio** or **Secondary Audio**.
- 3 - Select the language you need and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Select an Audio Language

If none of the preferred audio languages are available, you can select another audio language if available. If no audio languages are available, you cannot select this option.

To select an audio language when none of your preferred languages are available...

- 1 - Press **+** OPTIONS.
- 2 - Select **Audio Language** and select one of the languages as audio temporarily.

Common Interface

If you installed a CAM in one of the Common Interface slots, you can view the CAM and operator information or do some CAM related settings.

To view the CAM information...

- 1 - Press **➤** SOURCES.
- 2 - Select the channel type you are using the CAM for, **Watch TV** or **Watch Satellite**.
- 3 - Press **⊕** OPTIONS and select **Common Interface**.
- 4 - Select the appropriate Common Interface slot (slot 1 or 2) and press **➤** (right).
- 5 - Select the TV operator of the CAM and press **OK**. The following screens come from the TV operator.

HbbTV on This Channel

If you want to avoid access to HbbTV pages on a specific channel, you can block the HbbTV pages for this channel only.

- 1 - Tune to the channel of which you want to block the HbbTV pages.
- 2 - Press **⊕** OPTIONS and select **HbbTV on This Channel** and press **➤** (right).
- 3 - Select **Off** and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

To block HbbTV on TV completely...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings > Advanced > HbbTV** and press **OK**.
- 3 - Select **Off** and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Channel Info

You can view the technical characteristics of a particular channel, like digital or analogue, sound type, etc.

To view the technical information on a channel...

- 1 - Tune to the channel.
- 2 - Press **⊕** OPTIONS, select **Channel Info** and press **OK**.
- 3 - To close this screen, press **OK**.

Mono / Stereo

You can switch the sound of an analogue channel to Mono or Stereo.

To switch to Mono or Stereo...

- 1 - Tune to an analogue channel.
- 2 - Press **⊕** OPTIONS, select **Mono/Stereo** and press **➤** (right).
- 3 - Select **Mono** or **Stereo** and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅**

BACK to close the menu.

7.3

Favourite Channels

About Favourite Channels

In a favourite channel list, you can collect the channels you like.

For each type of tuner - **Watch TV** (Antenna/Cable - DVB-T/C) or **Watch Satellite** (Satellite - DVB-S) - you can create 4 different lists of favourite channels for easy channel zapping. You can name each Favourites List individually. Only in a Favourites List you can reorder channels.

With a Favourites List selected, you only tune to the channels in that list when using the **≡ +** or **≡ -** keys.

Create a Favourites List

To create a favourite channels list...

- 1 - Press **TV** TV, to switch to TV.
- 2 - Press **OK** to open the current channel list.
- 3 - Press **⊕** OPTIONS.
- 4 - Select **Create Favourites List** and press **OK**.
- 5 - In the list at the left, select a channel you want as a favourite and press **OK**. Channels come in the list at the right in the order you add them. To undo, select the channel in the list at the left and press **OK** again.
- 6 - If necessary, you can go on selecting and adding channels as favourites.
- 7 - To finish adding channels, press **⬅** BACK.

The TV will ask to rename the Favourites List. You can use the on screen keyboard or use the keyboard on the back of the remote control.

- 1 - Press **⬅** BACK to hide the on screen keyboard.
- 2 - Use the keyboard on the back of the remote control to delete the current name and enter a new name.
- 3 - When done, turn the remote control, select **Close** and press **OK**.

The TV will switch to the newly created Favourites List.

You can add a range of channels in one go or start a Favourites List by duplicating the channel list with all channels and removing the channels you do not want.

The channels in the Favourites List are renumbered.

Add a Range of Channels

To add a consecutive range of channels to a Favourites List in one go, you can use Select Range.

To add a range of channels...

- 1 - Open the Favourites List where you want to add a range of channels.
- 2 - Press **+** OPTIONS, select **Select Range** and press **OK**.
- 3 - In the list at the left select the first channel of the range you want to add and press **OK**.
- 4 - Press **▼** (down) to select the last channel of the range you want to add. The channels are marked at the left.
- 5 - Press **OK** to add this range of channels and confirm.

You can also start creating a Favourites List from Select Range.

Rename a Favourites List

You can rename a Favourites List.

To rename a Favourites List...

- 1 - Open the Favourite List you want to rename.
- 2 - Press **+** OPTIONS, select **Rename Favourites List** and press **OK**.
- 3 - Press **←** BACK to hide the on screen keyboard.
- 4 - Use the keyboard on the back of the remote control to delete the current name and enter a new name.
- 5 - When done, turn the remote control, select **Close** and press **OK**.
- 6 - Press **←** BACK to close the channel list.

Remove a Favourites List

You can remove a Favourites List.

To remove a Favourites List...

- 1 - Open the Favourites List you want to remove.
- 2 - Press **+** OPTIONS, select **Remove Favourites List** and press **OK**.
- 3 - Confirm to remove the list.
- 4 - Press **←** BACK to close the channel list.

Reorder Channels

Only in a Favourites List you can change the sequence of channels (reorder).

To change the sequence of channels...

- 1 - Open the Favourites List you want to reorder.
- 2 - Press **+** OPTIONS, select **Reorder Channels** and

press **OK**.

3 - In the Favourites List, select the channel you want to reorder and press **OK**.

4 - With the **▲** (up) or **▼** (down) keys move the channel where you want it.

5 - Press **OK** to confirm the new location.

6 - You can reorder channels with the same method until you close the Favourites List with the **←** BACK key.

7.4

Text (Teletext)

Text Pages

To open Text (Teletext) press **TEXT**, while you are watching TV channels.

To close Text, press **TEXT** again.

Select a Text page

To select a page . . .

- 1 - Enter the page number with the number keys.
- 2 - Use the arrow keys to navigate.
- 3 - Press a colour key to select a colour-coded subject at the bottom of the screen.

Text sub-pages

A Text page number can hold several subpages. The subpage numbers are shown on a bar next to the main page number.

To select a subpage, press **<** or **>**.

T.O.P. Text pages

Some broadcasters offer T.O.P. Text.

To open T.O.P. Text pages within Text, press **+** OPTIONS and select **T.O.P. Overview** and press **OK**.

Favourite pages

The TV makes a list of the last 10 Text pages you opened. You can easily reopen them again in the Favourite Text pages column.

- 1 - In Text, select **♥** (heart) in the top left corner of the screen to show the column of favourite pages.
 - 2 - Press **▼** (down) or **▲** (up) to select a page number and press **OK** to open the page.
- You can clear the list with the option **Clear Favourite Pages**.

Search Text

You can select a word and scan Text for all occurrences of this word.

- 1 - Open a Text page and press **OK**.
- 2 - Select a word or number with the arrow keys.
- 3 - Press **OK** again to jump immediately to the next occurrence of this word or number.
- 4 - Press **OK** again to jump to the subsequent occurrence.

5 - To stop searching, press **▲** (up) until nothing is selected.

Text from a connected device

Some devices that receive TV channels can also offer Text.

To open Text from a connected device . . .

1 - Press **☰** SOURCES, select the device and press **OK**.

2 - While watching a channel on the device, press **⊕** OPTIONS, select **Show Device Keys** and select the **☰** key and press **OK**.

3 - Press **←** BACK to hide the device keys.

4 - To close Text, press **←** BACK again.

Digital Text (UK only)

Some digital broadcasters offer dedicated Digital Text or interactive TV on their digital TV channels. This includes normal Text using the number, colour and arrow keys to select and navigate.

To close Digital Text, press **←** BACK.

Text Options

In Text (Teletext), press **⊕** OPTIONS to select the following...

- **Freeze page**

To stop the automatic rotation of subpages.

- **Dual screen / Full screen**

To show the TV channel and Text alongside each other.

- **T.O.P. overview**

To open T.O.P. Text.

- **Enlarge**

To enlarge the Text page for comfortable reading.

- **Reveal**

To unhide hidden information on a page.

- **Cycle subpages**

To cycle subpages when these are available.

- **Hide/Show Favourite Pages**

To hide or show the list of favourite pages.

- **Clear Favourite Pages**

To clear the list of favourite pages.

- **Language**

To switch the group of characters that Text uses to display correctly.

- **Text 2.5**

To activate the Text 2.5 for more colours and better graphics.

Text and TV

You can watch a TV channel in the small screen of Multi View when you're watching Text (Teletext).

To watch a TV channel while watching Text (Teletext)...

1 - Press **⏏**.

2 - Select **Multi View: On** on screen. The channel you were watching appears in the small screen.

3 - To hide the small screen, press **⏏** again and select **Multi View: Off** on screen.

Text Setup

Text language

Some digital TV broadcasters have several Text languages available.

To set your primary and secondary Text language . . .

1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.

2 - Select **Region and Language > Languages and** press **OK**.

3 - Select **Primary Text** or **Secondary Text** and press **OK**.

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

5 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Text 2.5

If available, Text 2.5 offers more colours and better graphics. Text 2.5 is activated as a standard factory setting.

To switch off Text 2.5...

1 - Press **TEXT**.

2 - With Text (Teletext) open on screen, press **⊕** OPTIONS.

3 - Select **Text 2.5 > Off** and press **OK**.

4 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

7.5

Interactive TV

About iTV

With interactive TV, some digital broadcasters combine their normal TV programme with information or entertainment pages. On some pages, you can respond to a programme or vote, do online shopping or pay for a video-on-demand programme.

HbbTV, MHEG, . . .

Broadcasters use various interactive TV systems :

HbbTV (Hybrid Broadcast Broadband TV) or iTV (Interactive TV – MHEG). Interactive TV is sometimes referred to as Digital Text or Red button. But each system is distinct.

Visit the broadcaster's Internet website for more information.

What You Need

Interactive TV is only available on digital TV channels. To enjoy the full benefits of Interactive TV, you need a high-speed (broadband) Internet connection to the TV.

HbbTV

In Help, press the colour key **— Keywords** and look up **HbbTV**, on or off for more information.

Use iTV

Open iTV pages

Most channels that offer HbbTV or iTV invite you to press the colour key **—** (red) or **OK** key to open their interactive programme.

Navigate iTV pages

You can use the arrow and colour keys, the number keys and the **←** BACK key to navigate the iTV pages. You can use the **▶** (Play), **||** (Pause) and **■** (Stop) keys to watch videos within iTV pages.

Digital Text (UK only)

To open Digital Text, press **TEXT**. To close, press **←** BACK.

Close iTV pages

Most iTV pages inform you which key to use to close. To force an iTV page to close, switch to the next TV channel and press **←** BACK.

TV Guide

8.1

What You Need

With the TV Guide you can view a list of the current and scheduled TV programmes of your channels. Depending on where the TV guide information (data) is coming from, analogue 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. The TV cannot collect the TV Guide information for channels viewed from a digital receiver or decoder.

8.2

TV Guide Data

The TV Guide receives information (data) from broadcasters or from the Internet. In some regions and for some channels, TV Guide information might not be available. The TV can collect TV Guide information for the channels that are installed on the TV. The TV cannot collect the TV Guide information from channels viewed from a digital receiver or decoder.



The TV comes with the information set to **From the broadcaster**.

If TV Guide information comes from the Internet, the TV Guide can also list analogue channels next to the digital channels. The TV Guide menu also shows a small screen with the current channel.

From the Internet

If the TV is connected to the Internet, you can set the TV to receive the TV Guide information from the Internet.

To set the TV Guide information...

- 1 - Press , select **All Settings** and press **OK**.
- 2 - Select **General Settings** > **Advanced** > **TV Guide** and select **From the Internet** and press **OK**.
- 3 - Press  **BACK** to close the menu.

Missing recordings

When some recordings seem to have disappeared from the list of recordings, the TV Guide info (data) might have changed. Recordings made with the setting **From the broadcaster** become invisible in the list if you switch the setting to **From the Internet** or vice versa. The TV might have switched to **From the Internet** automatically.

To make the recordings available in the list of

recordings, switch to the setting that was selected when the recordings were made.

8.3

Using the TV Guide

Open the TV Guide

To open the TV Guide, press  **TV GUIDE**. The TV Guide shows the channels of the selected tuner.

Press  **TV GUIDE** again to close.

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

Tune to a Programme

From the TV Guide, you can tune to a current programme.

To switch to the programme (channel), select the programme and press **OK**.


View programme details

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

- 1 - Press  **INFO**.
- 2 - Press  **BACK** to close.

Change Day




The TV Guide can show the scheduled programmes for the upcoming days (maximum up to 8 days).


Press the colour key  **Day** and select the day you need.

Search by Genre

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

To search for programmes by genre...

- 1 - Press  **TV GUIDE**.
- 2 - Press  **OPTIONS**.
- 3 - Select **Search by Genre** and press **OK**.
- 4 - Select the genre you want and press **OK**. A list with the found programmes appears.
- 5 - You can set reminders or schedule a recording on a selected programme.
- 6 - Press  **BACK** to close the menu.




For more information on Recording, press the colour key  **Keywords** and look up **Recording**.

Set a Reminder




You can set a reminder for a programme. A message will alert you at the start of the programme. You can tune to this channel immediately.

In the TV Guide a programme with a reminder is marked with a 🕒 (clock).

To set a reminder...

- 1 - Press  TV GUIDE and select an upcoming programme.
- 2 - Press  OPTIONS.
- 3 - Select **Set Reminder** and press **OK**.
- 4 - Press  BACK to close the menu.

To clear a reminder...







- 1 - Press  TV GUIDE and select a programme with the reminder.
- 2 - Press  OPTIONS.
- 3 - Select **Clear Reminder** and press **OK**.
- 4 - Press  BACK to close the menu.

List of Reminders

You can view a list of the reminders you have set.

List of Reminders

To open the list of reminders...




- 1 - Press  TV GUIDE.
- 2 - Press the colour key  Recordings .
- 3 - At the top of the screen, select  Scheduled and press **OK**.
- 4 - In the list of scheduled recordings and reminders, select the tab **Reminders** and press **OK** to view the reminders only.
- 5 - Press the colour key  Remove to remove the selected reminder. Press the colour key  Record to record the selected programme.
- 6 - Press  BACK to close the menu.

Set a Recording


You can set a recording in the TV Guide*.



In the TV Guide, a programme set to be recorded is marked with a ● (red dot).

To record a programme...

- 1 - Press  TV GUIDE and select a future or ongoing programme.
- 2 - Press the colour key  Record .
- 3 - Press  BACK to close the menu.

To cancel a recording...

- 1 - Press  TV GUIDE and select the programme set for recording.

- 2 - Press the colour key  Clear Recording .
- 3 - Press  BACK to close the menu.

* See chapter **Recording and Pause TV** for more information.

Recording and Pause TV

Recording

What You Need

You can record a digital TV broadcast and watch it later.

To record a TV programme you need...

- a connected USB Hard Drive formatted on this TV
- digital TV channels installed on this TV
- to receive channel information for the on screen TV Guide
- a reliable TV clock setting. If you reset the TV clock manually, recordings may fail.

You cannot record when you are using Pause TV.

Some digital TV operators do not allow the recording of channels.

For more information on installing a USB Hard Drive, press the colour key **— Keywords** and look up **USB Hard Drive, installation**.

Record a Programme

Record Now

To record the programme you are watching right now, press **●** (Record) on the remote control. The recording will start immediately.

To stop the recording, press **■** (Stop).

When TV Guide data is available, the programme you are watching will be recorded from the moment you pressed the recording key until the programme ends. If no TV Guide data is available, the recording will only last 30 minutes. You can adjust the end time of the recording in the list of **Recordings**.

Schedule a Recording

You can schedule a recording of an upcoming programme for today or a few days from today (maximum of 8 days away). The TV will use the data from the TV Guide to start and end the recording.

To record a programme...

- 1 - Press **≡** TV GUIDE.
- 2 - On the TV Guide, select the channel and programme you wish to record. Press **>** (right) or **<**

(left) to scroll through the programmes of a channel. Use the colour key **— Day** to select the day you need.

3 - With the programme highlighted, press the colour key **— Record**. The programme is scheduled for recording. A warning will show automatically when overlapping recordings are scheduled. If you plan to record a programme in your absence, remember to leave the TV switched to Standby and the USB Hard Drive switched on.

4 - The TV adds some time margin at the end of the programme. You can adjust this margin with **Auto End Margin**.

5 - Press **←** BACK to close the menu.

List of Recordings

You can view and manage your recordings in the list of recordings. Next to the list of recordings, there is a separate list for scheduled recordings and reminders.

To open the list or recordings...

- 1 - Press **≡** TV GUIDE.
- 2 - Press the colour key **— Recordings**.
- 3 - In the list of recordings, select the tabs **New**, **Watched** or **Expired** and press **OK** to filter your view.
- 4 - With a recording selected in the list, you can remove the recording with **— Remove** or stop an ongoing recording with **— Stop Recording**. You can rename a recording with **— Rename**.
- 5 - Press **←** BACK to close the menu.

Broadcasters can limit the number of days a recording can be viewed. When this period expires, the recording will be marked as expired. A recording in the list can show the number of days before it expires.

When a scheduled recording was prevented by the broadcaster or when the broadcast was interrupted, a recording is marked as **Failed**.

Recording Conflicts

When two scheduled recordings are overlapping in time, there is a recording conflict. To solve a recording conflict, you can adjust the start and end time of one or both scheduled recordings.

To adjust the start or end time of a scheduled recording...

- 1 - Press **≡** TV GUIDE.
- 2 - Press the colour key **— Recordings**.
- 3 - At the top of the screen, select **⌚ Scheduled** and press **OK**.
- 4 - In the list of scheduled recordings and reminders, select the tab **Recordings** and press **OK** to view the scheduled recordings only.
- 5 - Select the scheduled recording that conflicts with another scheduled recording and press **— Adjust**

Time.

6 - Select the start or end time and change the time with the **▲** (up) or **▼** (down) keys.

Select **Apply** and press **OK**.

7 - Press **←** BACK to close the menu.

Auto End Margin

You can set the time margin that the TV will add automatically at the end of each scheduled recording.

To set the automatic end time margin...

1 - Press **≡** TV GUIDE.

2 - Press **+** OPTIONS and select **Auto End Margin** and press **OK**.

3 - Press **▲** (up) or **▼** (down) and press **OK** to set the time margin added to a recording automatically. You can add up to 45 minutes to a recording.

4 - Press **←** BACK to close the menu.

Manual Recording

You can schedule a recording that is not linked to a TV programme. You set the tuner type, channel and the start and end time yourself.

To schedule a recording manually...

1 - Press **≡** TV GUIDE.

2 - Press the colour key **■** Recordings .

3 - At the top of the screen, select **Scheduled** and press **OK**.

4 - Press **+** OPTIONS, select **Schedule** and press **OK**.

5 - Select the tuner from where you want to record and press **OK**.

6 - Select the channel to record from and press **OK**.

7 - Select the day of the recording and press **OK**.

8 - Set the start and end time of the recording. Select a button and use the **▲** (up) and **▼** (down) keys to set the hours and minutes.

9 - Select **Schedule** and press **OK** to schedule the manual recording.

The recording will appear in the list of scheduled recordings and reminders.

Watching TV While Recording

Your TV is equipped with 2 tuners. One tuner to watch a channel and a second tuner to record another channel at the same time. However, the channels available for watching during a recording depend on your TV setup for receiving channels.

Which channels can you watch during a recording...

If you use 1 CAM to decode scrambled channels, you can only watch the channels that don't need

decoding and the channel you are recording.

If you use 2 CAMs to decode scrambled channels and both smart cards have identical viewing rights, you can watch all channels, including the one you are recording.

If you use 2 CAMs with non-identical viewing rights, you can only watch the channels of the CAM with less viewing rights and the channel you are recording.

If you are using a Unicable system and you have only 1 User Band available, you can only watch the channels that don't need decoding and the channel you are recording.

