

Register your product and get support at
www.philips.com/welcome

LED TV

32PFK5109
40PFK5109
48PFK5109
55PFK5109

User Manual

PHILIPS

Contents

1 Your new TV 3

- 1.1 Pause TV and recordings 3
- 1.2 EasyLink 3

2 Setting up 4

- 2.1 Read safety 4
- 2.2 TV stand and wall mounting 4
- 2.3 Tips on placement 4
- 2.4 Power cable 4
- 2.5 Antenna cable 5
- 2.6 Satellite dish 5

3 Connections 6

- 3.1 Tips on connections 6
- 3.2 EasyLink HDMI CEC 7
- 3.3 Common interface - CAM 8
- 3.4 Set-top box - STB 8
- 3.5 Satellite receiver 8
- 3.6 Home Theatre System - HTS 9
- 3.7 Blu-ray Disc player 10
- 3.8 DVD player 10
- 3.9 Game console 11
- 3.10 USB Hard Drive 11
- 3.11 USB flash drive 12
- 3.12 Camcorder 12
- 3.13 Computer 12
- 3.14 Headphones 13

4 Switch on 14

- 4.1 On or Standby 14

5 Remote control 15

- 5.1 Key overview 15
- 5.2 IR sensor 15
- 5.3 Batteries 16
- 5.4 Cleaning 16

6 TV channels 17

- 6.1 Watching TV channels 17
- 6.2 Channel installation 20

7 Satellite channels 24

- 7.1 Watching satellite channels 24
- 7.2 Satellite channel list 24
- 7.3 Favourite satellite channels 24
- 7.4 Lock satellite channels 25
- 7.5 Satellite installation 26
- 7.6 Problems with satellites 28

8 TV guide 30

- 8.1 Using the TV guide 30
- 8.2 Recordings 30
- 8.3 Receiving TV guide data 30

9 Sources 31

- 9.1 Sources list 31
- 9.2 From standby 31
- 9.3 EasyLink 31

10 Timers and clock 32

- 10.1 Sleep timer 32
- 10.2 Clock 32
- 10.3 Auto switch off 32

11 Your photos, videos and music 33

- 11.1 From a USB connection 33

12 Pause TV 35

- 12.1 Pause TV 35

13 Recording 36

- 13.1 What you need 36
- 13.2 Record a programme 36
- 13.3 Watch a recording 36

14 Settings 37

- 14.1 Picture 37
- 14.2 Game or computer 38
- 14.3 Format and edges 38
- 14.4 Sound 39

15 Specifications 42

- 15.1 Environmental 42
- 15.2 Reception for PxHxxx9 / PxTxxx9 42
- 15.3 Reception for PxKxxx9 43
- 15.4 Display 43
- 15.5 Power 43
- 15.6 Dimensions and weights_5109 43
- 15.7 Connectivity 44
- 15.8 Multimedia 44

16 Software 45

- 16.1 Software update 45
- 16.2 Software version 45
- 16.3 Open source software 45
- 16.4 Open source license 45

17 Troubleshooting and support 64

- 17.1 Troubleshooting 64
- 17.2 Register 65
- 17.3 Help 65
- 17.4 Online help 65
- 17.5 Consumer Care / Repair 65

18 Safety and care 67

- 18.1 Safety 67
- 18.2 Screen care 68

19 Terms of use, copyrights and licenses 69

- 19.1 Terms of use 69
- 19.2 Copyrights and licenses 69

Index 71

Your new TV

1.1

Pause TV and recordings

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



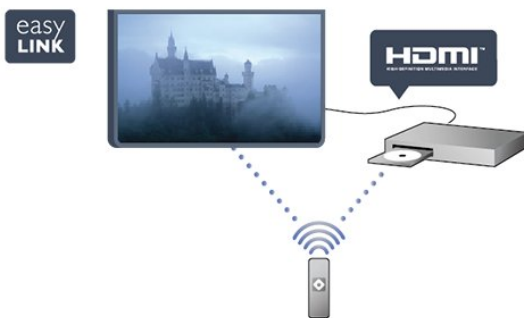
Pause your TV and answer that urgent phone call or simply take a break during a sports match, while the TV stores the broadcast on the USB Hard Drive. You can start watching again later.

1.2

EasyLink

With **EasyLink** you can operate a connected device, like a Bluray Disc player, with the remote control of the TV.

EasyLink uses HDMI CEC to communicate with the connected devices.



Setting up

2.1

Read safety

Read the safety instructions first before you use the TV.

In Help, go to **Safety and care** > **Safety**.

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 this 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.

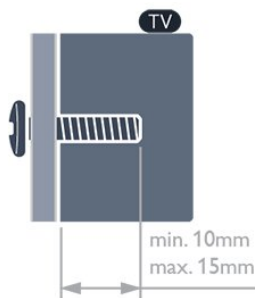
Wall mounting

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

Use the following VESA code when purchasing the wall mount .

..

To fix the bracket securely, use screws with a length indicated in the drawing.



- 32Pxx5109 - VESA MIS-F 400x200, M6
- 40Pxx5109 - VESA MIS-F 400x200, M6
- 48Pxx5109 - VESA MIS-F 400x200, M6
- 55Pxx5109 - VESA MIS-F 400x400, M6

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.

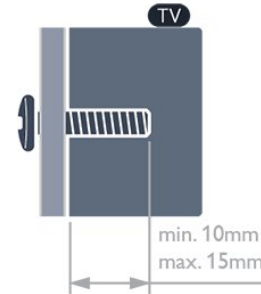
Wall mounting

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

Use the following VESA code when purchasing the wall mount .

..

To fix the bracket securely, use screws with a length indicated in the drawing.



- 42Pxx5199 - VESA MIS-F 200x200, M6
- 47Pxx5199 - VESA MIS-F 400x400, M6
- 55Pxx5199 - VESA MIS-F 400x400, M6

Caution

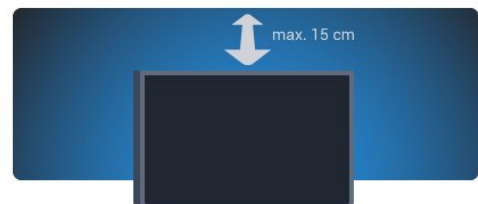
Wall mounting the TV requires special skills and should only be performed by qualified personnel. The TV wall mounting should meet safety standards according to the TV's weight. Also read the safety precautions before positioning the TV.

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

2.3

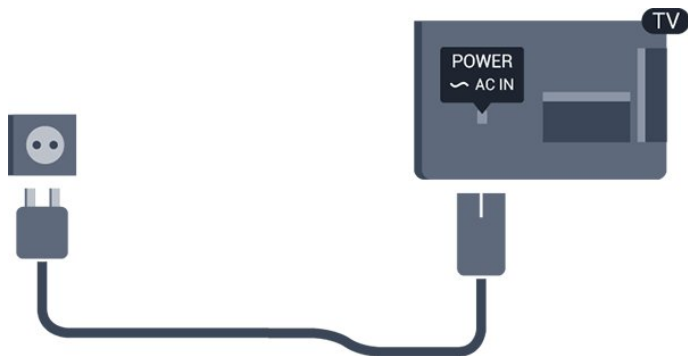
Tips on placement

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



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.



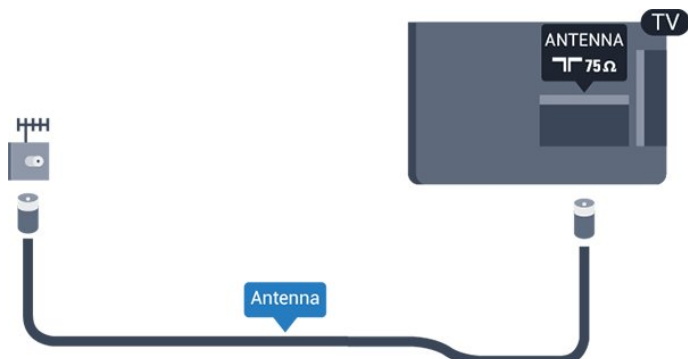
Although this TV has a very low standby power consumption, unplug the power cable to save energy if you do not use the TV for a long period of time.

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

Attach the satellite F-type connector to the satellite connection **SAT** at the back of the TV.



Connections

3.1

Tips on connections

Connectivity guide

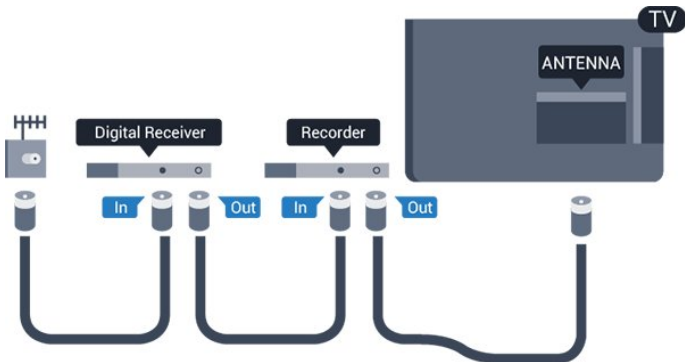
Always connect a device to the TV with the highest quality connection available. Also, use good quality cables to ensure a good transfer of picture and sound.

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

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

HDMI CEC

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 Full HD (FHD) TV signals. For best signal quality transfer, use a High speed HDMI cable and do not use an HDMI cable longer than 5 m.



EasyLink HDMI CEC

If your devices are connected with HDMI and have EasyLink, you can operate them with the TV remote control. EasyLink HDMI CEC must be switched On on the TV and the connected device.

DVI to HDMI

Use a DVI to HDMI adapter if your device only has a DVI connection. Use one of the HDMI connections and add an Audio L/R cable (mini-jack 3.5mm) to Audio In for sound, on the back of the TV.

Copy protection

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

HDMI ARC

HDMI 1 connection 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 HDMI 1 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.

In case you prefer to switch off ARC on the HDMI connections, press **⏻** and select **Setup** and press **OK**. Select **TV settings > Sound > Advanced > HDMI 1 - ARC**.

Scart

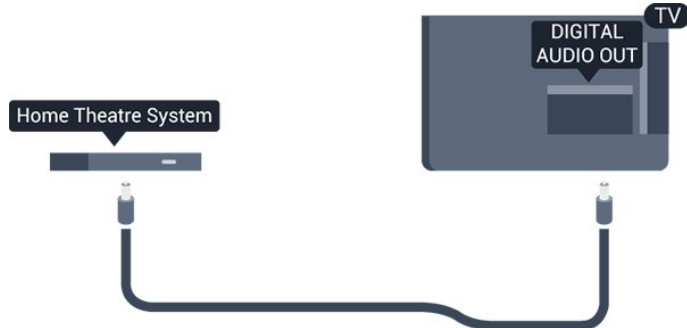
SCART is a good quality connection. The SCART connection can be used for CVBS and RGB video signals but cannot be used for High Definition (HD) TV signals. The SCART connection combines video and audio signals.

Use the SCART adapter cable to connect your device.



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.

If the sound does not match the video on screen, you can adjust the audio to video synchronization.

3.2

EasyLink HDMI CEC

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 **HOME** and **OPTIONS** keys and some other TV keys 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.

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

EasyLink settings

The TV comes with all EasyLink settings switched on. You can switch off any EasyLink setting independently.

EasyLink

To switch off EasyLink completely . . .

1. Press **HOME** and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **EasyLink**.
3. Select **EasyLink**.
4. Select **Off** and press **OK**.
5. Press **BACK**, repeatedly if necessary, 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. You can control multiple HDMI-CEC compliant devices with your TV remote control.

In the EasyLink settings menu, select **EasyLink Remote Control** and select **Off**.

One-touch play

When you play an HDMI-CEC compliant device, the TV switches on from standby and switches to the correct source.

One-touch standby

When you press **⏻** on the TV remote control, the TV and all HDMI-CEC compliant devices switch to standby mode.

System audio control

If you connect an HDMI-CEC compliant device that includes speakers through the HDMI ARC connector, you can choose to hear the TV audio from those speakers instead of the TV speakers.

3.3

Common interface - CAM

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 broadcasters in your region. These programmes are scrambled by the TV broadcaster and descrambled with a prepaid CI+ module.

Digital TV broadcasters provide this CI+ module (Conditional Access Module - CAM) when you subscribe to their premium programmes. These programmes have a high level of copy protection.

Contact a digital TV broadcaster for more information on terms and conditions.

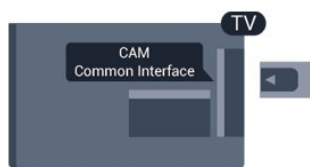


CAM

Insert a CAM module

Switch off the TV before inserting a CAM.

Look on the CAM for the correct method of insertion. Incorrect insertion can damage the CAM and TV.



Use the Common Interface slot on the TV to insert the CAM card.

With the front of the card facing to you, gently insert the CAM as far as it will go.

