

# BeoVision Avant

BeoVision Avant-55

BeoVision Avant-75

BeoVision Avant-85

**BANG & OLUFSEN**

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# Dear customer

This guide contains additional information about the daily use of your Bang & Olufsen product and connected products, and describes the features and functions of your product in more detail. Among other things you can find information about settings, how to operate your product with a Bang & Olufsen remote control, and how to set up a wired or wireless connection. We expect your retailer to deliver, install and set up your product.

This guide will be updated on a regular basis to make it reflect, for example, new features and functions introduced with software updates.

You can find additional information if you look up your product in the Frequently Asked Questions (FAQ) section on [www.bang-olufsen.com/faq](http://www.bang-olufsen.com/faq).

Your Bang & Olufsen retailer is your first stop for all your service queries.

To find your nearest retailer, visit our website ...

[www.bang-olufsen.com](http://www.bang-olufsen.com)

# Remote control

## How to use your remote control

In this guide, operation is described with BeoRemote One. Note that to operate your television, it must first be paired with BeoRemote One. Your television enters pairing mode as soon as you connect it to the mains. For information on how to enable pairing of BeoRemote One, see the guide for your remote control, [www.bang-olufsen.com/guides/beoremoteonebt](http://www.bang-olufsen.com/guides/beoremoteonebt). Also, press the red button in the on-screen help and find 'Bluetooth' for more about pairing.

### Display

The display shows you a list of sources or functions when it is switched on.

### TV

Display available television sources in the display for you to switch on. Use  $\wedge$  or  $\vee$  to step in the list\*.

### MUSIC

Display available music sources in the display for you to switch on. Use  $\wedge$  or  $\vee$  to step in the list\*.

### $\gg$ , $\gg$ , $\gg$ (MyButtons)

Long press to save the current setup, such as sound settings and stand positions, short press to activate it.



### 0-9

Select channels and enter information in on-screen menus.

### LIST

Display extra functions in the display. Use  $\wedge$  or  $\vee$  to step in the list.

### GUIDE

Bring up the TV Programme Guide.

### $\leftarrow$ (Back button)

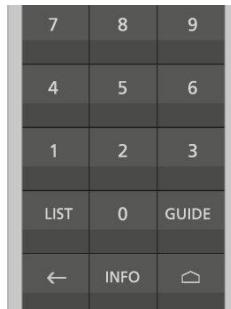
Leave or move backwards through TV menus and the BeoRemote One lists.

### INFO

Bring up information on a menu or function.

### $\square$ (Home button)

Bring up the Home menu, from where you can access different apps, among other a setup app, a TV app and MUSIC app.



## ↖, ↘, < and >

Arrow buttons left, right, up and down. Move in menus and in the BeoRemote One display.

## ● (Centre button)

For selecting and activating, for example, settings.

## Yellow, Red, Green and Blue (Colour buttons)

Select colour specific functions.



Start playback of a track, file or recording or start replay.

## ◀◀ and ▶▶

Search backwards or forwards step by step.

## P + and P -

Step through channels and stations.



Pause playback of a programme or recording.

## 🔉 + and 🔉 -

Adjust volume. To mute, press the middle of the button.

## ○ (Standby button)

Switch to standby.



\*Some sources in the display can be reconfigured during the setup process. To learn more, press the red button in the on-screen help and find '[Set up connected products](#)'.

For general information about remote control operation, see the guide for your remote control, [www.bang-olufsen.com/guides/beoremoteonebt](http://www.bang-olufsen.com/guides/beoremoteonebt).

Some countries and CA Modules require activation of Digital Text/MHEG. Consequently, some differences apply for BeoRemote One. For more information, press the red button in the on-screen help and find '[Digital Text](#)'.

## BeoRemote App

Operation of your television with the BeoRemote App may not be available in the current software version.

You can download the BeoRemote App through the illustrated QR code.\*

Your device and your television must be on the same network to use the BeoRemote App.

BeoRemote App allows you to operate your television with a smartphone or iOS tablet and is especially useful for navigating in web pages or applications.\* Both your television and device must be on the same network and **Wake on WLAN** must be set to **On**, see the television **Wireless and networks** menu. This allows you to switch on your television from standby mode. Note that the standby power consumption will increase slightly.

\*BeoRemote App supports smartphones with most recent iOS version or Android (version 4.0 or higher) and tablets with iOS (most recent iOS version).

BeoRemote App integrates with your television. However, it does not support all BeoRemote One functions.

Note that first-time setup must be performed using BeoRemote One. BeoRemote App requires that your television is set up in a network.



# Basic operation

## Guides

Together with your television you have received a printed Quick guide introducing you to the television.



The present guide found on-screen and online provides you with a deeper knowledge about the television and its many features and functions. It is also referred to as on-screen help.



## Menu operation

The below shows an example of a menu operation.

```
□  
Settings ● ▼  
Sound > ▼  
...  
...
```

This menu hierarchy illustrates the path into a menu where you can make different settings. Press **□** on your remote control and use the arrow buttons, then the **centre** button to select and open, for example, the **Settings** app. Use the arrow buttons **▼** and **>** to select and open a desired menu. When available, you can also press the **blue** button to bring up this guide.

## Remote control operation

The below shows an example of remote control operation.

To activate picture modes directly...

1. Press LIST, then **▲** or **▼** to bring up PICTURE in the BeoRemote One display and press the **centre** button.
2. Use **<** and **>** to step between modes and press the **centre** button to select a mode.
3. Press **←** to remove PICTURE from the display.

Where relevant, the remote control operation is shown. Remote control buttons are marked and indicate either a physical button you must press or a BeoRemote One display text. Press LIST, TV or MUSIC on BeoRemote One to bring up text in the BeoRemote One display. The text in LIST, TV and MUSIC can be renamed and you can hide text you have no need for and show text you need. For more information, see your BeoRemote One guide, [www.bang-olufsen.com/guides/beoremoteonebt](http://www.bang-olufsen.com/guides/beoremoteonebt)

To bring up a list of options related to the active source, you can press LIST, then  $\wedge$  or  $\vee$  to bring up Options in the BeoRemote One display and press the centre button.

## How to navigate in menus

Navigate in menus and select settings using your remote control. Pressing  $\square$  brings up a Home menu, which gives an overview of available apps and different features.

### Navigate in menus...

When a menu is on the screen, you can move between menu options, reveal settings or enter data.



1. Use the arrow buttons to highlight a menu, bring up a submenu, go back a menu level or change a setting.
2. Use the number buttons to enter data.
3. Press the **centre** button to save a setting.
4. Use the coloured buttons to select an option.
5. Press  $\leftarrow$  to leave the menu.

### Step between menu pages...

Some menus take up more space than available on the TV screen. You can then scroll through these menus.

1. Press  $\leftarrow$  or  $\rightarrow$  to step in pages.
2. Press  $\wedge$  or  $\vee$  to scroll through menu items.

### Select source...

You can bring up a source by pressing the **TV** or **MUSIC** button and select a source in the remote control display, or you can select a source via the TV menu.

1. Press  $\square$  to bring up the Home menu.
2. Use the arrow buttons to highlight **TV** or **MUSIC** and press the **centre** button.
3. Press  $\wedge$  or  $\vee$ , then the **centre** button to select a source.

### Bring up on-screen help...

You can press the **blue** button to bring up on-screen help with explanations of features and functions when available in menus and submenus.

## Personalise the TV experience

You can personalise your BeoRemote One, using the MyButtons and the **TV** and **MUSIC** buttons.\* You can save a “snapshot” of a current viewing and listening experience and thereby personalise that experience to restore it quickly with just one touch of a button. A snapshot can include the settings made for the selected source, for example, stand positions, sound mode and speaker group. You can also simply use it to activate a specific source with a MyButton.

\*The **TV** and **MUSIC** buttons can be personalised the same way as the MyButtons and you will still be able to select sources from the lists brought up in the remote control display.

For information on how to activate a source directly with the TV or MUSIC button, see the guide for BeoRemote One.

### Save a snapshot

You can save snapshots which can be activated by the MyButtons, the TV button and the MUSIC button. Your television must be switched on and a source must be selected.

1. Press and hold one of the MyButtons, the TV or the MUSIC button to bring up a list of items you can include in the snapshot.
2. Highlight the different items and press the centre button to enable or disable them.
3. Highlight **Save** and press the centre button to save the settings.

If all items are unchecked, you can select **Clear** to remove the snapshot from the button.

If you save a snapshot with a button where a snapshot has already been saved, the existing snapshot will be replaced by the new one.

### Use a snapshot

Use a desired snapshot when you watch television.

1. Press the button dedicated for the desired snapshot.

When you activate a saved snapshot, the settings are temporary and will be in effect until you adjust the settings, select another source, or switch the television to standby.

If the item saved as a snapshot is no longer available, the snapshot will still be activated, but the item played will follow normal source behaviour for the selected source.

## Home menu

Example of a Home menu.

In the Home menu, you find a number of shelves and a variety of different apps allowing you, for example, to start an application, switch to a TV channel or switch to a connected device. Here, you also find Settings.

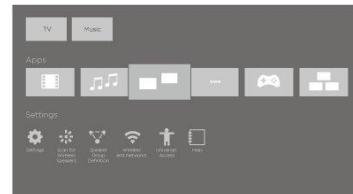
### Overview of the shelves

- Recommendations show recommended apps based on recent and frequent use and content preferences.
- Apps show the default apps and all apps you choose to install.
- Games show the games you choose to install.
- Settings show the different options for making settings such as **Settings**, Scan for wireless speakers, Speaker group setup, Wireless and networks, Universal access and Help.

### Basic navigation

1. Press  to bring up the Home menu.
2. Use the arrow buttons to move around in the Home menu.
3. Press the centre button to select an app or a specific function.

### Search



If the television is connected to the Internet, you can use the search field in the Home menu. You can enter text for a precise search for a song, a TV programme, a YouTube video or anything you like on the Internet. Use **▲** to move to the microphone icon and press **>** to move to the search field. Use the on-screen keyboard to enter text and the **centre** button. The results of your search appear after a few seconds. Move **▲** or **▼** to view the different types of content you found.

Voice search and personalised recommendations mean more time being entertained and less time hunting for something good. Voice search requires that you download the Android TV Remote Control app from Google Play Store and pair it with your television.

For more about search and voice search, press the **red** button in the on-screen help and find "[Voice and search](#)".

## Options

You can bring up a list of options for a specific function if you press **LIST**, then **▲** or **▼** to bring up **Options** and press the **centre** button.

## Indicator light

The standby indicator placed on the right on top of the television will provide you with information about the television state.

- (Solid green)

The television is switched on, but there is no picture on the screen.

- (Slowly flashing red)

The television has been disconnected from the mains supply. It has then been reconnected and you must enter the pin code. For information about the pin code, press the **red** button in the on-screen help and find "[Pin code system](#)".

- (Quickly flashing red)

Do not disconnect the television from the mains supply. Could be due to new software being activated or too many failed pin code attempts.

# Set up your television

## Set up your television – introduction

The television must be set up by qualified service personnel according to the guide for the stand or bracket. The television has several placement options. Guidelines for placement and connection must be followed.

To ensure proper ventilation, allow enough space around the screen. At overheating (flashing standby indicator and an on-screen warning), switch the television to standby, do not disconnect from the mains, in order for the television to cool down. You cannot operate the television during this time.

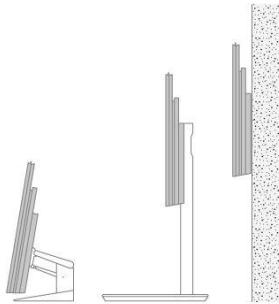
**WARNING!** Do not lift or otherwise move your television physically when it is mounted on the floor stand. It could cause the TV screen to break. Contact your retailer.

If your television is mounted on the table stand, make sure it is placed on a table that can handle the heavy weight of the television and the table stand.

## Placement

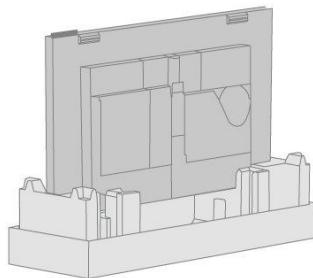
The television has several placement options.

Refer to [www.bang-olufsen.com](http://www.bang-olufsen.com) for available stands and wall brackets or contact your Bang & Olufsen retailer. Depending on your television size, different stands are available. Due to the weight of the television, any moving or lifting of the television should be performed by qualified personnel – using the proper equipment.



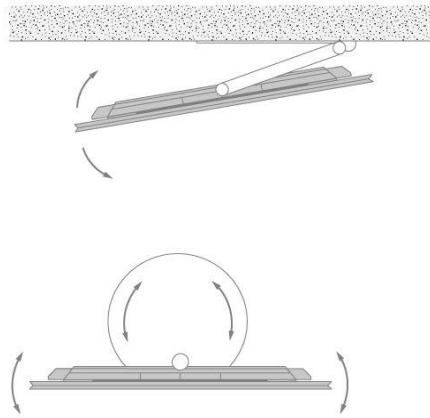
## Handling

The television is not designed to stand on its own. It must be supported until mounted either by the packaging or the transportation feet. To prevent injury, use Bang & Olufsen approved brackets or stands only!



## Stands and wall brackets

Set the maximum angle the television will turn on the motorised floor stand or wall bracket. Remember to leave enough space around the television to allow it to turn freely. If your television is mounted on the motorised table stand, it can be slightly tilted to avoid disturbing reflections. For more information, press the red button in the on-screen help and find '[Set a stand position](#)'.



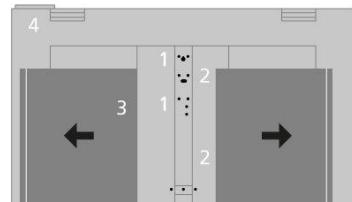
If the television is to be moved when mounted on the floor stand, it must be moved by qualified personnel. Also, it is important that the stand is set in transport mode. When placed in a new position, the stand must be calibrated again. Bring up **Settings**, then **Stand** to set it up again.

## Overview

Locate the connection panel and other important items:

1. Holes for mounting of a wall bracket.
2. Holes for mounting of a stand.
3. Covers for the connection panel. Slide the covers to the sides to reveal the connection panel.
4. Standby indicator.

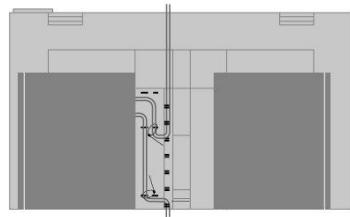
Depending on your setup, different stand or wall bracket covers may be used. See the guide for your stand or wall bracket for information on how to mount such covers.



## Run cables

Gather the cables from the upper and lower part of the panel, fasten them with cable ties and run them upwards or downwards behind the cable holders depending on wall bracket or stand placement. See the illustrated example.

When mounted on a motorised stand or wall bracket, make sure that there is enough slack in the cables to allow the television to turn to either side or tilt before you fasten the cables with cable ties to make a neat bundle.



# Maintenance

Regular maintenance, such as cleaning, is the responsibility of the user.

Never use alcohol or other solvents to clean any parts of the television.

## Screen

Use a mild window cleaning fluid and lightly clean the screen without leaving streaks or traces. Some micro-fibre cloths may harm the optical coating due to their strong abrasive effect.

## Cabinet and controls

Wipe dust off the surfaces using a dry, soft cloth. To remove stains or dirt, use a soft, damp cloth and a solution of water and mild detergent, such as washing-up liquid.

# Connections

## Connection of products

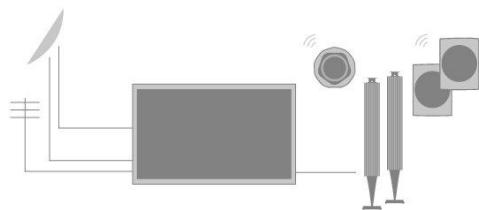
The connection panel on your television allows you to connect signal input cables as well as a variety of extra products, such as a Blu-ray player or a music system.

Products you connect to these sockets can be registered in the Source list menu. For more information, press the red button in the on-screen help and find '[Set up connected products](#)'.

The illustration shows an example of connections to the AERIAL, SAT 1-2 and PL1-4 sockets.

Before you connect any products to your television, remember to disconnect the television from the mains. Except when connecting a source to an HDMI IN or USB socket.

Depending on the type of product you connect to the television, different cables and maybe also adaptors are needed. Cables and adaptors are available from your Bang & Olufsen retailer.



### Tuner

If you use the hard disk recorder functions in connection with a satellite dish, you must use an LNB head with two outputs. If you have more than one satellite dish, you must also use a multi DISEqC switch. For more information, contact your Bang & Olufsen retailer.

### Loudspeakers

Use Bang & Olufsen BeoLab speakers. Cables are available from your Bang & Olufsen retailer.

You can also connect up to eight speakers wirelessly. For more information, press the red button in the on-screen help and find '[Sound settings](#)'.

To obtain the best possible wireless connection, it is recommended to place all wireless speakers within a range of approximately 9 metres (29.5 ft) from the television.

Do not place any obstacles in front of the television or wireless speakers as this may interfere with the wireless connection. The wireless speakers should be placed in one room and be visible from the television. See the guide for your speaker for information about whether or not your speaker can be connected wirelessly.

### Products with HDMI™ output

Products with HDMI output such as a set-top box can be connected to any available HDMI IN socket in the television. For more information on how to set up connected products, press the red button in the on-screen help and find '[Set up connected products](#)'.

A configured source can be selected on the BeoRemote One or via TV in the Home menu.

Connected products can be operated with its own remote control or you may download a Peripheral Unit Controller (PUC) table, if available, to use the Bang & Olufsen remote control. For more information, press the red button in the on-screen help and find '[PUC tables](#)'.