For more information, press the colour key **■** Keywords and look up **Smart Card, CAM**.

Watch a Recording

To watch a recording...

1 - Press **≡** TV GUIDE.

2 - Press the colour key **■** Recordings .

3 - In the list of recordings, select the recording you need and press **OK** to start watching.

4 - You can use the keys **⏸** (pause), **▶** (play), **⏮** (rewind), **⏭** (fast forward) or **■** (stop).

5 - To switch back to watch TV, press **TV** TV.

9.2

Pause TV

What You Need

You can pause a digital TV broadcast and resume watching it a bit later.

To pause a TV programme you need...

- a connected USB Hard Drive formatted on this TV
- digital TV channels installed on this TV
- to receive channel information for the onscreen TV Guide

With the USB Hard Drive connected and formatted, the TV continuously stores the TV broadcast you are watching. When you switch to another channel, the broadcast of the former channel is cleared. Also when you switch the TV to standby the broadcast is cleared.

You cannot use Pause TV when you are recording.

For more information, press the colour key **■** Keywords and look up **USB Hard Drive, installation**.

Pause a Programme

To pause and resume a broadcast...

To pause a broadcast, press **⏸** (Pause). A progress bar at the bottom of the screen appears briefly.

To call up the progress bar, press **⏸** (Pause) again.

To resume watching, press **▶** (Play).

With the progress bar on screen, press **◀◀** (Rewind) or press **▶▶** (Forward) to select from where you want to start viewing the paused broadcast. Press these keys repeatedly to change speed.

You can pause a broadcast for a maximum time span of 90 minutes.

To switch back to the live TV broadcast, press **■** (Stop).

Replay

Since the TV stores the broadcast you are watching, you can mostly replay the broadcast for a few seconds.

To replay a current broadcast...

1 - Press **⏸** (Pause)

2 - Press **◀◀** (Rewind). You can press **◀◀** repeatedly to select from where you want to start viewing the paused broadcast. Press these keys repeatedly to change speed. At one point you will reach the start of the broadcast storage or the maximum time span.

3 - Press **▶** (Play) to watch the broadcast again.

4 - Press **■** (Stop) to watch the broadcast live.

Top Picks

10.1

About Top Picks

With  Top Picks your TV recommends...




- current TV programmes in **Now on TV**
- online TV services (Catch Up TV) in **TV on Demand**
- the latest rental videos in **Video on Demand**

To enjoy Top Picks, connect your TV to the Internet. Make sure you agree to the Terms of Use. The Top Picks information and services are only available in selected countries.

Terms of Use

To allow the TV to make these recommendations, you must agree to the Terms of Use. To get personalised recommendations based on your viewing habits, make sure you checked the box for **Personalized Recommendations Service Opt-In**.

To open the Terms of Use...

- 1 - Press  TOP PICKS.
- 2 - Press , select **Terms of Use** and press **OK**.
- 3 - Select **Privacy Settings** and press **OK**.
- 4 - Select **Personalized Recommendations Service Opt-In** and press **OK** to check the box. Press **OK** again to uncheck.
- 5 - Press  BACK to close the menu.

10.2

Now on TV

About Now on TV


With  **Now on TV**, the TV recommends the 10 most popular programmes to watch at this moment.

The TV recommends programmes on TV now or starting within 15 minutes. The recommended programmes are selected from the channels you installed. The selection is made from channels of your country. Also, you can let **Now on TV** do some personalised recommendations for you, based on programmes you watch regularly.

To make the Now on TV information available...

- the Now on TV information must be available in your country.
- the TV must have channels installed.
- the TV must be connected to the Internet.
- the TV Clock must be set to Automatic or Country Dependent.
- you must accept the Terms of Use (You might have




accepted already when you connected to the Internet.).

The icon  will only appear at the top of the screen when Now on TV is available.

The TV does not store former recommendations.

Using Now on TV

To open Now on TV...


- 1 - Press  TOP PICKS to open the Top Picks menu.
- 2 - Select  **Now on TV** at the top of the screen and press **OK**.
- 3 - Press  BACK to close.

When you open **Now on TV**, the TV may need a few seconds to refresh the page information.

In Now on TV you can...

- select and press **OK** on a programme icon to tune to the ongoing programme.
- select and press **OK** on a scheduled programme icon to tune to the channel already.


You can use the colour keys on the remote control to start, stop or clear a scheduled recording. You can also set or remove a reminder that warns you when a programme starts.

To leave Now on TV without tuning to another channel, press  BACK.


10.3

TV on Demand

About TV on Demand





With  **TV on Demand**, you can watch TV programmes you missed or watch your favourite programmes whenever it suits you best. This service is also called Catch Up TV, Replay TV or Online TV. Programmes available on TV on Demand are free to watch.

You can let TV on Demand do some personalised recommendations of programmes, based on the TV installation and the programmes you watch regularly.



The icon  will only appear at the top of the screen when TV on Demand is available.

Using TV on Demand

To open TV on Demand...



- 1 - Press  TOP PICKS to open the Top Picks menu.
- 2 - Select  TV on Demand at the top of the screen and press OK.
- 3 - Press  (down) to open the page full screen.
- 4 - You can select a specific broadcaster if more than one is available.
- 5 - Select a programme icon and press OK to start watching.
- 6 - Press  BACK to close.

When you open TV on Demand, the TV may need a few seconds to refresh the page information.

Once a programme started, you can use the  (Play) and  (Pause) keys.

You can select a specific video store if more than one is available.

To rent a movie...

- 1 - Navigate the highlight on a movie poster. Limited info will show after some seconds.
- 2 - Press OK to open the movie page of the video store for a synopsis of the movie.
- 3 - Confirm your order.
- 4 - Make the payment on TV.
- 5 - Start watching. You can use the  (Play) and  (Pause) keys.


10.4

Video on Demand

About Video on Demand

With  Video on Demand, you can rent movies from an online rental video store.

You can let Video on Demand do some personalised recommendations of movies, based on your country, the TV installation and the programmes you watch regularly.

The icon  will only appear at the top of the screen when Video on Demand is available.

Payment




When you rent or buy a movie, you can pay the video store securely with your credit card. Most video stores ask you to create a login account the first time you rent a movie.

Internet Traffic

Streaming a lot of videos may cause you to exceed your monthly Internet traffic limit.

Using Video on Demand

To open Video on Demand...

- 1 - Press  TOP PICKS to open the Top Picks menu.
- 2 - Select  Video on Demand at the top of the screen and press OK.
- 3 - Use the navigation keys to select a movie poster.
- 4 - Press  BACK to close.

When you open Video on Demand, the TV may need a few seconds to refresh the page information.

Home Menu

11.1

About the Home Menu

To enjoy the benefits of your Android TV, connect the TV to the Internet.

Like on your Android smartphone or tablet, the Home menu is the centre of your TV. From the Home menu you can start any application, switch to a TV channel, rent a movie, open a website or switch to a connected device. Depending on your TV setup and your country the Home menu can contain different items.

The Home menu is organised in rows...

Recommendations

The first row suggests popular videos, music videos or Internet hits. You can set the Privacy settings in Terms of Use to allow suggestions based on your personal viewing habits.

Philips Collection

This row contains suggestions from the Philips App Gallery.


Apps

The row of Apps contain all Apps that come with the TV and the Apps you download from the Google Play store yourself. In this row you will also find the Apps for TV, like **Watch TV**, **Sources**, **Media** and others. Apps you started recently will appear in front of the row.

Games

From here, you can start a game on TV. If you download a game, it will appear in this row.

Settings



From here, you can open a selection of settings. However, to find all settings, press  **SETTINGS** and select **All Settings**. You can also open **Help** here.

See also www.support.google.com/androidtv


11.2

Open the Home Menu

To open the Home menu and open an item...

- 1 - Press  HOME.
- 2 - Select an item and press **OK** to open it.
- 3 - Press  **BACK** to close the Home menu without opening anything.


You can use the remote control Touch Pad to scroll through rows quickly.

In **Help**, press the colour key  **Keywords** and look up **Remote Control, Touch Pad** for more information.

11.3

Search and Voice

You can search for videos, music or anything else on the Internet by simply using your voice. You can speak into the microphone on the remote control. Alternatively, you can use the remote control keyboard to enter text.

In **Help**, press the colour key  **Keywords** and look up **Voice** for more information.

11.4

Restricted Profile

You can restrict the use of certain apps by switching the TV to a restricted profile. This restricted profile will only allow the use of apps which you have selected. You can only switch out of this profile with a PIN code.


With the TV switched to a restricted profile you cannot...

- Find or open apps which are marked as Not allowed
- Access the Google Play Store
- Purchase through Google Play Movies & TV, nor Google Play Games
- Use third-party apps that don't use the Google sign-in

With the TV switched to a restricted profile you can...

- Watch content already rented or purchased from Google Play Movies & TV
- Play games already purchased and installed from Google Play Games
- Access the following settings: Wi-Fi network, Speech and Accessibility
- Add Bluetooth accessories

The Google Account on TV will stay logged in. Using a restricted profile doesn't change the Google Account.

In **Help**, press the colour key  **Keywords** and look up **Restricted Profile** for more information.

TV Menu


About TV Menu

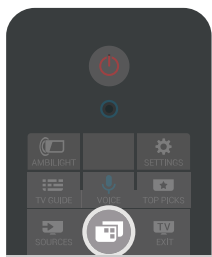
If the TV cannot be connected with the Internet, you can use the TV Menu as your Home menu.

In the TV Menu, you will find every TV function.

Open TV Menu

To open TV Menu and open an item...

- 1 - Press  to open TV Menu.
- 2 - Select an item and press **OK** to open or start it.
- 3 - Press **← BACK** to close TV Menu without starting anything.





Sources

13.1

Switch to a TV Input


From the list of Sources, you can switch to any of the TV inputs. You can switch to a tuner to watch TV, open the content of a connected USB Flash Drive or see the recordings you made on a connected USB Hard Drive. You can switch to your connected devices to watch their programme, a digital receiver or a Blu-ray Disc player.

To switch to a TV input...

- 1 - Press  SOURCES to open the Sources menu.
- 2 - Select the TV input you want to watch and press **OK**. The TV will show the programme of the device.
- 3 - Press  SOURCES again to close the menu without switching to a TV input.

One Touch Play

With the TV in standby, you can switch on a disc player with your TV remote control.




To switch on both disc player and TV from standby and start playing the disc immediately, press  (play) on the TV remote control. The device must be connected with an HDMI cable and both TV and device must have HDMI CEC switched on.

13.2

Options for a TV Input

Some TV input devices offer specific settings.

To set the options for a specific TV input...

- 1 - Press  SOURCES.
- 2 - Select the TV input in the list and press **OK**.
- 3 - Press  OPTIONS. You can set the options for the selected TV input here.
- 4 - Press  OPTIONS again to close the Options menu.

Possible options...

Controls

With this option you can operate the connected device with the TV remote control. The device must be connected with an HDMI cable and both TV and device must have HDMI CEC switched on.

Device Info


Open this option to view information on the connected device.

Device Name and Type





When you connect a new device to the TV and the TV detects the device, you can assign an icon that fits the device type. If you connect a device with an HDMI cable and HDMI CEC, the TV detects the device type automatically and the device gets an appropriate icon and name.

The device type determines picture and sound styles, resolution values, specific settings or the position within the Sources menu. You don't have to worry about the ideal settings.

Rename or Change Type

You can always change the name or change the type of a connected device. Look for the  icon at the right of the device name in the Sources menu. Some TV input sources do not allow a name change.

To change the device name or type...

- 1 - Select the device in the Sources menu.
- 2 - Press  (right) to select the  icon and press **OK**.
- 3 - Press  BACK to hide the onscreen keyboard.
- 4 - Use the keyboard on the back of the remote control to delete the current name and enter a new one.
- 5 - If you want to change the type of the device, press  (down) to find all available device types. Select the type you want and press **OK**.
- 6 - If you want to reset the name and type of the device to the original connector name, select **Reset** and press **OK**.
- 7 - Select **Close** and press **OK** to close this menu.

13.4




Game or Computer

The device type determines picture and sound styles, resolution values and other specifics. You don't have to worry about the ideal settings.

For some devices the type of the device is not that clear. A game console can have a built-in Blu-ray Disc player and the type is set to Player because it is used as a disc player most of the time. For this kind of devices, you can temporarily switch to the ideal settings for gaming. Or alternatively, switch to the ideal settings for a connected computer.

You can only use the setting **Game or Computer** when you switch to a connected device in the Sources menu. The Game or Computer setting is stored for the selected device.

To switch to the ideal settings for gaming or computer manually...

- 1 - Press  SETTINGS, select All Settings and press OK.
- 2 - Select Picture > Advanced and press OK.
- 3 - Select Game or Computer and press OK.
- 4 - Select Game, Computer or Off.
- 5 - Press  (left) to go back one step or press  BACK to close the menu.


Remember to set this setting back to Off when you stop playing the game.

13.5

Rescan Connections

You can rescan all TV connections to update the Sources menu with recently connected devices.

To rescan the connections...

- 1 - Select the  icon at the top right of the Sources menu.
- 2 - Press OK to start scanning the connections. Newly connected devices will be added to the Sources menu.

Apps

14.1

About Apps

You can find all installed apps in the **Apps** section of the Home menu.

Like apps on your smartphone or tablet, the apps on your TV offer specific functions for an enriched TV experience. Apps like YouTube, Twitter, games, video stores or weather forecasts (a.o.). You can use the Internet app to surf the Internet.

Apps can come from the **Philips App Gallery** or the **Google Play™ Store**. To get you started, some practical apps are pre-installed on your TV.

To install apps from the Philips App Gallery or the Google Play Store, the TV must be connected to the Internet. You must agree to the Terms of Use to use apps from the App Gallery. You must sign in with a Google Account to use the Google Play apps and Google Play Store.

In Help, press the colour key **Keywords** and look up **App Gallery**, **Terms of Use** or **App Gallery**, **Privacy Settings** for more information.

14.2

Google Play

Movies and TV

With Google Play Movies & TV, you can rent or buy movies and TV shows to watch on TV.

What You Need

- your TV must be connected with the Internet
- you must sign in with your Google Account on TV
- add a credit card to your Google Account to purchase movies and TV shows

To rent or buy a movie or TV show...

- 1 - Press **HOME**.
- 2 - Scroll down and select **Apps** > **Google Play Movies & TV** and press **OK**.
- 3 - Select a movie or TV show and press **OK**.
- 4 - Select the purchase you want and press **OK**. You will be taken through the purchase procedure.

To watch a rented or bought movie or TV show...

- 1 - Press **HOME**.
- 2 - Scroll down and select **Apps** > **Google Play Movies & TV** and press **OK**.
- 3 - Select the movie or TV show from your library in the app, select the title and press **OK**.
- 4 - You can use the **■** (stop), **||** (pause), **◀**

(rewind) or **▶▶** (fast forward) keys on the remote control.

5 - To stop the Movies & TV app, press **← BACK** repeatedly or press **TV EXIT**.

Some Google Play products and features aren't available in all countries.

Find more information on support.google.com/androidtv

Music

With Google Play Music, you can play your favourite music on TV.

With Google Play Music you can buy new music on your computer or mobile device. Or, on your TV, you can sign up for All Access, the Google Play Music subscription. Alternatively, you can play the music you already own, stored on your computer.

What You Need

- your TV must be connected with the Internet
- you must sign in with your Google Account on TV
- add a credit card to your Google Account to take a music subscription

To start Google Play Music...

- 1 - Press **HOME**.
- 2 - Scroll down and select **Apps** > **Google Play Music** and press **OK**.
- 3 - Select the music you want and press **OK**.
- 4 - To stop the Music app, press **← BACK** repeatedly or press **TV EXIT**.

Some Google Play products and features aren't available in all countries.

Find more information on support.google.com/androidtv

Games

With Google Play Games, you can play games on TV. Online or offline.





You can see what your friends are playing currently or you can join the game and compete. You can track your achievements or start wherever you left off.


What You Need

- your TV must be connected with the Internet
- you must sign in with your Google Account on TV
- add a credit card to your Google Account to purchase new games

Start the Google Play Games app to select and install new game apps on your TV. Some games are free of charge. A message appears if a particular game needs a gamepad to play the game.

To start or stop a Google Play Game...

- 1 - Press  HOME.
- 2 - Scroll down and select  Apps > Google Play Games and press OK.
- 3 - Select a game to play or select a new game to install and press OK.
- 4 - When done, press  BACK repeatedly or press  TV EXIT or stop the app with its dedicated exit/stop button.

The games you install will also appear in the row of  Games in the Home menu

Some Google Play products and features aren't available in all countries.

Find more information on support.google.com/androidtv




Google Play Store

From the Google Play Store you can download and install new apps. Some apps are free of charge.

What You Need

- your TV must be connected with the Internet
- you must sign in with your Google Account on TV
- add a credit card to your Google Account to purchase apps





To install a new app...

- 1 - Press  HOME.
- 2 - Scroll down and select  Apps > Google Play Store and press OK.
- 3 - Select the app you want to install and press OK.
- 4 - To close the Google Play Store, press  BACK repeatedly or press  TV EXIT.

Parental controls

In the Google Play Store, you can hide apps according to users/buyers maturity. You need to enter a PIN code to select or change the level of maturity.

To set the parental control...

- 1 - Press  HOME.
- 2 - Scroll down and select  Apps > Google Play Store and press OK.
- 3 - Select Settings > Parental controls and press OK.
- 4 - Select the level of maturity you want.
- 5 - On request, enter the PIN code.
- 6 - To close the Google Play Store, press  BACK repeatedly or press  TV EXIT.

Some Google Play products and features aren't available in all countries.

Find more information on support.google.com/androidtv

Payments

To make a payment on Google Play on TV, you must add a form of payment - a credit card (outside the United States) - to your Google Account. When you purchase a movie or TV show, you will be charged on this credit card.

To add a credit card ...

- 1 - On your computer, go to accounts.google.com and sign in with the Google Account you will use with Google Play on TV.
- 2 - Go to wallet.google.com to add a card to your Google Account.
- 3 - Enter your credit card data and accept the terms and conditions.

14.3




App Gallery

Connect the TV to the Internet to enjoy apps selected by Philips. These apps are made specially for TV. The Philips App Gallery offers a wide diversity of apps. For some countries, you can install apps of a local Videostore or apps from TV broadcasters in your country. The latter can offer Catch-Up TV services. Downloading and installing App Gallery apps is free of charge.

The Philips App Gallery collection of apps can differ per country or region.

Some App Gallery apps are pre-installed on your TV. To install other apps from the App Gallery, you will be asked to agree to the Terms of Use. You can set the Privacy Settings according to your preference.

To install an app from the App Gallery...





- 1 - Press  HOME.
- 2 - Scroll down and select  Philips Collection >  App Gallery and press OK.
- 3 - Select an app icon and press OK.
- 4 - Select Install and press OK.

14.4

Start or Stop an App

You can start an app from the Home menu.

To start an app...

- 1 - Press  HOME.
- 2 - Scroll down to  Apps and select the app you want and press OK.
- 3 - To stop an app, press  BACK or press  TV EXIT or stop the app with its dedicated exit/stop button.

Lock Apps

About App Locks

You can lock apps unsuited for children. You can lock 18+ rated apps from the App Gallery or set up a restricted profile in the Home menu.

18+

The 18+ app lock will ask 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 App Gallery.

Restricted profile

You can set up a restricted profile for the Home menu where only the apps you allow are available. You need to enter a PIN code to set up and switch on the restricted profile.

Google Play Store - Maturity

In the Google Play Store, you can hide apps according to users/buyers maturity. You need to enter a PIN code to select or change the level of maturity. The level of maturity will determine which apps are available for installation.