Leave the card in the slot permanently.

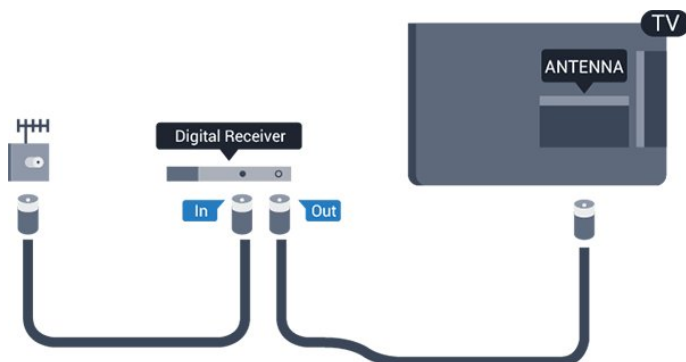
It may take a few minutes before the CAM is activated.

Removing the CAM will deactivate the broadcast service on TV. If a CAM is inserted and subscription fees are paid, (connection methods can differ), you can watch the TV broadcast. The inserted CAM is exclusively for your TV.

3.4

Set-top box - STB

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.

Auto switch off

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

To switch off the Switch off timer, press **⏻** and select **Setup** and press **OK**.

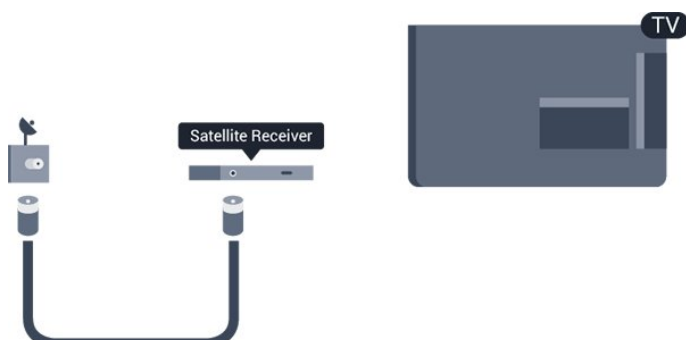
Select **TV settings** > **General settings** > **Auto switch off** and set the slider bar to **Off**.

3.5

Satellite receiver

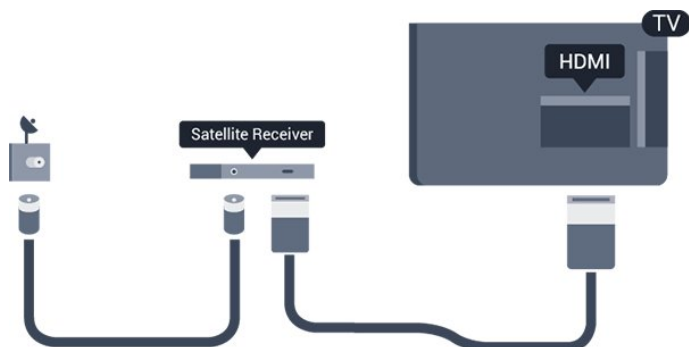
- Only for TVs with a built-in satellite tuner.

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.



Auto switch off

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

To switch off the Switch off timer, press **Home** and select **Setup** and press **OK**.

Select **TV settings > General settings > Auto switch off** and set the slider bar to **Off**.

3.6

Home Theatre System - HTS

Connect HTS

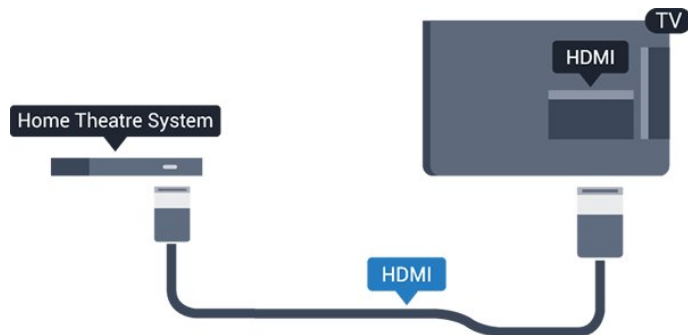
Use an HDMI cable to connect a Home Theatre System (HTS) to the TV. You can connect a Philips Soundbar or an HTS with a built-in disc player.

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

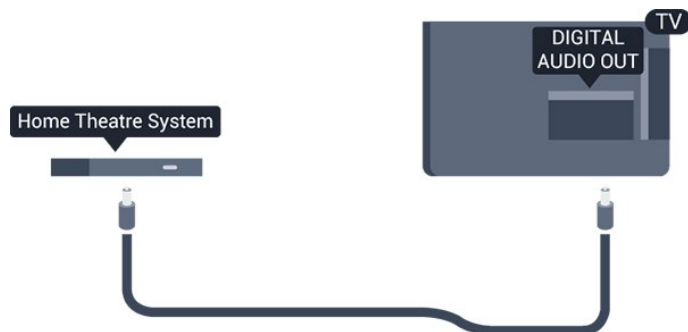
HDMI ARC

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 connected the Home Theatre System, the TV can only send the ARC signal to this HDMI connection.



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.

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 automatically synchronised 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 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 **Home** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Audio out delay**.
3. Select **Off** and press **OK**.
4. Press **Back**, repeatedly if necessary, 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 the time necessary for the Home Theatre System to process the sound of the TV picture. You can set the value in steps of 1ms. Maximum setting is 12ms. The Audio out delay setting should be switched on.

To synchronise the sound on the TV . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Audio out offset**.
3. Use the slider bar to set the sound offset and press **OK**.
4. Press **⬅**, repeatedly if necessary, 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 **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Audio out format**.
3. Select **Multichannel** or **Stereo**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

Audio Out levelling

Use the Audio Out leveling 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 **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Audio out leveling**.
3. If the volume difference is large, select **More**. If the volume difference is small, select **Less**. Press **⬅**, repeatedly if necessary, to close the menu.

Audio Out leveling 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.

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Audio out format**.

No sound

If you cannot hear the sound from the TV on your Home Theatre System, check the following . . .

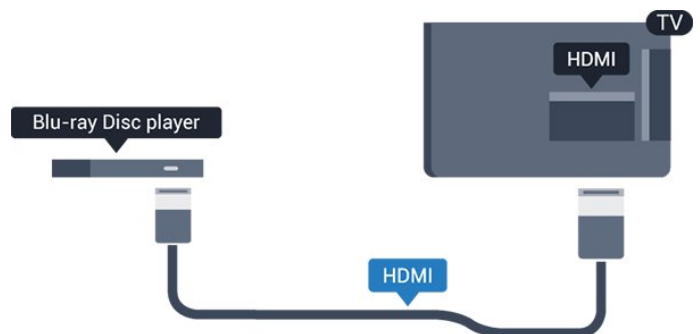
- Check if you connected the HDMI cable to a **HDMI ARC** connection on the Home Theatre System. All HDMI connections on the TV are HDMI ARC connections.

- Check if the **HDMI ARC** setting on the TV is switched **On**. Go to **⬆ > Setup > TV settings > Sound > Advanced > HDMI 1 -ARC**.

3.7

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.

3.8

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.

3.9

Game console

HDMI

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

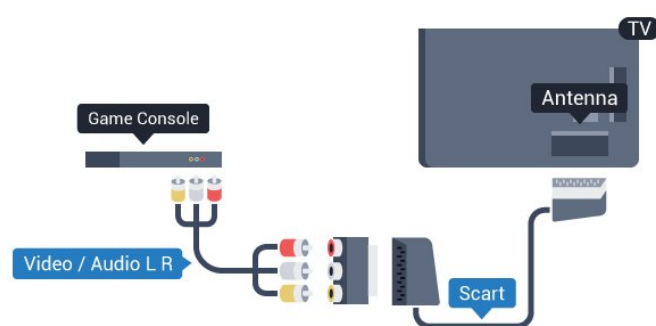


Video-Audio LR / Scart

Connect the game console with a composite cable (CVBS) and an audio L/R cable to the TV.

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

Note: the CVBS to Scart Adaptor is not provided in the TV set.



3.10

USB Hard Drive

What you need

If you connect a USB Hard Drive, you can pause or record a TV broadcast. The TV broadcast must be a digital broadcast (DVB broadcast or similar).

To pause

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

To record

To pause and record a broadcast, you need a minimum of 250GB disc space.



TV guide

Before you decide to buy a USB Hard Drive to record, you can check if you can record digital TV channels in your country. Press **TV GUIDE** on the remote control. If there is a Record button on the TV guide page, you can record.

Installation

Before you can pause or record a broadcast, you must connect and 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.

When the USB Hard Drive is formatted, leave it connected permanently.

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.

3.11

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 **TV** **SOURCE**, select **USB** and press **OK**.

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

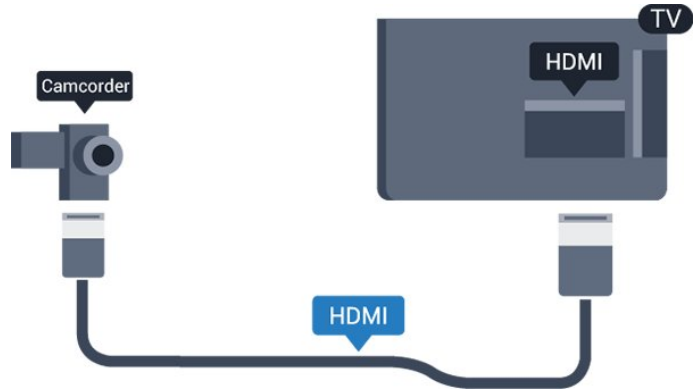
To disconnect the USB flash drive, you can pull out the flash drive anytime.

3.12

Camcorder

HDMI

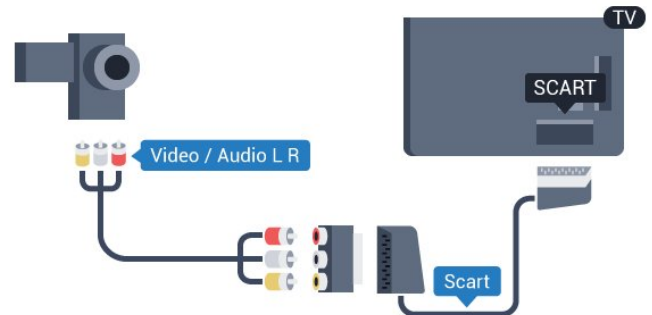
For best quality, use an HDMI cable to connect the camcorder to the TV.



Video-Audio 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 to connect to the SCART connection.

Note: the CVBS to Scart Adaptor is not provided in the TV set.



3.13

Computer

Connect

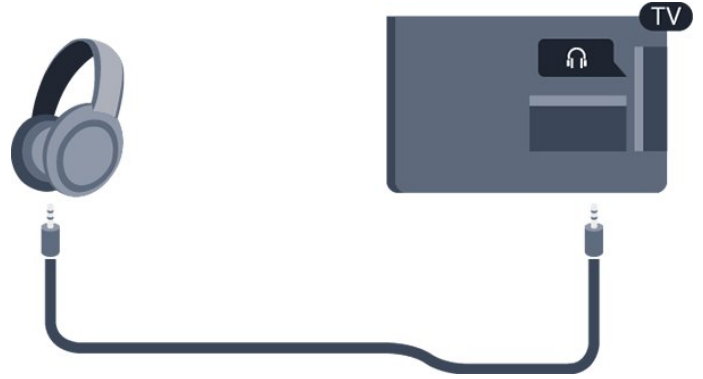
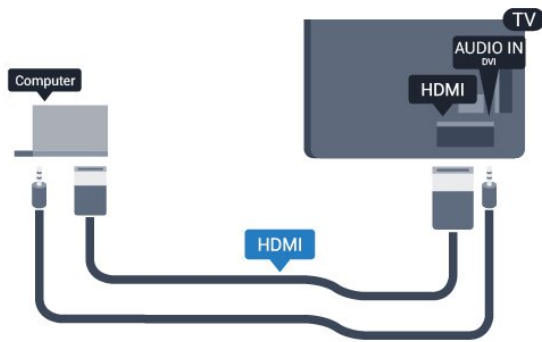
You can connect your computer to the TV and use the TV as a PC monitor.

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 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.



Settings

Ideal monitor setting

If your computer is added as a Computer type of device in the Source menu (the list of connections), the TV is set to the ideal Computer setting automatically.

If you use your computer to watch movies or use it to play games, you might want to set the TV back to the ideal TV watching or gaming setting.


To set the TV to the ideal setting manually . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Game or computer** and press **OK**.
3. Select **Game** (for gaming) or select **Computer** (for watching a movie) and press **OK**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

Remember to set the Game or computer setting back to **Computer** when you stop playing the game.

3.14

Headphones

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

To adjust the volume . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Headphone volume** and press **OK**.
3. Press **▲** (up) or **▼** (down) to adjust the volume.
4. Press **⬅**, repeatedly if necessary, to close the menu.