# Connection panels

Products you connect permanently to the connection panel can be registered in the Source list menu by pressing **>** for each source. For more information, press the red button in the on-screen help and find '[Set up a source](#)'.

We recommend that you connect the television to the Internet to use Smart TV functions, receive software updates and to download Peripheral Unit Controller (PUC) tables. PUC tables enable you to operate connected non-Bang & Olufsen products with your Bang & Olufsen remote control.

Connect the mains socket (~) on the connection panel of your television to the wall outlet.

The supplied plug and mains cord are specially designed for the product. Do not change the plug, and if the mains cord is damaged, you must buy a new one from your Bang & Olufsen retailer.

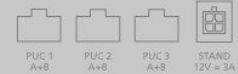
## ~ Mains supply

Connection to the mains supply.



## STAND

For connection of a motorised stand or wall bracket. Press the red button in the on-screen help and find '[Adjust the stand](#)' for information on how to calibrate a floor stand or wall bracket.



## PUC 1-3 (A+B)

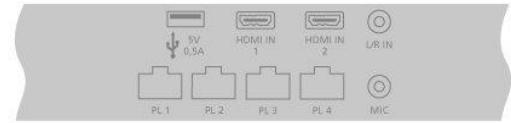
For IR control signals to external products connected to an HDMI IN socket. Allows you to control non-Bang & Olufsen products with your Bang & Olufsen remote control.

## MIC

For connection of a calibration microphone only, to be able to calibrate connected speakers automatically.

## PL1-4 (Power Link)

For connection of external speakers in a surround sound setup. Press the red button in the on-screen help and find '[Connect speakers to the television](#)' for more information.



## L/R IN

Left and right line input.

## HDMI IN 1-2

The High Definition Multimedia Interface allows you to connect many different sources, such as set-top boxes, multimedia players, Blu-ray players, or a PC.

## USB (↔)

For connection of a USB device to browse digital photos, video or music files. If you connect a USB HDD or SSD, you can use it as an external hard disk recorder.

## AERIAL

Aerial input socket for a digital aerial/cable TV network or for an analogue TV signal.



## SAT 1-2 (Satellite)

Aerial input sockets for a digital satellite signal.

## Ethernet

For connection to the Internet. For access to the Internet, Smart TV, software updates and PUC downloads.

Make sure the cable connection between the product and the router does not exit the building to avoid contact with high voltage.

It is strongly recommended that you set your television to update system software automatically, press the red button in the on-screen help and find '[Auto system updates](#)'.

## HDMI IN 3-4

The High Definition Multimedia Interface allows you to connect many different sources, such as set-top boxes, multimedia players, Blu-ray players, or a PC. HDMI IN 4 is for connection of MHL compliant devices.

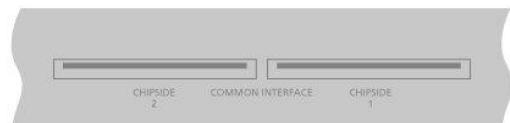


## USB x 2 (↔)

For connection of a USB device to browse digital photos, video or music files. If you connect a USB HDD or SSD, you can use it as an external hard disk recorder.

## COMMON INTERFACE x 2

For insertion of a CA Module and card for access to coded digital channels. For more information about compatible card and module combinations, contact your Bang & Olufsen retailer.



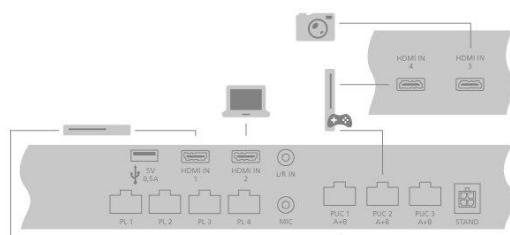
# Connect digital sources

Connect external HDMI sources, such as a set-top box, computer or game console. All products connected to the television can be configured. For more information, press the red button in the on-screen help and find '[Set up a source](#)'.

Depending on the product you connect to the television, different cables and maybe also adaptors are needed. If you have more than one product that needs a PUC socket, you must buy an extra PUC cable. Cables and adaptors are available from your Bang & Olufsen retailer.

## Connect a digital source

1. Connect the cable to the appropriate socket on the digital product.
2. Run the cable to an HDMI IN socket on the television.
3. To enable operation of the digital product with your Bang & Olufsen remote control, connect an IR-transmitter to one of the PUC sockets and attach it to the IR-receiver of digital product. Press the red button in the on-screen help and find '[IR-transmitters](#)' for more information.
4. Follow on-screen instructions to configure the source.\*



\*When selecting Game console as source, the picture mode Game is activated as default setting. You can change this setting temporarily in the Picture menu. Press

the red button in the on-screen help and find '[Picture settings](#)' for more information.

#### Connect a camera

1. Connect the cable to the appropriate socket on the camera.
2. Run the cable to an HDMI IN socket on the television.
3. Follow on-screen instructions to configure the source.

## Connect a computer

Before you connect a computer, you must disconnect the television, the computer and all connected products from the mains supply.

1. Using the appropriate type of cable, connect one end to the DVI or HDMI output socket on your computer, and the other end to an HDMI IN socket on the television.
2. If you use the DVI output socket on the computer, use the appropriate cable and connect the sound output on the computer to the L/R IN socket on the television to hear sound from the computer in the speakers connected to the television.
3. Reconnect the television, the computer, and all connected products to the mains. Remember, the computer must be connected to a grounded wall outlet as specified in its setting-up instructions.
4. Follow on-screen instructions to configure the source.

## Connect an analogue audio source

You can connect one analogue audio source, such as an Mp3 player. To configure products connected to the television, press the red button in the on-screen help and find '[Set up connected products](#)'.

Disconnect all systems from the mains before you connect additional products.

1. Connect the cable to the appropriate socket on the product you wish to connect.
2. Run the cable to the L/R IN socket on the television.
3. Reconnect the television and the connected products to the mains.
4. Follow on-screen instructions to configure the source.

Different adaptors and possibly also cables are needed. Cables and adaptors are available from your Bang & Olufsen retailer.

## IR-transmitters

To operate non-Bang & Olufsen products with a BeoRemote One or the BeoRemote App, attach a Bang & Olufsen IR-transmitter on your non-Bang & Olufsen product and then connect it to one of the sockets marked PUC on the connection panel. Attach the transmitter near the IR-receiver on the connected product to ensure remote control operation. Before attaching the transmitter permanently, check that you can operate the product menus on the TV screen using BeoRemote One or BeoRemote App. Operation of your television with the BeoRemote App may not be available in the current software version.

When you set up the transmitter to a selected PUC socket in the **Source list** menu, settings for the IR-transmitter are made automatically. However, it is possible to perform a manual setup of the socket if alternative settings are required.

For an extra PUC cable, contact your Bang & Olufsen retailer.

For information about download of Peripheral Unit Controller (PUC) tables for set-top boxes, press the red button in the on-screen help and find '[PUC tables](#)'.

## Smart Card for digital channels

If you want to watch coded channels, contact your service provider. The service provider will register you as an authorised viewer, usually requiring payment. You will then be provided with a Smart Card and a CA Module. Note that these will only be valid for one service provider and therefore only work with certain channels.

The CA Module is a 'card reader' for your Smart Card which decodes the coded signals sent out by the service provider. Only uncoded digital channels, also known as 'free-to-air' channels, are available without Smart Cards and CA Modules.

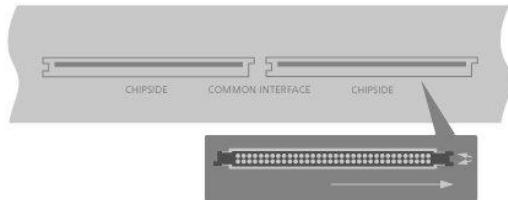
Contact your Bang & Olufsen retailer for information about compatible CA Modules.

The Smart Cards must remain in the CA Modules, unless your service provider asks you to remove it. This is important in case your service provider wishes to send new information to your Smart Card.

Insert a Smart Card carefully into a CA Module. The CA Module has one protruding edge on one side and two protruding edges on the other side. If the television does not receive any signal, check that the Smart Card and CA Modules are inserted correctly.

Smart Cards and CA Modules may also give access to special menus which are not described here. If this is the case, follow the instructions from your service provider. You can access a **Common interface** menu when the TV tuner is the current source if you press LIST and bring up Options.

When operating your television, you may need to use different pin codes other than a pin code for your Smart Card. Pin codes are used for protective reasons, due to mandatory requirement from providers and by external equipment. It may be easier for you if you choose the same code for different systems when possible.



## Connect speakers to the television

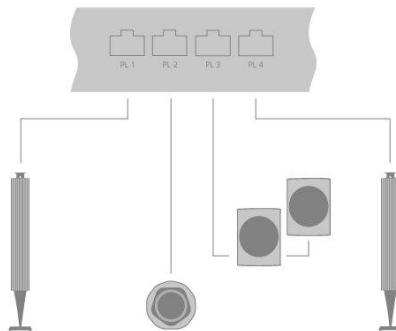
You can connect up to eight wired speakers and subwoofers to the television using Power Link cables.

In addition, you can connect up to eight speakers wirelessly, including subwoofers. For more information about setting up wireless speakers, press the red button in the on-screen help and find '[Sound settings](#)'.

Disconnect all systems from the mains before you connect additional products.

Depending on the type of speakers you connect to the television, different cables and maybe also adaptors are needed. Cables and adaptors are available from your Bang & Olufsen retailer.

The illustration shows an example of a speaker setup with two front speakers, two daisy-chained rear speakers and a subwoofer.



### Connect speakers

1. Connect a Power Link cable to the appropriate socket on the speakers you wish to connect to the television.\*
2. Run the cables to available sockets marked PL 1-4 on the television.
3. Connect a Power Link cable to the appropriate sockets on a subwoofer.
4. Run the cable to an available socket marked PL 1-4 on the television.
5. Reconnect the television and the connected speakers to the mains.

\*Remember to set the switch for left and right position on the speakers depending on whether your speaker is positioned on the left or right of your listening position.

If you want to connect two speakers to one PL socket on the television and it is not possible to loop the cable between the speakers, an extra splitter is needed, contact your Bang & Olufsen retailer for more information.

# Set up connected products

## Set up a source

If you connect additional video products to your television, you can set up the products in the Source list menu via the Settings option when you find the source and press **>**.

When the television is switched on and you connect additional products to an HDMI IN socket, the television will detect an unconfigured source. A message appears on the screen and you can follow on-screen instructions to configure the source.

Registering the products connected to the television enables you to operate it with your BeoRemote One.

Sources have default settings, for example, sound and picture that suit most situations but you can change these settings if you wish.

□  
Settings ●  
Source list >  
...

Select the source in **Source list** and press **>**.

You can give the source the name you want to appear in the source list by pressing the **yellow** button and follow on-screen instructions.

You can also set a speaker group to be activated when you select the source.

## Products connected to HDMI IN

You can register the connected products in the television.

With an Internet connection, you can download Peripheral Unit Controller (PUC) tables enabling you to operate connected products, such as a set-top box, with BeoRemote One. PUC tables are available for many other brand products, such as projectors, Blu-ray players, set-top boxes, and game consoles. The list of PUC tables on the Internet is updated and expanded on a regular basis.

### PUC table

Select a PUC table in the list brought up. If the peripheral unit is not present in the list, select **Search** to download a table suitable for the connected product.

You can also select **From USB** to download a table from a connected USB key.

For more information, press the **red** button in the on-screen help and find '[Download PUC tables](#)'.

### PUC socket

When you have found the wanted peripheral unit, you must select the socket to connect and configure the product to. Settings for the PUC socket are made automatically upon selecting **Next**. However, if you need to set up the control type and modulation mode manually, you must select **Manual setup** and follow on-screen instructions instead.

### Control type

If you have selected **Manual setup**, you must select a control type.

To operate non-Bang & Olufsen products with a Bang & Olufsen remote control, attach a Bang & Olufsen IR-transmitter to the products. Select **IR-blaster** if the IR-transmission takes place via an IR-blaster. Select **Plug** if the IR-transmission takes place via a cable plugged into the product.

#### Modulation mode

If you have selected **Manual setup**, and set the control type to **Plug**, you must select a modulation mode. Select **Modulation on** if the connected product requires a modulated signal. Select **Modulation off** if the connected product requires an un-modulated signal. For more information, contact your Bang & Olufsen retailer.

#### Standby options

Set up when the product should switch off.

- **Off at TV standby:** The connected product should switch off when you switch off the television.
- **Off at source change:** The connected product should switch off when you select a different source available in your system.
- **Always on:** The connected product should remain on at all times. This is useful if the product has a very long start-up time.
- **Manual control:** Switch the connected product on and off manually.

The connected product is now ready for use and you must select **Finish**.

## Sound mode

Set a sound mode for the source. The television has several sound modes optimised for different types of programmes and sources. However, if you wish, you can adjust the values in the sound modes to your liking.

- **Automatic:** Adapts to the selected source or the input received. If, for example, you are watching a movie, the sound mode for movie will be used. This also means that if you have adjusted the **Movie** sound mode, your adjustments are included.
- **Movie:** For use when watching movies, either from DVD or Blu-ray, streaming sources or television broadcasts.
- **Game:** For use for audio with game consoles.
- **Speech:** For signals where increased speech intelligibility is wanted, for example, television news programmes.
- **Drama:** Primarily, for use when watching television broadcasts. Timbre settings are flat and bass management is active.
- **Sports:** For use when watching broadcasts of sports events.
- **Music:** For use with music sources, either with or without accompanying video.
- **Night listening:** For situations where it is desirable to hear all components of the audio signal without large jumps in dynamics or bass.
- **Custom:** Make your own specific sound mode with the sound adjustments you prefer. This sound mode can also be renamed.

For more information about setting up sound modes, press the **red** button in the on-screen help and find '[Sound settings](#)'.

## Speaker group

Select the speaker group to be used with this source.

For more information about setting up speaker groups, press the **red** button in the on-screen help and find '[Sound settings](#)'.

## Picture off

Select whether the picture on the TV screen should switch off when you select an audio source. Options are **Timeout** for the picture to switch off when a source has not been operated for a while, **Never** for the picture to remain on and **Always** for the picture to be switched off as soon as you select the source.

When the picture is switched off, you can still hear the sound of the source. If you have selected **Timeout** and the picture has faded out, you can activate the picture again if you press **INFO** or the **centre** button.

## Picture mode

Select a picture mode to be used for the selected source.

- **General:** Continuously and automatically adjusts the picture to the signal and the viewing conditions.
- **Movie:** Continuously and automatically adjusts the picture to the signal and the viewing conditions. The colour temperature is set to 6500 K.
- **Game:** Adjusts the picture to use the screen as a monitor for a connected game console or PC. It minimises the video delay and add signal processing for optimal picture.
- **Monitor:** Adjusts the picture to use the screen as a monitor for PC application. It minimises the video delay and neutralises all signal processing for unaltered picture. The colour temperature is set to 6500 K.

## Picture format

Set up a picture format to be used each time you activate the source.

- **Auto:** Reduces black bars at the top and bottom. The picture is scaled without changing the picture geometry. However, if a 4:3 source signals a wrong aspect ratio, the picture will be stretched horizontally.
- **Auto wide:** Reduces black bars at the top and bottom. Furthermore, the picture is scaled and stretched horizontally to reduce black bars on the left and right and to fill out as much of the screen as possible.

Note, that you can select additional picture formats in the **Options** menu found in **LIST** on your remote control.

If **Auto** or **Auto wide** do not give a satisfactory result due to incorrect format information from the source, you can select additional picture formats in the **Options** menu found in **LIST** on your remote control. Select one of the formats **Fixed A** – **Fixed D** until you obtain the optimum picture format. When you have selected **Fixed C** or **Fixed D**, you can use **^** and **▼** to move the picture up and down.

## Picture corrections

You can make brightness and contrast corrections as well as shift and zoom the picture horizontally and vertically on the TV screen to avoid any unwanted areas being visible on the screen. The options available depends on the source selected.

## Auto selection

If available for the connected source, select if the source should be selected automatically as soon as the television detects a signal, provided the television is on at the time.

## Audio level

Set the audio level of the connected source. This also enables you to align the audio level of the different products connected to the television.

## Blanking

If available for the connected source, select for how long the TV screen should display a blank screen before it displays the signal of the connected product. If, for example, a connected set-top box requires some time to start up, you can set the 'blanking' time to ensure that the picture is ready before it is displayed on the television.

## BeoRemote lists

Select if a source should be present in the list of video sources in your remote control display when you press **TV**, in the list of music sources when you press **MUSIC**, in both lists or in none of them.

Note that if you select **None**, the selected source will not be visible in the TV and Music lists on your remote control.

## Reset all settings for a source

If you have connected and configured a source to a specific socket on the television and then disconnect the source permanently, you must reset the source settings. Highlight the source in the **Source list** menu, press **>** and select **Reset to default**. When you select **Yes**, the source is no longer configured to this socket. Next time you connect a source to the socket, you are asked to configure the source.

Under **Service** you can remove unused PUC tables. For more information, press the red button in the on-screen help and find '[Service and software update](#)'

# Stand settings

## Set up the stand

If your television is equipped with the optional motorised floor stand or wall bracket, you can turn it using the remote control.

Furthermore, you can set the television to turn automatically to face your favourite viewing position when you switch it on. It can turn to a different position when you listen to, for example, a connected radio, and turn away to a standby position when you switch it off. You can also set up other stand positions for other listening or viewing positions.