In Help, press the colour key **Keywords** and look up **Google Play Store** for more information.

Lock 18+ rated apps

You can lock 18+ rated apps from the Philips App Gallery. This setting controls the 18+ setting in the Philips App Gallery Privacy Settings.

To lock 18+ rated apps...

- 1 - Press **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Child Lock**, select **App Lock** and press **OK**.
- 3 - Select **On** and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

In Help, press the colour key **Keywords** and look up **Child Lock**, **Set PIN code** for more information.

Restricted Profile

About Restricted Profile

You can restrict the use of certain apps by switching the TV to a restricted profile. The Home menu will only show the apps you allowed. You need a PIN code to switch out of the restricted profile.

With the TV switched to a restricted profile you cannot...

- Find or open apps which are marked as Not allowed
- Access the Google Play Store
- Purchase through Google Play Movies & TV, nor Google Play Games
- Use third-party apps that don't use the Google sign-in

With the TV switched to a restricted profile you can...

- Watch content already rented or purchased from Google Play Movies & TV
- Play games already purchased and installed from Google Play Games
- Access the following settings: Wi-Fi network, Speech and Accessibility
- Add Bluetooth accessories

The Google Account on TV will stay logged in. Using a restricted profile doesn't change the Google Account.

Set Up

To set up the restricted profile...

- 1 - Press **HOME**, scroll down and select **Settings** > **General Settings** and press **OK**.
- 2 - Press **→** (right), select **Android Settings** and press **OK**.
- 3 - Press **↓** (down) and select **Personal** > **Security & restrictions** and press **OK**.
- 4 - Select **Settings** and press **OK**.
- 5 - Enter a PIN code with the remote control.
- 6 - Select **Allowed apps** and press **OK**.
- 7 - In the list of available apps, select an app and press **OK** to allow or not allow this app.
- 8 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Now you can enter the restricted profile.

With the PIN code, you can always change the PIN code or edit the list of allowed or not allowed apps.

Enter

To enter (switch to) the restricted profile...


- 1 - Press **HOME**, scroll down and select **Settings** > **General Settings** and press **OK**.
- 2 - Press **→** (right), select **Android Settings** and press **OK**.
- 3 - Press **↓** (down) and select **Personal** > **Security & restrictions** and press **OK**.
- 4 - Select **Enter restricted profile** and press **OK**.
- 5 - Enter a PIN code with the remote control.
- 6 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

You can see when a restricted profile is entered if an icon appears in the Home screen. Scroll down to **⚙️**

Settings and scroll to the far right.

Exit

To exit the restricted profile...







- 1 - Press  HOME, scroll down and scroll far right.
- 2 - Select **Restricted Profile** and press **OK**.
- 3 - Select **Exit restricted profile** and press **OK**.
- 4 - Enter the PIN code. The TV will exit the restricted profile.

14.6

Manage Apps

If you stop an app and return to the Home menu, the app is not really stopped. The app is still running in the background to be readily available when you start it again. To run fluently, most apps need to save some data in the cache memory of the TV. It might be good to stop an app completely or clear the cache data of a particular app to optimise the overall performance of apps and to keep memory usage low on your Android TV. Also, it is best to uninstall apps that you are not using anymore.

To open the list of downloaded and system apps...

- 1 - Press  HOME, scroll down and select  **Settings** >  **General Settings** and press **OK**.
- 2 - Press  (left), select **Android Settings** and press **OK**.
- 3 - Select **Device** > **Apps** and press **OK**.
- 4 - Select an app and press **OK**. If the app is still running, you can force it to stop or you can clear the cache data. You can uninstall apps you downloaded.
- 5 - Press  (left) to go back one step or press  **BACK** to close the menu.


If you are using a USB Hard Drive to store apps, you can move the app from the USB Hard Drive to the TV memory or vice versa.

14.7



Storage

You can see how much storage space - the internal TV memory - you are using for your apps, videos, music, etc. You can see how much free space you still have available for installing new apps. Check your storage if apps start to run slow or in case of app trouble.

To see how much storage you are using...

- 1 - Press  HOME, scroll down and select  **Settings** >  **General Settings** and press **OK**.
- 2 - Press  (left), select **Android Settings** and press

OK.

- 3 - Select **Device** > **Storage & reset** and press **OK**.
- 4 - View the storage usage of the TV memory.
- 5 - Press  (left) to go back one step or press  **BACK** to close the menu.

USB Hard Drive

If you connect a USB Hard Drive, you can use the drive to extend the TV memory to store more apps. Allow the USB Hard Drive to be used as an additional TV memory during the formatting process. The TV will try to store new apps on the USB Hard Drive first. Some apps do not allow to be stored on a USB Hard Drive.

Gaming

15.1

What You Need

On this TV, you can play games...

- from the App Gallery in the Home menu
- from the Google Play Store in the Home menu
- from a connected Game Console

Games from the App Gallery or the Google Play Store must be downloaded and installed on TV before you can play them. Some games need a gamepad to play.

To install game apps from the Philips App Gallery or the Google Play Store, the TV must be connected to the Internet. You must agree to the Terms of Use to use apps from the App Gallery. You must sign in with a Google Account to use the Google Play apps and Google Play Store.

In Help, press the colour key **— Keywords** and look up **App Gallery**, **Terms of Use** or **App Gallery**, **Privacy Settings** for more information.

For more information on connecting to the Internet, press the colour key **— Keywords** and look up **Network Installation**.

15.2

Gamepads

To play games from the Internet on this TV, you can connect a selected range of wireless Gamepads. The TV can support 2 connected Gamepads at a time. When you connect the Gamepad, you can use it immediately.





For more information on connecting a gamepad, press the colour key **— Keywords** and look up **Gamepad**, **connect**.

15.3

Play a Game




From the Home menu

To start a game from the Home menu...

- 1 - Press  HOME.
- 2 - Scroll down to  **Games**, select a game and press OK.
- 3 - Press  BACK repeatedly or press  EXIT or stop the app with its dedicated exit/stop button.

From a Game Console

To start a game from a Game Console...

- 1 - Switch on the Game Console.
- 2 - Press  SOURCES and select a game console or the name of the connection.
- 3 - Start the game.
- 4 - Press  BACK repeatedly or press  EXIT or stop the app with its dedicated exit/stop button.

For more information on connecting a Game Console, press **— Keywords** and look up **Game Console**, **connect**.

15.4

Ideal Game Settings

If you start playing a game app from the Home menu, the TV will switch to the ideal game settings automatically. If you start a game from a connected game console with the device type set to 'Game Console', also then the TV switches to the ideal game settings automatically. You can always switch the TV to the ideal game settings manually.

In Help, press the colour key **— Keywords** and look up **Game** or **Computer** for more information.

Internet





16.1

Start Internet

You can browse the Internet on your TV. You can view any Internet website but most of them are not prepared for a TV screen.

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

To start the Internet browser...




- 1 - Press  HOME.
- 2 - Scroll down and select **Apps** >  **Internet** and press **OK**.
- 3 - Enter an Internet address and press **OK**.
- 4 - To close Internet, press  HOME or  TV.

16.2

Options on Internet

Some extras are available for the Internet.

To open the extras...

- 1 - With the Internet app open, press  **OPTIONS**.
- 2 - Select one of the items and press **OK**.
- 3 - Press  (left) to go back one step or press  **BACK** to close the menu.

Enter Address

To enter a new Internet address.

Show Favourites

To view the pages you marked as favourites.

Reload Page

To load the Internet page again.

Zoom Page

Use the slider bar to set the zoom percentage.

Security Info

To view the security level of the current page.

Mark as Favourite

To mark the current page as a favourite.

Your Videos, Photos and Music





17.1

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. The TV detects the device and will list your media files.

If the list of files does not appear automatically...

- 1 - Press  SOURCES, select  USB and press OK.
- 2 - Select USB Devices and press  (right) to select the USB device you need.
- 3 - You can browse your files in the folder structure you have organised on the drive.
- 4 - To stop playing videos, photos and music, press  EXIT.

Warning

If you try to pause or record a programme with a USB Hard Drive connected, the TV will ask you to format the USB Hard Drive. This formatting will delete all current files on the USB Hard Drive.

17.2

From a Computer or NAS





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


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

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

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

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


- 1 - Press  SOURCES, select  Network and press OK.
- 2 - Select  'name of device' and press  (right) to browse and play your files.






- 3 - To stop playing videos, photos and music, press  EXIT.

17.3

From a Cloud Storage Service

You can view photos or play music and videos you uploaded on a storage service in the online cloud*.

With the  Cloud Explorer app you can connect to Cloud Hosting Services. You can use your login and password to connect.

- 1 - Press  HOME.
- 2 - Scroll down and select  Apps >  Cloud Explorer and press OK.
- 3 - Select the hosting service you need.
- 4 - Connect and sign in to the hosting service with your login and password.
- 5 - Select the photo or video you want to play and press OK.
- 6 - Press  (left) to go back one step or press  BACK to close the menu.

* A storage service like Dropbox™.

17.4










Play your Videos

Play Videos


How you open the list of your media files on TV depends on the type of device where the files are stored. See the chapters above.

To play a video on TV...

Select the file name and press OK.

- To pause the video, press  OK. Press  OK again to continue.
- To rewind or go 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 stop the video playback, press  (Stop).
- To go back to the folder, press  BACK.

Progress Bar

To show the progress bar when a video is playing (playhead position, duration, title, date, etc.), press  INFO.

Press again to hide the info.

Video Options

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

- **Play All** – Play all video files in this folder.
- **Play One** – Play this video only.
- **Shuffle** – Play your files in a random order.
- **Subtitles** – If available, you can switch subtitles On, Off or On During Mute.
- **Subtitle Language** – If available, select a Subtitle Language.
- **Audio Language** – If available, select an Audio Language.
- **Repeat** – Plays all videos in this folder once or continuously.

17.5

View your Photos

View Photos

How you open the list of your media files on TV depends on the type of device where the files are stored. See the chapters above.

To view a photo on TV...

Select the file name and press **OK**.

If there are several photos in a folder, you can start a slide show.

To start a slide show...

- 1 – Select the folder with photos.
 - 2 – Press the colour key **■ Play All**.
- To jump to the next or previous photo, press **>** (right - next) or **<** (left - previous).
 - To pause the slide show, press **OK**. To start again, press **OK** again.
 - To stop the slide show, press **OK** and press **← BACK**.

Info

To view info on a photo (size, creation date, file path, etc.), select a photo and press **i INFO**. Press again to hide the info.

Slideshow with Music

You can watch a slideshow of your photos and listen to your music at the same time. You must start the music before you start the photo slideshow.

To play music with the slide show...

- 1 – Select a song or a folder with songs and press **OK**.
- 2 – Press **i INFO** to hide file info and progress bar.
- 3 – Press **← BACK**.
- 4 – Now use the navigation arrows to select the folder with photos.

5 – Select the folder with photos and press **■ Play All**.

6 – To stop the slideshow, press **← BACK**.

Photo Options

With a photo on screen, press **+** OPTIONS to...

- **Slide Show** – Show photos one after the other.
- **Shuffle** – Play your files in a random order.
- **Repeat** – Play the slide show once or continuously.
- **Rotate** – Rotate the photo to landscape or portrait format.
- **Stop Music** – Stop the music playing in the background.
- **Slide Show Speed** – Sets the speed of the slide show.

17.6

Play your Music

Play Music

How you open the list of your media files on TV depends on the type of device where the files are stored. See the chapters above.

To play a song on TV...

Select the file name of the song and press **OK**.

If there are several songs in a folder, you can listen to them one after the other.

- To pause a song, press **OK**. Press **OK** again to continue.
- To rewind or go fast forward, press **▶▶** or **◀◀**. Press the keys several times to speed up - 2x, 4x, 8x, 16x, 32x.
- To jump to the next song in a folder, press **OK** to pause and select **▶** on screen and press **OK**.
- To go back to the folder, press **← BACK**, the music will keep on playing.
- To stop the music playback, press **■ (Stop)**.

Progress Bar

To show the progress bar when a song is playing (playhead position, duration, title, date, etc.), press **i INFO**. Press again to hide the info.

Music Options

Colour key functions and Options for playing music.

- **Play All** – Play all songs in this folder.
- **Play One** – Play this song only.
- **Shuffle** – Play your files in a random order.
- **Repeat** – Plays all songs in this folder once or continuously.

Smartphones and Tablets

18.1

Philips TV Remote App

The new Philips TV Remote App on your smartphone or tablet is your new TV buddy.

With the TV Remote App, you master your media around you. Send photos, music or videos to your big TV screen or watch any of your TV channels live on your tablet or phone. Look up what you want to watch on the TV Guide and watch it on your phone or TV. With the TV Remote App you can use your phone as a remote control.

Download the Philips TV Remote App from your favourite app store today.

The Philips TV Remote App is available for iOS and Android and is free of charge.

Wi-Fi Smart Screen

To watch digital TV channels on your smartphone or tablet with the Philips TV Remote App, you must switch on Wi-Fi Smart Screen. In Help, press the colour key **— Keywords** and look up **Wi-Fi Smart Screen**.

18.2

Google Cast

What You Need

If an app on your mobile device has Google Cast, you can cast your app on this TV. On the mobile app, look for the Google Cast icon. You can use your mobile device to control what's on TV. Google Cast works on Android and iOS.

Your mobile device must be connected to the same Wi-Fi home network as your TV.



Apps with Google Cast

New Google Cast apps come available every day. You can already try it with YouTube, Chrome, Netflix, Photowall ... or Big Web Quiz for Chromecast. See also google.com/cast

Some Google Play products and features aren't available in all countries.

Find more information on support.google.com/androidtv

Cast to Your TV

To cast an app to the TV screen...

- 1 - On your smartphone or tablet, open an app that supports Google Cast.
- 2 - Tab the Google Cast icon.
- 3 - Select the TV you would like to cast to.
- 4 - Press play on your smartphone or tablet. What you selected should start playing on TV.

18.3

AirPlay

To add the AirPlay functionality to your Android TV, you can download and install one of the several Android apps that do just that. You can find several of these apps in the Google Play Store.

18.4

MHL

This TV is MHL™ compliant.

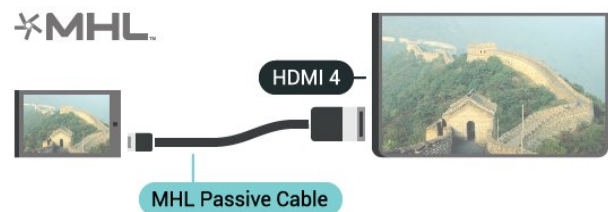
If your mobile device is also MHL compliant, you can connect your mobile device with a MHL cable to the TV. With the MHL cable connected you can share what's on your mobile device on the TV screen. Your mobile device charges its battery at the same time. The MHL connection is ideal for watching movies or playing games from your mobile device on TV for a longer time.

Charging

With the MHL cable connected, your device will charge while the TV is switched on (not in standby).

MHL Cable

You need a passive MHL cable (HDMI to Micro USB) to connect your mobile device to the TV. You might need an extra adapter to connect to your mobile device. To connect the MHL cable to the TV use the **HDMI 4 MHL** connection.



MHL, Mobile High-Definition Link and the MHL Logo are trademarks or registered trademarks of the MHL, LLC.


Ambilight

Ambilight Style

Follow Video

You can set Ambilight to follow the video or the audio dynamics of a TV programme. Alternatively, you can set Ambilight to show a preset colour style or you can switch Ambilight off.

If you select **Follow Video**, you can select one of the styles that follow the dynamics of the picture on your TV screen.

- 1 - Press  AMBILIGHT.
- 2 - Select **Follow Video** and press **OK**.
- 3 - Select the style you want and press **OK**.
- 4 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.


The available **Follow Video** styles are...

- **Standard** - Ideal for day to day TV watching
- **Natural** - Follows the picture or sound as truthful as possible
- **Immersive** - Ideal for action movies
- **Gaming** - Ideal for gaming
- **Vivid** - Ideal for daylight conditions
- **Comfort** - Ideal for a quiet evening
- **Relax** - Ideal for a lounge feeling

Follow Audio

You can set Ambilight to follow the video or the audio dynamics of a TV programme. Alternatively, you can set Ambilight to show a preset colour style or you can switch Ambilight off.

If you select **Follow Audio**, you can select one of the styles that follow the dynamics of the sound.

- 1 - Press  AMBILIGHT.
- 2 - Select **Follow Audio** and press **OK**.
- 3 - Select the style you want and press **OK**.
- 4 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.


The available **Follow Audio** styles are...

- **Lumina** - Mixes audio dynamics with video colours
- **Colora** - Based on audio dynamics
- **Retro** - Based on audio dynamics
- **Spectrum** - Based on audio dynamics
- **Scanner** - Based on audio dynamics
- **Rhythm** - Based on audio dynamics
- **Party** - A mix of all Follow Audio styles, one after the other

Follow Colour

You can set Ambilight to follow the video or the audio dynamics of a TV programme. Alternatively, you can set Ambilight to show a preset colour style or you can switch Ambilight off.

If you select **Follow Colour**, you can select one of the preset colour styles.


- 1 - Press  AMBILIGHT.
- 2 - Select **Follow Colour** and press **OK**.
- 3 - Select the style you want and press **OK**.
- 4 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

The available **Follow Colour** styles are...


- **Hot Lava** - Red colour variations
- **Deep Water** - Blue colour variations
- **Fresh Nature** - Green colour variations
- **Warm White** - Static colour
- **Cool White** - Static colour

Ambilight Off

To switch off Ambilight...

- 1 - Press  AMBILIGHT.
- 2 - Select **Off** and press **OK**.
- 3 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Ambilight Settings

In Help, press the colour key  **Keywords** and look up **Ambilight, Settings** for more information.

Multi View

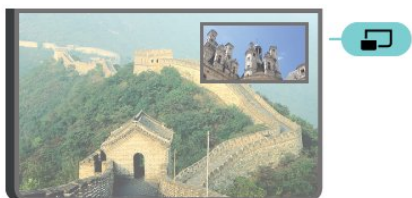
20.1

Open Multi View

With Multi View, you can watch a second programme in a small screen.

To open the Multi View screen...

- 1 - Tune to a TV channel. If you're not watching TV channels, press **TV** TV.
- 2 - Press **⏏** to open the small screen and press **OK**.
- 3 - Press **≡ +** or **≡ -** to tune to another channel in the large screen.
- 4 - Press **⏏** and press **OK** to swap the TV channels. Alternatively, press **▼** (down) and press **OK** to close the small screen.



Conditions

- Multi View can only show digital TV channels.
- While the TV is recording, Multi View is not available.
- To use Multi View with satellite TV channels, you must connect the 2 satellite tuners **SAT 1** and **SAT 2** to your satellite dish.
- If both TV channels need a CAM to decode, you must install 2 CAMs to use Multi View.

20.2

Text (Teletext) and TV

You can watch a TV channel in the small screen of Multi View when you're watching Text (Teletext).

To watch a TV channel while watching Text (Teletext)...

- 1 - Press **⏏**.
- 2 - Select **Multi View: On** on screen. The channel you were watching appears in the small screen.
- 3 - To hide the small screen, press **⏏** again and select **Multi View: Off** on screen.



Settings

21.1

Frequent Settings

The most frequently used settings are bundled in the **Frequent Settings** menu.

To open the menu...

- 1 - Press  **SETTINGS**.
- 2 - Select the setting you want to adjust and press **OK**.
- 3 - Press  **BACK**, if you do not want to change anything.




21.2

Picture

Quick Setting

During the first installation, you did some picture settings in a few easy steps. You can redo these steps with **Quick Picture Setting**. To do these steps, make sure the TV can tune to a TV channel or can show a programme from a connected device.