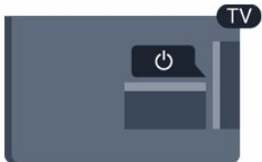
Switch on

4.1

On or Standby

Make sure you plugged in the mains power on the back of the TV before you switch on the TV.


If the red indicator light is off, press the power button on the side of the TV to put the TV in standby - the red indicator will light up.



With the TV in standby, press  on the remote control to switch the TV On.



Switch to standby

To switch the TV to standby, press  on the remote control.

Switch Off

To switch the TV Off, press the power button on the side of the TV. The red indicator light is off. The TV is still connected to the mains power but consumes a minimum of 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.

Remote control

5.1

Key overview

Top



1. Standby / On

To switch the TV On or back to Standby.

2. Playback keys

- Play , to playback.
- Pause , to pause playback
- Stop , to stop playback
- Rewind , to rewind
- Fast forward , to go fast forward
- Record , to record now

3. TV GUIDE

To open or close the TV guide.

4. SETUP

To open the Settings menu.

5. FORMAT

To open or close the Picture format menu.

Middle



1. SOURCES

To open or close the Sources menu - the list of connected devices.

2. Colour keys

The buttons function follow the on-screen instructions.

3. INFO

To open or close programme info.

4. BACK

To switch back to the previous channel you selected.

To close a menu without changing a setting.

5. HOME

To open or close the home menu.

6. EXIT

To switch back to watching TV.

7. OPTIONS

To open or close the Options menu.

8. OK key

To confirm a selection or setting.

9. Arrow / navigation keys

To navigate up, down, left or right.

10. LIST

To open or close the channel list.

Bottom



1. Volume

To adjust the volume level.

2. Number keys and text keypad

To select a TV channel directly or to enter text.

3. SUBTITLE

To switch subtitles on, off or Automatic.

4. Channel

To switch to the next or previous channel in the channel list, to open the next or previous page in Text or start the next or previous chapter on a disc.

5. Mute

To mute the sound or to restore it.

6. TEXT

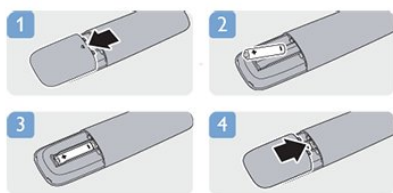
To open or close Text / Teletext.

IR sensor

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

Batteries

1. Slide the battery door in the direction shown by the arrow.
2. Replace the old batteries with 2 type **AAA-LR03-1.5V** batteries. Make sure the + and the - ends of the batteries line up correctly.
3. Reposition the battery door.
4. Slide it back until it clicks.



Remove the batteries if you are not using the remote control for a long time.

Safely dispose of your old batteries according to the end of use directions.

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

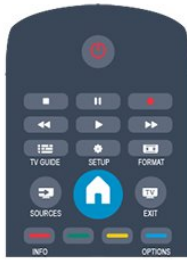
6.1

Watching TV channels

Switch channels

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

Alternatively, press **Home** to open the Home menu and select **TV** and press **OK**.



To switch channels, press **Channel Up** or **Channel Down**. If you know the channel number, type in the number with the number keys.

Press OK after you entered the number to switch channel.

To switch back to the previously tuned channel, press **Previous**.

To switch to a channel from a channel list

While watching a TV channel, press **LIST** to open the channel lists.



The channel list can have several pages with channels. To view the next or previous page, press **Channel Up** or **Channel Down**.

To close the channel lists without switching channel, press **LIST** again.

Radio channels

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.

Channel list

View all channel list

1. While watching a TV channel, press **LIST** to open the channel list.
2. Press **OPTIONS** to open Option menu.
3. Select **List**, then you can select **All**, **Favourites**, **Radio**, and **New channels**.

Favourite channels

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

Create your favourite channel list

1. While watching a TV channel, press **LIST** to open the channel list.
2. Select the channel to mark as favourite and press **OPTIONS**.
3. Select **Add favourites** and press **OK**. The selected channel is marked with a **★**.
4. To finish, press **Previous**. The channels are added to the Favourites list.
5. To remove a channel from the favourites list, select the channel with a **★**, then press **OPTIONS**, select **Remove favourites** and press **OK**.

Reorder

You can reorder — reposition — channels in the Favourite channel list.

1. In the channel list **Favourites**, highlight the channel you want to reposition.
2. Press **OPTIONS**.
3. Select **Reorder** and press **OK**.
4. Select the channel to reorder and press **OK**.
5. Press the **Navigation buttons** to move the highlighted channel to another location and press **OK**.
6. Once complete, press **OPTIONS**.
7. Select **Exit reorder** and press **OK**.

You can highlight another channel and do the same.

Add or remove favourites in other channel lists

You can mark channels and radio stations as favourites from the **All**, **Radio** and **New** channel list.

In these lists, highlight a channel you want to add to the favourite list and press **OPTIONS**. Select **Add favourites** and press **OK**.

The selected channel is marked with a **★**.

To remove a channel from the favourites list, select **Remove favourites** and press **OK**.

Rename channels

You can rename channels in the channel list.

1. Select the channel you want to rename in one of the channel lists.
2. Press **≡ OPTIONS**.
3. Select **Rename** and press **OK**.

Lock a channel

To prevent children from watching a channel or a programme, you can lock channels or lock age rated programmes.

Lock a channel

You can lock a channel to prevent children from watching it. To watch a locked channel you need to enter the Child lock code. You cannot lock programmes from connected devices.

To lock a channel . . .

1. While watching a TV channel, press **≡ LIST** to open the **Channel list**.
2. In any list, select the channel you want to lock.
3. Press **≡ OPTIONS** and select **Lock channel**. In a channel list, a locked channel is marked with a lock **🔒**.

To unlock a channel, select the locked channel in the channel list, press **≡ OPTIONS**, then select **Unlock channel**. You will need to enter the Child lock code.

Parental rating

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

Some digital broadcasters have age rated their programmes. 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 code. The parental age rating is set for all channels.

To set an age rating . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Channel settings > Child lock > Parental rating** and press **OK**.
3. Enter a 4-digit Child lock code. Enter a 4-digit Child lock code and confirm. Now you can set an age rating.
4. Set the age and press **OK**.
5. Press **⬅**, repeatedly if necessary, to close the menu.
6. To switch off the parental age rating, select **None** as age setting.

The TV will ask for the code to unlock the programme. For some broadcasters / operators, the TV only locks programmes with a higher rating.

Set or change the lock code

To set the lock code or to change the current code . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Channel settings > Child lock > Change code** and press **OK**.
3. If a code is set already, enter the current Child lock code and then enter the new code twice.

The new code is set.

Forgotten your code?

To override and enter a new child lock code in case you forget it, enter **8888**.

Picture format

If black bars appear on top and bottom or on both sides of the picture, you can adjust the picture format to a format that fills the screen.

To change the picture format . . .

1. While watching a TV channel, press **⬆** to open the **Picture format** menu.
2. Select a format from the list and press **OK**.

The following format can be available according the picture on screen . . .

- Auto

Adjust the picture format according to the input source.

- Super zoom

Removes the black bars on the side of 4:3 broadcasts. The picture is adjusted to fit the screen.

- Movie expand 16:9

Scale 4:3 format to 16:9. Not recommended for HD or PC.

- Wide screen

Stretches the picture to a 16:9 format.

- Unscaled

Expert mode for HD or PC input. Pixel for pixel display. Black bars may appear with pictures from a computer.

- 4:3

Display the classic 4:3 format.

Text / Teletext

Text pages

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

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**.

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 the star 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 **⏏**, 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 **↵** to hide the device keys.
4. To close Text, press **↵** 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 **↵**.

Text options

In Text, press ≡ **OPTIONS** to select the following . . .

- Freeze page / Unfreeze 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 / Normal view

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.

- 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 setup

Text language

Some digital TV broadcasters have several Text languages available.

To set your primary and secondary Text language . . .

1. Press **⏏** and select **Setup** and press **OK**.
2. Select **Channel settings > Languages**.
3. Select **Primary Teletext** or **Secondary Teletext**.
4. Select your preferred Text languages.
5. Press **↵**, repeatedly if necessary, 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. While watching the teletext, press ≡ **OPTIONS**.
3. Select **Text 2.5 > Off**.
4. Press **↵**, repeatedly if necessary, to close the menu.


Subtitles and languages

Subtitles

Switch subtitles on

To open the Subtitle menu, press **SUBTITLE**.

You can set subtitles to **Subtitles off**, **Subtitles on**, or **Automatic**.

To show subtitles when the broadcasted programme is not in your language — the language you set for the TV, select **Automatic**. Also, this setting will show subtitles when you mute the sound with .

For analogue channels, subtitles must be made available in **Text**.





Subtitles for digital channels


There is no need to set subtitles in Text for digital channels. Digital channels 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 them.

If none of the preferred subtitle languages are available, you can select another subtitle language which is available.

To set the primary and secondary subtitle language . . .

1. Press  and select **Setup** and press **OK**.
2. Select **Channel settings** and select **Languages**.
3. Select **Primary subtitle language** or **Secondary subtitle language** and press **OK**.
4. Select a language and press **OK**.
5. Press , repeatedly if necessary, to close the menu.

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

1. Press  **OPTIONS**.
2. Select **Subtitle language** and select a language you want temporarily and press **OK**.

Subtitles for analogue channels

For analogue channels, 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 **Status** in the **Options** menu.

Audio languages


Digital TV channels can broadcast audio with several 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 this audio.

If none of the preferred audio languages is available, you can select another audio language which is available.

To set the primary and secondary audio language . . .

1. Press  and select **Setup** and press **OK**.
2. Select **Channel settings** and select **Languages**.
3. Select **Primary audio language** or **Secondary audio language** and press **OK**.
4. Select a language and press **OK**.
5. Press , repeatedly if necessary, to close the menu.

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



1. Press  **OPTIONS**.
2. Select **Audio language** and select an audio language you want temporarily and press **OK**.

Audio languages for the hearing and visually impaired

Some digital TV channels broadcast special audio and subtitles adapted for people who are hearing or visually impaired.

Menu language

To change the language of the TV menus and messages . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Menu language** and press **OK**.
3. Select the language you want and press **OK**.
4. Press , repeatedly if necessary, to close the menu.

6.2

Channel installation

Update channels


Automatic update

If you receive digital channels, you can set the TV to automatically update the list with new channels. Alternatively, you can start a channel update yourself.

Automatic channel update

Once a day, at 6 AM, the TV updates the channels and stores new channels. New channels are stored in the All channels list but also in the New channels list. Empty channels are removed. If new channels are found or if channels are updated or removed, a message is shown at TV start up. The TV must be in standby to automatically update channels.

To switch off the message at start up . . .

1. Press  and select **Setup** and press **OK**.
2. Select **Channel settings** and press **OK**.
3. Select **Channel installation** > **Channel update message** > **Off**.

To switch off the Automatic channel update . . .

1. Press  and select **Setup** and press **OK**.
2. Select **Channel settings** and press **OK**.

3. Select **Channel installation > Automatic channel update > Off**.

Start an update

To start an update yourself . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Search for channels** and press **OK**.
3. Select **Update channels** and follow the instructions on screen. The update may take a few minutes.

In certain countries, the Automatic channel update is done while watching TV or any moment when the TV is in standby.

New channels

New channels added with the automatic channel update are easy to find in the channel list **New**. The same new channels are also stored in the **All** or **Radio** channel list.

New channels are kept in the channel list **New** as long as you don't mark them as a favourite or tune to them.

Reinstall channels

You can search for and reinstall channels and leave all other TV settings untouched. Alternatively, you can do a full new TV installation.

If a child lock code is set, you will need to enter this code before you can reinstall channels.

Reinstall channels

To reinstall the channels only . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Search for channels > Re-install Channels** and press **OK**.
3. Select the country where you install the TV.
4. Select **Antenna (DVB-T)** or **Cable (DVB-C)**. The channel search may take a few minutes. Follow the instructions on screen.

Full installation

To redo a full TV installation . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > General settings > Reinstall TV** and press **OK**. The installation may take a few minutes. Follow the instructions on screen.

Factory settings

Factory settings sets the TV back to the original TV settings for picture and sound. To switch back to the original Factory settings . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > General settings > Factory settings** and press **OK**.

3. Press **OK** to confirm.
4. Press **⬅**, repeatedly if necessary, 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 version

You can check the current version of the TV software with **Current software info** in **⬆ > Setup > Software settings**.

Copy channel list

To copy a channel list . . .

1. Switch on the TV which has its channels installed. Plug in a USB memory device.
2. Press **⬆** and select **Setup** and press **OK**.
3. Select **TV settings > General settings > Copy channel list > Copy to USB** and press **OK**. To copy the channel list from this TV, you might be asked to enter the Child lock code you entered during the installation.
4. When copying is done, unplug the USB memory device.