If your television is equipped with the optional motorised table stand, you can set it to tilt slightly in the Stand adjustment menu, found in the Stand menu, for example, to avoid disturbing reflections.

```
□  
Settings ● ✓  
Stand > ✓  
...  
...
```

## Set a stand position

### Set a stand position – introduction

If your television is equipped with a motorised floor stand or wall bracket, choose one position for start-up and one for standby. You can also preset stand positions of your own choice, for example, when you sit in an armchair reading or when you sit at the dining table. Bring up the **Stand positions** menu to store, name or delete a stand position.

You cannot rename or delete the **Start-up** and **Standby** stand positions.

### Create a new stand position

In the **Stand positions** menu, set **Start-up** to the position you want your television to turn to when it is switched on. Set **Standby** to the position you want your television to turn to when it is switched off. You can also make a new stand position.

1. In the **Stand positions** menu, press the **green** button to make a new stand position.
2. Use the arrow buttons to move the television to the desired position.
3. Press the **centre** button to save.

To delete an existing stand position, press the **red** button in the menu and follow on-screen instructions. To rename a stand position, press the **yellow** button and follow on-screen instructions. The pre-named stand positions can be changed but not renamed or deleted.

## Adjust the stand

If your setup includes a motorised floor stand or wall bracket, you will during first-time setup be prompted to calibrate the outer positions of the motorised movement. For the floor stand, this is done by entering the distance from the stand to the wall, follow on-screen instructions. The motorised movement of the television will not work until the calibration process has been completed. If the television is placed differently later on, for example, in a corner, it is necessary to calibrate the motorised movement again. For information about moving your television press the **red** button in the on-screen help and

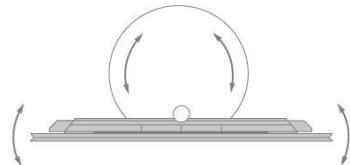
find '[Placement](#)'.

Depending on your setup, you can bring up a **Stand adjustment** menu for stand positions or wall bracket positions.

The calibration process allows you to set the maximum angle the television will turn – left and right.

## Set up the television with a motorised floor stand

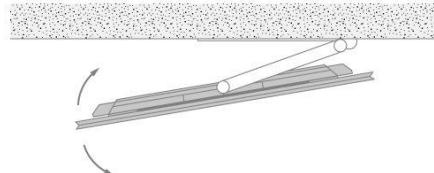
1. In the **Stand adjustment** menu, use **<** and **>** to turn the television by the pipe of the floor stand and **^** and **▼** to turn the television by the base of the floor stand. The television must be parallel to the wall behind.
2. Press the **centre** button to proceed to the next step.
3. Use **^**, **▼** or the number buttons to enter the distance between the stand and the wall.
4. Highlight **Save** and press the **centre** button.



If your television has just been moved, you will also be asked to set up new stand positions. Press the red button in the on-screen help and find '[Set a stand position](#)' for more information.

## Set up the television with a motorised wall bracket

1. In the **Stand adjustment** menu, press **<** or **>** to turn the television to the preferred position when fully closed.
2. Press the **centre** button to proceed to the next step.
3. Press **<** or **>** to turn the television to the preferred position when fully opened.
4. Press the **centre** button to save.



## Set up the television with a table stand

When mounted on a table stand, you can tilt the television to the position you prefer.

1. In the **Stand adjustment** menu, press **^** or **▼** to tilt the television to a preferred position.
2. Press the **centre** button to save.

## Transport of a stand

Moving of your television and floor stand to a different location, must be done by qualified personnel. You must activate the transport mode. This ensures that the calibration menu is shown when you switch on the television again, so you can determine the distance to the wall again. All the saved stand positions are deleted when you activate transport mode.

**WARNING!** Do not lift or otherwise move your television physically when it is mounted on the floor stand. It could cause the TV screen to break. Contact your retailer.

1. In the **Stand transport** menu, select **Yes** and press the **centre** button to activate transport mode. To deactivate transport mode, select **No** instead.

When the stand has been moved, you must calibrate the stand and set up stand positions again.

# Daily use

## Watch television

Watch analogue and digital terrestrial, cable and satellite channels depending on your tuner options. See programme information and turn the television. Make a recording if you have connected a correctly formatted USB HDD or SSD.

Learn more about programme information and TV guide in this chapter.

To bring up a favourite source quickly, you can save the source on one of the **MyButtons** on BeoRemote One. For more information, press the **red** button in the on-screen help and find '[Personalise the TV experience](#)'.

### Select a source

1. Press **TV**, then **↖** or **↘** to bring up the desired source in the BeoRemote One display and press the **centre** button, or ...
2. ... press **□** to bring up the Home menu.
3. Use the arrow buttons to highlight **TV** and press the **centre** button.
4. Press **↖** or **↘** to highlight the desired source and press the **centre** button.\*

\*You can set a video source to be activated directly with the BeoRemote One **TV** button from standby. See the guide for your BeoRemote One.

### Select a channel

1. Press **P +** and **P -** or use the number buttons to select a channel, or ...
2. ... press **←** to select the previous channel.

### Bring up and use source specific functions

1. Press **LIST**, then **↖** or **↘** to switch between source specific functions in the BeoRemote One display.
2. Highlight a desired function and press the **centre** button.

### Record here and now

To record the programme you are watching right now, press **INFO** and then the **red** button on the remote control. The recording will start immediately and a recording icon appears in the top right corner of the screen. It is only possible to record from digital channels.

To stop the recording, press **II**.

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

For more information about recording, press the **red** button in the on-screen help and find '[Record a programme](#)'.

### Use teletext

If available from your programme provider, you can bring up teletext for the selected channel.

1. Press **LIST**, then **↖** or **↘** to bring up **Text** in the BeoRemote One display and

- press the centre button.
2. Press **▲** or **▼** to step up or down in pages.
  3. Use the number buttons to enter a page number.
  4. Use the arrow buttons to navigate.
  5. Press **←** to leave teletext.

For more information about teletext, press the **red** button in the on-screen help and find '[Teletext](#)'.

## Programme information

You can bring up information on the current programme, or bring up a TV guide. You can also change audio and subtitle language or bring up interactive information via HbbTV.\*\*

An information display appears briefly on the screen every time you change channel or station. You can also bring up a display manually by pressing **INFO** to see programme information. When information is on-screen, you can press **▲** or **▼** to view information for other channels without switching channel. Press **←** to leave programme information.

In the information display, you find information such as channel name and number, the name of the current and following programme, programme start and stop time, programme information and a preview.

\*\*HbbTV may not be available on all markets.

Maturity rating is only visible if available from your service provider.



## TV guide

You can bring up a TV guide and view a list of the current and coming TV programmes of your channels. Depending on where the TV guide information is coming from, analogue and digital channels or only digital channels are shown.

In some regions and for some channels, TV guide information may not be available.

1. Press **GUIDE** on your remote control to bring up the TV guide. Press again to leave the TV guide.

The TV guide shows the channels of the selected tuner. The first time you open the TV guide, the television may scan all TV channels for programme information. This may take several minutes.

The television can collect TV guide information for the channels that are installed on the television. The television cannot collect the TV guide information for channels viewed from an external digital receiver or decoder.

For information on how to set the TV guide information to come from the Internet or the broadcaster, press the **red** button in the on-screen help and find '[TV guide](#)'.

From the TV guide...

1. To switch to a programme, highlight the programme and press the **centre** button.
2. To bring up details of the selected programme, press **INFO**. Press again or press **←** to remove the details.
3. Press the **yellow** button to show the scheduled programmes for the upcoming days and select a day. You can see up to eight days ahead.
4. Press the **green** button to view recordings and reminders.

## Search by genre

If the information is available, you can look up scheduled programmes by genre like movies, sports, etc. When the TV guide is on-screen you can search by genre via the Options menu found under **LIST** on your remote control. In the list of found programmes,

you can set reminders or schedule a recording on a selected programme.

For more information on recording, press the **red** button in the on-screen help and find '[Record a programme](#)'.

### Set a reminder

You can set a reminder for a programme. A message will alert you at the start of the programme. You can switch to this channel immediately. In the TV guide, a programme with a reminder is marked with a  icon.

When the TV guide is on-screen select an upcoming programme. You can set a reminder via the **Options** menu found under **LIST** on your remote control. Here, you can also clear a reminder.\*\*\*

\*\*\*If you have not connected a USB hard drive, you can simply press the **red** button to set or clear a reminder when you have selected an upcoming programme.

### List of reminders

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

1. Press **GUIDE** to bring up the TV guide.
2. Press the **green** button to bring up a list of reminders and recordings.
3. At the top of the screen, select **Scheduled** and press the **centre** button.
4. In the list of scheduled recordings and reminders, select the tab **Reminders** and press the **centre** button to view the reminders only.
5. Press the **red** button to remove the selected reminder. Press the **yellow** button to record the selected programme.
6. Press  to leave the menu.

### Set a recording

You can set a recording in the TV guide.\*\*\*\*

1. Press **GUIDE** and select a future or ongoing programme.
2. Press the **red** button to set a recording.
3. Press  to leave the menu.

To cancel a recording...

1. Press **GUIDE** and select the programme set for recording.
2. Press the **red** button to clear the scheduled recording.
3. Press  to leave the menu.

\*\*\*\*For more information, press the **red** button in the on-screen help and find '[Record a programme](#)'.

### Subtitles and audio options

If available, you can enable subtitles and select audio and subtitles language via the **Options** menu found under **LIST** on your remote control. Here, you can also make settings for visually and hearing impaired.

Subtitles from teletext...

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

1. Switch to a channel and press **LIST**, then  or  to bring up **TEXT** and press the **centre** button.
2. Enter the page number for subtitles.
3. Press  to leave teletext.

## Turn or tilt the television

Turn or tilt your television.

Turn the television mounted on a floor stand...

1. Press LIST, then  $\wedge$  or  $\vee$  to bring up STAND in the BeoRemote One display and press the centre button.
2. Press  $<$  or  $>$  to turn the television by the pipe of the floor stand.
3. Press the  $\wedge$  or  $\vee$  to turn the television by the base of the floor stand, or ...
4. ... use the number buttons to select a position for the television to turn to.

Turn the television mounted on a wall bracket...

1. Press LIST, then  $\wedge$  or  $\vee$  to bring up STAND in the BeoRemote One display and press the centre button.
2. Press  $<$  or  $>$  to turn the television, or ...
3. ... press  $\wedge$  or  $\vee$  to highlight a position for the television to turn to and press the centre button.

Tilt the television mounted on a table stand...

1. Press LIST, then  $\wedge$  or  $\vee$  to bring up STAND in the BeoRemote One display and press the centre button.
2. Press  $\wedge$  or  $\vee$  to tilt the television.

To use the motorised floor stand or wall bracket function, you have to calibrate the floor stand or wall bracket first. For more, press the red button in the on-screen help and find '[Stand settings](#)'.

## Use channels and lists

You can make, edit and use groups to make it easier to find your favourite TV channels and radio stations.

If automatic tuning of all channels and stations has not stored the channels and stations in your preferred order, you can rearrange the order in which they appear in a channel or station list. You can also remove or delete channels and stations you no longer wish to have or restore channels and stations you wish to have anyway.

Note, that some channels may show a loading symbol for a while before displaying content. These channels may behave differently and have some limitations regarding recording than otherwise described in this guide.

### Channel and station lists

After a channel installation, all channels appear in the channel list. Channels are shown with their name. The channel logo is shown if the television is connected to the Internet and this information is available. On some markets, channel logos must be enabled in the Channels Logos menu found in the Settings menu when you select General Settings then Advanced.

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

per satellite.

For each type of tuner, you can create four different lists of favourite channels. You can name each of these favourite lists individually. Only in these favourite lists can you reorder channels.

With a channel list selected, you switch to the channels in that list when pressing **P +** or **P -**.

#### Channel icons

After an automatic channel update of the channel list, newly found channels are marked with a **\*** icon. If you lock a channel, it will be marked with a **l** icon. The three most popular channels being watched by others currently are marked with 1, 2 or 3.

#### Radio stations

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

#### Open a channel list

Next to the list with all channels for each tuner, antenna/cable or satellite tuner, you can select a filtered list or you can select one of the favourite lists you have created.

To open the current channel list...

1. When the desired tuner is selected, press the **centre** button to bring up the current channel list, or...
2. ...press **GUIDE**, then **<**.
3. Press **<** to leave the channel list.

To select one of the channel lists...

1. When a channel list is shown on the TV screen, press **LIST**, then **^** or **▼** to bring up **Options** in the BeoRemote One display.
2. Press the **centre** button to bring up the **Options** menu on the TV screen.
3. Highlight **Select Channel List** and press the **centre** button.
4. In the list menu, highlight one of the available channel lists and press the **centre** button.

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

You can easily switch between two tuners in the list of sources. Press **TV**, then **^** or **▼** to highlight the source name dedicated to the antenna/cable tuner or the satellite tuner, and then press the **centre** button. The television will always open the last selected channel list for the selected tuner.

Filter a channel list...

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

Press the **centre** button to bring up the current channel list. You can select a list and a filter via the **Options** menu found under **LIST** on the remote control.

Search for a channel...

You can search for a channel to find it in a long list of channels. The television can search for a channel within one of the three main channel lists - the antenna, cable or satellite channel list.

Press the **centre** button to bring up the current channel list. You can select a list and search for a channel via the **Options** menu found under **LIST** on the remote control.

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

#### Channel list options

You can press **LIST** and select **Options** to access additional functions, for example, to rename a channel or create or edit a favourites list. Depending on whether you have brought up a channel list or favourites list different function are available.

### Channels

Lock channels unsuitable for children and select options for your channels.

You can press the **red** button in the on-screen help and find '[Child lock](#)' for more information.

#### Lock a channel

To prevent children from watching a channel, you can lock it. To watch a locked channel, you must enter the four-digit access code first. You cannot lock programmes from connected devices.

When the desired channel list is on-screen, select a channel you want to lock or unlock. You can then lock or unlock the channel via the **Options** menu found under **LIST** on the remote control. A locked channel is marked with a  icon.

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

#### Parental rating...

To prevent children from watching a programme not suitable for their age, you can set an age rating. Digital channels can have their programmes age rated. When the age rating of a programme is equal to or higher than the age you have set as age rating for your child, the programme will be locked. To watch a locked programme, you must enter the access code first. For information on how to set an access code, press the **red** button in the on-screen help and find '[Child lock](#)'.

#### Channel options

While watching a channel, you can set some options. Depending on the tuner type, the type of channel you are watching (analogue or digital) or depending on the TV settings you have made, different options are available. You may find options, for example, for subtitles, audio and subtitles language and for settings related to visually and hearing impaired.

While watching a channel, bring up available functions via the **Options** menu found under **LIST** on your remote control.

### Favourite channels

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

For each type of tuner, you can create four different lists of favourite channels. You can name each favourites list individually. You can only reorder channels in favourites lists. With a favourites list selected, you switch to the channels in that list when pressing **P +** or **P -**.

## Favourite channel options

You can press LIST and select Options to access additional functions, for example, to create or remove a favourites list, or move a channel.

While watching a TV channel or when a favourites channel list is on-screen, bring up available functions via the Options menu found under LIST on the remote control.

You can add a range of channels or start a favourites list by duplicating the complete channel list and removing the channels you do not want.

## Pause and play back a programme

With a USB hard drive connected to your television, you can pause, resume and repeat a digital programme in progress. The television continues saving during timeshift, so you are sure to see the entire programme. For information about a USB hard drive, press the red button in the on-screen help and find '[USB hard drive](#)'.

When you switch to another channel, the buffer content from the previous channel is cleared. Also, when you switch the television to standby, the buffer content is cleared.

Using a USB hard drive for timeshifting may not be supported by all programme providers.

You cannot activate MHEG or HbbTV during timeshift mode.

### Pause a programme

1. To pause a programme, press **II**. A progress bar at the bottom of the screen appears briefly.
2. To bring up the progress bar, press **II** again.

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

### Replay a programme

Resume a programme you have paused after a while.

1. When a programme is paused, press **<<** or **>>** to move backwards or forwards through the paused programme and select from where you want to start viewing the programme.\* Press repeatedly to change speed. At one point, you will reach the start or end of the programme storage or the maximum time span.
2. Press **>** to resume watching the programme.
3. To switch to the live TV programme, press and hold **II**.

\*You may need to press and hold **<<** or **>>** to move backwards or forwards.

During replay of a programme, you can press LIST, bring up the Options menu and make settings for subtitles, subtitle language and audio language.

## Record a programme

A USB hard drive connected to your television allows you to record programmes and watch them later. Your scheduled recordings are listed in the list of recordings. Here, you can also delete scheduled recordings. For information about a USB hard drive, press the red button in the on-screen help and find '[USB hard drive](#)'.

It is only possible to record from digital channels. Recording of channels may not be supported by all programme providers.

In some countries, it is not possible to record a CI+ programme while watching another

programme.

## Schedule a recording

You can schedule a recording of an upcoming programme for today or up to eight days from today. The television will use the data from the TV guide to start and end the recording.

1. Press **GUIDE** to bring up the TV guide.
2. Select the channel and programme you wish to record. Press **<** or **>** to scroll through the programmes of a channel. Use the **yellow** button to select the day you want.
3. With the programme highlighted, press the **red** button. The programme is now scheduled for recording. A warning will show automatically when overlapping recordings are scheduled.
4. The television adds a time margin at the end of the programme. You can adjust this margin with **Auto end margin**.
5. Press **<-** to leave the menu.

For more about **Auto end margin**, see information in this chapter.

## List of recordings

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

1. Press **TV**, then **↖** or **↙** to bring up **Recordings**.
2. Press the **centre** button to bring up the list of recordings.
3. Highlight the tabs **New**, **Watched** or **Expiring** and press the **centre** button to filter your view.
4. When a recording is highlighted, you can remove an existing recording or stop an ongoing recording if you press the **red** button. You can rename a recording if you press the **yellow** button.
5. Press **<-** to leave the menu.