To set the picture in a few easy steps...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Quick Picture Setting** and press **OK**.
- 4 - Select **Start** and press **OK**. Use the navigation keys to select your choice.
- 5 - Finally, select **Finish** and press **OK**.
- 6 - Press  (left) to go back one step or press  **BACK** to close the menu.

Picture Style

Select a Style

For easy picture adjustment, you can select a preset **Picture Style**.

- 1 - While watching a TV channel, press  **SETTINGS**, select **Picture Style** and press **OK**.
- 2 - Select one of the styles in the list and press **OK**.
- 3 - Press  (left) to go back one step or press  **BACK** to close the menu.

The available styles are...

- **Personal** - The picture preferences you set during the first start up.
- **Vivid** - Ideal for daylight viewing





- **Natural** - Natural picture settings
- **Standard** - Most energy conscious setting - Factory setting
- **Movie** - Ideal for watching movies
- **Photo** - Ideal for viewing photos
- **ISF Day** - For ISF Calibration
- **ISF Night** - For ISF Calibration

Customise a Style

Any picture setting you adjust, like **Colour** or **Contrast**, is stored in the currently selected **Picture Style**. It allows you to customize each style. Only the style **Personal** can save its settings for each connected device in the **Sources** menu.

Restore a Style




To restore the style to its original setting...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Picture Style** and press **OK**.
- 4 - Select the style you want to restore and press **OK**.
- 5 - Press the colour key  **Restore Style**. The style is restored.
- 6 - Press  (left) to go back one step or press  **BACK** to close the menu.

Home or Shop

If the **Picture Style** is switched back to **Vivid** every time you switch on the TV, the TV location is set to **Shop**. A setting meant for in-store promotion.

To set the TV for Home use...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Location** and press **OK**.
- 4 - Select **Home** and press **OK**.
- 5 - Press  (left) to go back one step or press  **BACK** to close the menu.

Picture Format

Basic

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...

- 1 - Press **⚙** SETTINGS.
- 2 - Select **Picture Format** and press **OK**.
- 3 - Select **Fill Screen** or **Fit to Screen** and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

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.

Fit to Screen – automatically zooms in the picture to fill the screen without distortion. Black bars may be visible. Not suitable for PC input.

Advanced

If the two basic settings are inadequate to format the picture you want, you can use the advanced settings. With the advanced settings you manually format the picture on your screen.

You can zoom, stretch and shift the picture until it shows what you need – e.g. missing subtitles or scrolling text banners. If you format the picture for a specific Source – like a connected game console – you can return to this setting the next time you use the game console. The TV stores the last setting you did for each connection.

To format the picture manually...

- 1 - Press **⚙** SETTINGS.
 - 2 - Select **Picture Format** and press **OK**.
 - 3 - Select **Advanced** and press **OK**.
 - 4 - Select **Shift**, **Zoom** or **Stretch** and press **OK** to adjust the picture with the navigation keys.
 - 5 - Alternatively, select **Last Setting** and press **OK** to switch to the format you stored before.
 - 6 - Or select **Undo** to return to the setting the picture had when you opened **Picture Format**.
 - 7 - The TV stores your settings as Last Settings when you press **⏪ Basic** or press **⬅** **BACK** to close the menu.
- **Shift** – Use the navigation keys to shift the picture. You can only shift the picture when it is zoomed in.
 - **Zoom** – Use the navigation keys to zoom in.
 - **Stretch** – Use the navigation keys to stretch the picture vertically or horizontally.
 - **Last Setting** – Returns to the last setting you did for this connection (source).
 - **Undo** – Returns to the picture format you started with.
 - **Original** – Shows the original format of the incoming picture. This is a 1:1 pixel on pixel format. Expert mode for HD and PC input.

Game or Computer

In Help, press the colour key **⏪ Keywords** and look up **Game or Computer** for more information.

Picture Settings

Colour

With **Colour**, you can adjust the colour saturation of the picture.

To adjust the colour...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Colour** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Contrast

With **Contrast**, you can adjust the contrast of the picture. If you are watching 3D pictures, this setting is switched to **3D Contrast**.

To adjust the contrast...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Contrast** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Sharpness

With **Sharpness**, you can adjust the level of sharpness in fine detail of the picture.

To adjust the sharpness...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Sharpness** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Advanced Settings

Colour Settings

Colour Enhancement

With **Colour Enhancement**, you can enhance the colour intensity and the details in bright colours.

To adjust the level...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Colour > Colour Enhancement** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum** or **Off** and press **OK**.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Colour Temperature

With **Colour Temperature**, you can set the picture to a preset colour temperature or select **Custom** to set a temperature setting yourself with **Custom Colour Temperature**. **Colour Temperature** and **Custom Colour Temperature** are settings intended for expert users.

To select a preset...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Colour > Colour Temperature** and press **OK**.
- 4 - Select **Normal, Warm** or **Cool** and press **OK**. Select **Custom** and press **OK** if you want to customise a colour temperature yourself.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Custom Colour Temperature

With **Custom Colour Temperature**, you can set a colour temperature yourself. To set a custom colour temperature, first select **Custom** in the **Colour Temperature** menu. **Custom Colour Temperature** is a setting intended for expert users.

To set a custom colour temperature...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Colour > Custom Colour Temperature** and press **➤** (right).
- 4 - Press **⬆️** (up) or **⬇️** (down) to adjust the value. **WP** is white point and **BL** is black level. You can also select one of the presets in this menu.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️**

BACK to close the menu.

ISF Colour Control

With **ISF Colour Control**, an ISF expert can calibrate the colour reproduction of the TV. **Colour Control** is an ISF expert setting.

Get the most out of your TV display with **ISF® Calibration**. Ask a ISF calibration expert to come to your home and set the TV to the most optimal picture setting. Additionally the expert can set an ISF Calibration for Ambientlight. Ask your dealer for an ISF Calibration.

Calibration benefits are...

- better picture clarity and sharpness
- better detail in bright and dark parts
- deeper and darker blacks
- better colour purity and quality
- reduced energy consumption

The ISF Calibration expert stores and locks the ISF settings as 2 picture styles.

When the ISF Calibration is done, press **⚙️** SETTINGS and select **Picture Style** and press **OK**. Select **ISF Day** or **ISF Night** and press **OK**. Select **ISF Day** to watch TV during bright light conditions or select **ISF Night** when it's dark.

ISF RGB Only Mode

With **RGB only mode**, an ISF expert can switch the screen to RGB colours only.

Contrast Settings

Contrast Mode

With **Contrast Mode**, you can set the level at which power consumption can be reduced by dimming the intensity of the screen. Choose for the best power consumption or for the picture with the best intensity.

To adjust the level...

- 1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Contrast Mode** and press **OK**.
- 4 - Select **Best Power, Best Picture, Standard** or **Off** and press **OK**.
- 5 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Perfect Contrast

With **Perfect Contrast**, you can set the level at which the TV automatically enhances the details in the dark, middle and light areas of the picture.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Perfect Contrast** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum or Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Brightness

With **Brightness**, you can set the level of brightness of the picture signal. Brightness is a setting intended for expert users. We recommend non-expert users to adjust the brightness of the picture with the **Contrast** setting.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Brightness** and press **➤** (right).
- 4 - Press **⬆** (up) or **⬇** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Video Contrast

With **Video Contrast**, you can decrease the range of the video contrast. Video Contrast is a setting intended for expert users.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Video Contrast** and press **➤** (right).
- 4 - Press **⬆** (up) or **⬇** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Light Sensor

The **Light Sensor** adjusts the picture and Ambilight settings automatically to the lighting conditions of the room. You can switch Light Sensor on or off.

To switch on or off...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Light Sensor**, and press **OK**.
- 4 - Select **On or Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Gamma

With **Gamma**, you can set a non-linear setting for picture luminance and contrast. Gamma is a setting intended for expert users.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Contrast > Gamma** and press **➤** (right).
- 4 - Press **⬆** (up) or **⬇** (down) to adjust the value.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Sharpness Settings

Ultra Resolution

With **Ultra Resolution**, you switch on a superior sharpness in line edges and contours.

To switch on or off...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Sharpness > Ultra Resolution** and press **OK**.
- 4 - Select **On or Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Noise Reduction

With **Noise Reduction**, you can filter out and reduce the level of image noise.

To adjust the noise reduction...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Sharpness > Noise Reduction** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum or Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅**

BACK to close the menu.

MPEG Artefact Reduction

With **MPEG Artefact Reduction**, you can smoothen the digital transitions in the picture. MPEG artefacts are mostly visible as small blocks or jagged edges in images.

To reduce the MPEG artefacts...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Sharpness > MPEG Artefact Reduction** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum** or **Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Motion Settings

Perfect Natural Motion

With **Perfect Natural Motion**, you can reduce the motion judder, visible in movies on TV. Perfect Natural Motion makes any movement smooth and fluent.

To adjust the motion judder...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Motion > Perfect Natural Motion** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum** or **Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Natural Motion

With **Natural Motion**, you can reduce the motion judder, visible in movies on TV. Natural Motion makes any movement smooth and fluent.

To adjust the motion judder...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Motion > Natural Motion** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum** or **Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

Clear LCD

With **Clear LCD**, you switch on a superior motion sharpness, better black level, high contrast with a flicker-free, quiet image and a larger viewing angle.

To switch on or off...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Picture** and press **OK**.
- 3 - Select **Advanced > Motion > Clear LCD** and press **OK**.
- 4 - Select **On** or **Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

HDMI Ultra HD

You can watch videos filmed or made in 'native' Ultra HD resolution - 3840x2160 pixels - on this TV. Connect devices that play Ultra HD video to one of the HDMI connectors.

Problems with devices connected with HDMI

This is an Ultra HD TV. Some older devices - connected with HDMI - do not recognise an Ultra HD TV electronically and might not work correctly or show distorted picture or sound. To avoid the malfunctioning of such a device, you can set the signal quality to a level the device can handle. If the device is not using Ultra HD signals, you can switch off Ultra HD for this HDMI connection.

To set the signal quality...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **HDMI Ultra HD** and press **OK**.
- 4 - Select **UHD 4:4:4/4:2:2** (highest UHD quality), **UHD 4:2:0** or **Off** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

21.3

Sound

Sound Style

Select a Style

For easy sound adjustment, you can select a preset setting with Sound Style.

- 1 - While watching a TV channel, press **⚙** SETTINGS and select **Sound Style** and press **OK**.
- 2 - Select one of the styles in the list and press **OK**.
- 3 - Press **⬅** (left) to go back one step or press **⬅**

BACK to close the menu.

The available styles are...

- **Personal** – The sound preferences you set during the first start up.
- **Original** – Most neutral sound setting
- **Movie** – Ideal for watching movies
- **Music** – Ideal for listening to music
- **Game** – Ideal for gaming
- **News** – Ideal for speech





Customise a Style

Any sound setting you adjust, like Treble or Bass, is stored in the currently selected **Sound Style**. It allows you to customize each style.

Only the style **Personal** can save its settings for each connected device in the Sources menu.

Restore a Style

To restore the style to its original setting...

- 1 – Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 – Select **Sound** and press **OK**.
- 3 – Select **Sound Style** and press **OK**.
- 4 – Select the style you want to restore and press **OK**.
- 5 – Press the colour key  **Restore Style**. The style is restored.
- 6 – Press  (left) to go back one step or press  **BACK** to close the menu.




Speakers

Select your Speakers

In this menu you can switch the TV speakers on or off. If you connect a Home Theatre System or a wireless Bluetooth speaker, you can select which device is playing the TV sound. All available loudspeaker systems are shown in this list.

If you use an HDMI CEC connection for an audio device (like a Home Theatre System), you can select EasyLink Autostart. The TV will switch on the audio device, send the TV sound to the device and switch off the TV speakers.

To select the speakers you want...

- 1 – Press  **SETTINGS**, select **Speakers** and press **OK**.
- 2 – Select the loudspeaker system you want and press **OK**.
- 3 – Press  (left) to go back one step or press  **BACK** to close the menu.

Wireless Speakers (Bluetooth)


What You Need

You can connect a wireless device with Bluetooth® to this TV – a wireless speaker, a subwoofer, a sound bar or headphones. You can also connect a wireless gamepad with Bluetooth LE.


To play the TV sound on a wireless speaker, you must pair the wireless speaker with the TV. You can pair some wireless speakers and a maximum of 4 Bluetooth LE (low energy) devices. The TV can only play the sound on one speaker at a time. If you connect a subwoofer, the sound is played on the TV and the subwoofer. If you connect a sound bar the sound is played on the sound bar only.

Attention – Audio to Video synchronisation


Many Bluetooth speaker systems have a high, so called, 'latency'. High latency means that the audio lags behind the video, causing unsynchronised 'lip sync'. Before you purchase a wireless Bluetooth speaker system, inform yourself about the newest models and look for a device with a low latency rating. Ask your dealer for advice.

For more information on how to pair a wireless speaker, press the colour key  **Keywords** and look up **Bluetooth, Pairing**.

Pairing a Speaker

In Help, press the colour key  **Keywords** and look up **Bluetooth, Pairing** for more information on pairing wireless devices.







Remove a Speaker

In Help, press the colour key  **Keywords** and look up **Bluetooth, Remove device** for more information on how to unpair (remove) a wireless Bluetooth device.

Subwoofer Volume

If you connect a wireless Bluetooth subwoofer, you can slightly increase or decrease the volume of the subwoofer.

To adjust the volume a little...

- 1 – Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 – Select **Sound > Wireless Speakers > Subwoofer Volume** and press  (right).
- 3 – Press  (up) or  (down) to adjust the value.
- 4 – Press  (left) to go back one step or press  **BACK** to close the menu.

Problems

Lost connection

- Position the wireless speaker within a range of 5 meters from the TV.
- Places with a high amount of wireless activity - apartments with lots of wireless routers - can hamper the wireless connection. Keep the router and wireless speaker as close to the TV as possible.

Audio and Video synchronisation

- Before you purchase a wireless Bluetooth speaker, inform yourself about its quality of Audio to Video synchronisation, commonly called 'lip sync'. Not all Bluetooth devices perform correctly. Ask your dealer for advice.

Sound Settings

Bass

With **Bass**, you can adjust the level of low tones in the sound.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Bass** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Treble

With **Treble**, you can adjust the level of high tones in the sound.

To adjust the level...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Treble** and press **➤** (right).
- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Headphone Volume

With **Headphones Volume**, you can set the volume of a connected headphone separately.

To adjust the volume...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Headphone Volume** and press **➤** (right).

- 4 - Press **▲** (up) or **▼** (down) to adjust the value.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Surround Mode

With **Surround Mode**, you can set the sound effect of the TV speakers.

To set the surround mode...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Surround Mode** and press **OK**.
- 4 - Select **Stereo** or **Incredible Surround** and press **OK**.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Advanced Settings

Auto Volume Levelling

With **Auto Volume Levelling**, you can set the TV to automatically level out sudden volume differences. Typically at the beginning of adverts or when you are switching channels.

To switch on or off...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Advanced > Auto Volume Levelling** and press **OK**.
- 4 - Select **On** or **Off** and press **OK**.
- 5 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Speakers

In this menu you can switch the TV speakers on or off. If you connect a Home Theatre System or a wireless Bluetooth speaker, you can select which device is playing the TV sound. All available loudspeaker systems are shown in this list.

If you use an HDMI CEC connection for an audio device (like a Home Theatre System), you can select EasyLink Autostart. The TV will switch on the audio device, send the TV sound to the device and switch off the TV speakers.

To select the speakers you want...


- 1 - Press **⚙** SETTINGS, select **Speakers** and press **OK**.
- 2 - Select the loudspeaker system you want and press **OK**.
- 3 - Press **◀** (left) to go back one step or press **←**

BACK to close the menu.


Clear Sound

With **Clear Sound**, you improve the sound for speech. Ideal for news programmes. You can switch the speech improvement on or off.


To switch on or off...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **Advanced** > **Clear Sound** and press **OK**.
- 4 - Select **On** or **Off** and press **OK**.
- 5 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.


Audio Out Format

In Help, press the colour key  **Keywords** and look up **Audio Out Format** for more information.


Audio Out Levelling

In Help, press the colour key  **Keywords** and look up **Audio Out Levelling** for more information.

Audio Out Delay


In Help, press the colour key  **Keywords** and look up **Audio Out Delay** for more information.

Audio Out Offset

In Help, press the colour key  **Keywords** and look up **Audio Out Offset** for more information.

TV Placement


As part of the first installation, this setting is set to either **On a TV stand** or **On the Wall**. If you have changed the placement of the TV since then, adjust this setting accordingly for best sound reproduction.

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Sound** and press **OK**.
- 3 - Select **TV Placement** and press **OK**.
- 4 - Select **On a TV Stand** or **On the Wall** and press **OK**.
- 5 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

21.4


Ambilight

Ambilight Style

In Help, press the colour key  **Keywords** and look up **Ambilight Style** for more information.

Ambilight Off

To switch off Ambilight...


- 1 - Press  **AMBILIGHT**.
- 2 - Select **Off** and press **OK**.
- 3 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Ambilight Settings

Brightness

You can set the level of brightness of the Ambilight.


To adjust the level...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Ambilight** > **Brightness** and press **→** (right).
- 3 - Press **▲** (up) or **▼** (down) to adjust the value.
- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Brightness Bottom Side

You can set the level of brightness of the Ambilight at the bottom of the TV. A white table surface might reflect the Ambilight too much.

To adjust the level...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Ambilight** > **Brightness Bottom Side** and press **→** (right).
- 3 - Press **▲** (up) or **▼** (down) to adjust the value.
- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Saturation

You can set the level of colour saturation of the Ambilight.

To adjust the level...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.

- 2 - Select **Ambilight > Saturation** and press **>** (right).
- 3 - Press **▲** (up) or **▼** (down) to adjust the value.
- 4 - Press **<** (left) to go back one step or press **←** **BACK** to close the menu.

Ambilight+hue

What You Need

With **Ambilight+hue**, you can set up your **Philips Hue** lamps to follow the **Ambilight** colours of the TV. The Philips Hue lamps will expand the Ambilight effect across the room. If you don't have any Philips Hue lamps yet, buy the **Philips Hue Starter Kit** (includes a Hue Bridge and 3 Hue bulbs) and install the bulbs and Bridge. You can buy extra Philips Hue bulbs separately.

To set up Ambilight+hue on your TV you need...

- a Philips Hue Bridge
- a few Philips Hue bulbs
- this TV connected to your home network

You can do the complete Ambilight+hue setup on TV and don't need the Ambilight+hue App.

If you do download the free **Ambilight+hue App** on your smartphone or tablet later, you can use this App to adjust some Ambilight+hue settings.

Configure

Step 1 - Network

In this first step, you will prepare the TV to find the **Philips Hue Bridge**. The TV and the Philips Hue Bridge must use the same network.

Setting up...

- 1 - Connect the Philips Hue Bridge to the power outlet.
- 2 - Connect the Philips Hue Bridge to the same router you are using for the TV — use an Ethernet cable to connect.
- 3 - Switch on the Hue bulbs.

To start the configuration...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Ambilight > Ambilight+hue** and press **OK**.
- 3 - Select **Configure** and press **OK**.
- 4 - Select **Start** and press **OK**. The TV will search for the Philips Hue Bridge. If the TV is not yet connected to your network, the TV will start the network setup first. If the Philips Hue Bridge appears in the list ...

go to **Step 2 - Hue Bridge**.

For more info on connecting the TV to your home network, press the colour key **■** **Keywords** and look

up **Network, wireless**.

Step 2 - Hue Bridge

In the next step, you will link up the TV with the **Philips Hue Bridge**.

The TV can only be linked up to one Hue Bridge.

To link the Hue Bridge...