Now you can upload the copied channel list onto another Philips TV.

Upload channel list

Upload a copied channel list

Depending on whether your TV is already installed or not, you must use a different way 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 Search for channels. Finish the installation.
2. Plug in the USB memory device that holds the channel list of

the other TV.

3. To start the channel list upload, press **Home** and select **Setup** and press **OK**.

4. Select **TV settings > General settings > Copy channel list > Copy to TV** and press **OK**. You might be asked to enter the Child lock code of this TV.

5. The TV notifies you if the channel list is copied to the TV successfully. Unplug the USB memory device.

To an already installed TV

1. Verify the country setting of the TV. (To verify this setting, press **Home** and select **Setup** and press **OK**. Select **Search for channels > Reinstall channels** and press **OK**. Press **Left** and later **Cancel** to leave the Search for channels.)

If the country is correct continue with step 2.

If the country is not correct, you need to start a reinstallation. To start the reinstallation, press **Home** and select **Setup** and press **OK**. Select **TV settings > General settings > Re-install TV > OK**.

Select the correct country and skip the Search for channels.

Finish the installation. When done, continue with step 2.

2. Plug in the USB memory device that holds the channel list of the other TV.

3. To start the channel list upload, press **Home** and select **Setup** and press **OK**.

4. Select **TV settings > General settings > Copy channel list > Copy to TV** and press **OK**. You might be asked to enter the Child lock code of this TV.

5. The TV notifies you if the channel list is copied to the TV successfully. Unplug the USB memory device.

DVB-T or DVB-C

DVB-T or DVB-C reception

If both DVB-T and DVB-C reception is available in your country and if this TV is ready to receive DVB-T and DVB-C for your country, you have selected one or the other during the channel installation.

If you want to change the DVB setting to start a new channel installation . . .

1. Press **Home** and select **Setup** and press **OK**.

2. Select **Channel settings** and press **OK**.

3. Select **Channel installation > Antenna connection > Antenna (DVB-T) or Cable (DVB-C)** and press **OK**.

4. Select the DVB setting you want.

5. Press **Left**, repeatedly if necessary, to close the menu.

DVB-C channel installation

For ease of use, all DVB-C settings are set to automatic.

If your DVB-C provider gave you specific DVB-C values, the network ID or network frequency, enter these values when the TV asks for them during installation.

It might be necessary to adjust the scanning (full or quick scan) or enter a specific symbol rate in the **Settings** menu while installing. To set a **Symbol rate**, first set the Symbol rate to

Manual.

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-T + DVB-C

If you can use a DVB-T antenna input but also a DVB-C input, you can set up your TV for both DVB-T and DVB-C. Install one system followed by the other with the necessary settings.

Once each system is installed, you need to switch the antenna input signal on the **Antenna** connection on the back of the TV and set the TV in the appropriate system to view the installed channels on TV.

To select the DVB-T or DVB-C setting, see above.

DVB settings

Access DVB settings

1. Press **Home** and select **Setup** and press **OK**.

2. Select **Search for channels** and press **OK**.

3. Select **Re-install Channels**.

4. Select the country where you install this TV.

5. Select **Cable (DVB-C)**.

6. Select **Start to search channels**, or select **Settings for DVB-C settings**.

7. Press **Left**, repeatedly if necessary, to close the menu.

Symbol rate mode

If your cable provider did not give you a specific **symbol rate** value to install the TV channels, leave the **Symbol rate mode** setting on **Automatic**.

If you received a specific symbol rate value, select **Manual**.

However, the value you received could be in the predefined list of symbol rates already. Select **Predefined symbol rates** to check if your value is available automatically.

Symbol rate

With the **Symbol rate mode** set to **Manual**, you can enter the symbol rate value you received from your cable provider. To enter the value, use the number keys.

Network frequency

With **Frequency scan** set to **Quick** or **Advanced**, you can enter here the network frequency value received from your cable provider. 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 providers 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.

Network ID

With **Frequency scan** set to **Quick**, you can enter here the network ID value received from your cable provider. To enter the value, use the number keys.

Digital channels

If you know your cable provider is not offering digital channels, you can skip searching for digital channels. Select **Off**.

Analogue channels

If you know your cable provider 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**.

Manual installation

Analogue TV channels can be manually installed, channel by channel.

To install analogue channels manually . . .

1. Press **Home** and select **Setup** and press **OK**.
2. Select **Channel settings** > **Channel installation** > **Analogue : manual installation** and press **OK**.

- System

To set up the TV system, select **System** and press **OK**. Select your country or the part of the world where you are now.

- Search channel

To find a channel, select **Search channel** and press **OK**. Select **Search** and press **OK**. You can also enter a frequency yourself. If the reception is poor, press **Search** again. If you want to store the channel, select **Done** and press **OK**.

- Fine tune

To fine tune a channel, select **Fine tune** and press **OK**. You can fine tune the channel with **▲** or **▼**.

If you want to store the channel found, 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**.

You can redo these steps until you found all available analogue TV channels.

Satellite channels

7.1

Watching satellite channels

- Only for TVs with a built-in satellite tuner.

To watch satellite channels . . .

Press **HOME** and select **Satellite** and press **OK**. The TV tunes to the satellite channel you last watched.

Change channel

To change channels, press **LIST** + or **LIST** -. The TV will tune to the next channel in the selected channel list. If you know the channel number, you can use the number keys on the remote control.

To change back to the previously tuned channel, press **↩**.

You can also tune to a channel directly from the Satellite channel list.

7.2

Satellite channel list

About the channel list

When the satellite installation is completed, all satellite channels are put in the channel list. You can view the list of all channels or filter the list down to show the favourite channels only or the radio stations only. Or, after a channel update, you can find the newly added channels in the list of new channels.

From any list, you can directly tune to a channel. The list you select in the channel list, determines the channels you tune to with the **LIST** + and **LIST** - keys.

You can only reorder channels in the list of favourite channels.

Select a list filter

The list you select in the channel list, determines the channels you tune to with the **LIST** + and **LIST** - keys.

To select a channel list . . .

1. Press **HOME** and select **Satellite** and press **OK**.
2. Press **LIST** to open the channel list. The list appears with the current channel selected.
3. Navigate up to select **All** or a list filter **Favourites**, **Radio**, **TV** or **New**.

Channel list options

To view the channel list options on the current channel . . .

1. With the All channels list on screen, select a channel and press **≡** **OPTIONS**.
2. Select the option you want and press **OK**.

Available options for satellite channels . . .

- Satellite

Filter the channel list to only show the channels of a specific satellite or show the channels of all satellites.

- Free/Scrambled

Filter the channel list to only show the free-to-air channels, only the scrambled channels or both. Scrambled channels are marked with a key **KS**.

- Lock

You can lock a channel. First select a channel in the list, press **≡** **OPTIONS** and select **Lock**. You will have to enter the 4-digit child lock code. A locked channel is marked with a lock **🔒**.

- Unlock

To unlock a locked channel. Select a locked channel in the list, press **≡** **OPTIONS** and select **Unlock**. You will have to enter the 4-digit child lock code.

Copy channel list

Copy channel list is intended for dealers and expert users. With Channel list copy, you can copy the channels installed on one TV onto another Philips TV of the same range. Channel list copy will copy both terrestrial and satellite channels.

7.3

Favourite satellite channels

Favourite channels

You can mark channels as favourite channels. Your favourite satellite channels are collected in the **Favourites** list of the satellite channel list.

Watching favourite channels

Set up a favourite channel list to easily switch between the channels you want to watch. Only in this list, you can reorder channels according to your preference.

To only switch between your favourite channels with **LIST** + and **LIST** -, select the Favourites list in the channel list and close the channel list again.

There are two favourite lists, one for TV channels and one for satellite channels.

Set up your favourites list

To compose a list of your favourite channels . . .

1. While watching a channel, press **≡ LIST** to open the channel list.
2. Select the **Favourites** list.
3. The TV will ask you to start adding channels immediately. Press **OK**. To avoid a lot of reordering later, select the channels in the order you want them in the list.
4. To add a channel to the Favourites list, select the channel and press **OK**. You can then select another channel to add as a favourite.
5. To finish, press **↩**.

Add or remove favourite channels

To add or remove favourites list . . .

1. While watching a TV channel, press **≡ LIST** to open the channel list.
2. Select the channel to mark as favourite and press **≡ OPTIONS**.
3. Select **Add favourites** and press **OK**. The selected channel is marked with a ★.
4. To finish, press **↩**. The channels are added to the Favourites list.

To remove a channel from the favourites list, select **Remove favourites** and press **OK**.

Reorder favourite channels

You can only reorder channels in the Favourites list.

1. In the Favourites list **All**, highlight the channel you want to reposition.
2. Press **≡ OPTIONS**.
3. Select **Reorder** and press **OK**.
4. Select the channel to reorder and press **OK**.
5. Press the **Navigation buttons** to move the highlighted channel to another location and press **OK**.
6. Once complete, press **≡ OPTIONS**.
7. Select **Exit reorder** and press **OK**.

7.4

Lock satellite channels

Lock a channel

You can lock a channel to prevent children from watching it. To watch a locked channel you need to enter the Child lock code. You cannot lock programmes from connected devices.

To lock a channel . . .

1. While watching a TV channel, press **≡ LIST** to open the **Channel list**.
2. In any list, select the channel you want to lock.
3. Press **≡ OPTIONS** and select **Lock channel**. In a channel list, a locked channel is marked with a lock **🔒**.

To unlock a channel, select the locked channel in the channel list and select the **Unlock channel** option. You will need to enter the Child lock code.

Use an age rating

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

Some digital broadcasters have age rated their programmes. 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 code. The parental age rating is set for all channels.

To set an age rating . . .

1. Press **🏠** and select **Setup** and press **OK**.
2. Select **Satellite settings > Child lock > Parental rating** and press **OK**.
3. Enter a 4-digit Child lock code. If you did not set a code yet, select **Set code** and press **OK**. Enter a 4-digit Child lock code and confirm. Now you can set an age rating.
4. Set the age and press **OK**.
5. Press **↩**, repeatedly if necessary, to close the menu.
6. To switch off the parental age rating, select **None** as age setting.

The TV will ask for the code to unlock the programme. For some broadcasters / operators, the TV only locks programmes with a higher rating.

Child lock code

You can set or change the Child lock code.

To set the lock code or to change the current code . . .

1. Press **🏠** and select **Setup** and press **OK**.
2. Select **Satellite settings > Child lock > Set code** or **Change code** and press **OK**.
3. If a code is set already, enter the current Child lock code and then enter the new code twice.

The new code is set.

Forgotten your Child lock code?

If you forgot your code, you can override the current code and enter a new code.

1. Press **Home** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Child lock** > **Change code** and press **OK**.
3. Enter the overriding code **8888**.
4. Now enter a new Child lock code and enter it again to confirm.

7.5

Satellite installation

Installing satellites

About installing satellites

This TV has a built-in satellite DVB-S/DVB-S2 receiver. Connect the cable from your satellite dish directly to the TV. Use a coaxial cable fit for connecting a satellite antenna dish. Make sure your satellite dish is perfectly aligned before you start the installation.

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. Select if you are installing satellites for a Unicable system, for 1 or for 2 satellites at the start of the installation.

Installing

You can install your satellites during the initial TV setup. The satellite installation follows the TV channel installation. If you only watch satellite channels, you can skip the TV channel installation. You can always start a new satellite installation from the Setup menu.

To install satellite channels . . .

1. Press **Home** and select **Setup** and press **OK**.
2. Select **Search for satellite** and press **OK**.
3. Select **Install satellites** and press **OK**.
4. The TV shows the current installation setting. If the current setting corresponds with the satellite installation you want, you can start searching for satellites. Select **Search** and press **OK**. Go to step 5. If the current setting is not the setting you want, select **Settings** and press **OK**. Go to step 4b.

4b - In the Settings menu, select the exact number of satellites you want to install. Or, if you use a Unicable setup, select **Unicable for 1 satellite** or **Unicable for 2 satellites** according

the number of satellites you want to install for Unicable. Select the setting you want and press **OK**.

4c - If the exact number of satellites is set or you completed the Unicable settings, select **Search** and press **OK**.

5. The TV will search for 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. If a channel package is available for any of the satellites found, you can select the package you want.

6. To install the channels of the satellites found, select **Install** and press **OK**. The TV shows the number of channels and radio stations found.

7. To store the satellite settings, all satellite channels and satellite radio stations, select **Finish** and press **OK**.

Channel packages

About 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 **Satellite operator channels only** to install the channels of the package only or select **All satellite channels** 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 Unicable system to connect the antenna dish to the TV. A Unicable system uses one cable to connect the satellite dish to all satellite receivers in its system. Unicable 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.