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

If a scheduled recording is prevented by the broadcaster or if the broadcast is interrupted, a recording is marked as **Failed**.

## Missing recordings

When some recordings seem to have disappeared from the list of recordings, the TV guide information may have changed. Recordings made with the setting **From the broadcaster** become invisible in the list if you switch the setting to **From the Internet** or vice versa. The television may have switched to **From the Internet** automatically. To make the recordings available in the list of recordings, switch to the setting that was selected when the recordings were made.

## Recording conflicts

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

1. Press **TV**, then **↖** or **↙** to bring up **Recordings**.
2. Press the **centre** button to bring up the list of recordings.
3. At the top of the screen, highlight **Scheduled** and press the **centre** button.
4. In the list of scheduled recordings and reminders, highlight the tab **Recordings** and press the **centre** button to view the scheduled recordings only.
5. Highlight the scheduled recording that conflicts with another scheduled recording and press the **green** button to be able to adjust time.

6. Select the start or end time and change the time with  $\wedge$  or  $\vee$ . Highlight **Apply** and press the **centre** button.
7. Press  $\leftarrow$  to leave the menu.

## Auto end margin

You can set the time margin that the television will add automatically at the end of each scheduled recording. The default setting is 10 minutes.

1. Press **TV**, then  $\wedge$  or  $\vee$  to bring up **Recordings**.
2. Press the **centre** button to bring up the list of recordings.
3. Press **LIST**, then  $\wedge$  or  $\vee$  to bring up **Options** in the BeoRemote One display.
4. Press the **centre** button to bring up the **Options** menu on the TV screen.
5. Highlight **Auto end margin** and press the **centre** button.
6. Press  $\wedge$  or  $\vee$  and press the **centre** button to set the time margin added to a recording automatically. You can add up to 45 minutes to a recording.
7. Press  $\leftarrow$  to leave the menu.

## Manually scheduled recording

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

1. When the desired channel is selected, press the **centre** button to bring up the current channel list.
2. Press **LIST**, then  $\wedge$  or  $\vee$  to bring up **Options** in the BeoRemote One display.
3. Press the **centre** button to bring up the **Options** menu on the TV screen.
4. Highlight **Schedule** and press the **centre** button.
5. Highlight the tuner from where you want to record and press the **centre** button.
6. Highlight the channel to record from and press the **centre** button.
7. Highlight the day of the recording and press the **centre** button.
8. Set the start and end time of the recording. Select a parameter and use  $\wedge$  and  $\vee$  to set the hours and minutes.
9. Highlight **Schedule** and press the **centre** button to schedule the manual recording.

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

## Watch TV while recording

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

### Which channels can you watch during a recording...

- If your television is set up with one CA Module, you can only watch free channels and the channel you are recording. However, if you are watching a scrambled channel when recording of a free channel has started, you can continue watching the channel provided that you do not switch channel. While a free satellite channel is recording, it is also possible to view antenna/cable channels.
- If you use two CA Modules to decode scrambled channels and both Smart Cards have identical viewing rights, you can watch all channels, including the one you are recording.
- If you use two CA Modules with non-identical viewing rights, make sure that the viewing rights of the recorded channel is covered by the subscription on the Smart Card inserted in COMMON INTERFACE slot 1.
- In a single tuner setup, you can only record the channel you are watching.

For more information, press the **red** button in the on-screen help and find '[Smart Card for digital channels](#)'.

## Play a recording

With a USB hard drive connected to your television, you can play and browse through recordings of digital programmes.

The list of recordings shows information such as the storage capacity status, recording titles and recording duration. Also, the date of the recording can be shown, and if you highlight a recording a preview is shown.

To play a recording...

1. Press TV, then **▲** or **▼** to bring up Recordings.
2. Press the centre button to bring up the list of recordings.
3. Highlight the recording you need and press the centre button to start playback.
4. Press **II** to pause playback.
5. Press **◀◀** or **▶▶** to move backwards or forwards through the recording.\* Press repeatedly to change speed.
6. Press **II** again to stop playback.
7. Press **▶** to resume playback.
8. To switch back to watch television, press TV and if necessary, select the television source.

\*You may need to press and hold **◀◀** or **▶▶** to move backwards or forwards.

In Options in the LIST menu, you can choose to either start playback or play back a highlighted recording from the beginning. You can also resume a recording from where you left off, or remove a recording.

In addition, you can press the red button to remove a recording or a scheduled recording.

Press the green button to adjust the time of a recording or scheduled recording.

In the list of recordings, use the yellow button to rename a recording. In the list of scheduled recordings, use the yellow button to set a reminder or recording.

During playback of a recording, you can press LIST, bring up the Options menu and make settings for subtitles, subtitle language and audio language.

## Daily use of sound modes and speaker groups

You can extend your television into a surround sound system by adding BeoLab loudspeakers and subwoofers.

When you switch on a source, the television automatically selects the appropriate sound mode for the source you are using. However, you can select another sound mode at any time.

Also, when you switch on the television, the TV speaker group is selected automatically. However, you can always select another group of activated speakers if you want to listen to music without having to sit in front of the television, for example, when you sit at the dining table or in an armchair.

You can adjust the settings of the sound modes and set up speaker groups. For more information about sound modes and speaker groups, press the red button in the on-screen help and find '[Sound modes](#)' and '[Create a speaker group](#)'.

### Select a sound mode

You can select the sound mode that suits the source you are using.

1. Press LIST, then **▲** or **▼** to bring up SOUND in the BeoRemote One display and press the centre button.
2. Press **▲** or **▼** to highlight the sound mode you want and press the centre button.

3. Press < or > to step between modes.
4. Press ← to remove SOUND from the display.

When you configure a source, you can set a sound mode to be selected automatically each time you switch on the source. For information about preset selection, press the red button in the on-screen help and find '[Create a speaker group](#)'.

#### Select a speaker group

Select the speaker group that suits your listening position.

1. Press LIST, then ▲ or ▼ to bring up SPEAKER in the BeoRemote One display and press the centre button.
2. Press ▲ or ▼ to highlight the speaker group you want and press the centre button. The selected speakers cut in automatically.
3. Press < or > to step between groups.
4. Press ← to remove SPEAKER from the display.

When you configure a source, you can set a speaker group to be selected automatically each time you switch on the source. For information about preset selection, press the red button in the on-screen help and find '[Create a speaker group](#)'.

## Watch 3D television

You can enhance the experience of watching television with 3D technology, for example, when you want to watch movies, sports or nature films.

#### Important health and safety information for 3D pictures

Some viewers may experience discomfort while watching 3D television such as dizziness, nausea and headaches. If you experience such symptoms, stop watching 3D television, remove the 3D glasses and rest. Watching 3D television for an extended period of time may cause eye strain. If you feel eye strain, stop watching 3D television, remove the 3D glasses and rest. If you use eye glasses or contact lenses, wear the 3D glasses over them. Do not use the 3D glasses for other purposes. Adults should supervise children watching 3D television and ensure that they do not experience any discomfort as mentioned above. It is recommended that children under 3 years do not watch 3D television.

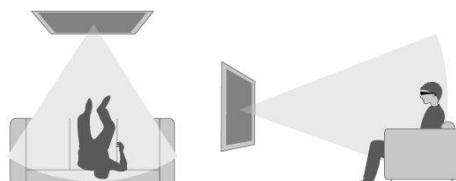
If two sources are brought up on the screen at the same time or if teletext is brought up in one picture and a source in the other, the television will always display a 2D mode.

Subtitles may not always be supported.

#### Viewing conditions

Place yourself in front of the screen, a little closer than when you normally watch 2D television, and use the 3D glasses. The recommended distance between your viewing position and the screen depends on the size of the screen and the picture resolution. If you move too far to the left or right of the centre of the screen, or if you move too far up or down, the quality of 3D television decreases.

You will get the best 3D experience if you darken the room, for example, switch off the lights and draw the curtains. Especially lights behind and around the screen can cause an irritating effect. We recommend not to watch 3D television in direct sunlight or bright surroundings.



#### Activate 3D or 2D television

To watch films or other programmes suited for 3D, you must activate the 3D function and put on the activated 3D glasses that are available from your retailer. Switch to 2D mode again to watch television that is not suited for 3D, for example, the news.

You activate 2D and 3D television via the LIST button. If 3D signalling is available, the television automatically switches to 3D when you select 3D and to 2D when you

select 2D. If 3D signalling is not available, a menu for 3D or 2D mode selection appears in the display.

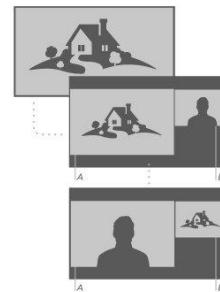
If 3D signalling is no longer available, the television automatically switches to the last used mode for the current source. At channel and source change, the television switches to Standard 2D.

## See two sources at the same time

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

To open the Multi View screen...

1. Switch to a TV channel. If you are not watching TV channels, press TV and select the television source.
2. Press LIST, then  $\wedge$  or  $\vee$  to bring up Multi View and press the centre button to open the small screen.
3. Press  $\text{P}+$  or  $\text{P}-$  to switch to another channel in the large screen, or...
4. ...press TV and use  $\wedge, \vee$  and the centre button to select another source.
5. Press LIST, then  $\wedge$  or  $\vee$  to bring up Multi View and press the centre button to swap the two pictures.
6. Alternatively, press  $\vee$  and press the centre button to close the small screen.



### Conditions

- While the television is recording, Multi View is not available.
- To use Multi View with satellite TV channels, you must connect the two satellite tuners SAT 1 and SAT 2 to your satellite dish.
- If both TV channels need a CA Module to decode, you must install two CA Modules to use Multi View.

The small screen has no sound.

## Teletext

You can operate teletext with  $\text{P}+$  or  $\text{P}-$  and the number buttons on your remote control.

If Digital Text is enabled and an MHEG application is available for the current channel, the Text button in LIST may have alternative functions communicated on-screen.

### To start and stop teletext

1. Press LIST, then  $\wedge$  or  $\vee$  to bring up Text in the remote control display and press the centre button to access the teletext start page.
2. To leave teletext, press  $\leftarrow$  or TV.

### Select a page

1. Enter the page number with the number buttons.
2. Use the arrow buttons to navigate.
3. Press a coloured button to select an option at the bottom of the screen.

### Subpages

A teletext 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 **>**.

### Favourite pages

The television makes a list of the last 10 teletext pages you have opened. You can easily reopen them again in the favourite teletext pages column.

1. When **Text** is selected, use the arrow buttons to select the  icon in the top left corner of the screen to show the column of favourite pages.
2. Press **^** or **v** to highlight a page number and press the **centre** button to open the page.

You can clear the list with the option **Clear favourite pages** found when you press **LIST** and bring up **Options**.

### Search teletext

You can highlight a word and scan teletext for all occurrences of this word.

1. Open a teletext page and press the **centre** button.
2. Highlight a word or number with the arrow buttons.
3. Press the **centre** button again to move immediately to the next occurrence of this word or number.
4. Press the **centre** button again to move to the next occurrence.
5. To stop searching, press **^** until nothing is selected.

### Teletext options

Additional options are available for teletext.

1. When teletext is activated, press **LIST**, then **^** or **v** to bring up **Options** in the BeoRemote One display.
2. Press the **centre** button to bring up the **Options** menu on the TV screen.
3. Select one of the items and press the **centre** button.
4. Press **<-** to leave the menu.

### Teletext language

Some digital television broadcasters have several teletext languages available.

1. To set your primary and secondary teletext language, press **□** and use the arrow buttons to highlight **Settings**, then press the **centre** button.
2. Use **^** or **v**, then **>** to select **Region and Language**, then **Languages** and **Primary Text or Secondary Text**.
3. Press **^** or **v** to highlight your preferred teletext language and press the **centre** button.
4. Press **<-** to leave the menu.

### Text 2.5

If provided by the broadcaster, Text 2.5 offers more colours and better graphics. Text 2.5 is activated as a default setting, however, if you wish, you can deactivate the function.

1. Press **LIST**, then **^** or **v** to highlight **Text** and press the **centre** button.
2. With teletext brought up on the TV screen, press **^** or **v** to highlight **Text 2.5** and press the **centre** button.
3. Press **^** or **v** to highlight **Off** and press the **centre** button.
4. Press **<-** to leave the menu.

## Operate connected products

The built-in Peripheral Unit Controller (PUC) acts as an interpreter between connected video products, such as a set-top box, video recorder or Blu-ray player, and your Bang & Olufsen remote control.

Download a Peripheral Unit Controller (PUC) table and use the Bang & Olufsen remote control to gain access to the functions offered by your non-Bang & Olufsen product. For information on how to download a PUC table, press the red button in the on-screen help and find '[Download PUC tables](#)'.

For instruction in the various functions offered by your product, see the product's own guide.

Some features and functions of the television may not be available when non-Bang & Olufsen products are connected. Not all connected video products are supported by Bang & Olufsen. For more information about supported products, contact your Bang & Olufsen retailer.

### Operate other products with BeoRemote One

Some functions are available directly via BeoRemote One when you switch on the products. Additional functions are available via the LIST button in the remote control display.

1. Press TV to bring up sources in the BeoRemote One display, then  $\wedge$  or  $\vee$  to highlight the source name configured for a connected product, for example, HDMI IN 1.
2. Press the centre button to switch it on.
3. Press LIST to bring up a list of source related functions.
4. Press  $\wedge$  or  $\vee$ , then the centre button to activate the function you want.

To bring up a favourite source quickly, you can save the source on one of the MyButtons on BeoRemote One. For more information, press the red button in the on-screen help and find '[Personalise the TV experience](#)'.

## Apps

The Apps shelf in the Home menu shows the collection of applications on your television. Like apps on your smartphone or tablet, the apps on your television offer specific functions for an enriched TV experience. It could be apps such as YouTube, Twitter, games, video stores or weather forecasts. Or, you can use the Internet app to browse the Internet.

Apps can come from the App Gallery or the Google Play™ Store. To get you started, a number of apps are preinstalled on your television. To install apps from the App Gallery or the Google Play Store, the television must be connected to the Internet.

You must agree to the Terms of Use to use apps from the App Gallery. See more information later in this chapter. You must sign in with a Google Account to use the Google Play apps and Google Play Store.

The selection of apps for download may change over time. Also, we are not responsible for the availability and performance of downloaded apps as the app providers may change or remove them. We also refer to the Terms of Use, described later in this chapter.

### Select an app

1. Press  $\square$ , then  $\wedge$  or  $\vee$  to move to the Apps shelf.
2. Press  $<$  or  $>$  to browse through the available apps.
3. Press the centre button to select the desired app.
4. To leave an app, press  $\leftarrow$ .

## Install an app

1. Press , then use the arrow buttons to move to the App Gallery icon or the Google Play icon and press the **centre** button.
2. Use the arrow buttons to select an app and press the **centre** button.
3. If necessary, highlight **Install** and press the **centre** button. The television will install the app.

When installed, the icon of the app will appear on the **Apps** shelf. Apps installed from the App Gallery open automatically after installation.

If you have trouble installing apps, first check the settings in the Google Play Store.

## Lock apps

Lock apps unsuited for children.

### 18+ rated apps

You can lock 18+ rated apps from the App Gallery. The 18+ app lock will ask for an access code when you try to start an 18+ rated app. For information on how to lock 18+ rated apps, press the **red** button in the on-screen help and find '[Child lock](#)'.

### Maturity

In the Google Play Store, you can hide apps according to the user's maturity. You need to enter an access code to select or change the maturity rate. This determines which apps are available for installation.

## Manage apps

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

In the Home menu, select **Settings**, **General settings** then **Android settings** to access a function for managing apps and other functions, for example, about storage capacity.

For more information about android settings, press the **red** button and find '[Android settings](#)'.

### USB hard drive

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

## Terms of Use - Apps

When you connect the television to the Internet, you are invited to agree to the Terms of Use. To use the apps from the App Gallery, you must agree to the Terms of Use. You can open the Terms of Use and read it again.

To read the Terms of Use...

1. Press , use the arrow buttons to go to the App Gallery app and press the

- centre button.
2. Press LIST, then  $\wedge$  or  $\vee$  to bring up Options in the BeoRemote One display.
  3. Press the centre button to bring up the Options menu on the TV screen.
  4. Highlight Terms of Use and press the centre button.

## Music and video services

Access services such as Spotify, Deezer and TuneIn, if you have the required subscriptions, and search through and stream for every occasion.

Access YouTube to watch a variety of different video content, such as movie and TV clips, music videos, short videos and other content uploaded by users. To use music or video services, your television must be connected to the Internet. Press the red button in the on-screen help and find '[Connect to a network](#)'.

Not all services are available on all markets.

### Bring up a video or music service

Bring up and activate a service to watch or listen to video or music of your choice. The services are available via your remote control or via apps in the Home menu.

1. Press  $\square$  and use the arrow buttons to highlight a service available as an app, then press the centre button, or...
2. ...press TV or MUSIC to bring up sources in the BeoRemote One display and  $\wedge$  or  $\vee$  to highlight the source name dedicated to the service you want to activate then press the centre button.
3. If necessary, enter user name and password for the relevant account.

## Games

You can play games that you have either downloaded and installed.

To install games, the television must be connected to the Internet.

For more information on connecting to the Internet, press the red button in the on-screen help and find '[Network and Bluetooth settings](#)'.

For information on setting your television to game mode, press the red button in the on-screen help and find '[Picture mode](#)'.

### Play a game

To start a game from the Home menu...

1. Press  $\square$ , highlight a game and press the centre button.
2. To stop the app, press  $\square$  or TV and select a source.

## Internet

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

- Some plug-ins, for example, to view pages or videos, are not available on your television.
- You cannot send or download files.
- Internet pages are shown one page at a time and full screen.