1 - With the TV connected to your home network, it will show the available Hue Bridges. If the TV did not find your Hue Bridge yet, you can select **Scan again** and press **OK**.

If the TV found the only Hue Bridge you have, select the Hue Bridge name and press **OK**.

If you have more than one Hue Bridge available, select the Hue Bridge you want to use and press **OK**.

2 - Select **Start** and press **OK**.

3 - Now go to the **Philips Hue Bridge** and press the link button in the middle of the device. This will link the Hue Bridge with the TV. Do this within 30 seconds. The TV will confirm if a Hue Bridge is now linked to the TV.

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

With the Philips Hue bridge linked to the TV, go to page **Hue bulbs**.

Step 3 - Hue Bulbs

In the next step, you will select the **Philips Hue bulbs** that have to follow the Ambilight.

You can select a maximum of 9 Philips Hue bulbs for Ambilight+hue.

To select the bulbs for Ambilight+hue...

1 - In the list, mark the bulbs that have to follow the Ambilight. To mark a bulb, select the bulb name and press **OK**. When you mark a bulb, the bulb will blink once.

2 - When you're done, select **OK** and press **OK**.

With the bulbs marked for Ambilight+hue, go to page **Configure bulb**.

Step 4 - Configure Bulb

In the following step, you will configure each **Philips Hue bulb**.

To configure each Hue bulb...

1 - Select a bulb to configure and press **OK**. The bulb you selected is flashing.

2 - Select **Start** and press **OK**.

3 - First indicate where you placed the bulb relative to the TV. A correct setting of the **Angle** will send the correct Ambilight colour to the bulb. Select the slider bar to adjust the position.

4 - Secondly, indicate the **Distance** between the bulb and the TV. The further away from the TV, the weaker the Ambilight colour. Select the slider bar to adjust the distance.

5 - Finally, set the **Brightness** of the bulb. Select the slider bar to adjust the brightness.

6 - To stop configuring this bulb, select **OK** and press **OK**.

7 - In the **Configure Ambilight+hue** menu, you can do the same for each bulb.

8 - When all Ambilight+hue bulbs are configured, select **Finish** and press **OK**.

Ambilight+hue is ready for use.

Switch On or Off

You can switch off the Ambilight+hue effect on the bulbs. The bulbs will light up white.

To switch off Ambilight+hue...

1 - Press **⚙️** **SETTINGS**, select **Ambilight+hue** and press **OK**.

2 - Select **Off** or **On** and press **OK**.

3 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Immersion

You can adjust the level of the Ambilight effect for the Ambilight+hue bulbs.

To adjust the Ambilight+hue Immersion...

1 - Press **⚙️** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Ambilight > Ambilight+hue** and press **OK**.

3 - Select **Immersion** and press **➡️** (right).

4 - Press **⬆️** (up) or **⬇️** (down) to adjust the value.

5 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

View Configuration

In **View configuration**, you can consult the current Ambilight+hue configuration. Which network you use, how many bulbs are connected, etc.

To view the current Ambilight+hue setup...

1 - Press **⚙️** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Ambilight > Ambilight+hue** and press **OK**.

3 - Select **View Configuration** and press **OK**.

4 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Reset Configuration

You can reset (uninstall) the complete Ambilight+hue configuration in one go.

To reset the Ambilight+hue configuration...

1 - Press **⚙️** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Ambilight > Ambilight+hue** and press **OK**.

3 - Select **Reset Configuration** and press **OK**. The configuration is reset.

4 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

Lounge Light

With the TV on standby, you can switch on Lounge Light. Lounge Light is Ambilight without video. You can also switch on Lounge Light when the TV is switched on but the screen is switched off to save energy — like when you are listening to a radio station.

Standby

With the TV in standby, press **📺** **AMBILIGHT** to switch on Lounge Light. Press **📺** again to toggle through the different colour schemes as you can find them in the **Follow Colour** menu. Press **📺** again to switch off.

Screen Off

With the TV switched on but the TV screen switched off, press **📺** **AMBILIGHT** to switch on Lounge Light. With the **📺** **AMBILIGHT** key you can toggle through the audio style set in the **Follow Audio** menu or the colour scheme set in the **Follow Colour** menu. Press **📺** again to switch off.

In **Help**, press the colour key **— Keywords** and look up **Screen Off** for more information on how to switch off the screen to save energy while you are listening to a radio station.

Advanced

Wall Colour

With **Wall Colour**, you can neutralise the influence of a coloured wall on the Ambilight colours. Select the colour of the wall behind the TV and the TV will modify the Ambilight colours to appear as they are intended.

To select the colour of the wall . . .

1 - Press **⚙️** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Ambilight > Advanced** and press **OK**.

3 - Select **Wall Colour** and press **OK**.

4 - Select the colour that matches the colour of the wall behind the TV and press **OK**.

5 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

TV Switch Off

With **TV Switch Off**, you can set **Ambilight** to switch off immediately or slowly fade out when you switch off the TV. The slow fade out gives you some time to switch on the lights in your living room.

To select the way how **Ambilight** switches off...

1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Ambilight > Advanced** and press **OK**.

3 - Select **TV Switch Off** and press **OK**.

4 - Select **Fade Out to Off** or **Immediate Switch Off** and press **OK**.

5 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

ISF Tuning

When an ISF expert calibrates the TV, a static **Ambilight** colour can be calibrated. You can select any colour you want to calibrate. With the **ISF Calibration** done, you can select the static **ISF** colour.

To select the **ISF** static colour...

Press **Ⓜ** (**Ambilight**) and select **ISF** and press **OK**.

For more information, press the colour key **■** **Keywords** and look up **ISF® Calibration**.

21.5

Eco Settings

Energy Saving

If you select **Energy Saving**, the TV switches to **Picture Style - Standard** automatically, the most ideal energy conscious setting for the picture and **Ambilight**.

To set the TV in **Energy Saving**...

1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Eco Settings** and press **OK**.

3 - Select **Energy Saving**, the **Picture Style** is set to **Standard** automatically. The setting is marked with a **🍃** (leave).

4 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

Screen Off

If you use the TV to listen to music, you can switch off the TV screen to save energy.

To switch off the TV screen...

1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Eco Settings** and press **OK**.

3 - Select **Screen Off** and press **OK**. The screen will switch off.

4 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

To switch the screen back on, press any key on the remote control.

Light Sensor

To save energy, the built-in ambient light sensor lowers the brightness of the TV screen when the surrounding light darkens. The built-in light sensor automatically adjusts the picture, together with **Ambilight**, to the lighting conditions of the room.

To activate the light sensor...

1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Eco Settings** and press **OK**.

3 - Select **Light Sensor** and press **OK**. When the **Light Sensor** is activated, the setting is marked with a **🍃** (leave).

4 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

Switch Off Timer

If the TV receives a TV signal but you don't press a key on the remote control during a 4 hour period, the TV switches off automatically to save energy. Also, if the TV does not receive a TV signal nor a remote control command for 10 minutes, the TV switches off automatically.

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 remote control of the TV, you should deactivate this automatic switch off.

To deactivate the **Switch Off Timer** ...

1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.

2 - Select **Eco Settings** and press **OK**.

3 - Select **Switch Off Timer** and press **▶** (right).

4 - Press **▲** (up) or **▼** (down) to adjust the value.

The value **0** (Off) deactivates the automatic switch off.

5 - Press **◀** (left) to go back one step or press **←**

BACK to close the menu.


21.6

General Settings

Philips Logo Brightness

You can switch off or adjust the brightness of the Philips logo on the front of the TV.


To adjust or switch off...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Philips Logo Brightness** and press **OK**.
- 4 - Select **Maximum, Medium, Minimum** or **Off** and press **OK**.
- 5 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Home or Shop

If you use the TV at home, set the location to **Home**. If you use the TV in a shop, set the location to **Shop**. In location **Shop**, the Picture Style is set to **Vivid** automatically. The automatic Switch Off Timer is switched off.


To set the TV location...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Location** and press **OK**.
- 4 - Select **Home** or **Shop** and press **OK**.
- 5 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Shop Setup

If the TV is set to **Shop**, some settings were set automatically. You can change these shop settings in **Shop Setup**.

To set the Shop Setup...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Shop Setup** and press **OK**.
- 4 - Change the settings according to your preference.
- 5 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

Demo Me


To present the picture and sound quality of this TV, you can play a stored video clip.

To play the demonstration video clip...

- 1 - Press .
- 2 - Select **Demo Me** and press **OK**. The video clip will start playing.


You can use this video clip to check on the picture and sound quality of the TV. The TV switches to the factory settings when playing the video clip.

EasyLink

In Help, press the colour key  **Keywords** and look up **EasyLink** for more information on EasyLink.

Advanced

TV Guide Data


In Help, press the colour key  **Keywords** and look up **TV Guide Data** for more information.

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.

To switch off the logos...


- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Advanced** > **Channel Logos** and press **OK**.
- 4 - Select **On** or **Off** and press **OK**.
- 5 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

HbbTV

If a TV channel offers HbbTV pages, you must first switch on HbbTV in the TV settings to view the pages.

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings** > **HbbTV** and press **OK**.
- 3 - Select **On** and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** BACK to close the menu.

If you want to avoid access to HbbTV pages on a specific channel, you can block the HbbTV pages for this channel only.

- 1 - Tune to the channel of which you want to block the HbbTV pages.
- 2 - Press  **OPTIONS** and select **HbbTV on This**

- Channel and press **OK**.
- 3 - Select **Off** and press **OK**.

Factory Settings

You can set the TV back to the original TV settings (the factory settings) for picture, sound and Ambilight.

To switch back to the original settings...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Factory Settings** and press **OK**.
- 4 - Select **Ok** and press **OK**.
- 5 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Reinstall TV

You can redo a full TV installation.

To redo a full TV installation...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **General Settings** and press **OK**.
- 3 - Select **Reinstall TV** and press **OK**.
- 4 - Follow the instructions on screen. The installation may take a few minutes.

21.7

Language, Region and Clock

Menu Language

Change the language back to your language.

- 1 - Press **⏏** (the round key above the **OK** key).
- 2 - Select the **⚙** icon (Settings) and press **OK**.
- 3 - Press 5 times **⬇** (down).
- 4 - Press 3 times **➤** (right), select your language and press **OK**.
- 5 - Press **⬅** **BACK** to close the menu.

Language preferences

Preferred Subtitle Language

A digital broadcast can offer several subtitle languages for a programme. You can set a preferred primary and secondary subtitle language. If subtitles in one of these languages are available, the TV will show the subtitles you selected.

To set the primary and secondary subtitle language...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and

- press **OK**.
- 2 - Select **Region and Language** and select **Languages > Primary Subtitles** or **Secondary Subtitles**.
- 3 - Select the language you need and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Preferred Audio Language

A digital broadcast can offer several audio languages (spoken languages) for a programme. You can set a preferred primary and secondary audio language. If audio in one of these languages is available, the TV will switch to the audio language.

To set the primary and secondary audio language...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Languages > Primary Audio** or **Secondary Audio**.
- 3 - Select the language you need and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Clock

Date and Time

Automatic

The standard setting for the TV clock is **Automatic**. The time information comes from the broadcasted UTC - Coordinated Universal Time information.

If the clock is not correct, you can set the TV clock to **Country Dependent**. For some countries, you can select a specific time zone or set a time offset. In some countries, for some network operators, the clock settings are hidden to avoid an incorrect clock setting.

To set the TV clock...


- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Clock > Auto Clock Mode** and press **OK**.
- 3 - Select **Automatic** or **Country Dependent** and press **OK**.
- 4 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Manual

If none of the automatic settings display the time correctly, you can set the time manually.

However, if you schedule recordings from the TV Guide, we recommend not to change the time and date manually. In some countries, for some network operators, the clock settings are hidden to avoid an incorrect clock setting.


To set the TV clock manually (if available)...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Clock > Auto Clock Mode** and press **OK**.
- 3 - Select **Manual** and press **OK**.
- 4 - Press **←** (left) and select **Date or Time** and press **OK**.
- 5 - Press **▲** (up) or **▼** (down) to adjust the value.
- 6 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Time Zone

For some countries, you can select specific time zones to set the TV clock correctly.


To set the time zone (if available)...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language** and select **Clock** and press **OK**.
- 3 - Select **Time Zone** and press **OK**.
- 4 - According to your country, you can select a time zone or set a time offset to correct the TV clock.
- 5 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Sleep Timer

With the **Sleep Timer**, you can set the TV to switch to standby automatically after a preset time.

To set the Sleep Timer...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **General Settings**, select **Sleep Timer** and press **▶** (right). With the slider bar you can set the time to up to 180 minutes in increments of 5 minutes. If set to 0 minutes, the Sleep Timer is switched off. You can always switch off your TV earlier or reset the time during the countdown.
- 3 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.


Remote Control Keyboard

The standard layout of the Remote Control Keyboard is Qwerty.

Azerty keyboard

Depending on your region, the Remote Control Keyboard can be set to Azerty. The Azerty characters are shown at the top right of the relevant keys.



To set the keyboard layout to Azerty...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Region and Language > Remote Control Keyboard**.
- 3 - Select **Azerty** or **Qwerty** and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Cyrillic keyboard

Depending on your region, the Remote Control Keyboard can be switched to Cyrillic characters. The Cyrillic characters are shown at the top right of the keyboard keys.

To write Cyrillic characters...

- 1 - Press  on the remote control.
- 2 - Press  again to switch back to Qwerty.

21.8

Universal Access


Switch On

With **Universal Access** switched on, the TV offers extra features for the deaf, hard of hearing, blind or partially sighted people.

Switch on

If you did not switch on Universal Access during the installation, you can still switch it on. With Universal Access switched on, the option Universal Access is added in the Options menu.

To switch on Universal Access...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Universal Access** and press **▶** (right) to select **Universal Access** and press **OK**.
- 3 - Select **On** and press **OK**.
- 4 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Hard of Hearing

Some digital TV channels broadcast special audio and subtitles adapted for the hard of hearing or deaf people. With **Hearing impaired** switched on, the TV automatically switches to the adapted audio and subtitles, if available. Before you can switch on **Hearing impaired**, you have to switch on **Universal Access**.

To switch on Hearing impaired...

- 1 - While watching a TV channel, press **+** **OPTIONS**, select **Universal Access** and press **OK**.
- 2 - Select **Hearing impaired**, select **On** and press **OK**.

To check whether a hearing impaired audio language is available, press **+** **OPTIONS**, select **Audio Language** and look for an audio language marked with a **+**.

If **Accessibility** does not appear in the **Options** menu, switch on **Universal Access** in **Settings**. For more information, press **—** **Keywords** and look up **Universal Access**, switch on.

Audio Description

Switch On

Digital TV channels can broadcast special audio commentary describing what is happening on screen. To be able to set the visually impaired audio and effects, you have to switch on **Audio Description** first. Also, before you can switch on **Audio Description**, you have to switch on **Universal Access** in the **Settings** menu.

With **Audio Description**, a narrator's commentary is added to the normal audio.

To switch on the commentary (if available)...

- 1 - While watching a TV channel, press **+** **OPTIONS**.
- 2 - Select **Universal Access** > **Audio Description** and press **OK**.
- 3 - Select **On** and press **OK**.

You can check if an audio commentary is available. In the **Options** menu, select **Audio Language** and look for an audio language marked with a **+**.

Mixed Volume

You can mix the volume of the normal audio with the audio commentary.

To mix the volume...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Universal Access**, select **Audio Description** and press **OK**.

3 - With **Audio Description** switched on, you can select **Mixed Volume** and press **OK**.

4 - Press **▲** (up) or **▼** (down) to adjust the value.

5 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

If an audio language with added audio commentary is available, you can also find this setting in **+** **OPTIONS** > **Accessibility** > **Mixed Volume**.

Audio Effects

Some audio commentary can hold extra audio effects, like stereo or fading sound.

To switch on **Audio Effects** (if available)...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Universal Access**, select **Audio Description** and press **OK**.
- 3 - With **Audio Description** switched on, you can select **Audio Effects** and press **OK**.
- 4 - Select **On** and press **OK**.
- 5 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

Speech

The audio commentary can also hold subtitles for the words which are spoken.

To switch on these subtitles (if available) . . .

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Universal Access**, select **Audio Description** and press **OK**.
- 3 - With **Audio Description** switched on, you can select **Audio Effects** and press **OK**.
- 4 - Select **Descriptive** or **Subtitles** and press **OK**.
- 5 - Press **◀** (left) to go back one step or press **←** **BACK** to close the menu.

21.9

Child Lock

Parental Rating

To prevent children from watching a programme not suitable for their age, you can set an age rating.

Digital channels can have their programmes age rated. When the age rating of a programme is equal to or higher than the age you have set as age rating for your child, the programme will be locked. To watch a locked programme, you must enter the **Child Lock** PIN code first.

To set an age rating...

1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.

2 - Select **Child Lock > Parental Rating**.

3 - Enter the 4-digit Child lock PIN code. If you did not set a code yet, select **Set code in Child Lock**. Enter a 4-digit Child lock PIN code and confirm. Now you can set an age rating.

4 - Back in **Parental Rating**, select an age and press **OK**.

5 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

To switch off the parental age rating, select **None**. However, in some countries you must set an age rating.

For some broadcasters/operators, the TV only locks programmes with a higher rating. The parental age rating is set for all channels.

App Lock

In Help, press the colour key **— Keywords** and look up **Lock Apps** for more information.

Set Code / Change Code

The Child Lock PIN code is used to lock or unlock channels or programmes. If the TV didn't ask you to enter a PIN code yet, you can set the Child Lock PIN code here.

To set the lock code or to change the current code...

1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.

2 - Select **Child Lock**, select **Set Code or Change Code** and press **OK**.

3 - Enter a 4 digit code of your choice. If a code is set already, enter the current Child Lock code and then enter the new code twice.

4 - Press **⬅️** (left) to go back one step or press **⬅️** **BACK** to close the menu.

The new code is set.

Forgot your PIN Code?

If you forgot your PIN code, you can override the current code and enter a new code.

1 - Press **⚙️** SETTINGS, select **All Settings** and press **OK**.

2 - Select **Child Lock**, select **Set Code or Change Code** and press **OK**.

3 - Enter the overriding code **8888**.

4 - Now enter a new Child Lock PIN code and enter it again to confirm.

5 - Press **⬅️** (left) to go back one step or press **⬅️**

BACK to close the menu.

21.10

Wireless and Networks

Network

In Help, press the colour key **— Keywords** and look up **Network**, for more information on connecting the TV to a network.

Bluetooth

What You Need

You can connect a wireless device with Bluetooth® to this TV – a wireless speaker, a subwoofer, a sound bar or headphones. You can also connect a wireless gamepad with Bluetooth LE.

To play the TV sound on a wireless speaker, you must pair the wireless speaker with the TV. You can pair some wireless speakers and a maximum of 4 Bluetooth LE (low energy) devices. The TV can only play the sound on one speaker at a time. If you connect a subwoofer, the sound is played on the TV and the subwoofer. If you connect a sound bar the sound is played on the sound bar only.

Attention - Audio to Video synchronisation

Many Bluetooth speaker systems have a high, so called, 'latency'. High latency means that the audio lags behind the video, causing unsynchronised 'lip sync'. Before you purchase a wireless Bluetooth speaker system, inform yourself about the newest models and look for a device with a low latency rating. Ask your dealer for advice.

For more information on how to pair a wireless speaker, press the colour key **— Keywords** and look up **Bluetooth, pairing**.


Pairing a Device

In Help, press the colour key **— Keywords** and look up **Bluetooth, pairing** for more information on pairing wireless devices.

Select a Device

In Help, press the colour key **— Keywords** and look up **Bluetooth, select device** for more information on how to select a wireless speaker.