User band number

In a Unicable system, each connected satellite receiver 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 its built-in satellite receiver. A satellite receiver cannot have the same user band number as another satellite receiver 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.

Add a satellite

You can add an additional satellite to your current satellite installation. The installed satellites and their channels stay untouched. However, 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.

Settings

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 **⬆** and select **Setup** and press **OK**.
2. Select **Search for satellite** and press **OK**.
3. Select **Add satellite** and press **OK**. The current satellites are shown.
4. Select **Add** and press **OK**. The TV will search for new satellites.
5. If the TV has found one or more satellites, select **Install** and press **OK**. The TV installs the channels of the found satellites.
6. To store the channels and radio stations, select **Finish** and press **OK**.

Remove a satellite

You can remove one or more satellites from your current satellite installation. You remove the satellite and its channels. However, some satellite operators do not allow removing a satellite.

To remove satellites . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Search for satellite** and press **OK**.
3. Select **Remove satellite** and press **OK**. The current satellites are shown.
4. Use the arrows keys to select the satellite you want to remove.
5. Press **OK** to mark a satellite to remove. Press **OK** again to unmark.
6. Select **Remove**, press **OK** and confirm. The satellites are removed.
7. Select **Exit** and press **OK** to close Remove satellite.

Update satellite channels

Once a day, at 6 AM, the TV automatically updates the satellite channels. A channel update looks for new channels and adds them to the channel list. No longer available channels are removed and if a provider reorders its channel package, the channel list of the TV will be updated. The TV must be on standby to automatically update the satellite channels. Alternatively, you can do a channel update yourself at any moment.

New channels, found with the channel update, are marked with the letter N and collected in the channel list New. New channels are also added in the All channel list. New channels stay in the channel list New as long as you do not tune to them or mark them as a favourite.

Switch off the automatic channel update

You can completely switch off the TV at night to avoid a channel update. Alternatively, you can switch off the automatic update in the setup menu.

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Channel installation** > **Automatic channel update** and select **Off**.

Switch off the update for a specific satellite

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Channel installation** > **Automatic update option**.
3. With the arrow keys, select the satellite you do not wish to update. Press **OK** to unmark the satellite.
4. Select **Done** and press **OK** to close the menu.

The TV will not update the channels from satellite you marked.

Start an update yourself

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Search for satellite** and press **OK**.
3. Select **Update channels** and press **OK**.
4. If you want to check which satellites are set for updating, select **Settings** and press **OK**.
5. With the arrow keys, mark or unmark the satellites for updating. Select **Done** and press **OK**.
6. Select **Update** and press **OK**. The update may take a few minutes.
7. Select **Finish** and press **OK**.

Languages and audio

Preferred languages and subtitles

Satellite channels can hold different audio languages, subtitle languages or Text languages. You can set the TV to automatically switch to the language, subtitle language or Text language you prefer, if this language is available on the channel or Text pages.

To set the your preferred language . . .

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Satellite settings** and press **OK**.
3. Select **Languages** and press **OK**. Select the setting you want.
4. Press **↩**, repeatedly if necessary, to close the menu.

Audio description

Speakers / Headphones

You can select where you want to hear the audio commentary. On the TV speakers only, on the headphones only or on both.

To set Speakers / Headphones . . .

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Languages** > **Audio description** > **Speakers / Headphones** and press **OK**.
3. Select **Speakers**, **Headphones** or **Speakers + headphones** and press **OK**.
4. Press **↩**, repeatedly if necessary, to close the menu.

Audio effect

Some audio commentary can hold extra audio effects, like stereo or fading sound.

To switch on Audio effects (if available) . . .

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Languages** > **Audio description** > **Audio effects** and press **OK**.
3. Select **On** or **Off** and press **OK**.
4. Press **↩**, repeatedly if necessary, 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 **▲** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Languages** > **Audio description** > **Speech** and press **OK**.
3. Select **Descriptive** (audio) or **Subtitles** and press **OK**.
4. Press **↩**, repeatedly if necessary, to close the menu.

Manual installation

Manual installation is intended for expert users.

You can use Manual installation to quickly add new channels from a satellite transponder. 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 install a transponder . . .

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Satellite settings** > **Channel installation** > **Manual installation** and press **OK**.
3. If you have more than 1 satellite installed, select the satellite/LNB for which you want to add channels.
4. Set the **Polarization** you need. If you set the **Symbol rate mode** to **Manual**, you can enter the symbol rate in **Symbol rate** manually. Enter the **Frequency** and start searching for the transponder.
5. If a transponder is found, select **Store** and press **OK** to store the new transponder on the selected LNB.
6. Select **Exit** to leave the manual installation.

7.6

Problems with satellites

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 a unique user band number to the satellite receiver in the Unicable settings. It might be that another satellite receiver 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.

TV guide

8.1

Using the TV guide

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

Open the TV guide

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

Press  **TV GUIDE** again to close.

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

Tune to a programme


Switch to a programme

From the TV guide, you can switch to a current programme. To select a programme, use the arrow keys to highlight the programme name.

Navigate to the right to view programmes scheduled later that day.


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


View programme details


To call up the details of the selected programme, press  **INFO**.

Change day

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

If the TV guide information comes from the broadcaster, you can press  **+** to view the schedule of one of the next days.

Press  **−** to go back to the previous day.


Alternatively, you can press  **OPTIONS** and select **Change**

day.

Select **Previous day**, **Today** or **Next day** and press **OK**, to select the day of the schedule.

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, press  **OPTIONS** and select **Search by genre**.

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

8.2

Recordings

From the TV guide, you can instantly record or schedule a recording of a TV programme. To store the recordings, connect a USB Hard Drive to the TV.

8.3




Receiving TV guide data

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 (e.g. the channels you watch with Watch 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**.

Set the TV guide information

To set the TV guide information . . .

1. Press  and select **TV guide**.
2. Press  key.
3. Select **From the broadcaster**.
4. Press , repeatedly if necessary, to close the menu.


Sources

9.1


Sources list

In the list of connections - the Source menu - you can find the devices connected to the TV. From this Source menu, you can switch to a device.

Sources menu

To open the Sources menu, press  **SOURCES**.

To switch to a connected device, select the device with the arrows ◀ (left) or ▶ (right) and press **OK**.

To close the Source menu without switching to a device, press  **SOURCES** again.



9.3

EasyLink

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

9.2

From standby

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


Play

To switch on both disc player and TV from standby and start playing the disc or programme immediately, press ▶ (play) on the TV remote control.

The device should be connected with an HDMI cable and both TV and device must have HDMI CEC switched on.

Home Theatre System

You can switch on your Home Theatre System to listen to an audio disc or a radio channel and leave the TV in standby.

To only switch on the HTS, with the TV in standby, press  **SOURCES** on the TV remote control.



Timers and clock

10.1

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  and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Sleep timer**.
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 , repeatedly if necessary, to close the menu.


10.2

Clock

To know what time it is, press  **TV GUIDE** to find the time in the TV guide.

In some countries, digital broadcasts do not send UTC - Coordinated Universal Time information. The daylight saving change might be ignored and the TV might show an incorrect time.

To correct the TV clock . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Clock** > **Auto clock mode** and select **Country dependent**.
3. Select **Daylight saving** and select the appropriate setting.


10.3

Auto switch off

If you do not press a key on the remote control during a 4 hour period, or if the TV receives no input signal nor remote control commands for 10 minutes, the TV switches off automatically to save energy.

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 the automatic switch off.

To deactivate the **Auto switch off** . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Auto switch off** and set the slider bar to **0 (Off)**.

Your photos, videos and music

11.1

From a USB connection

What you need

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

From a USB device

With the TV switched on, plug in a USB flash drive or USB Hard Drive to one of the USB connections. The TV detects the device and lists your files.

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



Menu bar

With a USB device connected, the TV sorts the files by type. Navigate to the menu bar and select the type of file you are looking for.

If you browse files from a computer, you can only browse the files and folders as they are organized on the computer.

The menu bar

Navigate to the menu bar and select the type of file you want to watch or play.

Select **Picture**, **Music** or **Movie**. Alternatively, you can open the **Folders** view and browse your folders to look for a file.

View photos

In the USB browser, select **Picture** and press **OK**.

Options

Press **≡** **OPTIONS**.

- Start slideshow, Stop slideshow

Start or stop slideshow.

- Slideshow transitions

Set the transition from one picture to the next.

- Slideshow frequency

Select the display time for each photo.

- Repeat, Play once

View the pictures repeatedly or once only.

- Shuffle off, Shuffle on

View the pictures in sequential order, or at random.

- Rotate image

Rotate photo.

- Show info

Display the picture name, date, size and next picture in the slide show.

To close **Browse USB**, press **⬆** and select another activity.

Play music

In the USB browser, select **Music** and press **OK**.

Options

Press **≡** **OPTIONS**.

- Stop playback

Stop music play.

- Repeat, Play once

Play songs repeatedly or once.

- Shuffle on, Shuffle off

Play songs in sequence or at random.

- Show info

Display the file name.

To close **Browse USB**, press **⬆** and select another activity.

Play videos

In the USB browser, select **Movie** and press **OK**.

Options

Press **≡** **OPTIONS**.

- Subtitles

Display the subtitles if available.

- Audio language

Play the audio language if available.

- Repeat, Play once

Play videos repeatedly or once.

- Shuffle on, Shuffle off

Play videos in sequence or at random.

- Show info

Display the file name.

To close **Browse USB**, press  and select another activity.

Pause TV

12.1

Pause TV

You can pause a TV broadcast and resume watching it later. Only digital TV channels can be paused. You must connect a USB Hard Drive to buffer the broadcast. You can pause a broadcast for a maximum time span of 90 minutes.

Pause or resume a broadcast

To pause a broadcast, press **⏸** (Pause). A progress bar appears briefly on screen.

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

To resume watching, press **▶** (Play). The icon on screen indicates you are watching a paused broadcast.

Back to the actual TV broadcast

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

The moment you switch to a digital channel, the USB Hard Drive starts buffering the broadcast. When you switch to another digital channel, the broadcast of the new channel is buffered and the broadcast of the former channel is cleared. When you switch to a connected device (a Blu-ray Disc player or digital receiver) the USB Hard Drive stops buffering and the broadcast is cleared. Also when you switch the TV to standby the broadcast is cleared.

Whilst recording a programme on the USB Hard Drive, you cannot pause a broadcast.

Instant replay

Whilst watching a broadcast from a digital TV channel, you can easily instant replay the broadcast.

To replay the last 10 seconds of a broadcast, press **⏸** (Pause) and press **◀** (Left).

You can press **◀** repeatedly until you reach the start of the broadcast buffer or the maximum time span.

Progress bar

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.

Recording

13.1

What you need


To record a TV programme you need . . .

- a connected USB Hard Drive formatted on this TV
- digital TV channels installed on this TV (the channels you watch with Watch TV)
- to receive channel information for the built-in TV guide

13.2

Record a programme

Record now

To record the programme you are watching, press  (Record) on the remote control.

If you receive TV guide information from the broadcaster, the recording starts immediately. You can adjust the end time of the recording in the list of recordings.

To stop recording, press  (Stop).



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).


1. To schedule a recording, press  **TV Guide**.

On the TV guide page, select the channel and programme you wish to record.

You can enter the channel number to jump to the channel in the list.



Press  (Right) or  (Left) to scroll through the programmes of a channel.

To change the date of the list, press  **OPTIONS** and select **Change day**. In the list, select the day you want and press **OK**.

2. With the programme highlighted, press  **Record**. The TV adds some time buffer at the end of the programme. You can add some extra buffer if needed.




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.

List of recordings

To view the list of recordings and scheduled recordings, press , select  **Recordings** and press **OK**.

In this list, you can select a recording to watch, remove recorded programmes, adjust the end time of an ongoing recording or check the free disc space.

Remove a scheduled recording from TV Guide or the list of recordings

- Press  **List** to open the list, then press .
- In TV Guide, select a scheduled recording programme, then press  **Cancel recording**.








Specifics

- While recording a programme, you can watch a previously recorded programme.
- While recording, you cannot switch TV channels.
- While recording, you cannot pause the TV broadcast.
- To Record, broadcasters need a reliable clock setting. If you reset the TV clock manually, recordings may fail.

13.3

Watch a recording

To watch a recording . . .

1. Press , select  **Recordings** and press **OK**.
2. In the list, select the recording and press  (Play) to start the playback. You can use the  (Forward),  (Rewind),  (Pause) or  (Stop) keys on the remote control.

Failed recording

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

Settings

14.1

Picture

Picture style

For easy picture adjustment, you can select a preset setting with **Picture style**.

1. While watching a TV channel, press **≡** **OPTIONS** to open the **Options** menu.
2. Select **Picture and sound** in the menu bar and select **Picture style**.
3. Select a style and press **OK**.

The available Picture styles are . . .