## Start the Internet browser

1. Press  $\square$ , highlight the **Internet** app and press the **centre** button.
2. Enter an Internet address and press the **centre** button.
3. To leave the Internet, press  $\square$  or press **TV** and select a source.

## Options on Internet

Additional options are available for the Internet.

1. With the Internet app open, press **LIST**, then  $\wedge$  or  $\vee$  to bring up **Options** in the BeoRemote One display.
2. Press the **centre** button to bring up the **Options** menu on the TV screen.
3. Select one of the items and press the **centre** button.
4. Press  $\leftarrow$  to leave the menu.

## Voice and search

You can search for videos, music or anything else on the Internet by simply using your voice. Alternatively, you can use an on-screen keyboard to enter text. Voice search requires that you download the Android TV Remote Control app from Google Play Store and pair it with your television.

See also [www.support.google.com/androidtv](http://www.support.google.com/androidtv)

### To use the keyboard to search

1. Press  $\square$  and move to the microphone icon in the top of the screen.
2. Press the **centre** button to activate the search function.
3. Press  $>$  to highlight the search field.
4. Type what you are looking for.
5. Press  $\leftarrow$  to hide the on-screen keyboard.
6. In the list of search results, you can select the item you want.
7. Press  $\leftarrow$  to leave the search results if necessary.

### To use Voice

1. Press the speaker button in the remote control.
2. Speak out clearly what you are looking for. It may take some time for the results to appear.
3. In the list of search results, you can select the item you want.
4. Press  $\leftarrow$  to leave the search results if necessary.

## Bluetooth headphones

You can use Bluetooth headphones or other Bluetooth devices if you pair them to your television. Remember to set your headphones or device in pairing mode before pairing.

1. Press  $\square$  and use the arrow buttons to highlight **Wireless and Networks** and press the **centre** button.
2. Press  $\wedge$  or  $\vee$  to highlight **Bluetooth** and press the **centre** button.
3. Press  $\wedge$  or  $\vee$  to highlight **Search for Devices** and press the **centre** button.
4. Follow on-screen instructions to pair your headphones.

Note that if your device comes out of range, you must pair it again.

For more information about pairing of Bluetooth devices, press the red button in the on-screen help and find '[Bluetooth](#)'.

## HomeMedia

### HomeMedia – introduction

You can play music and video files and browse photos stored either on a storage device or in another product connected via a DLNA/UPnP enabled media server. You get access to the files when you connect a storage device to your television.

Press **TV** or **MUSIC** and highlight the source name dedicated to HomeMedia, for example, HomeMedia then press the centre button.

If you have music and photos stored, you can start the music and return to the main menu to start a slideshow of your photos. You can then play music and see your photos at the same time.

You can also play files via a computer or smartphone. For information about the digital media renderer feature, press the red button in the on-screen help and find '[Digital Media Renderer](#)'.

Storage devices include, for example, USB devices and regular hard disks connected via USB or Ethernet.

For supported formats, see [www.bang-olufsen.com/guides](http://www.bang-olufsen.com/guides).



### USB Connection

You can view your photos or play your music and video files from a connected USB flash drive or USB hard drive.

With the television switched on, plug in a USB flash drive or a USB hard drive to one of the USB connections. The television detects the device and will list your media files. If the list of files does not appear automatically, press **TV** and select the source name dedicated to HomeMedia, then select the USB.

You can browse your files in the folder structure you have organised on the drive.

To stop playing video files, photos and music, press **←** or press **□** and select another activity.

Important! If you try to pause or record a programme with a USB hard drive connected, the television will ask you to format the USB hard drive. If you format a connected USB hard drive, all current files are deleted.

### Computer or NAS connection

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

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

Not all subtitles on video streams from a computer or NAS are supported by the television.

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

To browse and play the files on your computer, press **TV** and select the source name dedicated for your computer.

To stop playing video files, photos and music, press **←** or press **□** and select another activity.

From a cloud storage service

You can view photos or play music and videos you have uploaded on a storage service in the online cloud.\* With the Cloud Explorer app, you can connect to Cloud Hosting Services. You must use your login and password to connect if required.

1. Press , highlight the Cloud Explorer app and press the centre button.
  2. Select the hosting service you need.
  3. Connect and sign in to the hosting service with your login and password.
  4. Highlight the photo or video you want to play and press the centre button.
  5. Press  to leave the menu.

\*An example of a storage service is Dropbox™.

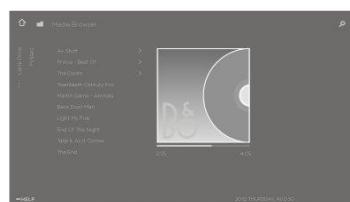
Listen to music

How to open a list of media files on the television depends on the type of device in which the files are stored.

To play a track, select the file name of the track in the list of media files.

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

1. To pause a track, press **II**. Press the centre button to continue.
  2. Press **◀◀** or **▶▶** to step backward or forward in tracks during playback. Press and hold to cue during playback. Press again to change cue speed.
  3. To go back to the folder, press **←**. The music keeps on playing.
  4. To stop the music, press **II** twice.



## Progress Bar

To show a progress bar when a track is playing, press **INFO**. You can see information such as playback position, duration, title and date. Press **INFO** again to hide the information.

## Music Options

During playback of a music file, you can press LIST, bring up Options and press the centre button to access available music options. Some of the options are also available when browsing through your music files.

## Browse photos

How to open a list of media files on the television depends on the type of device in which the files are stored.

To view a photo, select the file name of the photo in the list of media files.

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

To start a slide show...

1. Select the folder with photos.
  2. Press the **red** button to start the slide show.
  3. To jump to the next or previous photo, press **◀◀** or **▶▶**.
  4. To pause the slide show, press **II**. To start the slide show again, press the **centre** button.
  5. To stop the slide show, press and hold **II** or press the **centre** button, then **←**.

## To play music with a slide show...

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

1. Select a track or a folder with tracks and press the **centre** button.
2. Press **INFO** to hide file info and progress bar.
3. Press **←**.
4. Use the arrow buttons to highlight the desired folder with photos and press the **centre** button.
5. Press the **red** button to start a slide show.
6. To stop the slide show, press and hold **II** or press the **centre** button, then **←**.

## Information

To view information on a photo, such as size, creation date and file path, select a photo and press **INFO**. Press again to hide the information.

## Photo Options

While viewing photos, you can press **LIST**, bring up **Options** and press the **centre** button to access available photo options. Some of the options are also available when browsing through your photo files, and here you can also find a list of file thumbnails.

## Play back video files

How to open a list of media files on the television depends on the type of device in which the files are stored.

To play a video, select the file name of the video file in the list of media files.

1. To pause the file, press **II**. Press the **centre** button again to continue.
2. Press **◀** or **▶** to step backward or forward in files during playback. Press and hold to cue during playback. Press again to change cue speed.
3. To stop the video playback, press **II** twice.
4. To go back to the folder, press **←**.

## Progress Bar

To show a progress bar when a file is playing, press **INFO**. You can see information such as playback position, duration, title and date. Press **INFO** again to hide the information.

## Video Options

During playback of a video file, you can press **LIST**, bring up **Options** and press the **centre** button to access available video options. Some of the options are also available when browsing through your video files, and here you can also find a list of file thumbnails.

## Smartphones and tablets

Use your smartphone or tablet with your television.

### Google Cast

If an app on your device has Google Cast, you can cast your app on the television. On the app, look for the Google Cast icon.

Your device must be connected to the same home network as your television.

#### Apps with Google Cast

Some Google Play products and features are only available on some markets.

Find more information on [www.support.google.com/androidtv](http://www.support.google.com/androidtv).

#### Cast an app to your TV screen

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

#### AirPlay

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

#### MHL™

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

#### Charging

With the MHL cable connected, your device will charge while the television is switched on, however, not in standby.

#### MHL cable

You need a passive MHL cable (HDMI to Micro USB) to connect your mobile device to the television. You may need an extra adapter to connect to your mobile device. To connect the MHL cable to the television, use the HDMI IN 4 connection.

## Digital Text

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

Note that Digital Text is only available on some markets.

# Settings menu

Make all types of settings for your product, for example you tell the television what is connected, how to activate connected equipment, you adjust picture and sound settings and much more.

Settings ● ▾  
...

# Picture settings

## Adjust picture settings

Picture settings such as contrast, brightness, colour, and viewing distance are preset from the factory to neutral values which suit most types of programmes. However, if you wish, you can adjust these settings to your liking. Activate different picture modes, for example, game mode if you connect a game console to your television.

Adjust the picture settings via the Picture menu.

□  
Settings ● ▼  
Picture > ▼  
...

In the Picture menu, you can make different settings for the selected source and also reset picture settings. Press the **blue** button to bring up additional help.

To temporarily remove the picture from the screen, press **LIST**, then **▲** or **▼** to bring up **PUCKEOFF** in the BeoRemote One display and press the **centre** button. To restore the picture, press **TV**.

For information about picture formats, press the **red** button in the on-screen help and find '[Picture format](#)'.

## Picture modes

### Set up a picture mode

In the **Picture modes** menu, choose between different picture modes to set up.

You can select different picture modes to use in different viewing situations. If you, for example, connect a game console and use the television as a monitor, you can activate **Game mode**.

The television remembers which picture mode was activated the last time each source was selected until the television is switched to standby.

For more about the different picture modes, press the **red** button in the on-screen help and find '[Picture mode](#)'.

### Colour saturation

Press **▲** or **▼** to decrease or increase colour saturation.

### Colour temperature

Press **▲** or **▼** to decrease or increase the colour temperature. Increasing colour temperature moves the white point from the red area to the blue area.

## Backlight

Press **▲** or **▼** to decrease or increase backlight intensity of the TV screen.

## Contrast enhancement

Press **▲** or **▼** to decrease or increase the contrast enhancement. This contrast enhancement control adjusts a combination of adaptive contrast, adaptive black and backlight dimming.

## Sharpness

Press **▲** or **▼** to decrease or increase picture sharpness. Too much sharpness will make the picture grainy and unnatural.

## Noise reduction

Press **▲** or **▼** to decrease or increase noise reduction. The picture loses some detail when you increase the noise reduction.

## Gamma

Press **▲** or **▼** to decrease or increase the gamma value in order to adjust the balance between bright and dark areas of the picture. If the gamma value is too low, the picture will appear pale and if it is too high, shadow detail close to black will be missing.

## Reset a picture mode

Reset the picture mode to default values in the **Reset** menu.

## 3D activation

In the 3D Activation menu, you can set up preferences for watching 3D television.

You can select if the television should activate 3D mode automatically, by prompt or not at all, when it detects 3D signalling the first time after source or channel change. The default setting is **Prompt**.

- **Auto:** When 3D signalling is available, the television switches to 3D mode automatically.
- **Prompt:** When 3D signalling is available, you will be notified and you can then switch to 3D view via your remote control. For more information, press the red button in the on-screen help and find '[Watch 3D television](#)'.
- **Always 2D:** When 3D signalling is available, the 3D content is still shown in 2D.

Note, that you have additional 3D options in the **Options** menu found in LIST.

## Judder cancellation

Set up the preferred movie judder cancellation behaviour of the television.

- **Off:** When no judder cancellation is used. In this mode, you may experience excessive movie judder, especially with very bright pictures.
- **Adaptive:** Makes the television measure the light level in the picture and adjusts judder cancellation accordingly. The human eye is more sensitive to judder when the picture is bright and therefore more motion compensation is used in bright pictures. Judder cancellation removes 'blur' and disturbance around the picture edges.
- **Full:** Removes all movie judder. This means that the natural movie judder you would experience in a real cinema will be lost. Occasionally, negative side effects such as halos may become visible.

## Room adaptation

Activate Room adaptation to make the television measure the surrounding light and adapt the picture accordingly.

- **Off:** Disables the room adaptation.
- **Basic:** Enables the television to measure the intensity of the surrounding light and adapt the contrast of the picture accordingly.
- **Full:** Enables the television to measure both the intensity and colour of the surrounding light and adapt the colour temperature and contrast of the picture accordingly.

## Viewing distance

Enter the distance from your viewing position, for example, your armchair or sofa, to the screen. You can enter the distance manually or follow the sound settings.

- **Follow sound setting:** The distance is set according to the distance set for an enabled built-in speaker and it changes dynamically depending on the selected speaker group.
- **Manual:** Use  $\wedge$ ,  $\vee$  or the number buttons if you choose to enter the distance manually.

## Video signal information

View signal information about the received video signal.

## Reset picture settings

In the Reset all picture settings menu, you can reset all picture settings to default.

# Sound settings

## Loudspeaker setup – surround sound

Add BeoLab speakers and subwoofers to your television wired or wirelessly and you can have a surround sound system which fits easily into your living room. You get the best sound experience in the area bounded by the speakers.

When you connect additional speakers to your television, wired speakers are automatically detected by the television. Wireless speakers must be scanned first for the television to detect them. A message appears on the screen and you can follow on-screen instructions to configure the speaker.

You can also create speaker groups to customise the speaker setup for listening positions other than the one in front of the television, for example, at the dining table or in an armchair.

Settings ● ▾  
Sound > ▾  
...

Sound settings are preset from the factory to neutral values which suit most types of programmes. However, if you wish, you can adjust these settings to your liking.

Adjust sound settings such as volume, bass and treble and, for wired speakers, enable eco mode. You can also look up information about the chosen sound settings and reset the sound settings to default values.

In the Sound menu you can also find the Speaker connections menu, where you can set up both wired and wireless speakers.

For more about daily use of speaker groups, press the red button in the on-screen help and find '[Daily use of sound modes and speaker groups](#)'.

Your content provider may have prohibited distribution of digital wireless sound to your speakers. You must then use wired Power Link connected speakers instead.

For advanced information about sound settings, see the Technical Sound Guide on [www.bang-olufsen.com/guides](http://www.bang-olufsen.com/guides).

## Sound modes

### Set up sound modes

The television has several sound modes optimised for different types of programmes and sources. The sound modes are designed by sound engineers to suit all situations. However, if you wish, you can adjust the values in the sound modes to your liking in the Sound modes menu. The sound modes have predefined names. For example, use Movie when watching from a Blu-ray player or use Game to enhance the sound when using a game console. The Custom sound mode can be set up if you wish to define a new type of use and settings. It is the only mode you can rename. To rename the Custom mode, press the yellow button and follow on-screen instructions.

If you wish to reset a sound mode to default values, you must select Reset <...> mode in the specific sound mode's setup menu and confirm that you wish to reset the values.

You can bring up a list of sound modes on the TV screen by finding Sound in the BeoRemote One LIST menu and pressing the centre button. From here, you can select a desired sound mode.

For information about selecting a specific sound mode for a source, press the red button in the on-screen help and find '[Sound mode](#)'.

## Bass management

When switched on, the low frequency content in the audio signal may be re-routed to different loudspeakers, depending on their capabilities. Bass management redirects low frequencies to the most capable loudspeakers in your current setup. For example, if you have two small loudspeakers and a subwoofer, the low frequency signals will be directed to your subwoofer instead of to your smaller main speakers.

## Frequency tilt

Frequency tilt can be considered a combination of bass and treble controls in a single parameter. When frequency tilt is set to a low value, the low frequency content of the audio signal is increased and the level of the high frequency content is reduced. The frequency tilt can be set for each sound mode.

## Sound enhancement

Affects both low and high frequency bands with a single slider. Increasing the sound enhancement increases the level of bass and treble bands while reducing midrange. Decreasing the sound enhance decreases the level of bass and treble but increases the midrange.

## Speech enhancement

Allows you to increase the intelligibility of dialogue, making speech and voices easier to understand. It has no effect on the audio signal when at its lowest setting.

## Balance and Fader

Re-direct input signal to different output channels in your speaker setup. For example, adjusting the balance l/r all the way to the left will direct all the signals only to the speakers in your setup that have a speaker role on the left (that is left front, left surround, etc.) and adjusting the fader b/f all the way to the left will direct all the signals only to the speakers in your setup that have speaker roles as rear speakers (that is right back, left back, etc.).

## Listening style

The audio signal can be modified according to your listening style. If your primary activity is listening to the audio signal, you should set the option to **Active**. However, if listening is a secondary activity, for example, in case of background music during dinner, the setting should be **Passive**.

## LFE input

Low Frequency Effects (LFE) are used for additional sound effects for movies. However, some multichannel music releases contain a signal on the LFE channel. Consequently, when listening to this type of music, the LFE input should be switched off to avoid unwanted audio.

## Loudness boost

The loudness function increases the level of the low- and high-frequency content as the volume level is decreased. The maximum amount of level increase in bass and treble can be set under Bass max and treble max.

Note that **Loudness boost** will only have effect if **Loudness** in the **Sound** menu is activated.

## Spatial control

The spatial control function allows you to adjust many aspects of the perceived sound, including surround settings, stage width, envelopment and more.