Remove a Device

In Help, press the colour key  **Keywords** and look up **Bluetooth, remove device** for more information on how to unpair (remove) a wireless Bluetooth device.

21.11






Android Settings

You can set or view several Android specific settings or information. You can find the list of apps installed on your TV and the storage space they need. You can set the language you like to use with Voice. You can configure the onscreen keyboard or allow apps to use your location. Explore the different Android settings.

You can go

to www.support.google.com/androidtv for more information on these settings.

To open these settings..

- 1 - Press  HOME, scroll down and select  **General Settings** and press OK.
- 2 - Press , select **Android Settings** and press OK.
- 3 - Explore the different Android settings.
- 4 - Press  (left) to go back one step or press  BACK to close the menu.

Channel Installation

22.1

Antenna/Cable Installation


Update Channels

Automatic Channel Update

If you receive digital channels, you can set the TV to automatically update these channels.


Once a day, at 6 AM, the TV updates the channels and stores new channels. New channels are stored in the Channels List and are marked with a ★. Channels without a signal are removed. The TV must be in standby to automatically update channels. You can switch off Automatic Channel Update.

To switch off the automatic update...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**.
- 3 - Enter your PIN code if necessary.
- 4 - Select **Automatic Channel Update** and press **Ok**.
- 5 - Select **Off** and press **OK**.
- 6 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

When new channels are found or if channels are updated or removed, a message is shown at TV start up. To avoid this message to appear after every channel update, you can switch it off.

To switch off the message...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**.
- 3 - Enter your PIN code if necessary.
- 4 - Select **Channel Update Message** and press **Ok**.
- 5 - Select **Off** and press **OK**.
- 6 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

In certain countries, the Automatic channel update is done while watching TV or on any moment when the TV is in standby.

Manual Channel Update

You can always start an channel update yourself.

To start a channel update manually...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.

2 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**.

3 - Enter your PIN code if necessary.

4 - Select **Search for Channels** and press **OK**.

5 - Select **Update Digital Channels**, select **Next** and press **OK**.

6 - Select **Start** and press **OK** to update the digital channels. This can take a few minutes.

7 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.


Reinstall Channels

Reinstall All Channels

You can reinstall all channels and leave all other TV settings untouched.

If a PIN code is set, you will need to enter this code before you can reinstall channels.


To reinstall channels...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**.
- 3 - Enter your PIN code if necessary.
- 4 - Select **Search for Channels** and press **OK**.
- 5 - Select **Reinstall Channels**, select **Next** and press **OK**.
- 6 - Select the country where you are now and press **OK**.
- 7 - Select **Next** and press **OK**.
- 8 - Select the type of installation you want, **Antenna (DVB-T)** or **Cable (DVB-C)** and press **OK**.
- 7 - Select **Next** and press **OK**.
- 10 - Select the type of channels you want, **Digital and Analogue Channels** or **Only Digital Channels** and press **OK**.
- 7 - Select **Next** and press **OK**.
- 12 - Select **Start** and press **OK** to update the digital channels. This can take a few minutes.
- 13 - Press **←** (left) to go back one step or press **←** **BACK** to close the menu.

Reinstall TV

You can redo a full TV installation. The TV is completely reinstalled.

To redo a full TV installation...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings**, select **Reinstall TV** and press **OK**.
- 3 - Enter your PIN code if necessary.
- 4 - Select **Yes** and press **OK** to confirm.
- 5 - The TV will reinstall completely. The installation

can take a few minutes.

6 - Press ◀ (left) to go back one step or press ← BACK to close the menu.

Factory Settings

You can set the TV back to the original TV settings (the factory settings) for picture, sound and Ambilight.

To switch back to the original settings...

- 1 - Press ⚙ SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **General Settings**, select **Factory Settings** and press **OK**.
- 3 - Press ◀ (left) to go back one step or press ← BACK to close the menu.

Channel List Copy

Introduction

Channel List Copy is intended for dealers and expert users. In some countries, Channel List Copy is only available for copying satellite channels.

With Channel List Copy, you can copy the channels installed on one TV onto another Philips TV of the same range. With Channel List Copy, you avoid the time-consuming channel search by uploading a predefined channel list on a TV. Use a USB flash drive of minimum 1 GB.

Conditions

- Both TVs are from the same year range.
- Both TVs have the same hardware type. Check the hardware type on the TV type plate on the back of the TV. Typically noted as Q . . . LA
- Both TVs have compatible software versions.

Current channel version

To check the current version of the channel list...

- 1 - Press ⚙ SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels**, select **Channel List Copy**, select **Current Version** and press **OK**.
- 3 - Press **OK** to close.

Current software version

To check the current version of the TV software...

- 1 - Press ⚙ SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Update Software**, select **Current Software Info** and press **OK**.
- 3 - The version, release notes and creation date are shown. Also, the Netflix ESN Number is shown if available.
- 4 - Press ◀ (left) to go back one step or press ← BACK to close the menu.

Copy a Channel List

To copy a channel list...

- 1 - Switch on the TV. This TV should have channels installed.
- 2 - Plug in a USB flash drive.
- 3 - Press ⚙ SETTINGS, select **All Settings** and press **OK**.
- 4 - Select **Channels**, select **Channel List Copy**, select **Copy to USB** and press **OK**. Enter your PIN code if necessary.
- 5 - When copying is done, unplug the USB flash drive.
- 6 - Press ◀ (left) to go back one step or press ← BACK to close the menu.

Now you can upload the copied channel list onto another Philips TV.

Upload a Channel List

To not Installed TVs

Depending on whether your TV is already installed or not, you must use a different method to upload a channel list.

To a TV that is not yet installed

- 1 - Plug in the power plug to start the installation and select language and country. You can skip the channel search. Finish the installation.
- 2 - Plug in the USB flash drive that holds the channel list of the other TV.
- 3 - To start the channel list upload, press ⚙ SETTINGS, select **All Settings** and press **OK**.
- 4 - Select **Channels**, select **Channel List Copy**, select **Copy to TV** and press **OK**. Enter your PIN code if necessary.
- 5 - The TV notifies you if the channel list is copied to the TV successfully. Unplug the USB flash drive.


To Installed TVs

Depending on whether your TV is already installed or not, you must use a different method to upload a channel list.

To an already installed TV

- 1 - Verify the country setting of the TV. (To verify this setting, see chapter Reinstall All Channels. Start this procedure until you reach the country setting. Press ← BACK to cancel the installation.)
If the country is correct continue with step 2.
If the country is not correct, you need to start a reinstallation. See chapter Reinstall All Channels and start the installation. Select the correct country and skip the channels search. Finish the installation. When done, continue with step 2.

2 - Plug in the USB flash drive that holds the channel list of the other TV.

3 - To start the channel list upload, press  SETTINGS, select **All Settings** and press **OK**.

4 - Select **Channels**, select **Channel List Copy**, select **Copy to TV** and press **OK**. Enter your PIN code if necessary.

5 - The TV notifies you if the channel list is copied to the TV successfully. Unplug the USB flash drive.

DVB-T or DVB-C

DVB-T or DVB-C Reception

During the channel installation, just before you search for channels, you selected Antenna (DVB-T) or Cable (DVB-C). Antenna DVB-T searches for terrestrial analogue channels and digital DVB-T/T2 channels. Cable DVB-C searches for analogue and digital channels available from a cable DVB-C operator.

DVB-C Channel Installation

For ease of use, all DVB-C settings are set to automatic.

For some countries the TV can enter the network ID of the operator automatically. If the DVB-C installation then fails, restart the installation and enter the network ID and/or network frequency values you received from the DVB-C operator when the TV asks for them during the installation.

Channel Number Conflicts

In some countries, different TV channels (broadcasters) might have the same channel number. While installing, the TV shows the list with channel number conflicts. You need to select which TV channel you want to install on a channel number with multiple TV channels.

DVB Settings

Network Frequency Mode

If you intend to use the fast **Quick Scan** method in **Frequency Scan** to search for channels, select **Automatic**. The TV will use 1 of the predefined network frequencies (or HC - homing channel) as used by most cable operator in your country.

If you received a specific network frequency value to search for channels, select **Manual**.

Network Frequency

With the **Network Frequency Mode** set to **Manual**, you can enter the network frequency value received from your cable operator here. To enter the value, use the number keys.

Frequency Scan

Select the method of searching for channels. You can select the faster **Quick Scan** method and use the predefined settings used by most cable operator in your country.

If this results in having no channels installed or if some channels are missing, you can select the extended **Full Scan** method. This method will take more time to search for and install channels.

Frequency Step Size

The TV searches for channels in steps of **8MHz**.

If this results in having no channels installed or if some channels are missing, you can search in smaller steps of **1MHz**. Using the 1MHz steps will take more time to search for and install channels.

Digital Channels

If you know your cable operator is not offering digital channels, you can skip searching for digital channels.

Select **Off**.


Analogue Channels

If you know your cable operator is not offering analogue channels, you can skip searching for analogue channels.

Select **Off**.

Free / Scrambled

If you have a subscription and a CAM - Conditional Access Module for pay TV services, select **Free + Scrambled**. If you did not subscribe to pay TV channels or services, you can select **Free Channels Only** .

For more information, press the colour key  **Keywords** and look up **CAM - Conditional Access Module**.

Reception Quality

You can check the quality and signal strength of a digital channel. If you have your own antenna, you can reposition the antenna to try and improve the reception.

To check the reception quality of a digital channel...

- 1 - Tune to the channel.
- 2 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 3 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**. Enter your PIN code if necessary.
- 4 - Select **Digital: Reception Test** and press **OK**.
- 5 - Select **Search** and press **OK**. The digital frequency is shown for this channel.
- 6 - Select **Search** again and press **OK** to check the signal quality of this frequency. The test result is shown on screen. You can reposition the antenna or check the connections to possibly improve the reception.
- 7 - You can also change the frequency yourself. Select the frequency number one by one and use the **▲** (up) or **▼** (down) keys to change the value. Select **Search** and press **OK** to test the reception again.
- 8 - Press **◀** (left) to go back one step or press **←** BACK to close the menu.

Manual Installation

Analogue TV channels can be manually installed, channel by channel.

To install analogue channels manually...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels**, select **Antenna/Cable Installation** and press **OK**. Enter your PIN code if necessary.
- 3 - Select **Analogue: Manual Installation** and press **OK**.

• System

To set up the TV system, select **System**. Select your country or the part of the world where you are now and press **OK**.

• Search Channel

To find a channel, select **Search Channel** and press **OK**. You can enter a frequency yourself to find a channel or let the TV search for a channel. Press **▶** (right) to select **Search** and press **OK** to search for a channel automatically. The found channel is shown on screen and if the reception is poor, press **Search** again. If you want to store the channel, select **Done** and press **OK**.

• Store

You can store the channel on the current channel number or as a new channel number.

Select **Store Current Channel** or **Store as New Channel** and press **OK**. The new channel number is shown briefly.

You can redo these steps until you have found all available analogue TV channels.

22.2

Satellite Installation

Installing Satellites

About Installing Satellites

This TV has two built-in satellite DVB-S/DVB-S2 tuners.

Up to 4 Satellites

You can install up to 4 satellites (4 LNBs) on this TV. Select the exact number of satellites you wish to install at the start of the installation. This will speed up the installation.

Unicable

You can use a Unicable system to connect the antenna dish to the TV. You can select Unicable for 1 or for 2 satellites at the start of the installation.

MDU - Multi-Dwelling-Unit

The built-in satellite tuners support MDU on the Astra satellites and for Digiturk on the Eutelsat satellite. MDU on Türksat is not supported.

Start the Installation

Make sure your satellite dish is connected correctly and is perfectly aligned before you start the installation.

To start the satellite installation...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels** and press **OK**.
- 3 - Select **Satellite Installation** and press **OK**. Enter your PIN code if necessary.
- 4 - Select **Search for Satellite** and press **OK**.
- 5 - Select **One Tuner** or **Two Tuners** and press **OK**. The TV has 2 built-in satellite tuners. Make your selection according to how many satellite dish cables you have available.
- 6 - Select **Next** and press **OK**.

In the next screen you can start searching for satellites. The current installation setting is mentioned on screen. Before you start searching for satellites, you can change or check the installation

settings. See next chapter Satellite Installation Settings.

To start searching for satellites...

1 - Select **Search** and press **OK**. The TV will search for the satellites available on the alignment of your antenna dish. This may take a few minutes. If a satellite is found, its name and reception strength are shown on screen.

2 - If the TV shows the satellite(s) you want, select **Install** and press **OK**. If the TV did not find the satellite(s) you expected to find, the dish alignment might be altered or a cable might be disconnected. You can select **Search Again** and press **OK**.

3 - If a satellite offers **Channel Packages**, the TV will show the available packages for that satellite. Select the package you need and press **OK**.

4 - Select **Next** and press **OK**. Some packages offer a **Quick** or **Full** install for their available channels, select one or the other. The TV will install the satellite channels and radio stations.

5 - To store the satellite setup and installed channels and radio stations, select **Finish** and press **OK**.

Satellite Installation Settings

The satellite installation settings are preset according to your country. These settings determine how the TV searches and installs satellites and its channels. You can always change these settings.

To change the satellite installation settings...

1 - Start the satellite installation.

2 - On the screen where you can start searching for satellites, select **Settings** and press **OK**.

3 - Select the number of satellites you want to install or select one of the Unicable systems. When you select Unicable, you can choose the User Band Numbers and enter the User Band Frequencies for each tuner.

4 - When you're done, select **Next** and press **OK**.

5 - On the Settings menu, press the colour key **■** **Done** to return to the screen to start searching for satellites.

Homing Transponder and LNB

In some countries, you can adjust the expert settings for homing transponder and each LNB. Only use or change these settings when a normal installation fails. If you have non-standard satellite equipment, you can use these settings to overrule the standard settings. Some providers might give you some transponder or LNB values which you can enter here.

Satellite CAMs

If you use a CAM – a Conditional Access Module with a smart card – to watch satellite channels, we recommend to do the satellite installation with the CAM inserted in the TV.

Most CAMs are used to descramble channels.

Newest generation CAMs (CI+ 1.3 with Operator Profile), can install all the satellite channels by themselves on your TV. The CAM will invite you to install its satellite(s) and channels. These CAMs not only install and descramble the channels but also handle regular channel updates.

Channel Packages

Satellites can offer channel packages that bundle free channels (free-to-air) and offer a sorting that suits a country. Some satellites offer subscription packages – a collection of channels you pay for.

If you choose a subscription package, the TV might ask you to select a Quick or Full installation. Select **Quick** to install the channels of the package only or select **Full** to install the package and all other available channels too. We recommend a Quick installation for subscription packages. If you have additional satellites that are not part of your subscription package, we recommend a Full installation. All installed channels are put in the channels list All.

Unicable Setup

The Unicable System

You can use a Single Cable system, MDU or Unicable system to connect the antenna dish to the TV. A Single Cable system uses one cable to connect the satellite dish to all satellite tuners in its system. A Single Cable system is typically used in apartment buildings. If you use a Unicable system, the TV will ask you to assign a user band number and corresponding frequency during the installation. You can install 1 or 2 satellites with Unicable on this TV.

If you notice some missing channels after a Unicable installation, another installation might have been done at the same moment on the Unicable system. Do the installation again to install the missing channels.

In Help, press the colour key **■** **Keywords** and look up **Unicable**, **connect** for more information.

User Band Number

In a Unicable system, each connected satellite tuner must be numbered (e.g. 0, 1, 2 or 3 etc.).

You can find the available user bands and their number on the Unicable switchbox. User band is sometimes shortened as UB. There are Unicable switchboxes that offer 4 or 8 user bands. If you select Unicable in the settings, the TV will ask you to assign the unique user band number for each built-in satellite tuners. A satellite tuner cannot have the same user band number as another satellite tuner in the Unicable system.

User Band Frequency

Next to the unique user band number, the built-in satellite receiver needs the frequency of the selected user band number. These frequencies are mostly shown next to the user band number on a Unicable switchbox.

Automatic Channel Update

If you have digital satellite channels installed, you can set the TV to automatically update these channels.

Once a day, at 6 AM, the TV updates the channels and stores new channels. New channels are stored in the Channels List and are marked with a ★. Channels without a signal are removed and if a satellite operator reorders its channel package, the channel list of the TV will be updated. The TV must be in standby to automatically update channels. You can switch off Automatic Channel Update.

To switch off the automatic update...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels** and press **OK**.
- 3 - Select **Satellite Installation** and press **OK**. Enter your PIN code if necessary.
- 4 - Select **Automatic Channel Update** and press **OK**.
- 5 - Select **Off** and press **OK**.
- 6 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

You can set the TV to only update the channels of a specific satellite.

To mark satellites for updating...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Channels** and press **OK**.
- 3 - Select **Satellite Installation** and press **OK**. Enter your PIN code if necessary.
- 4 - Select **Automatic Update Option** and press **OK**.
- 5 - In the list of satellites, select a satellite and press

OK to mark or unmark.

6 - Select **Off** and press **OK**.

7 - Press **⬅** (left) to go back one step or press **⬅** BACK to close the menu.

In certain countries, the automatic channel update is done while watching TV or on any moment when the TV is in Standby.

Manual Channel Update

You can always start an channel update yourself.

To start a channel update manually...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Satellite Installation** and press **OK**.
- 3 - Select **Search for Satellites** and press **OK**.
- 4 - Select **Update Channels** and press **OK**. The TV will start updating. The update may take a few minutes.
- 5 - Select **Finish** and press **OK**.

Add a Satellite

You can add an additional satellite to your current satellite installation. The installed satellites and their channels remain untouched. Some satellite operators do not allow adding a satellite.

The additional satellite should be seen as an extra, it is not your main satellite subscription or not the main satellite of which you use its channel package. Typically, you would add a 4th satellite when you have 3 satellites already installed. If you have 4 satellites installed, you might consider removing one first to be able to add a new satellite.

Setup

If you currently have only 1 or 2 satellites installed, the current installation settings might not allow adding an extra satellite. If you need to change the installation settings, you must redo the complete satellite installation. You cannot use **Add satellite** if a change of settings is needed.

To add a satellite...

- 1 - Press **⚙** SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Satellite Installation** and press **OK**.
- 3 - Select **Search for Satellites** and press **OK**.
- 4 - Select **Add Satellite** and press **OK**. The current satellites are shown.
- 5 - Select **Search** and press **OK**. The TV will search for new satellites.
- 6 - If the TV has found one or more satellites, select **Install** and press **OK**. The TV installs the channels of the found satellites.

7 - Select **Finish** and press **OK** to store the channels and radio stations.

Remove a Satellite

You can remove one or more satellites from your current satellite installation. You remove the satellite and its channels. Some satellite operators do not allow removing a satellite.

To remove satellites...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Satellite Installation** and press **OK**.
- 3 - Select **Search for Satellites** and press **OK**.
- 4 - Select **Remove Satellite** and press **OK**. The current satellites are shown.
- 5 - Select a satellite and press **OK** to mark or unmark them to remove.
- 6 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Manual Installation

Manual Installation is intended for expert users.

You can use Manual Installation to test the signal strength of an LNB. You can test the signal through each tuner individually, tuner 1 (Sat 1) or tuner 2 (Sat 2).

Alternatively, you can use Manual Installation to quickly add new channels from a satellite transponder. You can only add channels on tuner 1 (Sat 1). To add channels, you need to know the frequency and polarization of the transponder. The TV will install all channels of that transponder. If the transponder was installed before, all its channels - the former and the new ones - are moved to the end of the channel list **All**.

You cannot use Manual installation if you need to change the number of satellites. If this is needed, you have to do a complete installation with **Install Satellites**.

To test an LNB or store channels from a transponder...