- **Personal** - Your preferences made in Quick picture settings
- **Vivid** - Ideal for daylight viewing
- **Natural** - Natural picture settings
- **Movie** - Ideal for watching movies
- **Energy saving** - Energy-efficient settings
- **Standard** - Factory standard settings
- **Photo** - Ideal for viewing photos

Adjust a Picture style

You can adjust a Picture style . . .

1. Select the style and press **OK**.
2. Press **⬆** and select **Setup** and press **OK**.
3. Select **TV settings**, navigate to the individual setting and adjust it.
4. Press **⬅**, repeatedly if necessary, to close the menu.

To return to the original Picture style values . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **Picture style** and select the style you want to reset.
3. Select **Restore style** and press **OK**. The style is reset.

Vivid

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 **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Location** and press **OK**.
3. Select **Home** and press **OK**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

Picture settings

Backlight contrast

With **Backlight contrast**, you can adjust the brightness of the display backlight.

To adjust the level . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **Backlight contrast**.
3. Press **▶** (right) and adjust the value with **▲** (up) or **▼** (down).
4. Press **⬅**, repeatedly if necessary, to close the menu.

Colour

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

To adjust the colour . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **Colour**.
3. Press **▶** (right) and adjust the value with **▲** (up) or **▼** (down).
4. Press **⬅**, repeatedly if necessary, 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 **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **Sharpness**.
3. Press **▶** (right) and adjust the value with **▲** (up) or **▼** (down).
4. Press **⬅**, repeatedly if necessary, to close the menu.

Noise reduction

With **Noise reduction**, you can select the amount of noise reduction for the picture.

To set the noise reduction . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **Noise reduction**.
3. Press **▶** (right) and select **Off**, **Minimum**, **Medium** or **Maximum**.
4. Press **⬅**, repeatedly if necessary, 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 artefact . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings** > **Picture** > **MPEG artefact reduction**.

3. Press ► (right) and select **On** or **Off**.
4. Press ⬅, repeatedly if necessary, to close the menu.

Digital Crystal Clear

With **Digital Crystal Clear**, you can fine-tune each pixel to match the surrounding pixels and produce a brilliant, high-definition image.

1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Digital Crystal Clear**.
3. Press ► (right) and select the settings.
4. Press ⬅, repeatedly if necessary, to close the menu.

The different settings are . . .

- **Advanced sharpness** - Enable superior sharpness, especially on lines and contours in the picture.
- **Dynamic contrast** - Dynamically enhance the details in the dark, medium and light areas of the picture.
- **Dynamic backlight** - Select a backlight level to optimise dynamic power consumption and picture contrast.
- **Colour enhancement** - Dynamically enhance the vividness and details of colours.

Advanced picture settings

Gamma

With **Gamma**, you can adjust the non-linear setting for picture luminance and contrast.

To adjust the level . . .

1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Gamma**.
3. Press ► (right) and adjust the value with ▲ (up) or ▼ (down).
4. Press ⬅, repeatedly if necessary, to close the menu.

Tint

With **Tint**, you can change the colour balance.

To select a preset . . .

1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Tint**.
3. Press ► (right) and select **Normal**, **Warm** or **Cool**.
Select **Custom** if you want to set a colour temperature yourself.
4. Press ⬅, repeatedly if necessary, to close the menu.

Custom tint

With **Custom tint**, you can set a colour temperature yourself. To set a Custom tint, first select **Custom** in the **Tint** setting to make the Custom tint menu available. Custom tint is a setting intended for expert users.

To set a custom colour temperature . . .

1. Press ⬆ and select **Setup** and press **OK**.

2. Select **TV settings > Picture > Advanced > Custom tint**.
3. Press ► (right).
4. Select a setting with the arrow keys. (WP is white point and BL is black level.)
5. Press **OK** to confirm a setting. You can also select one of the presets in this menu.
6. Press ⬅, repeatedly if necessary, to close the menu.

Video contrast

With **Video contrast**, you can decrease the range of the video contrast.

To adjust the level . . .

1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Video contrast**.
3. Press ► (right) and adjust the value with ▲ (up) or ▼ (down).
4. Press ⬅, repeatedly if necessary, 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 with the **Backlight contrast** setting.

To adjust the level . . .

1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Brightness**.
3. Press ► (right) and adjust the value with ▲ (up) or ▼ (down).
4. Press ⬅, repeatedly if necessary, to close the menu.

14.2

Game or computer

You can switch the TV to the ideal picture setting for gaming or for using the TV as a computer monitor. There is a different setting for **Game** or **Computer**. If a device has a correct type set in the Source menu - Game console or Computer - the TV switches automatically to the ideal setting when you switch to the device. If you switch the setting manually, do not forget to switch it off when you switch to watching TV or another connected device.

To switch the setting manually . . .


1. Press ⬆ and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Advanced > Game or computer**.
3. Select **Game**, **Computer** or **TV**. The setting **TV** returns to the picture settings for watching TV.
4. Press ⬅, repeatedly if necessary, to close the menu.

Format and edges

Picture format

If black bars appear on top and bottom or on both sides of the picture, you can adjust the picture format to a format that fills the screen.






To change the picture format . . .

1. While watching a TV channel, press  to open the **Picture format** menu.
2. Select a format from the list and press **OK**.

Screen edges

With **Screen edges**, you can slightly enlarge the picture to hide distorted edges.


To adjust the edges . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings > Picture > Format and edges > Screen edges**.
3. Press  (right) and adjust the value with  (up) or  (down).
4. Press , repeatedly if necessary, to close the menu.

Sound

Sound style

For easy sound adjustment, you can select a preset setting with **Sound style**.


1. While watching a TV channel, press  **OPTIONS** to open the **Options** menu.
2. Select Picture and sound in the menu bar and select **Sound style**.
3. Select a Sound style and press **OK**.

The different Sound styles are . . .

- **Personal** - Your personal choices made in Personalise picture and sound
- **Original** - Factory standard
- **Movie** - Ideal for watching movies
- **News** - Ideal for speech
- **Music** - Ideal for listening to music
- **Game** - Ideal for gaming

Adjust a Sound style


You can adjust a Sound style . . .

1. Select the style and press **OK**.
2. Press  and select **Setup** and press **OK**.

3. Select **TV settings**, navigate to the individual setting and adjust it.

4. Press  to close the menu to store your setting.

To return to the original Sound style values . . .






1. Press  and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Restore style**.

Sound settings

Bass

With **Bass**, you can adjust the level of low tones in the sound.






To adjust the level . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Bass**.
3. Press  (right) and adjust the value with  (up) or  (down).
4. Press , repeatedly if necessary, to close the menu.

Treble

With **Treble**, you can adjust the level of high tones in the sound.




To adjust the level . . .

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Treble**.
3. Press  (right) and adjust the value with  (up) or  (down).
4. Press , repeatedly if necessary, 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  and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Surround mode**.
3. Press  (right) and select **Stereo, Incredible surround**.
4. Press , repeatedly if necessary, to close the menu.

Headphones volume

With **Headphones volume**, you can set the volume of a connected headphones separately.

To adjust the volume . . .

1. Press  **OPTIONS** and select **Picture and sound** in the menu bar.
2. Press  (right) and select **Headphones volume** and press **OK**.
3. Press  (up) or  (down) to adjust the volume.
4. Press , repeatedly if necessary, to close the menu.

Advanced sound settings

Auto volume levelling

With **Auto volume leveling**, 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 **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > Auto volume leveling**.
3. Press **▶** (right) and select **On** or **Off**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

TV speakers

You can send the TV sound to a connected audio device - a Home Theatre System or audio system. With **TV speakers**, you select where you want to hear the TV sound and how you want to control it.

- If you select **Off**, you permanently switch off the TV speakers.
- If you select **On**, the TV speakers are always on.

With an audio device connected with HDMI CEC, you can use one of the EasyLink settings.

- If you select **EasyLink**, the TV sends the TV sound to the audio device. The TV will switch off the TV speakers when the device is playing the sound.
- If you select **EasyLink autostart**, the TV will switch on the audio device, send the TV sound to the device and switch off the TV speakers.

With **EasyLink** or **EasyLink autostart** selected, you can still switch to TV speakers or device speakers in the Picture and sound menu.

To set the TV speakers . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Advanced > TV speakers**.
3. Press **▶** (right) and select **Off**, **On**, **EasyLink** or **EasyLink autostart**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

To switch speakers directly . . .

1. While watching TV, press **≡** **OPTIONS** and select **Picture and sound**.
2. Select **Speakers** and select **TV** or **Amplifier** (audio device).
3. Press **⬅**, repeatedly if necessary, 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 **⬆** and select **Setup** and press **OK**.

2. Select **TV settings > Sound > Advanced > Clear sound**.
3. Press **▶** (right) and select **On** or **Off**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

HDMI1-ARC

If you do not need an Audio Return Channel (ARC) on any of the HDMI connections, you can switch the ARC signal off.

Audio Out format

With **Audio Out format** you can set the audio out signal of the TV to fit the sound processing capabilities of your Home Theatre System.

Audio Out levelling

With **Audio Out leveling** you can level the sound volume of the Home Theatre System with the volume of the TV when you switch over from one to another.

Audio Out delay

If you set an Audio sync delay on your Home Theatre System, to synchronise the sound with the picture, you must switch off **Audio Out delay** on the TV.

Audio Out offset

If you cannot set a delay on the Home Theatre System, you can set a delay on the TV with **Audio Out offset**.

Speakers

Home Theatre System

You can send the TV sound to a connected audio device - a Home Theatre System or audio system.

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

- If you select **Off**, you permanently switch off the TV speakers.
- If you select **TV speakers**, the TV speakers are always on.

With an audio device connected with HDMI CEC, you can use one of the EasyLink settings.

- If you select **EasyLink**, the TV sends the TV sound to the audio device. The TV will switch off the TV speakers when the device is playing the sound.
- If you select **EasyLink autostart**, the TV will switch on the audio device, send the TV sound to the device and switch off the TV speakers.

With EasyLink or EasyLink autostart selected, you can still switch

to TV speakers if necessary.

To set the TV speakers . . .

1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > Sound > Sound output**.
3. Press **▶** (right) and select **Off, TV speakers, EasyLink** or **EasyLink autostart**.
4. Press **⬅**, repeatedly if necessary, to close the menu.

To switch to speakers directly . . .

1. While watching TV, press **⚙**.
2. Select **Speakers** and select **TV** or **Amplifier** (audio system).
3. Press **⬅**, repeatedly if necessary, to close the menu.

TV placement

As part of the first installation, this setting is set to either **On a TV stand** or **Wall mounted**. If you have changed the placement of the TV since then, adjust this setting accordingly for best sound reproduction.


1. Press **⬆** and select **Setup** and press **OK**.
2. Select **TV settings > General settings > TV placement** and press **OK**.
3. Select **On a TV stand** or **Wall mounted** and press **OK**.
4. Press **⬅**, repeatedly if necessary, to close the menu.


Specifications

15.1

Environmental

Saving energy

The **Eco settings** bundle the settings that help the environment. While you are watching TV channels, press  to open **Eco settings**.

Active settings are marked with a . You can mark or unmark each setting with the **OK** key.

Press  again to close **Eco settings**.

Energy saving

This Picture style sets the picture, in the most ideal energy conscious setting.

Screen off

If you only listen to music, you can switch off the TV screen to save energy.

Select **Screen off** and press **OK**. To switch the screen back on, press any key on the remote control.

Auto switch off

If you do not press a key on the remote control during a 4 hour period, or if the TV receives no signal for 10 minutes, the TV switches off automatically to save energy.

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, deactivate the automatic switch off.

In addition to the Eco settings, your TV also has environmentally friendly technology with regard to power consumption.


Inactive devices off

Switch off connected EasyLink HDMI-CEC (Consumer Electronic Control) compliant devices that are inactive.

Power management

The advanced power management of this TV ensures the most efficient use of energy. You can check how your personal TV settings, the level of brightness in current onscreen pictures, and the surrounding light conditions determine the relative power consumption.

To check the relative power consumption . . .

1. Press  and select **Setup** and press **OK**.
2. Select **Watch demos > Active control Demo** and press **OK**.
3. Select a setting to check the corresponding values.

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.