- **Balance and Fader:** Re-direct input signal to different output channels in your speaker setup. For example, adjusting the balance l/r all the way to the left will direct all the signals only to the speakers in your setup that have a speaker role on the left (that is left front, left surround, etc.) and adjusting the fader b/f all the way to the left will direct all the signals only to the speakers in your setup that have speaker roles as rear speakers (that is right back, left back, etc.).
- **Processing:** In many cases, the number of input channels in the audio signal does not match the number of loudspeakers in your configuration. For example, you may have two speakers, but the input signal is from a 7.1-channel Blu-ray. In this case, the signal is "downmixed" to the two speakers and you can hear all the components of the signal. To do this, you must select **Downmix**. Conversely, you may have a large system with seven main speakers and a subwoofer (7.1 channel system) and you would like to distribute the two channels from a CD to all speakers. In this case, the signal must be "upmixed" to all speakers. **True image** is the processor that accomplishes these tasks dynamically. If you select the setting **1:1** instead, the signals are passed directly through to the speakers.
- **Surround:** Determines the balance between the sound stage (in the front) and the surround information from the True Image processor. Note that the surround controller has no effect on the signal when **Processing** is set to **1:1** or **Downmix**.
- **Height:** This setting determines the level of the feed to all loudspeakers in your configuration with a "height" speaker role. It will have no effect on other loudspeakers in your system. If the controller is set to minimum, then no signal will be sent to the "height" loudspeakers. Note that, if the LFE input to ceiling setting in the **Speaker groups** menu is **Yes**, then the height control will determine the level of the ceiling loudspeaker. In this case, to ensure that the ceiling loudspeaker is calibrated to the correct level, the **Height** setting should be set to maximum.
- **Stage width:** Determines the width of the front images in the sound stage. At a minimum setting, the images will collapse to the centre of the front. At a maximum setting, images will be pushed to the sides of the front sound stage. This allows you to control the perceived width of a band or music ensemble without affecting the information in the surround and back speakers.
- **Envelopment:** This allows you to set the desired amount of perceived width or spaciousness from your surround and back loudspeakers. At its minimum setting, the surround information will appear to collapse to a centre back location.

## Dynamics control

Many soundtracks and music recordings have a very wide dynamic range. This means that there is a very large difference between the quietest and loudest moments. Consequently, if you set your volume level to be able to hear the quiet sections, the loud sections become very loud. With **Dynamics control** option you can reduce the difference by making the quiet sound louder and the loud sound quieter.

- **Compression:** TV advertisements are typically much louder than the programme they interrupt, and movies often have large differences between the quietest and loudest moments. Consequently, the **Compression** feature allows the television to reduce (or compress) the dynamic range of audio signals.

- **Clip protection:** Each of the audio signal paths also has a peak limiter protecting its outputs to ensure that the speaker signals are not clipped at high listening levels. Disabling these peak limiters under **Clip protection** allow high-level signal to pass unmodified to the DAC. However, if set to off, some output signals are clipped and distortion heard, therefore, clip protection should be left on.

## Reset a sound mode

Reset sound settings for the selected sound mode to the default settings.

# Speaker groups

## Speaker groups – introduction

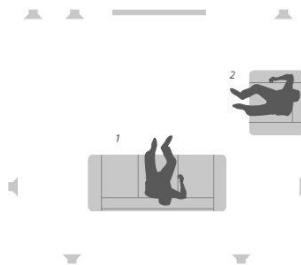
In the **Speaker groups** menu, you can make different speaker groups for different listening positions or loudspeaker combinations. This means that you can use your speakers differently in different scenarios.

In scenario 1 in the illustration, the right speaker in the top may be set up as a right front speaker when you watch television from the couch, whereas in scenario 2, the same speaker may function as a right back speaker when you sit in the armchair listening to music. The same speaker has different roles in the different speaker groups, and in some speaker groups, the speaker may not be included.

For each group, you must assign roles to the speakers, set the distance between the speakers and your listening position and calibrate the speaker level. It is possible to set distances and speaker levels for each speaker group either manually via the **Speaker groups** menu or automatically if you connect a calibration microphone.

In the **Speaker groups** menu, you can also see if a speaker group has been set for one or more of the MyButtons.

You access a **Speaker group setup** menu from the Home menu if you press . Follow on-screen instructions to create or edit a speaker group. For more advanced speaker group settings, press  and select **Settings**, then **Sound** and set up speaker groups as described in this chapter.



## Create a speaker group

### Create a speaker group – introduction

Select a speaker group to set up. You can name the speaker groups or delete groups you do not want to keep. The **Start-up** speaker group has a predefined name and you can set up the group for when you sit in front of the television.

You set distances and speaker levels for each speaker group either automatically if you connect a calibration microphone or manually via the **Speaker distance** and **Speaker level** menus. A calibration microphone must be purchased separately at your Bang & Olufsen retailer. For more information, press the **red** button in the on-screen help and find '[Assisted speaker calibration](#)', '[Speaker distance](#)' and '[Speaker level](#)'.

Some advanced Bang & Olufsen speakers support preset selection. The preset number is found in the app for the speaker. You decide which preset should be activated when you select a speaker group.

To bring up settings for a speaker group, highlight the group and press .

To create a new speaker group, press the **green** button. The new group has settings according to the currently playing speaker group. You can change these to your preferred settings.

To rename a speaker group, press the **yellow** button and follow on-screen instructions.

To delete a speaker group, press the **red** button in the menu and follow on-screen instructions.

You cannot rename or delete the **Start-up** speaker group.

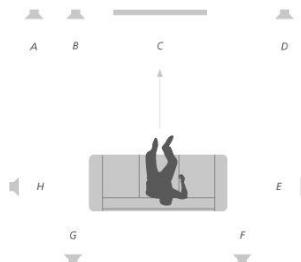
To activate a speaker group, press **LIST** on the remote control, select **Speaker** and then the desired group.

## Speaker roles

Assigning roles to the connected loudspeakers allows you to specify the speakers' function in a surround sound system and the number of speakers to be used. Use the arrow buttons to select each of the connected speakers and to highlight a speaker role, then press the **centre** button. As you move from speaker to speaker, a sound is produced to indicate the speaker to be set up.

Example of TV viewing illustrated:

- Speaker A - Left front
- Speaker B - Subwoofer
- Speaker C - Centre front
- Speaker D - Right front
- Speaker E - Right surround
- Speaker F - Right back
- Speaker G - Left back
- Speaker H - Left surround



## Speaker distance

Enter the distance between your listening position and each speaker. Use **▲**, **▼** or the number buttons to enter the distances.

## Speaker level

A calibration sound is produced alternately in each of the speakers you have connected in your sound setup. Your task is to adjust the sound level from all the connected speakers to match the sound level of the other speakers in the group. Use **▲**, **▼** or the number buttons to enter the levels.

## Assisted speaker calibration

You set distances and speaker levels for each speaker group automatically if you connect a calibration microphone to the **MIC** socket on the television. A calibration microphone must be purchased separately at your Bang & Olufsen retailer. The calibration microphone can only be used for speaker calibration.

Place the connected microphone in the primary listening position for the current speaker group and start a calibration of the connected speakers by pressing the **centre** button and follow on-screen instructions.

You can access the **Assisted speaker calibration** menu if you press **▷**, select the **Speaker group setup** option, and then select a speaker group.

It is recommended that background noise is kept to a minimum during calibration.

## Bass management

When switched on, the low frequency content in the audio signal may be re-routed to different loudspeakers, depending on their capabilities. Bass management redirects low frequencies to the most capable loudspeakers in your current setup. For example, if you have two small loudspeakers and a subwoofer, the low frequency signals will be directed to your subwoofer instead of to your smaller main speakers.

- **Crossover frequency:** All output signals use the same crossover frequency to ensure that coherent signals on multiple output channels have matched phase responses when passed through the bass management and bass re-direction processing. However, you can adjust it here or bypass it.
- **Enable filtering:** Determine whether the bass management filtering should be on or off for the individual output channels.
- **Panning:** Adjust the panning of the bass management signal derived from each output channel into the two bass management low-frequency channels. Adjust bass according to your listening position.
- **Redirection levels:** Adjust the level of the two bass management low-frequency channels being added back to the output channels.
- **Redirection balance:** Adjust the relative levels between the two bass management low-frequency channels in each output channel.

## LFE input to ceiling

Some record labels use the LFE (Low Frequency Effect) channel on their discs for height information instead of low frequency effects. This means that the LFE input channel should be directed to a 'full range' speaker placed above the listener. Setting the **LFE input to ceiling** to Yes directs the audio signal on the LFE input to a loudspeaker with a 'ceiling' speaker role.

## Subwoofer

Here, you can adjust the relative delays of the subwoofer and the main loudspeaker channels and adjust the allpass frequency to better match the subwoofer to the main speakers.

- **Time alignment:** Allows you to adjust the relative delays of the subwoofer and the main loudspeaker channels. When the value is positive, the subwoofer is being delayed relative to the main loudspeaker channels. When the value is negative, the subwoofer output precedes the main loudspeaker channels by the displayed value.
- **All-pass frequency:** There is a first-order allpass filter in the signal path of the subwoofer output. This can be adjusted to better match the subwoofer to the main speakers in cases where either the placement or the phase responses of the loudspeakers result in poor matching of the upper- and lower-frequency components through the crossover band.

## Volume

Adjust the volume level of the television. The volume level you set here is the volume level the television will start at each time you switch it on, no matter which volume level it was at when you switched it off.

Here you also set the highest volume level allowed in normal usage. This can be used to limit the maximum output of the television.

## Bass and treble

In the Bass and treble menu, decrease or increase the bass level and the treble level.

## Activate loudness

The human ear is less sensitive to low frequencies when they are played at low volume levels. In other words, when you lower the volume, the less bass you can hear. The Loudness function counteracts this effect. As you reduce the volume, the bass and treble levels are automatically increased to compensate for your reduced perception in the outer frequency bands. Loudness can be switched on or off for each sound mode.

## Sound information

Look up information on the current sound system in the Sound info menu.

## Eco mode

Make power saving settings for sound in the Eco mode menu. If you enable eco mode, the speakers that do not receive a signal when the television is on automatically switch off. Wireless speakers are not switched off when they do not receive signals from the television.

## Speaker connections

### Wired speakers

When setting up wired speakers, you must select which speakers you have connected to each Power Link (PL) socket in the Speaker connections menu.\*

\*If all Power Link sockets with connected speakers are not shown in the Speaker connections menu, you can press the green button to show all Power Link sockets.

Important! If you select Line as speaker type in the Speaker connections list, the volume will be very loud and you cannot adjust volume with your BeoRemote One. You must use the product's own remote control. Line is used for, for example, non-Bang & Olufsen amplifiers.

### Wireless speakers

If you have wireless speakers in your setup, the television automatically scans for wireless speakers and associate the detected speakers with wireless Power Link channels during first-time setup. However, you can also scan for wireless speakers and associate the detected speakers with the television's wireless Power Link channels manually if you press □, select Scan for wireless speakers and follow on-screen instructions.

You can also access a more advanced scanning function described in this chapter if you press □, select Settings, then Sound and Speaker connections.

Scan for and associate wireless speakers ...

1. In the Speaker connections menu, press the red button to rescan.
2. When the scanning is completed, press the centre button to associate the detected speakers with the television.

Disassociate a speaker from the television ...

1. Press  $\wedge$  or  $\vee$  to select a wireless speaker in the **Speaker connections** menu.
2. Press  $\wedge$  or  $\vee$  to select the **Disconnect** option.
3. Highlight **Yes** and press the **centre** button to disassociate the speaker.

If the state of a speaker is missing in the **Speaker connections** menu, shown by a triangular symbol with an exclamation mark, the speaker has been associated with a wireless channel, and will automatically be detected again when possible.

## Set up wired and wireless speakers

1. In the **Speaker connections** menu, press  $\wedge$  or  $\vee$  to select a PL socket or a wireless PL channel and press the **centre** button and follow on-screen instructions.

If you connect additional speakers to the television, remember to add the speakers to your speaker groups.

# General settings

## Make general settings

In the General settings menu, you can make settings for general features and functions, such as for a USB keyboard, the pin code system, Switch Off Timers and factory settings.

## USB hard drive

You can connect a USB hard drive to your television and browse the contents of supported formats. If you wish to use a USB hard drive as a hard disk recorder or to download apps, you must connect and set up a USB HDD (Hard Disk Drive) or SSD (Solid State Drive). Setting up a USB hard drive to be used as a hard disk recorder, enables you to pause, replay and record digital programmes, make scheduled recordings and watch recordings. For more information about hard disk recorder functions, press the red button in the on-screen help and find '[Pause and play back a programme](#)', '[Record a programme](#)' and '[Play a recording](#)'.

Only a USB HDD or SSD supporting USB 2.0 or higher and of at least 250 GB can be used for recording. The minimum storage capacity required of a USB hard drive is 32 GB if you need it to install apps and 4 GB if you only need to pause programmes. However, for recordings, it is recommended to use a USB HDD or SSD of at least 500 GB.

**Important!** Do not connect the USB hard drive you use for your PC or other devices, as you are asked to format the hard drive and the contents will then be lost.

□  
Settings ● ▼  
General settings > ▼  
USB hard drive > ▼  
...

When connecting a USB HDD or SSD, you are asked to set it up. You can also bring up the **USB hard drive** menu and follow on-screen instructions to format the hard disk.

It is recommended that it is kept connected to avoid data corruption. This implies that recordings made on a USB HDD or SSD are locked to the television and cannot be removed or used by another television. Only one USB HDD or SSD can be used for recording at any time.

Connecting your USB HDD or SSD to your television via a USB hub, may cause hard disk recorder operations to fail.

**Important!** If the television for some reason needs to be reinstalled, the connection of a USB HDD or SSD is not remembered and the contents will no longer be accessible.

Recording on a USB HDD or SSD may not be supported by all programme providers.

You can connect a second USB HDD or SSD to the television, but as long as the already connected hard disk is set up for recording, the second hard disk cannot be used as a hard disk recorder.

If you connect a USB HDD or SSD to your television as the only hard disk connected, but another USB HDD or SSD has previously been set up for recording, you can set up the new USB HDD or SSD. However, the television will forget the previous hard disk setting and the contents on the old USB HDD or SSD becomes unaccessible, as setting it up for recording later will format the disk. You are asked to accept this, before you can proceed. If setting up the new USB HDD or SSD is cancelled or fails, the setup of the previous USB HDD or SSD is, however, restored.

# Set up a USB keyboard

Connect a USB keyboard to a USB socket on the television and follow on-screen instructions to set it up.

You can also enter the **USB keyboard settings** menu to set it up.

□  
Settings ● ▼  
General settings > ▼  
USB keyboard settings > ▼  
...

# Pin code system

## Pin code system – introduction

The pin code system is intended to make normal use of your television impossible for someone who does not know the pin code. You choose whether or not to activate the pin code system.

When the pin code system is enabled and the television has been disconnected from the mains for a while, the pin code system is activated.

When reconnected and switched on, the television automatically switches itself off after five minutes if you do not enter the pin code.

**IMPORTANT!** If you are prompted for a pin code the first time you switch on your television, enter the pin code provided by your Bang & Olufsen retailer.

□  
Settings ● ▼  
General settings > ▼  
Pin code > ▼  
...

Five incorrect entries will cause the television to shut down for three hours, during which operation is not possible. The standby indicator will flash red quickly. Note, that the television must be connected to the mains during this period.

Should you lose or forget your code, contact your Bang & Olufsen retailer. Your retailer can provide you with a master code, which disables your pin code.

When operating your television, you may need to use different pin codes other than the pin code described here. Pin codes are used for protective reasons, due to mandatory requirement from providers and by external equipment. It may be easier for you if you choose the same code for different systems when possible.

## Deactivate the pin code system

You can activate or deactivate your pin code at all times. If the pin code system is already activated, you are prompted to enter your pin code when you bring up the **Pin code** menu.

Deactivate or activate the pin code system ...

1. In the **Pin code** menu, select **On** to activate the pin code system or **Off** to deactivate the system.
2. If you select **On**, enter a four-digit pin code and press the **centre** button. Re-

- enter the code and press the **centre** button to confirm.
3. If you select **Off**, enter your four-digit pin code and press the **centre** button to save.

If you inadvertently press a wrong button while entering a code, press the **yellow** button to delete a digit or press the **red** button to clear an input field.

## Change your pin code

You can change your pin code at all times. If the pin code system is already activated, you are prompted to enter your pin code when you bring up the Pin code menu.

Change the pin code ...

1. In the Pin code, menu select **New pin code**.
2. Enter your pin code and press the **centre** button.
3. Enter a new four-digit pin code, then press the **centre** button.
4. Re-enter the new pin code and press the **centre** button to confirm.

If you inadvertently press a wrong button while entering a code, you can select **Clear** to clear the input field.

If you change your pin code more than five times within a three-hour period, the Pin code menu becomes inaccessible for three hours, provided that the television is not disconnected from the mains. Disconnecting the television resets the three-hour period.

## Switch Off Timer

In the Switch Off Timer menu, you can set the television to switch off automatically after some time without operation. The factory setting is 4 hours. This function only applies in video mode, not in audio mode.

□  
Settings ● ✓  
General settings > ✓  
Switch Off Timer > ✓  
...

When Switch Off Timer is activated, a message appears on your TV screen if the television has not been operated during the time set in the menu. The television then switches to standby if you do not operate it.

When no source signal has been detected for 10 minutes, the television may switch to standby.

## Advanced settings

### Make advanced settings

Make advanced settings for the TV guide and HbbTV feature.

□  
Settings ● ✓  
General settings > ✓  
Advanced > ✓  
...

## TV guide

In the TV guide menu, you can select whether you want programme information in the TV guide to be downloaded from the Internet or received from the broadcaster. The default setting for receiving information is From the broadcaster. If the television is connected to the Internet, you can set it to receive the TV guide information from the Internet. If TV guide information comes from the Internet, the TV guide can also list analogue channels next to the digital channels.

While watching the TV source, you can press the GUIDE button on the remote control to activate the TV guide.

You can also select where the TV guide information should come from via the LIST menu, if you bring up Options, then the EPG - browser and EPG provider. However, this requires that you have accepted the Terms of Use. For more information, press the red button in the on-screen help and find '[Apps](#)'.

## Channel logos

In the Channel logos menu, you can select if you want available channel logos to be displayed in the channel and favourites lists. However, this requires that you have accepted the Terms of Use. For more information, press the red button in the on-screen help and find '[Apps](#)'.