- 1 - Press **⚙** **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Satellite Installation** and press **OK**.
- 3 - Select **Manual Installation** and press **OK**.
- 4 - Select **Tuner** and press **OK**.
- 5 - Select the tuner you want to test and press **OK**.
- 6 - If you have more than 1 satellite installed, select the satellite/LNB for which you want to test or add channels and press **OK**.
- 7 - Select **Polarization** and press **OK**. Select the polarization you need and press **OK**.
- 8 - If you set the **Symbol Rate Mode** to **Manual**, you can enter the symbol rate in **Symbol Rate** manually.

9 - Select **Search** and press **OK**. The signal strength is shown on screen.

10 - If you want to store the channels of a new transponder, select **Store** and press **OK**.

11 - Press **⬅** (left) to go back one step or press **⬅** **BACK** to close the menu.

Homing Transponder and LNB

In some countries, you can adjust the expert settings for homing transponder and each LNB. Only use or change these settings when a normal installation fails. If you have non-standard satellite equipment, you can use these settings to overrule the standard settings. Some providers might give you some transponder or LNB values which you can enter here.

LNB Power

By default, LNB Power is set to **On**.

22 kHz Tone

By default, the Tone is set to **Auto**.

Low LO Frequency / High LO Frequency

The local oscillator frequencies are set to standard values. Adjust the values only in case of exceptional equipment that needs different values.

Problems

The TV cannot find the satellites I want or the TV installs the same satellite twice

- Make sure that the correct number of satellites is set in **Settings** at the start of the installation. You can set the TV to search for **One**, **Two** or **3/4** satellites.

A dual head LNB cannot find a second satellite

- If the TV finds one satellite but cannot find a second one, turn the dish a few degrees. Align the dish to get the strongest signal on the first satellite. Check the signal strength indicator of the first satellite on screen. With the first satellite set at the strongest signal, select **Search** again to find the second satellite.
- Make sure the settings are set to **Two Satellites**.

Changing the installation settings did not solve my problem

- All settings, satellites and channels are only stored at the end of the installation when you finish.

All satellite channels are gone

- If you use a Unicable system, make sure you assigned two unique user band numbers for both built-in tuners in the Unicable settings. It might be that another satellite receiver in your Unicable system is using the same user band number.

Some satellite channels seem to have disappeared from the channel list

- If some channels seem to be gone or displaced, the broadcaster might have changed the transponder location of these channels. To restore the channel positions in the channel list, you can try an update of the channel package.

I cannot remove a satellite

- Subscription packages do not allow removing a satellite. To remove the satellite, you have to do a complete installation again and select another package.

Sometimes the reception is poor

- Check if the satellite dish is solidly mounted. Strong winds can move the dish.
- Snow and rain can degrade the reception.

Software

23.1


Update Software

Update from Internet



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.

With the message on screen, select **Update** and follow the instructions on screen.

You can also look for a software update yourself.

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 up. Do not press the power switch  on the TV or on the remote control during the software update.

To look for a software update yourself...


- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Update Software**, select **Search for Updates** and press **OK**.
- 3 - Select **Internet** and press **OK**.
- 4 - The TV will look for an update on the Internet.
- 5 - If an update is available, you can update the software right away.
- 6 - A software update can take several minutes. Do not press the  key on the TV or remote control.
- 7 - When the update is done, the TV will return to the channel you were watching.

Update from USB

It might be necessary to update the TV software.

You need a computer with an high-speed Internet connection and a USB flash drive to upload the software on the TV. Use a USB flash drive with at least 500MB free space. Make sure that write protection is switched off.

To update the TV software...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Update Software**, select **Search for Updates** and press **OK**.
- 3 - Select **USB** and press **OK**.

Identify the TV

- 1 - Insert the USB flash drive into one of the USB


connections of the TV.

2 - Select **Write to USB** and press **OK**. An identification file is written on the USB flash drive.

Download the software

- 1 - Insert the USB flash drive into your computer.
- 2 - On the USB flash drive, locate the file **update.htm** and double click it.
- 3 - Click **Send ID**.
- 4 - If new software is available, download the .zip file.
- 5 - After the download, unzip the file and copy the file **autorunupg** (the name starts with 'autorun...') onto the USB flash drive. Do not place this file in a folder.

Update the TV software

- 1 - Insert the USB flash drive into the TV again. The update starts automatically.
- 2 - A software update can take several minutes. Do not press the  key on the TV or remote control. Do not remove the USB flash drive.
- 3 - When the update is done, the TV will return to the channel you were watching.




If a power cut occurs during the update, never remove the USB flash drive from the TV. When the power returns, the update will continue.

To prevent an accidental update of the TV software, delete the autorunupg file from the USB flash drive.

23.2

Software Version

To view the current TV software version...

- 1 - Press  **SETTINGS**, select **All Settings** and press **OK**.
- 2 - Select **Update Software**, select **Current Software Info** and press **OK**.
- 3 - The version, release notes and creation date are shown. Also, the Netflix ESN Number is shown if available.
- 4 - Press  (left) to go back one step or press  to close the menu.

23.3

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 licences.

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 .

Intellectual Property Dept.
TP Vision Europe B.V.
Prins Bernhardplein 200
1097 JB Amsterdam
The Netherlands

23.4

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.

Android (5.0.0)

This tv contains the Android Lollipop Software. Android is a Linux-based operating system designed primarily for touchscreen mobile devices such as smartphones and tablet computers. This software will also be reused in TPVision Android based TV's. The original download site for this software is : <https://android.google.com> This piece of software is made available under the terms and conditions of the Apache license version 2, which can be found below. Android APACHE License Version 2 (<http://source.android.com/source/licenses.html>)

Busybox (1.18.5)

The original download site for this software is : <http://www.busybox.net> This piece of software is made available under the terms and conditions of the GPL v2 license.

linux kernel (3.10.27)

This tv contains the Linux Kernel. The original download site for this software is : <http://www.kernel.org/>. This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below. Additionally, following exception applies : "NOTE! This copyright does *not* cover user programs that use kernel services by normal system calls - this is merely

considered normal use of the kernel, and does *not* fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the linux kernel) is copyrighted by me and others who actually wrote it. Also note that the only valid version of the GPL as far as the kernel is concerned is `_this_` particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated. Linus Torvalds"

libcurl (7.21.7)

libcurl is a free and easy-to-use client-side URL transfer library, supporting DICT, FILE, FTP, FTPS, Gopher, HTTP, HTTPS, IMAP, IMAPS, LDAP, LDAPS, POP3, POP3S, RTMP, RTSP, SCP, SFTP, SMTP, SMTPS, Telnet and TFTP. libcurl supports SSL certificates, HTTP POST, HTTP PUT, FTP uploading, HTTP form based upload, proxies, cookies, user+password authentication (Basic, Digest, NTLM, Negotiate, Kerberos), file transfer resume, http proxy tunneling and more! The original download site for this software is : <http://curl.haxx.se/libcurl/COPYRIGHT> AND PERMISSION NOTICE Copyright (c) 1996 - 2010, Daniel Stenberg, daniel@haxx.se. All rights reserved. Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT OF THIRD PARTY RIGHTS. INNO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

libfreetype (2.4.2)

FreeType is a software development library, available in source and binary forms, used to render text on to bitmaps and provides support for other font-related operations. The original download site for this software is : <https://github.com/julienr/libfreetype-android> FreeType License

libjpeg (8a)

This package contains C software to implement JPEG image encoding, decoding, and transcoding. This software is based in part on the work of the Independent JPEG Group.-----The

authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy. This software is copyright (C) 1991-1998, Thomas G. Lane. All Rights Reserved except as specified below. Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions: (1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation. (2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group". (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind. These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us. Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software". We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

libpng (1.4.1)

libpng is the official Portable Network Graphics (PNG) reference library (originally called pnglib). It is a platform-independent library that contains C functions for handling PNG images. It supports almost all of PNG's features, is extensible. The original download site for this software is : <https://github.com/julienr/libpng-android> libpng license

openssl (1.0.1j)

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. The original download site for this software is : <http://openssl.org/> OpenSSL license

Zlib compression library (1.2.7)

zlib is a general purpose data compression library. All the code is thread safe. The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951

(deflate format) and rfc1952 (gzip format) Developed by Jean-loup Gailly and Mark Adler (C) 1995-2012 Jean-loup Gailly and Mark Adler This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software. Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions: 1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required. 2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software. 3. This notice may not be removed or altered from any source distribution. Jean-loup Gailly Mark Adler jloup@gzip.org madler@alumni.caltech.edu

dvbsnoop (1.2)

dvbsnoop is a DVB / MPEG stream analyzer program. For generating CRC32 values required for composing PAT, PMT, EIT sections The original download site for this software is : <https://github.com/a4tunado/dvbsnoop/blob/master/src/misc/crc32.c> PL v2 <http://dvbsnoop.sourceforge.net/dvbsnoop.html>

ezxml (0.8.6)

ezXML is a C library for parsing XML documents. The original download site for this software is : <http://ezxml.sourceforge.net>. Copyright 2004, 2005 Aaron Voisine. This piece of software is made available under the terms and conditions of the MIT license, which can be found below.

Protobuf (2.0a)

Protocol Buffers are a way of encoding structured data in an efficient yet extensible format. Google uses Protocol Buffers for almost all of its internal RPC protocols and file formats. The original download site for this software is : <http://code.google.com/p/protobuf> Copyright 2008, Google Inc. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND

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guava (11.0.2)

The Guava project contains several of Google's core libraries that we rely on in our Java-based projects: collections, caching, primitives support, concurrency libraries, common annotations, string processing, I/O, and so forth. The original download site for this software is : <http://code.google.com/>This piece of software is made available under the terms and conditions of the Apache License version 2.

gSoap (2.7.15)

The gSOAP toolkit is an open source C and C++ software development toolkit for SOAP/XML Web services and generic (non-SOAP) C/C++ XML data bindings. Part of the software embedded in this product is gSOAP software. Portions created by gSOAP are Copyright 2001-2009 Robert A. van Engelen, Genivia inc. All Rights Reserved. THE SOFTWARE IN THIS PRODUCT WAS IN PART PROVIDED BY GENIVIA INC AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

restlet (2.1.4)

Restlet is a lightweight, comprehensive, open source REST framework for the Java platform. Restlet is suitable for both server and client Web applications. It supports major Internet transport, data format, and service description standards like HTTP and HTTPS, SMTP, XML, JSON, Atom, and WADL. The original download site for this software is : <http://restlet.org>This piece of software is made available under the terms and conditions of the Apache License version 2.

Opera Web Browser (SDK 3.5)

This TV contains Opera Browser Software.

dlmalloc (2.7.2)

Opera uses Doug Lea's memory allocator The original download site for this software is : <http://gee.cs.oswego.edu/dl/html/malloc.html>

double-conversion

Opera uses double-conversion library by Florian Loitsch, faster double : string conversions (dtoa and strtod). The original download site for this software is : <http://code.google.com/p/double-conversion/>Copyright 2006-2011, the V8 project authors. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

EMX (0.9c)

Opera uses EMX, which is an OS/2 port of the gcc suite. Opera uses modified versions of the sprintf and sscanf methods from this C library.* The emx libraries are not distributed under the GPL. Linking an * application with the emx libraries does not cause the executable * to be covered by the GNU General Public License. You are allowed * to change and copy the emx library sources if you keep the copyright * message intact. If you improve the emx libraries, please send your * enhancements to the emx author (you should copyright your * enhancements similar to the existing emx libraries).

freetype (2.4.8)

Opera uses freetype FreeType 2 is a software-font engine that is designed to be small, efficient, highly customizable and portable, while capable of producing high-quality output (glyph images).The original download site for this software is : <http://www.freetype.org/freetype2/index.html>FreeType License

HKSCS (2008)

Opera uses HKSCS: The Government of the Hong Kong Special Administrative Region HKSCS mappingsThe original download site for this software is : <http://www.ogcio.gov.hk>Before downloading the Software or Document provided on this Web page, you should read the following terms (Terms of Use). By downloading the Software and Document, you are deemed to agree to these terms.1. The Government of the Hong Kong Special Administrative Region (HKSARG) has the right to amend or vary the terms under this Terms of Use from time to time at its sole discretion.2. By using the Software and Document, you irrevocably agree that the HKSARG may from time to time vary this Terms of Use without further notice to you and you also irrevocably agree to be bound by the most updated version of the Terms of Use.3. You have the sole responsibility of obtaining the most updated version of the Terms of Use which is available in the "Digital 21" Web site (http://www.ogcio.gov.hk/en/business/tech_promotion/ccli/terms/terms.htm).4. By accepting this Terms of Use, HKSARG shall grant you a non-exclusive license to use the Software and Document for any purpose, subject to clause 5 below.5. You are not allowed to make copies of the Software and Document except it is incidental to and necessary for the normal use of the Software. You are not allowed to adapt or modify the Software and Document or to distribute, sell, rent, or make available to the public the Software and Document, including copies or an adaptation of them.6. The Software and Document are protected by copyright. The licensors of the Government of Hong Kong Special Administrative Region are the owners of all copyright works in the Software and Document. All rights reserved.7. You understand and agree that use of the Software and Document are at your sole risk, that any material and/or data downloaded or otherwise obtained in relation to the Software and

Document is at your discretion and risk and that you will be solely responsible for any damage caused to your computer system or loss of data or any other loss that results from the download and use of the Software and Document in any manner whatsoever.8. In relation to the Software and Document, HKSARG hereby disclaims all warranties and conditions, including all implied warranties and conditions of merchantability, fitness for a particular purpose and non-infringement.9. HKSARG will not be liable for any direct, indirect, incidental, special or consequential loss of any kind resulting from the use of or the inability to use the Software and Document even if HKSARG has been advised of the possibility of such loss.10. You agree not to sue HKSARG and agree to indemnify, defend and hold harmless HKSARG, its officers and employees from any and all third party claims, liability, damages and/or costs (including, but not limited to, legal fees) arising from your use of the Software and Document, your violation of the Terms of Use or infringement of any intellectual property or other right of any person or entity.11. The Terms of Use will be governed by and construed in accordance with the laws of Hong Kong.12. Any waiver of any provision of the Terms of Use will be effective only if in writing and signed by HKSARG or its representative.13. If for any reason a court of competent jurisdiction finds any provision or portion of the Terms of Use to be unenforceable, the remainder of the Terms of Use will continue in full force and effect.14. The Terms of Use constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes and replaces all prior or contemporaneous understandings or agreements, written or oral, regarding such subject matter.15. In addition to the licence granted in Clause 4, HKSARG hereby grants you a non-exclusive limited licence to reproduce and distribute the Software and Document with the following conditions:(i) not for financial gain unless it is incidental;(ii) reproduction and distribution of the Software and Document in complete and unmodified form; and(iii) when you distribute the Software and Document, you agree to attach the Terms of Use and a statement that the latest version of the Terms of Use is available from the "Office of the Government Chief Information Officer" Web site (http://www.ogcio.gov.hk/en/business/tech_promotion/ccli/terms/terms.htm).

IANA (Dec 30 2013)

Opera uses Internet Assigned Numbers Authority: Character encoding tag names and numbers.The original download site for this software is : <https://www.iana.org>

ICU (3)

Opera uses ICU : International Components for Unicode: Mapping table for GB18030The original download site for this software is : <http://site.icu-project.org>

ect.org/http://source.icu-project.org/repos/icu/icu/trunk/license.html

MozTW (1.0)

Opera uses MoxTW : MozTW project: Big5-2003 mapping tables. The original download site for this software is : <https://moztw.org> This piece of software is made available under the terms and conditions of CCPL

NPAPI (0.27)

Opera uses NPAPI : Netscape 4 Plugin API: npapi.h, npfunctions.h, npruntime.h and nptypes.h. Distributed as part of the Netscape 4 Plugin SDK. The original download site for this software is : wiki.mozilla.org This piece of software is made available under the terms and conditions of mozilla license as described below.

Unicode (4.0)

Opera uses Unicode : Data from the Unicode character database. The original download site for this software is : www.unicode.org <http://www.unicode.org/copyright.html>

Webp (0.2.0)

Opera uses Webp : libwebp is a library for decoding images in the WebP format. Products may use it to decode WebP images. The turbo servers will eventually re-decode images to WebP. The original download site for this software is : <https://developers.google.com/speed/webp/?csw=1> <https://chromium.googlesource.com/webm/libwebp/> Additional IP Rights Grant (Patents)"This implementation" means the copyrightable works distributed by Google as part of the WebM Project. Google hereby grants to you a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, transfer, and otherwise run, modify and propagate the contents of this implementation of VP8, where such license applies only to those patent claims, both currently owned by Google and acquired in the future, licensable by Google that are necessarily infringed by this implementation of VP8. This grant does not include claims that would be infringed only as a consequence of further modification of this implementation. If you or your agent or exclusive licensee institute or order or agree to the institution of patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that this implementation of VP8 or any code incorporated within this implementation of VP8 constitutes direct or contributory patent infringement, or inducement of patent infringement, then any patent rights granted to you under this License for this implementation of VP8 shall terminate as of the date such litigation is filed.

FaceBook SDK (3.0.1)

This TV contains Facebook SDK. The Facebook SDK for Android is the easiest way to integrate your Android app with Facebook's platform. The SDK provides support for Login with Facebook authentication, reading and writing to Facebook APIs and support for UI elements such as pickers and dialogs. The original download site for this software is : <https://developer.facebook.com/docs/android> This piece of software is made available under the terms and conditions of the Apache License version 2.

iptables (1.4.7)

iptables is a user space application program that allows a system administrator to configure the tables provided by the Linux kernel firewall (implemented as different Netfilter modules) and the chains and rules it stores. Different kernel modules and programs are currently used for different protocols; iptables applies to IPv4. The original download site for this software is : <https://android.googlesource.com> This piece of software is made available under the terms and conditions of the GPL v2.

libyuv (814)

libyuv is an open source project that includes YUV conversion and scaling functionality. The original download site for this software is : <http://code.google.com/p/libyuv> This piece of software is made available under the terms and conditions BSD.

ffmpeg (1.1.1)

This TV uses FFmpeg. FFmpeg is a complete, cross-platform solution to record, convert and stream audio and video. The original download site for this software is : <http://ffmpeg.org> This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below.

u-boot (2011-12)

U-boot is a boot loader for embedded boards based on ARM, MIPS and other processors, which can be installed in a boot ROM and used to initialize and test the hardware or to download and run application code. This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below.

live555 (0.82)

Live555 provides RTP/RTCP/RTSP client. The original download site for this software is : <http://www.live555.com> This piece of software is made available under the terms and conditions of the LGPL v2.1 license, which can be found below.

Bluetooth Stack (Bluedroid)

This TV uses Bluetooth stack. The original download site for this software is : This piece of software is made available under the terms and conditions of Android Apache License Version 2.

EXIF (NA)

Exif JPEG header manipulation tool. The original download site for this software is : <http://www.sentex.net/~mwandel/jhead/> Portions of this source code are in the public domain Copyright (c) 2008, The Android Open Source Project All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. * Neither the name of The Android Open Source Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

EXPAT (2.1.0)

EXPAT is a XML Parser. The original download site for this software is : <http://expat.sourceforge.net/> Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd and Clark Cooper Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Expat maintainers. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE

WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

neven face recognition library (NA)

This TV uses neven face recognition library which is used for face recognition This piece of software is made available under the terms and conditions of Android Apache License version 2.

Unicode (4.8.1.1)

This TV uses Unicode which specifies the representation of text The original download site for this software is : <http://icu-project.org/> ICU License - ICU 1.8.1 and later COPYRIGHT AND PERMISSION NOTICE Copyright (c) 1995-2008 International Business Machines Corporation and others All rights reserved. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder. All trademarks and registered trademarks mentioned herein are the property of their respective owners.