15.2

Reception for PxHxxx9 / PxTxxx9

- Aerial input : 75 ohm coaxial (IEC75)
- Tuner bands : Hyperband; S-Channel; UHF; VHF
- DVB : DVB-T (terrestrial, antenna) COFDM 2K/8K; DVB-T2 : only for TV types ' . . . T/12'; DVB-C (cable) QAM

- Analogue video playback : NTSC; SECAM; PAL
- Digital video playback : MPEG2 SD/HD (ISO/IEC 13818-2); MPEG4 SD/HD (ISO/IEC 14496-10)
- Digital audio playback (ISO/IEC 13818-3)

15.3

Reception for PxKxxx9

- Aerial input : 75 ohm coaxial (IEC75)
- Tuner bands : Hyperband, S-Channel, UHF, VHF
- DVB : DVB-T (terrestrial, antenna) COFDM 2K/8K, DVB-T2 : only for TV types '. . . T/12', DVB-C (cable) QAM
- Analogue video playback : NTSC, SECAM, PAL
- Digital video playback : MPEG2 SD/HD (ISO/IEC 13818-2), MPEG4 SD/HD (ISO/IEC 14496-10)
- Digital audio playback (ISO/IEC 13818-3)
- Satellite aerial input : 75 ohm F-type
- Input frequency range : 950 to 2150MHz
- Input level range : 25 to 65 dBm
- DVB-S/S2 QPSK, symbol rate 2 to 45M symbols, SCPC and MCPC
- Supported satellites : Astra 19.2°E, Astra 23.5°E, Astra 28.2°E, Hotbird 13.0°E, TürkSat 42.0°E, Eutelsat 7°W, Thor 1°W
- Astra HD+ support
- LNB : DiSEqC 1.0, 1 to 4 LNBs supported, Polarity selection 14/18V, Band selection 22kHz, Tone burst mode, LNB current 300mA max

15.4

Display

Type

Diagonal screen size :

- 32Pxx5109 : 81 cm / 32 inch
- 40Pxx5109 : 102 cm / 40 inch
- 48Pxx5109 : 122 cm / 48 inch
- 55Pxx5109 : 140 cm / 55 inch

Display resolution :

1920x1080p

Display resolutions

Computer formats - HDMI (Resolution - refresh rate)

- 640 × 480 - 60 Hz
- 800 × 600 - 60 Hz
- 1024 × 768 - 60 Hz
- 1280 × 720 - 60 Hz
- 1280 × 768 - 60 Hz
- 1280 × 1024 - 60 Hz

- 1360 × 768 - 60 Hz
- 1600 × 900 - 60 Hz*
- 1680 × 1050 - 60 Hz*
- 1920 × 1080 - 60 Hz*

Computer formats - VGA (Resolution - refresh rate)

- 640 × 480 - 60 Hz
- 800 × 600 - 60 Hz
- 1024 × 768 - 60 Hz
- 1280 × 1024 - 60 Hz
- 1360 × 768 - 60 Hz
- 1600 × 900 - 60 Hz*
- 1600 × 1200 - 60 Hz*
- 1920 × 1080 - 60 Hz*

Video formats (Resolution - refresh rate)

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

* For certain sets only.

15.5

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
- Standby power consumption : less than 0.3W
- Power saving features : Eco mode, Picture mute (for radio), Auto switch off , Eco settings menu.

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).

15.6

Dimensions and weights_5109

32Pxx5109

- without TV stand:

Width 725.7 mm - Height 429.2 mm - Depth 55.4 mm - Weight ±4.97 kg

- with TV stand:

Width 725.7 mm - Height 479.7 mm - Depth 190 mm - Weight

±5.57 kg

40Pxx5109

- without TV stand:
Width 918.2 mm - Height 536.5 mm - Depth 56.3 mm - Weight ±7.82 kg
- with TV stand:
Width 918.2 mm - Height 592.1 mm - Depth 249.8 mm - Weight ±9.9 kg

48Pxx5109

- without TV stand:
Width 1082 mm - Height 625 mm - Depth 57 mm - Weight ±10.8 kg
- with TV stand:
Width 1082 mm - Height 680 mm - Depth 250 mm - Weight ±13.3 kg

55Pxx5109

- without TV stand:
Width 1243.2 mm - Height 720.6 mm - Depth 78 mm - Weight ±16.8 kg
- with TV stand:
Width 1243.2 mm - Height 770.5 mm - Depth 270 mm - Weight ±19.4 kg

15.7

Connectivity

For PxKxxx9

TV Rear

- HDMI 1 ARC: HDMI Audio Return Channel
- HDMI 2
- SERV. U: Service port
- TV ANTENNA: 75 ohm coaxial (IEC)
- SCART (RGB/CVBS): SCART adaptor
- AUDIO IN (DVI): Stereo 3.5mm mini-jack
- DIGITAL AUDIO OUT: SPDIF
- Headphones: Stereo 3.5mm mini-jack

TV Side

- CI: Common Interface
- USB
- Satellite

For PxHxxx9/PxTxxx9

TV Rear

- HDMI 1 ARC: HDMI Audio Return Channel
- HDMI 2

- SERV. U: Service port
- TV ANTENNA: 75 ohm coaxial (IEC)
- SCART (RGB/CVBS): SCART adaptor
- AUDIO IN (DVI): Stereo 3.5mm mini-jack
- DIGITAL AUDIO OUT: SPDIF
- Headphones: Stereo 3.5mm mini-jack

TV Side

- CI: Common Interface
- USB

15.8

Multimedia

Note: Multimedia file names must not exceed 128 characters.

Supported multimedia connections

- USB 2.0 (FAT / FAT 32 / NTFS): only connect USB devices that consume 500 mA of power or less.

Supported image files

- JPEG: *.jpg, *.jpeg
- PNG: *.png.jpg

Supported audio files

- MPEG1: *.mp3

Supported video files

- *.avi, *.mp4, *.mov, *.mkv, *.mpg, *.mpeg

Supported subtitle format

- SRT: multiple language support

Supported audio/video formats

File Extensions	Container	Video Decoder	Resolution	Audio Decoder
*.avi	AVI	x264 - H264/AVC encoder (D3d4), 1920x1080, 30 fps MPEG Layer-3, 192 kBit/s, 48,000 Hz, Stereo	1920 x 1080	MP3, MP2, AC3
		XviD	1920 x 1080	MP3, MP2
		MPEG1	768 x 576	MP3, MP2, AC3
		MPEG2	1920 x 1080	MP3, MP2, AC3
		H.264	1920 x 1080	MP3, MP2, AC3
*.mp4 *.mov		MPEG-4	1920 x 1080	MP3, MP2, AC3
		H.264	1920 x 1080	MP3
*.mkv	MKV	MPEG-4	1920 x 1080	MP3
		H.264	1920 x 1080	MP3, AC3
*.mpg *.mpeg	PS (Program Stream)	MPEG1	768 x 576	MP2, AC3
		MPEG2	1920 x 1080	MP2, AC3

File Extensions	Container	Video Decoder	Resolution	Audio Decoder
Others	TS (Transport Stream)	MPEG2	1920 x 1080	MP2, AC3
		H.264	1920 x 1080	MP2, AC3

Software

16.1

Software update

Update from USB

It might be necessary to update the TV software. You need a computer and a USB memory device to upload the software on the TV. Use a USB memory device with 256MB free space. Make sure that write protection is switched off.

1. Start the update on TV

To start the software update . . .

Press **▲**, select **Setup** and press **OK**.

Select **Update software** > **USB** and press **OK**.

2. Identify the TV

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

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

3. Download the TV software

Insert the USB memory into your computer.

On the USB memory device, locate the file **update.htm** and double click it.

Click on **Send ID**.

If new software is available, download the .zip file.

After the download, unzip the file and copy the file **autorun.upg** onto the USB memory device.

Do not place this file in a folder.

4. Update the TV software

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

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

Do not . . .

- use the remote control
- remove the USB memory device from the TV

If a power cut occurs during the update, never remove the USB memory device from the TV. When the power returns, the update will continue.

16.2

Software version

To view the current TV software version . . .

1. Press **▲** and select **Setup** and press **OK**.
2. Select **Software settings** and press **OK**.
3. Select **Current software info** and see **Release Version**.
4. Press **↩**, repeatedly if necessary, to close the menu.

16.3

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

16.4

Open source license

Acknowledgements and License Texts for any open source software used in this product.

This is a document describing the distribution of the source code used in this product, 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 source code for this software can be found in the documentation supplied with this product.

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

zlib (1.2.7) A massively spiffy yet delicately unobtrusive compression library. Source: <http://www.zlib.net/> This piece of software is made available under the terms and conditions of the zlib license, which can be found below.

libjpeg (6b) It is a widely used C library for reading and writing JPEG image files. Source: <http://libjpeg.sourceforge.net/> This piece of software is made available under the terms and conditions of

the JPEG license, which can be found below.

libsqlite3 (3.7.14) SQLite is a C library that implements an SQL database engine. Programs that link with the SQLite library can have SQL database access without running a separate RDBMS process.

Source:

<http://linuxappfinder.com/package/libsqlite3-0> This piece of software is made available under the terms and conditions of the SQLite public domain license, which can be found below.

Openssl (1.0.0.d) A toolkit implementing SSL v2/v3 and TLS protocols with full-strength cryptography world-wide. Source: www.openssl.org This piece of software is made available under the terms and conditions of the Apache license, which can be found below.

libboost (1.51) Provides a repository for free peer-reviewed portable C++ source libraries. The emphasis is on libraries which work well with the C++ standard library. Source: www.boost.org This piece of software is made available under the terms and conditions of the Boost license, which can be found below.

libdirectfb (1.4.11) DirectFB is a graphics library which was designed with embedded systems in mind. It offers maximum hardware accelerated performance at a minimum of resource usage and overhead. Source: <http://directfb.org> This piece of software is made available under the terms and conditions of the GNU Lesser General Public License, which can be found below.

libTomMath (0.42.0) A free open source portable number theoretic multiple-precision integer library written entirely in C. Source: <http://libtom.org/> This piece of software is made available under the terms and conditions of the WTFPL license, which can be found at this site: www.wtfpl.net/txt/copying
MTD utility (1.5.0) MTD subsystem (Memory Technology Devices) provides an abstraction layer for raw flash devices. It makes it possible to use the same API when working with different flash types and technologies, e.g. NAND, OneNAND, NOR, AG-AND, ECC'd NOR, etc. MTD subsystem does not deal with block devices like MMC, eMMC, SD, CompactFlash, etc. These devices are not raw flashes but they have a Flash Translation layer inside, which makes them look like block devices. These devices are the subject of the Linux block subsystem, not MTD.

Source:

<http://www.linux-mtd.infradead.org/source.html> This piece of software is made available under the terms and conditions of the GNU General Public License, which can be found below.

FFmpeg (0.6) Cross-platform solution to record, convert and stream audio and video. It includes libavcodec - the leading audio/video codec library. Source: www.ffmpeg.org This piece of software is made available under the terms and conditions of the GNU Lesser General Public License version 2.1 or GNU General Public License version 2, which can be found below.

zlib LICENSE [zlib.h](#) -- interface of the 'zlib' general purpose compression library version 1.2.8, April 28th, 2013

Copyright (C) 1995-2013 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 (jloup@gzip.org) Mark Adler (madler@alumni.caltech.edu)

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

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, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Independent JPEG Group's free JPEG software This package contains C software to implement JPEG image encoding, decoding, and transcoding. JPEG is a standardized compression method for full-color and gray-scale images.

The distributed programs provide conversion between JPEG "JFIF" format and image files in PBMPLUS PPM/PGM, GIF, BMP, and Targa file formats. The core compression and decompression library can easily be reused in other programs, such as image viewers. The package is highly portable C code; we have tested it on many machines ranging from PCs to Crays. We are releasing this software for both noncommercial and commercial use.

Companies are welcome to use it as the basis for JPEG-related products. We do not ask a royalty, although we do ask for an acknowledgement in product literature (see the README file in the distribution for details). We hope to make this software industrial-quality --- although, as with anything that's free, we

offer no warranty and accept no liability. For more information, contact jpeg-info@jpegclub.org.

Contents of this directory [jpegsrN.tar.gz](#) contains source code, documentation, and test files for release N in Unix format.

[jpegsrN.zip](#) contains source code, documentation, and test files for release N in Windows format.

[jpegaltui.vN.tar.gz](#) contains source code for an alternate user interface for cjpeg/djpeg in Unix format.

[jpegaltuiN.zip](#) contains source code for an alternate user interface for cjpeg/djpeg in Windows format.

[wallace.ps.gz](#) is a PostScript file of Greg Wallace's introductory article about JPEG. This is an update of the article that appeared in the April 1991 Communications of the ACM.

[jpeg.documents.gz](#) tells where to obtain the JPEG standard and documents about JPEG-related file formats.

[jfif.ps.gz](#) is a PostScript file of the JFIF (JPEG File Interchange Format) format specification.

[jfif.txt.gz](#) is a plain text transcription of the JFIF specification; it's missing a figure, so use the PostScript version if you can.

[TIFFTechNote2.txt.gz](#) is a draft of the proposed revisions to TIFF 6.0's JPEG support.

[pm.errata.gz](#) is the errata list for the first printing of the textbook "JPEG Still Image Data Compression Standard" by Pennebaker and Mitchell.

[jdosaobj.zip](#) contains pre-assembled object files for JMEMDOSA.ASM. If you want to compile the IJG code for MS-DOS, but don't have an assembler, these files may be helpful.