## HbbTV

Your television supports HbbTV (Hybrid Broadcast Broadband TV). HbbTV is an online service where you can access a wide variety of services, such as catch-up TV, competitions, interactive advertisements and social networking. To view the information, your television must be connected to the Internet.

HbbTV is not supported by all broadcasters and the content supplied depends on the broadcaster. Also, content might be blocked by some broadcasters.

### HbbTV settings

In the HbbTV menu, activate or deactivate HbbTV.

You can also activate or deactivate HbbTV in the LIST menu, if you bring up Options, then HbbTV on this channel when the TV tuner is the current source.

## Factory settings

Reset picture and sound settings to default settings.

□  
Settings ● ▼  
General settings > ▼  
Factory settings > ▼  
...

## Reinstall your television

To reinstall your television, follow on-screen instructions. After a reinstallation of your television, it starts up in first-time setup. If you, for some reason, need to change country setting in the television, you must reinstall your television and go through first-time setup again.

Important! If you reinstall your television, the content on a connected hard disk drive will no longer be accessible.

□  
Settings ● ▼  
General settings > ▼  
Reinstall TV > ▼  
...

# Region and language

## Make region and language settings

Make settings for language, time and date.

If you for some reason need to change country setting in the television, you must reinstall your television and go through first-time setup again. Press the **red** button in the on-screen help and find '[Reinstall your television](#)'.

## Languages

### Set up a language

Select a language to be used for the menu, audio languages and languages for subtitles and teletext.

Settings ● ▾  
Region and language > ▾  
Languages > ▾  
...

### Set a menu language

In the **Menu languages** menu, select the language to be used in the menus.

### Set a primary audio language

In the **Primary audio** menu, select your preferred audio language to be used if available from the programme provider.

### Set a secondary audio language

In the **Secondary audio** menu, select the audio language to be used if your first choice is not available.

### Set a primary subtitles language

In the **Primary subtitles** menu, select your preferred subtitles language to be used if available from the programme provider.

### Set a secondary subtitles language

In the **Secondary subtitles** menu, select the subtitles language to be used if your first choice is not available.

## Set a primary teletext language

In the Primary text menu, select your preferred teletext language to be used if available from the programme provider.

## Set a secondary teletext language

In the Secondary text menu, select the teletext language to be used if your first choice is not available.

# Time and date

## Time and date – introduction

In the Clock menu, you can set the time, date and time zone, and select how you want daylight saving time to be activated and deactivated.

□  
Settings ● ▼  
Region and language > ▼  
Clock > ▼  
...  
...

## Set up the clock mode

In the Auto clock mode menu, select if the time should switch to and from daylight saving time automatically, manually or dependent on country.

## Set the time zone

In the Time zone menu, select the time zone you live in.

## Set the date

In the Date menu, use the number buttons to enter the date.

## Set the time

In the Time menu, use the number buttons to enter the time.

## Sleep Timer

Your television has a built-in Sleep Timer which means that you can make it switch off after a predefined number of minutes.

To activate the Sleep Timer ...

1. In the Sleep Timer menu, press **▲** or **▼** and press the **centre** button to select the number of minutes after which you want the television to switch off.

To activate the Sleep Timer via the remote control ...

This function may not be available in the current software version.

1. Press LIST, then **^** or **▼** to bring up **Sleep** in the BeoRemote One display, then press **>**.
2. Press **^** or **▼** to highlight the desired number of minutes or Off then press the **centre** button.

# Universal access

## Universal access – introduction

For hearing and visually impaired, the television can describe audible and visual elements by means of sound and subtitles when provided by the broadcaster.

Settings ● ▾  
Universal access > ▾  
...

## Universal access

Activate or deactivate the accessibility features.

When **Universal access** is switched on, the option is added in the **Options** menu brought up when you press **LIST** and select **Options**.

## Hearing impaired

Some digital TV channels broadcast special audio and subtitles adapted for the hearing impaired. With **Hearing impaired** switched on, the television automatically switches to the adapted audio and subtitles, if available. Before you can enable **Hearing impaired**, you have to enable **Universal access**.

When **Universal access** is enabled and you are watching a TV channel, you can also press **LIST** and select **Options** to bring up an on-screen menu where you can select **Universal access** and bring up and enable the **Hearing impaired** function.

## Audio description

Digital TV channels can broadcast special audio commentary describing what happens on-screen. To be able to set the visually impaired audio and effects, you have to switch on **Audio description** first.

Before you can enable **Audio description**, you have to enable **Universal access**. With **Audio description**, a narrator's commentary is added to the normal audio.

When **Universal access** is enabled and you are watching a TV channel, you can also press **LIST** and select **Options** to bring up an on-screen menu where you can select **Universal access** and bring up and enable the **Audio description** function.

Available audio commentary are also shown in **Audio languages** found under **Options** in **LIST**.

- **Mixed volume:** If you enable the **Audio description** function, you can mix the volume of the normal audio with the audio commentary in the **Mixed volume** menu. **Mixed volume** is also available in **Universal access** brought up via **Options** in the **LIST**.
- **Audio effects:** Some audio commentary can hold extra audio effects, like stereo or fading sound. Enable this function in the **Audio effects** menu.
- **Speech:** The audio commentary can also hold subtitles for the words which are spoken. In the **Speech** menu, you can select between **Descriptive** and **Subtitles**.

# Child lock

## Set up a child lock

The Child lock menu allows you to activate a child lock system to determine which programmes and apps require that you enter an access code.

Note that once the child lock system has been enabled, it can only be disabled by resetting the television. Press the red button in the on-screen help and find '[Reinstall your television](#)'.

The access code described here is not the same as the pin code you have received with your Smart Card. For information about Smart Card pin code, contact your service provider.

When operating your television, you may need to use different pin codes other than the pin code described here. Pin codes are used for protective reasons, due to mandatory requirement from providers and by external equipment. It may be easier for you if you choose the same code for different systems when possible.

Settings ● ▾  
Child lock > ▾  
...

If you forget your access code, bring up the Child lock menu and press '8888'. You must then enter a new access code.

To lock a channel, enter the Channel list, press LIST and bring up Options. Here, you have a channel lock option.

## Parental rating

In the Parental rating menu, you can limit access to certain programmes exceeding the chosen rating if rating information is available from the service provider.

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

On some markets, it is not possible to disable the child lock for programmes rated 18 years and you must enter the access code every time you bring up such a programme.

## App lock

You can set the television to lock apps unsuited for children. 18+ rated apps will require an access code to be entered. Only apps from the App Gallery can be locked. To unlock an app, when the App lock function is enabled, you need the access code.

## Set an access code

In the Set code menu, set a four-digit access code to be entered when programmes exceeds the chosen parental rating.

On some markets, it is not possible to select the access code '0000'.

The child lock system is not the same as the pin code system for the television, but it may be easier for you if you choose the same code for both systems.

## Change your access code

In the **Change code** menu, enter the current access code to be able to set a new code.  
Then, enter a new four-digit access code.

# Network and Bluetooth settings

## Make network and Bluetooth settings

You can set up your television to a network either with a wired or wireless broadband connection. For the most reliable network connection, Bang & Olufsen recommends making a wired connection.

Bang & Olufsen also recommends that you use a separate router and access point – a Network Link router – to ensure the most reliable playback of digital files.

You can also connect one or more Bluetooth devices to your television.

For more information about Bang & Olufsen network setup, contact your Bang & Olufsen retailer.

In some countries, it is not possible to set up a wireless connection, and you must use a wired connection.

You can access network and Bluetooth settings via **Wireless and Networks** in the Home menu, and more advanced settings via **Wireless and networks** in **Settings** found in the Home menu and described in this chapter.

⌂  
Settings ● ▾  
Wireless and networks > ▾  
...  
...

## Wired or wireless

### Wired or wireless – introduction

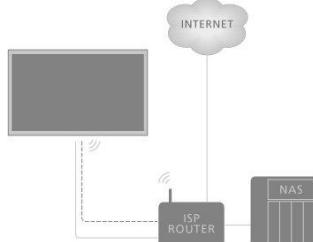
Select a network to connect your television to and see network information in the **Wired** or **wireless** menu.

### Connect to a network

Connect your television to a network, either wired or wirelessly, in the **Connect to network** menu.

For more information about your router, see the guide for it.

Example of simple setup either wired or wireless.



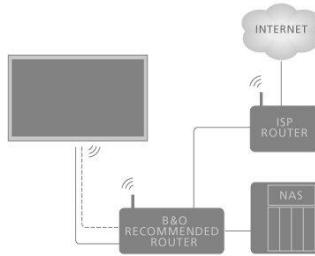
Example of recommended setup either wired or wireless. Here, you add a Bang & Olufsen recommended router.

## Wired setup

Connect one end of the Ethernet cable to the router and the other end to the Ethernet socket  on the television.\* You can then make the wired connection. It is assumed that you have enabled the DHCP service on your network.

1. Make sure that the router is switched on.
2. Press , highlight **Settings** and press the **centre** button.
3. Highlight **Wireless and Networks** and press .
4. Highlight **Wired or wireless** and press .
5. Highlight **Connect to network** and press the **centre** button.
6. Select **Wired**. The television constantly searches for the network connection.
7. A message will be shown when the connection is successful.

\*Use a shielded Ethernet cable.



## Wireless setup

If your router has the WPS feature (wireless protected setup), you can make a wireless connection to your network directly. You can also search for a network. It is assumed that you have enabled the DHCP service on your network and that the SSID is not hidden.

### Wireless

1. Press , highlight **Settings** and press the **centre** button.
2. Highlight **Wireless and Networks** and press .
3. Highlight **Wired or wireless** and press .
4. Highlight **Connect to network** and press the **centre** button.
5. Select **Wireless**.
6. In the list of found networks, select your wireless network. If your network is not in the list because the network name is hidden (you switched off the SSID broadcast of the router), select **Enter Name** to enter the network name yourself.
7. Depending on the type of router, enter your encryption key - WEP, WPA or WPA2. If you have entered the encryption key for this network previously, you can use the **centre** button to accept and make the connection immediately.
8. A message will be shown when the connection is successful.

### WPS

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

1. Press , highlight **Settings** and press the **centre** button.
2. Highlight **Wireless and Networks** and press .
3. Highlight **Wired or wireless** and press .
4. Highlight **Connect to network** and press the **centre** button.
5. Select **WPS**.
6. Go to the router, press the WPS button and return to the television within two minutes.
7. Select **Connect** to make the connection.
8. A message will be shown when the connection is successful.

### WPS with pin code

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

1. Press □, highlight Settings and press the centre button.
2. Highlight Wireless and Networks and press >.
3. Highlight Wired or wireless and press >.
4. Highlight Connect to network and press the centre button.
5. Select WPS with PIN code.
6. Write down the 8-digit pin code shown on-screen and enter it in the router software on your computer. See the guide for the router on where to enter the pin code in the router software.
7. Select Connect to make the connection.
8. A message will be shown when the connection is successful.

When operating your television, you may need to use different pin codes other than the pin code described here. Pin codes are used for protective reasons, due to mandatory requirement from providers and by external equipment. It may be easier for you if you choose the same code for different systems when possible.

## Troubleshooting

Wireless network not found or distorted;

- Microwave ovens, DECT phones or other wireless 802.11b/g/n devices in your proximity might disturb the wireless network.
- Make sure that the firewalls in your network allow access to the television's wireless connection.
- If the wireless network does not work properly in your home, try the wired network installation.

Internet does not work;

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

The PC and Internet connection are slow;

- See the guide for your wireless router for information on indoor range, transfer rate and other factors of signal quality.
- Use a high-speed (broadband) Internet connection for your router.

DHCP;

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

Your television supports 2.4 GHz and 5 GHz. For more information, contact your Bang & Olufsen retailer.

## See network information

You can see information on your network connection in the **View network settings** menu.

Note: A previously well-functioning setup may develop problems over time as surroundings change. Check your Ethernet connection or router. If the problem persists, contact your Bang & Olufsen retailer.

## Configure your network

In the **Network configuration** menu, you can select between a **DHCP** or a **Static IP** network setup.

If **Network configuration** is set to **DHCP**, IP address, netmask, gateway and DNS servers are assigned automatically. Otherwise, select **Static IP** to set up the network manually.

## Configure the static IP

In the **Static IP configuration** menu, you can set up your network manually.

If the settings are set to configure manually, or if the IP address, netmask, gateway and DNS servers, for some reason, are not assigned automatically, you must enter this information manually.

## Switch on with your network

You can switch on the television from your smartphone or tablet if the television is in standby. The setting **Wake on WLAN** must be activated.

For more information about smartphones and tablets, press the red button in the on-screen help and find '[Smartphones and tablets](#)'.

## Digital Media Renderer

In the **Digital Media Renderer** menu, you can enable or disable the Digital Media Renderer feature.

The Digital Media Renderer feature enables you to play photos, music and video files via a computer or a smartphone. The feature is default enabled. If you do not want your television to be used as a monitor for a computer, smartphone or other device, it is possible to disable the feature.

### File sharing

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

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

Install the media server software on your computer and set it up to share your media files with the television. See the guide for the media server software for more information. This software must be running on your computer to view or play your files on the television.

## Wireless On/Off

In the **Wireless On/Off** menu, enable or disable your wireless network connection.

## TV network name

If you want your television to be easily recognisable on your computer or smartphone, you can name it in the **TV network name** menu.

## Clear Internet memory

In the Clear Internet memory menu, you can clear all information saved in the memory function of the Internet. Information such as server registration and parental rating settings, your video store app logins, all App Gallery favourites, Internet bookmarks and history is cleared. Interactive MHEG applications can also save so-called 'cookies', on your television. These files will also be cleared.

## Bluetooth

You can connect several Bluetooth devices, such as a pair of headphones, to your television. For your television and Bluetooth device to be able to work together, the device must be paired to the television.

### Pair a device...

Make sure your device is in pairing mode.

1. In the **Bluetooth** menu, highlight **Search Bluetooth Device** and press the **centre** button to search for a device to pair to your television.
2. From the list of devices found, highlight the device you wish to pair to your television and press the **centre** button.

### Unpair a device...

1. In the **Bluetooth** menu, highlight **Remove Bluetooth Device** and press the **centre** button to bring up a list of paired devices.
2. Highlight the device you wish to unpair and press the **centre** button.

When you receive BeoRemote One together with your television, you set it in pairing mode during first time setup of the remote control, and it will then pair to the television automatically as soon as the television is connected to the mains. For more, see the guide for your remote control. However, if your BeoRemote One for some reason is no longer paired to the television and you need to pair it again, or if you cannot find it and you need to pair another BeoRemote One, you must set both television and remote control in pairing mode to pair it to the television. To set the television in pairing mode, disconnect it from the mains and reconnect immediately after. See the guide for your remote control for information on how to set it in pairing mode.

If no remote control or device is paired with the television, your television is always open for pairing.

# Android settings

Make device settings and personal settings and set up preferences for the Android functions in your television. You can also look up Android specific information.

⌂  
Settings ● ▾  
Android settings > ▾

For more information about Android functions, see [www.support.google.com/androidtv](http://www.support.google.com/androidtv).

# Re-tune channels

## Re-tune channels – introduction

You can make your television find your TV channels and radio stations for you. Channels and stations are updated automatically, but it is also possible to update manually. Depending on your service provider, some settings are made automatically.

## Antenna and cable installation

You can reinstall or update tuned terrestrial and cable channels which, for example, have been moved by the broadcaster. Follow on-screen instructions.

### Update channels

#### Automatic channel update

When you receive digital channels, your television is default set to update these channels automatically.

New channels are stored in the Channels list and are marked with a **\*** icon. Channels without a signal are removed. The television must be in standby to update channels automatically. You can switch off automatic channel update.

To switch off the automatic update...

1. Press **□**, highlight Settings and press the **centre** button.
2. Highlight **Channels** and press **>**.
3. Highlight **Antenna/Cable Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Automatic Channel Update**.
6. Select **Off**.
7. Press **<** to go back one step or press **←** to leave the menu.

When new channels are found or if channels are updated or removed, a message is shown when the television is switched on. To avoid that this message appears after every channel update, you can switch it off.

To switch off the message...

1. Press **□**, highlight Settings and press the **centre** button.
2. Highlight **Channels** and press **>**.
3. Highlight **Antenna/Cable Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Channel Update Message**.
6. Select **Off**.
7. Press **<** to go back one step or press **←** to leave the menu.

On some markets, the automatic channel update is done either while watching television or when the television is in standby.

#### Manual channel update

You can always start an channel update yourself.

1. Press **□**, highlight Settings and press the **centre** button.
2. Highlight **Channels** and press **>**.
3. Highlight **Antenna/Cable Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Search for Channels**, then select **Start**.

6. Select Update Digital Channels, then select Next.
7. Select Start to update the digital channels. This can take a few minutes.
8. Select Done when updating has completed.

## Reinstall channels

You can reinstall all channels and leave all other TV settings untouched. If a pincode is set, you will need to enter this code before you can reinstall channels.

1. Press , highlight Settings and press the centre button.
2. Highlight Channels and press .
3. Highlight Antenna/Cable Installation and press the centre button.
4. Enter your child lock pin code if necessary.
5. Select Search for Channels, then select Start.
6. Select Reinstall Channels, then select Next.
7. Select your country, then select Next.
8. Select the type of installation you want, Antenna (DVB-T) or Cable (DVB-C).
9. Select Next.
10. Select the type of channels you want, Digital and Analogue Channels or Only Digital Channels.
11. Select Next.
12. Select Start to search for channels. This can take a few minutes.
13. Press  to go back one step or press  to leave the menu.

You can perform a full TV installation. The television is completely reinstalled. For information on reinstallation of your television, press the red button in the on-screen help and find '[Reinstall your television](#)'.