IPRoute2 (NA)

IPRoute2 is used for TCP/IP, Networking and Traffic control. The original download site for this software is :

<http://www.linuxfoundation.org/collaborate/workgroups/networking/iproute2>This piece of software is made available under the terms and conditions of GPL V2.

mtpd (NA)

mtpd is used for VPN Network.The original download site for this software is :
<http://libmtp.sourceforge.net/>This piece of software is made available under the terms and conditions of Apache License version 2.0.

MDNS Responder (NA)

MDNS Responder. The mDNSResponder project is a component of Bonjour,Apple's ease-of-use IP networking initiative.The original download site for this software is : <http://www.opensource.apple.com/tarballs/mDNSResponder/>This piece of software is made available under the terms and conditions of Apache License version 2.0.

NFC (NA)

NFC Semiconductor's NFC Library. Near Field Communication (NFC) is a set of short-range wireless technologies, typically requiring a distance of 4cm or less to initiate a connection. NFC allows you to share small payloads of data between an NFC tag and an Android-powered device, or between two Android-powered devices.This piece of software is made available under the terms and conditions of Apache License version 2.0.

Skia (NA)

Skia is a complete 2D graphic library for drawing Text, Geometries, and Images.The original download site for this software is :
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Sonic Audio Synthesis library (NA)

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C++Standard Template Library library (5)

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svox (NA)

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tinyalsa (NA)

This TV uses tinyalsa: a small library to interface with ALSA in the Linux kernelThe original download site for this software is : <http://github.com/tinyalsa>Copyright 2011, The Android Open Source ProjectRedistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. * Neither the name of The Android Open Source Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.THIS SOFTWARE IS PROVIDED BY The Android Open Source Project "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,

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Vorbis Decompression Library (NA)

This TV uses Tremolo ARM-optimized Ogg Vorbis decompression library. Vorbis is a general purpose audio and music encoding format contemporary to MPEG-4's AAC and TwinVQ, the next generation beyond MPEG audio layer 3The original download site for this software is :

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wpa_supplicant_Daemon (v0.8)

Library used by legacy HAL to talk to wpa_supplicant

daemonThe original download site for this software is : http://hostap.epitest.fi/wpa_supplicant/This piece of software is made available under the terms and conditions of GPL version 2.

gson (2.3)

Gson is a Java library that can be used to convert Java Objects into their JSON representation. It can also be used to convert a JSON string to an equivalent Java object. Gson can work with arbitrary Java objects including pre-existing objects that you do not have source-code of.The original download site for this software is :

<https://code.google.com/p/google-gson/>This piece of software is made available under the terms and conditions of the Apache License 2.0

This software includes an implementation of the AES Cipher, licensed by Brian GladmanThe original download site for this software is :

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libUpNp (1.2.1)

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dnsmasq

Dnsmasq is a lightweight, easy to configure DNS forwarder and DHCP serverThe original download site for this software is : <https://android.googlesource.com/platform/external/dnmasq>This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below.

TomCrypt (1.1)

iwedia stack is using tomcrypt for sw decryptionThe original download site for this software is : <http://manpages.ubuntu.com/manpages/saucy/man3/libtomcrypt.3.html>This piece of software is made available under the terms and conditions of the DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE

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23.5

Announcements

You can receive an announcement on new TV software available for download or other software related issues.

To read these announcements...

- 1 - Press  SETTINGS, select **All Settings** and press **OK**.
- 2 - Select **Update Software**, select **Announcements** and press **OK**.
- 3 - If there is an announcement, you can read it or select one of the announcements available.
- 4 - Press **←** (left) to go back one step or press **←** to close the menu.

Specifications

24.1

Environmental

European Energy Label

The European Energy Label informs you on the energy efficiency class of this product. The greener the energy efficiency class of this product is, the lower the energy it consumes.

On the label, you can find the energy efficiency class, the average power consumption of this product in use and the average energy consumption for 1 year. You can also find the power consumption values for this product on the Philips website for your country at www.philips.com/TV

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 the European Directive 2002/96/EC.



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 to prevent potential negative consequences for the environment and human health.

Your product contains batteries covered by the European Directive 2006/66/EC, which 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 to prevent negative consequences for the environment and human health.

24.2

Power

Product specifications are subject to change without notice. For more specification details of this product, see www.philips.com/support

Power

- Mains power : AC 220–240V +/-10%
- Ambient temperature : 5°C to 35°C
- Power saving features : Light sensor, Picture mute (for radio), Auto switch-off timer, Eco settings menu.

For power consumption info, see chapter **Product Fiche**.

The power rating stated on the product typeplate is the power consumption for this product during normal household use (IEC 62087 Ed.2). The maximum power rating, stated between brackets, is used for electrical safety (IEC 60065 Ed. 7.2).

24.3

Product Fiche

55PUS8601

- Energy Efficiency Class : A
- Visible Screen Size : 139cm / 55 inch
- On Mode Power Consumption (W) : 115W
- Annual Energy Consumption (kWh) * : 160kWh
- Standby Power Consumption (W) : 0.5W
- Display Resolution (Pixels) : 3840 x 2160p

65PUS8601

- Energy Efficiency Class : A+
- Visible Screen Size : 164cm / 65 inch
- On Mode Power Consumption (W) : 118W
- Annual Energy Consumption (kWh) * : 164kWh
- Standby Power Consumption (W) : 0.5W
- Display Resolution (Pixels) : 3840 x 2160p

* Energy consumption kWh per year, based on the power consumption of the television operating 4 hours per day for 365 days. The actual energy consumption depends on how the television is used.

24.4

Operating System

Android OS : Android Lollipop 5.1

Reception

- Aerial input : 75 Ohm coaxial (IEC75)
- Tuner bands : VHF, UHF, S-Band/Hyperband
- DVB : DVB-T (terrestrial, antenna) COFDM 2k/8k, DVB-T2, DVB-C (cable) QAM
- Analogue video playback : PAL, SECAM
- Digital video playback : MPEG2 SD/HD (ISO/IEC 13818-2), MPEG4 SD/HD (ISO/IEC 14496-10)
- Digital audio playback (ISO/IEC 13818-3)
- Satellite aerial input : 75 Ohm F-type
- Input frequency range : 950 to 2150MHz
- Input level range : -25 to -65 dBm
- DVB-S/S2 symbol rate 2 to 45 Msymbols/s
- LNB : DiSEqC 1.0, support for 1 to 4 LNBs: polarity selection 13/18V, band selection 22kHz, tone burst mode supported
- LNB max. current 300 mA.

Display

Type

Diagonal screen size

- 55PUS8601 : 139 cm / 55 inch
- 65PUS8601 : 164 cm / 65 inch

Display resolution

- 3840 x 2160p

Input Resolution

Video formats

Resolution — Refresh rate

- 480i - 60 Hz
- 480p - 60 Hz
- 576i - 50 Hz
- 576p - 50 Hz
- 720p - 50 Hz, 60 Hz
- 1080i - 50 Hz, 60 Hz
- 1080p - 24 Hz, 25 Hz, 30 Hz
- 2160p (4K) - 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Computer formats

Resolutions (amongst others)

- 640 x 480p - 60 Hz
- 800 x 600p - 60 Hz
- 1024 x 768p - 60 Hz
- 1280 x 768p - 60 Hz
- 1280 x 800p - 60 Hz
- 1280 x 1024p - 60 Hz
- 1440 x 900p - 60 Hz
- 1680 x 1050p - 60 Hz

- 1920 x 1080p - 60 Hz
- 3840 x 2160p - 24 Hz, 25 Hz, 30 Hz, 50 Hz, 60 Hz

Dimensions and Weights

55PUS8601

55PUS8601

- with TV stand and side speakers:
Width 1317 mm - Height 758 mm - Depth 227 mm - Weight ±21.5 kg
- with side speakers only:
Width 1260 mm - Height 709 mm - Depth 41 mm - Weight ±20 kg
- with TV stand only:
Width 1317 mm - Height 758 mm - Depth 227 mm - Weight ±20.5 kg
- without TV stand and side speakers:
Width 1227 mm - Height 709 mm - Depth 41 mm - Weight ±19 kg

Philips PTS840 - Central TV Stand*

In combination with 55PUS8600 and side speakers
Width 1260 mm - Height 763 mm - Depth 202 mm - Weight ±24 kg

Philips PTA860 - Wireless Speaker Stands*

One speaker stand in combination with 55PUS8600 side speaker.
Height 1262 mm - Base width 160 mm - Base depth (with connections) 210 mm - Weight ±2 kg (1 stand + speaker)

* Sold separately

65PUS8601

65PUS8601

- with TV stand and side speakers:
Width 1551 mm - Height 892 mm - Depth 270 mm - Weight ±28 kg
- with side speakers only:
Width 1480 mm - Height 834 mm - Depth 41 mm - Weight ±26 kg
- with TV stand only:
Width 1551 mm - Height 892 mm - Depth 270 mm - Weight ±27 kg
- without TV stand and side speakers:
Width 1447 mm - Height 834 mm - Depth 41 mm - Weight ±25 kg

Philips PTS840 - Central TV Stand*

In combination with 65PUS8600 and side speakers
Width 1480 mm - Height 892 mm - Depth 202 mm - Weight ±30 kg

Philips PTA860 - Wireless Speaker Stands*

One speaker stand in combination with 65PUS8600 side speaker.

Height 1387 mm - Base width 160 mm - Base depth (with connections) 210 mm - Weight ±2 kg (1 stand + speaker)

* Sold separately

24.8

Connectivity

TV Side

- HDMI 3 in - ARC - HDCP 2.2 - 4K 50/60Hz
- HDMI 4 in - MHL - ARC - HDCP 2.2 - 4K 50/60Hz
- USB 2 - USB 2.0
- USB 3 - USB 3.0 (blue)
- 2x Common Interface slot: CI+/CAM
- Headphones - Stereo mini-jack 3.5mm

TV Rear

- Audio In (DVI to HDMI) - Stereo mini-jack 3.5mm
- SCART: Audio L/R, CVBS in, RGB
- YPbPr : Y Pb Pr, Audio L/R
- Network LAN - RJ45

TV Bottom

- HDMI 1 in - ARC - HDCP 2.2 - 4K 50/60Hz
- HDMI 2 in - ARC - HDCP 2.2 - 4K 50/60Hz
- USB 1 - USB 2.0
- Digital Audio Out - Optical Toslink
- Antenna (75%), dual tuner
- Satellite tuner 1
- Satellite tuner 2
- For 8601 Series only - Wireless Audio, for Philips PTA860

24.9

Sound

- 3D wOOx
- HD Stereo
- Output power (RMS) : 50W
- Dolby Digital Plus®
- DTS Premium Sound™

24.10

Multimedia

Connections

- USB 2.0 / USB 3.0
- Ethernet LAN RJ-45
- Wi-Fi 802.11a/b/g/n/ac (built-in)
- BT2.1 with EDR & BT4.0 with BLE

Supported USB file systems

- FAT 16, FAT 32, NTFS

Playback formats

- Containers : 3GP, AVCHD, AVI, MPEG-PS, MPEG-TS,

MPEG-4, Matroska (MKV), Quicktime (MOV, M4V, M4A), Windows Media (ASF/WMV/WMA)

- Video Codecs : MPEG-1, MPEG-2, MPEG-4 Part 2, MPEG-4 Part 10 AVC (H264), H.265 (HEVC), VC-1, WMV9

- Audio Codecs : AAC, HE-AAC (v1/v2), AMR-NB, Dolby Digital, Dolby Digital Plus, DTS Premium Sound™, MPEG-1/2/2.5 Layer I/II/III (includes MP3), WMA (v2 to v9.2), WMA Pro (v9/v10)

- Subtitles :

- Formats : SAMI, SubRip (SRT), SubViewer (SUB), MicroDVD (TXT), mplayer2 (TXT), TMLayer (TXT)
- Character encodings : UTF-8, Central Europe and Eastern Europe (Windows-1250), Cyrillic (Windows-1251), Greek (Windows-1253), Turkish (Windows-1254), Western Europe (Windows-1252)

- Image Codecs : JPEG, JPS, MPO

- Limitations :

- Maximum supported total bit rate for a media file is 30Mbps.

- Maximum supported video bit rate for a media file is 20Mbps.

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

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

- VC-1 is supported up to Advanced Profile @ L3.

Supported media server software (DMS)

- You can use any DLNA V1.5 certified media server software (DMS class).

- You can use the Philips TV Remote app (iOS and Android) on mobile devices.

Performance may vary, depending on the capabilities of the mobile device and the software used.

ESD regulations

This apparatus meets performance criteria A for ESD. In case the apparatus does not recover in file sharing mode due to electrostatic discharge, user interference is required.

Help and Support

25.1

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/welcome

25.2


Using Help


This TV offers help on screen .

Open Help

Press the  key (blue) to open Help immediately. Help will open on the chapter that is most relevant to what you are doing or what is selected on TV. To look up topics alphabetically, press the colour key  **Keywords**.

To read the Help as a book, select **Book**.

You can also open  **Help** in the Home menu or TV menu.

Before you execute the Help instructions, close Help. To close Help, press the colour key  **Close**.

For some activities, like Text (Teletext), the colour keys have specific functions and cannot open Help.

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/support

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25.3

Troubleshooting

Switch On and Remote Control

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.

Creaking sound at startup or switch off

When you are switching the TV on, off or to 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.


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 behaviour. If the TV continues to be unresponsive to the remote control, you can check if the remote control is working by means of a mobile phone camera. Put the phone in camera mode and point the remote control to the camera lens. If you press any key on the remote control and you notice the infra red LED flicker through the camera, the remote control is working. The TV needs to be checked.

If you do not notice the flickering, the remote control might be broken or its batteries are low.

This method of checking the remote control is not possible with remote controls which are wirelessly paired with the TV.

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 behaviour. 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  on the remote control or on 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, contact Philips TV Consumer Care.

Channels

No digital channels found during the installation

See the technical specifications to make sure that your TV supports DVB-T or DVB-C in your country. Make sure that all cables are properly connected and that the correct network is selected.

Previously installed channels are not in the channel

list

Make sure that the correct channel list is selected.

Picture

No picture or a distorted picture

- Make sure that the antenna is properly connected to the TV.
- Make sure that the correct device is selected in the Sources menu.
- Make sure that the device is properly connected.

Sound but no picture

- Make sure that the picture settings are set correctly. Press **⚙** SETTINGS, select Picture Style and select any style.

Poor antenna reception

- Make sure that the antenna is properly connected to the TV.
- Loud speakers, unearthed audio devices, neon lights, high buildings and other large objects can influence reception quality. If possible, try to improve the reception quality by changing the antenna direction or moving devices away from the TV.
- If reception on only one channel is poor, fine-tune this channel with Manual Installation.

Poor picture from a device

- Make sure that the device is connected properly.
- Make sure that the picture settings are set correctly.

Picture settings change after a while

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

A commercial banner appears

Make sure that **Location** is set to **Home**.

Picture does not fit the screen

Change to a different picture format. Press **⚙** SETTINGS and select **Picture Format**.

Picture format keeps changing with different channels

Select a non 'Auto' picture format.

Picture position is incorrect

Picture signals from some devices may not fit the screen correctly. Check the signal output of the connected device.

Computer picture is not stable

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

Sound

No sound or poor sound quality

If no audio signal is detected, the TV automatically switches the audio output off — this does not indicate malfunction.

- Make sure that the sound settings are correctly set.
- Make sure that all cables are properly connected.
- Make sure that the volume is not muted or set to zero.
- Make sure that the TV audio output is connected to the audio input on the Home Theatre System. Sound should be heard from the HTS speakers.
- Some devices may require you to manually enable HDMI audio output. If HDMI audio is already enabled, but you still do not hear audio, try changing the digital audio format of the device to PCM (Pulse Code Modulation). Refer to the documentation accompanying your device for instructions.

HDMI and USB

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 recognise the HDMI device and no picture is displayed, switch the source from one device to another and back again.
- If the picture and sound of a device connected with HDMI is distorted, check if a different **HDMI Ultra HD** setting can solve this problem. In Help, press the colour key **— Keywords** and look up **HDMI Ultra HD**.
- If there are intermittent sound disruptions, make sure that output settings from the HDMI device are correct.
- If you use an HDMI-to-DVI adapter or HDMI-to-DVI cable, make sure that an additional audio cable is connected to AUDIO IN (mini-jack only), if available.

HDMI EasyLink does not work

- Make sure that 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 behaviour is normal.

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

- Make sure that the USB storage device is set to Mass Storage Class compliant, as described in the storage device's documentation.
- Make sure that the USB storage device is compatible with the TV.
- Make sure that the audio and picture file formats are

supported by the TV.

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.

Wi-Fi

Wi-Fi network not found or distorted

- Microwave ovens, DECT phones or other Wi-Fi 802.11b/g/n devices in your proximity might disturb the wireless network.
- We recommend using the 5 GHz frequency (802.11ac) on your router when your TV is placed in the neighborhood of many other wireless routers (apartments, etc.).
- Make sure that the firewalls in your network allow access to the TV's wireless connection.
- For easy installation of your wireless network, do not hide the name of your router by switching off the SSID broadcast.
- If the wireless network does not work properly in your home, you can use the wired network installation.

Wi-Fi network connection is slow

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

DHCP

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

Bluetooth

Unable to pair

- Make sure the device is in pairing mode. Read the user manual of the device.
- Keep the router and wireless speaker as close to the TV as possible.
- Places with a high amount of wireless activity - apartments with lots of wireless routers - can hamper the wireless connection.
- Trying to pair several devices with the TV at the same time, may not work.

Bluetooth lost connection

- Always position the wireless speaker within a range of 5 meters from the TV.

Bluetooth Audio and Video synchronisation

- Before you purchase a wireless Bluetooth speaker, inform yourself about its quality of Audio to Video synchronisation, commonly called 'lip sync'. Not all

Bluetooth devices perform correctly. Ask your dealer for advice.

Internet







Internet does not work

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

Wrong Menu Language

Wrong menu language

Change the language back to your language.

- 1 - Press  (the round key above the OK key).
- 2 - Select the  icon (Settings) and press .
- 3 - Press 5 times  (down).
- 4 - Press 3 times , select your language and press OK.
- 5 - Press  BACK to close the menu.

25.4

Online Help

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

Go to www.philips.com/support.

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 user manual to read on your computer.

25.5

Support and 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/support and select your country if needed.

Support app

You can also look up the Support app in the Apps row of the Home menu.

Open this app to find the telephone number to contact us.

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.

Safety and Care

26.1

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 or a stand designed for this particular TV model (see type number). Secure the stand to the TV tightly. Place the TV, mounted on a stand, on a flat, level and stable surface that can support the weight of the TV and the stand.
- External force on the TV housing or TV screen (weight or impact) can cause temporary deformation of the picture or permanent damage.
- 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.

Risk of Injury to Children

Follow these precautions to prevent the TV from toppling over and causing injury to children:

- Never place the TV on a surface covered by a cloth or other material that can be pulled away.
- Ensure that no part of the TV hangs over the edge of the mounting surface.
- Never place the TV on tall furniture, such as a bookcase, without anchoring both the furniture and TV to the wall or a suitable support.
- Teach children about the dangers of climbing on furniture to reach the TV.

Risk of swallowing batteries !

The remote control may contain coin-type batteries which can easily be swallowed by small children. Keep these batteries out of reach of children at all times.

Risk of Overheating

Never install the TV in a confined space. Always leave a space of at least 10 cm or 4 inches 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.

26.2

Cleaning

- 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. Avoid touching the Ambilight LEDs on the backside of the TV. Never use substances such as alcohol, chemicals or household cleaners on the TV.
- To avoid deformations and colour 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.

Terms of Use

27.1

Terms of Use – TV

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27.2

Terms of Use – Philips App Gallery

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FAQ



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Forum



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