Expat LICENSE Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd

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 NONINFRINGEMENT. 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.

DirectFB LICENSE (c) Copyright 2001-2007 The DirectFB Organization (directfb.org) (c) Copyright 2000-2004 Convergence (integrated media) GmbH All rights reserved. Written by Denis Oliver Kropp <dok@directfb.org>, Andreas Hundt <andi@fischlustig.de>, Sven Neumann <neo@directfb.org>, Ville Syrjälä <syrjala@sci.fi> and Claudio

Ciccani <klan@users.sf.net>.

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. The complete text of the license is found in the file COPYING.

GNU General Public LICENSE version 2 (GPLv2) Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it. For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software. Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations. Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program. You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions: a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change. b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License. c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote

it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following: a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or, b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or, c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based

on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License.

If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the

Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

SQLite Copyright All of the deliverable code in SQLite has been dedicated to the public domain by the authors. All code authors, and representatives of the companies they work for, have signed affidavits dedicating their contributions to the public domain and originals of those signed affidavits are stored in a firesafe at the main offices of Hwaci. Anyone is free to copy, modify, publish, use, compile, sell, or distribute the original SQLite code, either in source code form or as a compiled binary, for any purpose, commercial or non-commercial, and by any means.

The previous paragraph applies to the deliverable code in SQLite - those parts of the SQLite library that you actually bundle and ship with a larger application. Portions of the documentation and some code used as part of the build process

might fall under other licenses. The details here are unclear. We do not worry about the licensing of the documentation and build code so much because none of these things are part of the core deliverable SQLite library.

All of the deliverable code in SQLite has been written from scratch. No code has been taken from other projects or from the open internet. Every line of code can be traced back to its original author, and all of those authors have public domain dedications on file. So the SQLite code base is clean and is uncontaminated with licensed code from other projects.

Obtaining An Explicit License To Use SQLite Even though SQLite is in the public domain and does not require a license, some users want to obtain a license anyway. Some reasons for obtaining a license include:

You are using SQLite in a jurisdiction that does not recognize the public domain. You are using SQLite in a jurisdiction that does not recognize the right of an author to dedicate their work to the public domain. •You want to hold a tangible legal document as evidence that you have the legal right to use and distribute SQLite. •Your legal department tells you that you have to purchase a license.

If you feel like you really have to purchase a license for SQLite, Hwaci, the company that employs the architect and principal developers of SQLite, will sell you one.

Contributed Code In order to keep SQLite completely free and unencumbered by copyright, all new contributors to the SQLite code base are asked to dedicate their contributions to the public domain. If you want to send a patch or enhancement for possible inclusion in the SQLite source tree, please accompany the patch with the following statement:

The author or authors of this code dedicate any and all copyright interest in this code to the public domain. We make this dedication for the benefit of the public at large and to the detriment of our heirs and successors. We intend this dedication to be an overt act of relinquishment in perpetuity of all present and future rights to this code under copyright law.

We are not able to accept patches or changes to SQLite that are not accompanied by a statement such as the above. In addition, if you make changes or enhancements as an employee, then a simple statement such as the above is insufficient. You must also send by surface mail a copyright release signed by a company officer. A signed original of the copyright release should be mailed to:

Hwaci 6200 Maple Cove Lane Charlotte, NC 28269 USA

GNU GENERAL PUBLIC LICENSE Version 2, June 1991
Copyright (C) 1989, 1991 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software

Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too. When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it. For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software. Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations. Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION 0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of

warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program. You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions: a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change. b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License. c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.) These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following: a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or, b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or, c)

Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for non-commercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable

under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007
Copyright © 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions. "This License" refers to version 3 of the GNU General Public License. "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks. "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you".

"Licensees" and "recipients" may be individuals or organizations. To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the

normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work. The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you. Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law. No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures. When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such

circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions: •a) The work must carry prominent notices stating that you modified it, and giving a relevant date. •b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices". c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it. •d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways: a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange. b) Convey the object code in, or embodied in, a

physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge. c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b. d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements. e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d. A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work. A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying

occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions

directly impose on those licensors and authors.

All other non-permissive additional terms are considered “further restrictions” within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An “entity transaction” is a transaction transferring control of an

organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version". A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License. Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or

arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a

version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program. Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

GNU LESSER GENERAL PUBLIC LICENSE Version 2.1,
February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things. To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it. For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library.

The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source

code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions: a) The modified work must itself be a software library. b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change. c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License. d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful. (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring

the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy. This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License. However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library".

The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms

permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License.

Also, you must do one of these things: a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.) b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with. c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution. d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place. e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy. For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above. b) Give prominent notice with the combined

library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this

License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

GNU LESSER GENERAL PUBLIC LICENSE Version 3, 29 June 2007
Copyright © 2007 Free Software Foundation, Inc.
<http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, “this License” refers to version 3 of the GNU Lesser General Public License, and the “GNU GPL” refers to version 3 of the GNU General Public License.

“The Library” refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An “Application” is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library. A “Combined Work” is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the “Linked Version”.

The “Minimal Corresponding Source” for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The “Corresponding Application Code” for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version: a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following: a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License. b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following: a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License. b) Accompany the Combined Work with a copy of the GNU GPL and this license document. c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document. d) Do one of the following: 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source. 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version. e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following: a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License. b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License “or any later version” applies to it, you have the option of following the terms

and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Apache LICENSE Version 2.0, January 2004

<http://www.apache.org/licenses/> TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document. "Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity. "You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License. "Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor 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, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that you meet the following conditions: (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and (b) You must cause any modified files to carry prominent notices stating that You changed the files; and (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE.

You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Troubleshooting and support

17.1

Troubleshooting

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.

General

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 turning 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 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.

Wrong menu language

Change the language back to your language.

1. Press  and select **Setup** and press **OK**.
2. Select **TV settings** > **General settings** > **Menu language** and press **OK**.
3. Select the language you want and press **OK**.
4. Press , repeatedly if necessary, to close the menu.

Picture

No picture / distorted picture

- Make sure that the antenna is properly connected to the TV.
- Make sure that the correct device is selected as the display source.
- Make sure that the external device or source is properly connected.

Sound but no picture

- Make sure that the picture settings are set correctly.

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.

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 .

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.

Connections

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 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.

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 a HDMI-CEC audio device is connected 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.

17.2

Register

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

17.3

Help

This TV offers help on screen.

Open Help

1. Press  to open the Home menu.
2. Select **Help** and press **OK**.

nvk_v8_20140827

17.4

Online help

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

Go to www.philips.com/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 manual to read on your computer.

Consumer Care / Repair

For support and repair, call the Consumer Care hotline in your country. Find the telephone number in the printed documentation that came with the TV.

Or consult our website www.philips.com/support .

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

18.1

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.

Secure the TV from falling over

Always use the supplied wall bracket to secure the TV from falling over. Mount the bracket and secure the TV onto the bracket, even if you put the TV on the floor.

You can find the mounting instructions in the Quick Start Guide that came with the TV. In case you lost this guide, you can download the guide from www.philips.com. Use the product type number of the TV to look for the Quick Start Guide to download.

Risk of electric shock or fire

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

Risk of injury or damage to the TV

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

Risk of damage to the TV !

Before you connect the TV to the power outlet, ensure that the power voltage matches the value printed on the back of the TV. Never connect the TV to the power outlet if the voltage is different.

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.

18.2

Screen care

- Never touch, push, rub or strike the screen with any object.
- Unplug the TV before cleaning.
- Clean the TV and frame with a soft damp cloth and wipe gently. Never use substances such as alcohol, chemicals or household cleaners on the TV.
- To avoid deformations and 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, copyrights and licenses

19.1

Terms of use

2014 © TP Vision Europe B.V. All rights reserved.

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

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

The written material packaged with the TV and the manual stored in the memory of the TV or downloaded from the Philips website are believed to be adequate for the intended use of the system.

The material in this manual is believed adequate for the intended use of the system. If the product, or its individual modules or procedures, are used for purposes other than those specified herein, confirmation of their validity and suitability must be obtained. TP Vision Europe B.V. warrants that the material itself does not infringe any United States patents. No further warranty is expressed or implied. TP Vision Europe B.V. cannot be held responsible neither for any errors in the content of this document nor for any problems as a result of the content in this document. Errors reported to Philips will be adapted and published on the Philips support website as soon as possible. Terms of warranty Risk of injury, damage to TV or void of warranty! Never attempt to repair the TV yourself. Use the TV and accessories only as intended by the manufacturer. The caution sign printed on the back of the TV indicates risk of electric shock. Never remove the TV cover. Always contact Philips TV Customer Care for service or repairs. Any operation expressly prohibited in this manual, or any adjustments and assembly procedures not recommended or authorised in this manual, shall void the warranty. Pixel characteristics This LCD/LED product has a high number of colour pixels. Although it has effective pixels of 99.999% or more, black dots or bright points of light (red, green or blue) may appear constantly on the screen. This is a structural property of the display (within common industry standards) and is not a malfunction. CE compliance This product is in compliance with the essential requirements and other relevant provisions of Directives 2006/95/EC (Low Voltage), 2004/108/EC (EMC) and 2011/65/EU (ROHS). Compliance with EMF TP Vision Europe B.V. manufactures and sells many products targeted at

consumers which, like any electronic apparatus, in general have the ability to emit and receive electromagnetic signals. One of Philips' leading Business Principles is to take all necessary health and safety measures for our products, to comply with all applicable legal requirements and to stay well within the Electro Magnetic Field (EMF) standards applicable at the time of producing the products. Philips is committed to develop, produce and market products that cause no adverse health effects. TP Vision confirms that, as long as its products are handled properly for their intended use, they are safe to use according to scientific evidence available today. Philips plays an active role in the development of international EMF and safety standards, enabling Philips to anticipate further developments in standardisation for early integration in its products.

19.2

Copyrights and licenses

HDMI



HDMI®

The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

Dolby



Dolby®

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

MHEG software

The copyright in MHEG software (the Software) comprised in this television (this product) and included to enable you to use interactive television features is owned by S&T CLIENT SYSTEMS LIMITED (the Owner). You are permitted to use the Software only in conjunction with this product.

Kensington



Kensington and Micro Saver are registered US trademarks of ACCO World Corporation with issued registrations and pending applications in other countries throughout the world.

Other trademarks

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



Contact information

Argentina

0800 444 7749

Buenos Aires 0810 444 7782

België / Belgique

070 700 035 (0,15€/min.)

Bosna i Hercegovina

033 941 251 (Lokalni poziv)

Brazil

0800 701 0245

Sao Paulo 2938 0245

България

02 4916 273 (Национален номер)

Česká republika

228880895 (Místní tarif)

Danmark

3525 8314

Deutschland

0180 501 04 69 (0,14€/Min.)

Ελλάδα

2111983028 (Εθνική κλήση)

España

902 88 10 83 (0,10€ + 0,08€/min.)

Estonia

6683061 (Kohalikud kõned)

France

01 57 32 40 50 (local)

Hrvatska

01 777 66 01 (Lokalni poziv)

Italia

0245 28 70 14 (chiamata nazionale)

Ireland

0818 210 140 (national call)

Northern Ireland

0844 338 04 88 (5p/min BT landline)

Қазақстан

8 10 800 2000 00 04 (free)

Latvia

6616 3263 (Vietējais tarifs)

Lithuania

8 5 214 0293 (Vietiniais tarifais)

Luxembourg / Luxemburg

2487 1100 (Nationale Ruf / appel national)

Magyarország

06 1 700 8151 (Belföldi hívás)

Nederland

0900 202 08 71 (0,10€/min.)

Norge

22 97 19 14

Österreich

0820 40 11 33 (0,145€/Min.)

Polska

22 397 15 04 (Połączenie lokalne)

Portugal707 78 02 25 (0,12€/min. - Móvel
0,30€/min.)**Română**

031 6300042 (Tarif local)

Россия

8-800-22 00004 (бесплатно)

Suisse / Schweiz / Svizzera

0848 000 291 (0,081 CHF/Min.)

Србија

011 321 6840 (Lokalni poziv)

Slovakia

2 332 154 93 (Vnútroštátny hovor)

Slovenija

1 888 83 12 (Lokalni klic)

Suomi

09 88 62 50 40

Sverige

08 5792 9096 (lokalsamtal)

ประเทศไทย (Thailand)

02 652 7650

Türkiye

444 8 445

United Kingdom

0844 338 04 88 (5p/min BT landline)

Україна

0-800-500-480 (безкоштовно)

www.philips.com/support

Non-contractual images / Images non contractuelles / Außervertragliche Bilder

Specifications are subject to change without notice.

Philips and the Philips' shield emblem are registered trademarks of Koninklijke Philips N.V. and are used under license from Koninklijke Philips Electronics N.V.

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

2014 © TP Vision Europe B.V. All rights reserved.

www.philips.com