## DVB-T or DVB-C

### DVB-T or DVB-C reception

During the channel installation, just before you search for channels, you select Antenna (DVB-T) or Cable (DVB-C). Antenna DVB-T searches for terrestrial analogue channels and digital DVB-T/T2 channels. Cable DVB-C searches for analogue and digital channels available from a cable DVB-C provider.

### DVB-C channel installation

For ease of use, all DVB-C settings are set to automatic. On some markets, the television can enter the network ID of the provider automatically. If the DVB-C installation fails, restart the installation and enter the network ID and/or network frequency values you have received from the DVB-C provider when the television asks for them during the installation. If your provider does not use Network ID, you should select Full Scan under Frequency Scan in the DVB settings menu.

### Channel number conflicts

On some markets, different TV channels (broadcasters) may have the same channel number. While installing, the television shows the list with channel number conflicts. You need to select which TV channel you want to install on a channel number with multiple TV channels.

### DVB settings

- **Network Frequency Mode:** If you intend to use the fast Quick Scan method in Frequency Scan to search for channels, select Automatic. The television will use one of the predefined network frequencies (or HC - homing channel) as used by most cable providers in your country. If you have received a specific network frequency value to search for channels, select Manual.
- **Network Frequency:** With the Network Frequency Mode set to Manual, you can enter the network frequency value received from your cable provider here. To enter the value, use the number buttons.

- **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.
- **Frequency Step Size:** The television searches for channels in steps of 8MHz. If this results in having no channels installed or if some channels are missing, you can search in smaller steps of 1MHz. Using the 1MHz steps will take more time to search for and install channels.
- **Digital Channels:** If your cable provider is not offering digital channels, you can skip searching for digital channels.
- **Analogue Channels:** If your cable provider is not offering analogue channels, you can skip searching for analogue channels.
- **Free / Scrambled:** If you have a subscription and a CA Module - Conditional Access Module for pay TV services, select Free + Scrambled. If you have not subscribed to pay TV channels or services, you can select Free Channels Only. For more information, press the red button in the on-screen help and find '[Smart Card for digital channels](#)'.
- **Signal Quality:** You can check the quality and signal strength of a digital channel. If you have your own antenna, you can reposition the antenna to try and improve the reception.

To check the signal quality of a digital channel...

1. Switch to the channel.
2. Press □, highlight Settings and press the centre button.
3. Highlight Channels and press >.
4. Highlight Antenna/Cable Installation and press the centre button.
5. Enter your child lock pin code if necessary.
6. Select Digital: Reception Test.
7. Select Search. The digital frequency is shown for this channel.
8. Select Search again to check the signal quality of this frequency. The test result is shown on-screen. You can reposition the antenna or check the connections to possibly improve the reception.
9. You can also change the frequency yourself. Select the frequency number one by one and use ▲ or ▼ to change the value. Select Search to test the reception again.
10. Press < to go back one step or press ← to leave the menu.

## Manual installation

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

1. Press □, highlight Settings and press the centre button.
2. Highlight Channels and press >.
3. Highlight Antenna/Cable Installation and press the centre button.
4. Enter your child lock pin code if necessary.
5. Select Analogue: Manual Installation.

- **System:** To set up the TV system, select System. Select your country or location.
- **Search Channel:** To find a channel, select Search Channel. You can enter a frequency yourself to find a channel or let the television search for a channel. Press > and select Search to search for a channel automatically. The found channel is shown on-screen and if the reception is poor, select Search again. If you want to save the channel, select Done.
- **Store:** You can save the channel on the current channel number or as a new channel number. Select Store Current Channel or Store as New Channel. The new channel number is shown briefly.

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

# Satellite installation

You can install or update tuned satellite channels which, for example, have been moved by the broadcaster. Follow on-screen instructions.

## Install satellites

This television has two built-in satellite DVB-S/DVB-S2 tuners.

You can install up to four satellites (four LNBs) on the television. 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 television. You can select Unicable for one or for two satellites at the start of the installation.

### Start the installation

Make sure your satellite dish is connected correctly and is perfectly aligned before you start the installation.

1. Press **□**, highlight **Settings** and press the **centre** button.
2. Highlight **Channels** and press **>**.
3. Highlight **Satellite Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Search for Satellite**.
6. Select **One Tuner** or **Two Tuners**. The television has 2 built-in satellite tuners.  
Make your selection according to how many satellite dish cables you have available.
7. Select **Next.\***
8. Select **Search**. The television will search for the satellites available on the alignment of your antenna dish. This may take a few minutes. If a satellite is found, its name and reception strength are shown on-screen.
9. If the television shows the satellite(s) you want, select **Install**. If the television does not find the satellite(s) you expect to find, the dish alignment may be altered or a cable may be disconnected. You can select **Search Again**.
10. If a satellite offers **Channel Packages**, the television will show the available packages for that satellite. Select the package you need.
11. Select **Next**. Some packages offer a **Quick** or **Full** install for their available channels, select one or the other. The TV will install the satellite channels and radio stations.
12. To save the satellite setup and installed channels and radio stations, select **Finish**.

\*Before you start searching for satellites, you can change or check the installation settings. See **Satellite installation settings** in this chapter.

### Satellite installation settings

The satellite installation settings are preset according to your country. These settings determine how the television searches and installs satellites and its channels. You can always change these settings if you start the satellite installation and follow on-screen instructions. On the screen where you can start searching for satellites, you can also make settings for satellite installation.

You can select the number of satellites you want to install or select one of the Unicable systems. When you select Unicable, you can choose the User band numbers and enter the User band frequencies for each tuner.

- **Homing Transponder and LNB:** On some markets, you can adjust the advanced settings for homing transponder and each LNB. Only use or change these settings when a normal installation fails. If you have a non-standard

satellite product, you can use these settings to overrule the standard settings. Some providers may give you transponder or LNB values which you can enter here.

### Satellite CA Modules

If you use a CA Module – a Conditional Access Module with a Smart Card – to watch satellite channels, we recommend to do the satellite installation with the CA Module inserted in the television.

Most CA Modules are used to decode channels.

CA Modules (CI+ 1.3 with Operator Profile), can install all the satellite channels by themselves on your television. The CA Module asks you to install its satellites and channels. These CA Modules not only install and descramble the channels but also handle regular channel updates.

### Channel packages

Satellites can offer channel packages that bundle free channels (free-to-air) and offer a sorting that suits a country. Some satellites offer subscription packages – a collection of channels you pay for.

If you choose a subscription package, the television may ask you to select a **Quick** or **Full** installation.

Select **Quick** to install the channels of the package only or select **Full** to install the package and all other available channels too. We recommend a **Quick** installation for subscription packages. If you have additional satellites that are not part of your subscription package, we recommend a **Full** installation. All installed channels are put in the channels list **All**.

### Unicable Setup

The Unicable system...

You can use a Single Cable system, MDU or Unicable system to connect the antenna dish to the television. A Single Cable system uses one cable to connect the satellite dish to all satellite tuners in its system. A Single Cable system is typically used in apartment buildings. If you use a Unicable system, the television asks you to assign a user band number and corresponding frequency during the installation. You can install one or two satellites with Unicable on this television.

If you notice missing channels after a Unicable installation, another installation may have been performed at the same time on the Unicable system. Perform the installation again to install the missing channels.

User band number...

In a Unicable system, each connected satellite tuner must be numbered (for example, 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 television will ask you to assign the unique user band number for each built-in satellite tuners. One satellite tuner cannot have the same user band number as another satellite tuner in the Unicable system.

User band frequency...

Next to the unique user band number, the built-in satellite receiver needs the frequency of the selected user band number. These frequencies are mostly shown next to the user band number on a Unicable switchbox.

### Automatic channel update

If you have digital satellite channels installed, you can set the television to automatically update these channels.

The television updates the channels and saves new channels. New channels are saved in the channels list and are marked with a icon. Channels without a signal are removed and if satellite providers reorder their channel package, the channel list of the television will be updated. The television must be in standby to automatically update channels. You can switch off Automatic Channel Update.

To switch off the automatic update...

1. Press , highlight **Settings** and press the **centre** button.
2. Highlight **Channels** and press .
3. Highlight **Satellite Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Automatic Channel Update**.
6. Select **Off**.
7. Press to go back one step or press to leave the menu.

On some markets, the automatic channel update is done either while watching television or when the television is in standby.

## Manual channel update

You can always start a channel update yourself.

1. Press , highlight **Settings** and press the **centre** button.
2. Highlight **Channels** and press .
3. Highlight **Satellite Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Search for Satellites**.
6. Select **Update Channels**. The television starts updating. The update may take a while.
7. Select **Finish**.

## Add a satellite

You may be able to add an additional satellite to your current satellite installation. The installed satellites and their channels remain untouched. Some satellite providers 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.

### Setup

If you currently have only one or two satellites installed, the current installation settings may not allow adding an extra satellite. If you need to change the installation settings, you must perform a complete satellite installation again. You cannot use **Add Satellite** if a change of settings is needed.

To add a satellite...

1. Press , highlight **Settings** and press the **centre** button.
2. Highlight **Channels** and press .
3. Highlight **Satellite Installation** and press the **centre** button.
4. Enter your child lock pin code if necessary.
5. Select **Search for Satellites**.
6. Select **Add Satellite**. The current satellites are shown.
7. Select **Search**. The television now searches for new satellites.
8. If the television has found one or more satellites, select **Install**. The television installs the channels of the found satellites.
9. Select **Finish** to save the channels and radio stations.

For Add Satellite to be available, the Settings menu must be set up to four satellites in the start of the installation.

## Remove a satellite

You may be able to remove one or more satellites from your current satellite installation. You remove the satellite and its channels. Some satellite providers do not allow removing a satellite.

1. Press □, highlight Settings and press the centre button.
2. Highlight Channels and press >.
3. Highlight Satellite Installation and press the centre button.
4. Enter your child lock pin code if necessary.
5. Select Search for Satellites.
6. Select Remove Satellite. The current satellites are shown.
7. Select a satellite to remove.
8. Press < to go back one step or press ← to leave the menu.

For Remove Satellite to be available, the Settings menu must be set up to four satellites in the start of the installation.

## Manual installation

Manual installation is intended for advanced users.

You can use manual installation to test the signal strength of an LNB. You can test the signal through each tuner individually, tuner 1 (Sat 1) or tuner 2 (Sat 2). Alternatively, you can use manual installation to quickly add new channels from a satellite transponder. You can only add channels on tuner 1 (Sat 1).

To add channels, you need to know the frequency and polarization of the transponder. The television will install all channels of that transponder. If the transponder was installed before, all its channels - the former and the new ones - are moved to the end of the channel list All. You cannot use manual installation if you need to change the number of satellites. If this is needed, you have to do a complete installation with Install Satellites.

To test an LNB or save channels from a transponder...

1. Press □, highlight Settings and press the centre button.
2. Highlight Channels and press >.
3. Highlight Satellite Installation and press the centre button.
4. Enter your child lock pin code if necessary.
5. Select Manual Installation.
6. Select Tuner.
7. Select the tuner you want to test.
8. If you have more than one satellite installed, select the satellite/LNB for which you want to test or add channels.
9. Select Polarization, and then select the polarization you need.
10. If you set the Symbol Rate Mode to Manual, you can enter the symbol rate in Symbol Rate manually.
11. Select Search. The signal strength is shown on-screen.
12. If you want to save the channels of a new transponder, select Store.
13. Press < to go back one step or press ← to leave the menu.

## Home transponder and LNB

On some markets, you can adjust the expert settings for homing transponder and each LNB. Only use or change these settings when a normal installation fails. If you have a non-standard satellite product, you can use these settings to overrule the standard settings. Some providers may give you transponder or LNB values which you can enter here.

### LNB Power

By default, LNB Power is set to On.

#### 22 kHz Tone

By default, the tone is set to Auto.

#### Low LO Frequency / High LO Frequency

The local oscillator frequencies are set to standard values. Adjust the values only if the product needs different values.

### Troubleshooting

The television cannot find the satellites you want or it installs the same satellite twice;

- Make sure that the correct number of satellites is set in **Settings** at the start of the installation.

A dual head LNB cannot find a second satellite;

- If the television 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 the problem;

- All settings, satellites and channels are only saved at the end of the installation when you finish.

All satellite channels have disappeared;

- If you use a Unicable system, make sure you have assigned two unique user band numbers for both built-in tuners in the Unicable settings. It may be that another satellite receiver in your Unicable system is using the same user band number.

Some satellite channels seem to have disappeared from the channel list;

- If some channels seem to be gone or displaced, the broadcaster may 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.

You cannot remove a satellite;

- Subscription packages do not allow removing a satellite. To remove the satellite, you have to perform a complete installation again and select another package.

Sometimes the reception is poor;

- Check if the satellite dish is mounted solidly. Strong winds can move the dish.
- Snow and rain can degrade the reception.

# Integrate your product in a system

## Integrate your product – introduction

The function of integrating of your television with other products may not be available in the current software version.

With Network Link you can distribute sound, but not video signals, to other rooms throughout the house. If you connect your television to a Master Link product, you must also use a BeoLink Converter NL/ML (BLC).

For example, you can connect your television in the living room to an audio or video system in another room, thereby making it possible to listen to sound from other rooms.

Access sources from another Bang & Olufsen audio product and share speakers easily via the TV menu.

You can join in on a source played on another product if you press LIST on BeoRemote One, highlight Join, press the centre button and select the desired source from the on-screen menu.

Some content providers may have blocked distribution of sound.

For information about integration of other products, see the guide for your remote control.

For information about distribution of video signals, press the red button in the on-screen help and find '[HDMI Matrix](#)'.

For more information about network settings, press the red button in the on-screen help and find '[Network and Bluetooth settings](#)'.

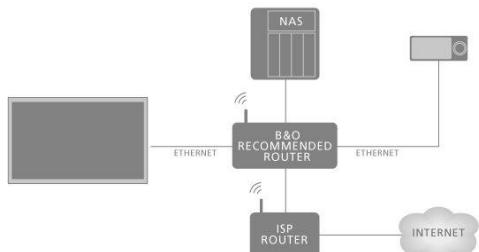
⌂  
Settings ● ▾  
Product integration > ▾  
...  
...

### Network Link to Network Link

A Bang & Olufsen product with Network Link must be connected directly to the same network (router) as your television:

1. Connect an Ethernet cable to the socket marked  on the television. Then, run the cable to a router, which is connected to the router with Internet connection.
2. Connect one end of an Ethernet cable to the router and the other end to the audio or video system.

You can also make a wireless connection of your products. However, note that this can cause lip sync problems. For more information about wireless connection, press the red button in the on-screen help and find '[Connect to a network](#)'.

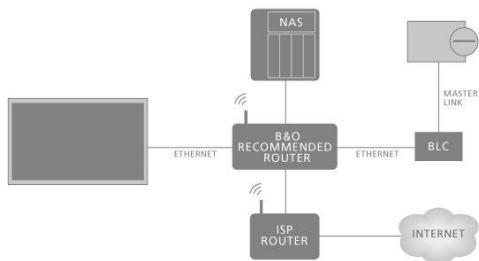


### Network Link to Master Link

The illustration is an example of a link room setup with an audio system with Master Link.

The main room television must be connected to the link room system through BeoLink Converter NL/ML if the link room system is an audio or video system with Master Link:

1. Connect an Ethernet cable to the socket marked  on the television. Then, run the cable to a router, which is connected to the router with Internet connection.
2. Connect one end of an Ethernet cable to the router and the other end to BeoLink Converter NL/ML.
3. Connect one end of a Master Link cable to BeoLink Converter NL/ML and the other end to the Master Link socket on the audio or video system.



## Link to other products

The function of integrating of your television with other products may not be available in the current software version.

You can integrate external products with your television to listen to music from an audio system or another television.

You can listen to audio and video sources from another Bang & Olufsen product if the product is connected to the same network (router) as your television. Press the red button in the on-screen help and find '[Integrate your product – introduction](#)'.

A source can play simultaneously on speakers in different rooms.

If, for example, the television (with additional speakers) and an audio system is set up in one room and a Master Link audio system is set up in another room as illustrated, make the following settings:

- **Link to other products:** Select the audio system in the same room and then the BeoLink Converter for the audio system in the other room
- Use TV speakers for the audio system in the same room: Yes

In the **Product integration** menu, you can select up to two products to link to. A list of products identified on the home network is shown.

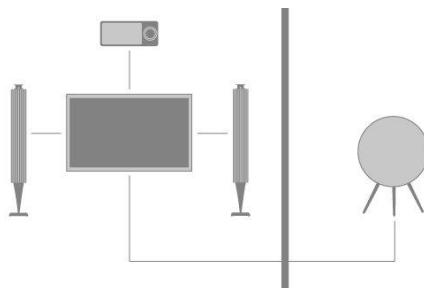
To link to sources from products, such as radio or CD, you must set up the products in the **Link to other products** menu by pressing **>**. To select a product, it must have been switched on at some point in time for it to show up as a product found in the list. If you have selected two products, the product on top is the primary product and its sources are shown immediately after the television sources when selecting **TV** or **MUSIC** in the Home menu. If you have an audio product in the same room as your television, it can be set up to use the TV speakers.

Once you have chosen a product in the **Link to other products** menu, the sources that can be linked to are shown with a 'link' symbol () and an indication of the product in the lists brought up by selecting **TV** or **MUSIC** in the Home menu.

For information about setting up an audio system or a television for integration with your television, see the guide for your remote control.

When the television is part of a system setup, it will automatically enable **Wake on WLAN** to be able to be activated from connected products. Note that this will increase the power consumption slightly.

When a BeoLink Converter NL/ML is a part of your system, six audio sources are listed as sources you can link to, whether or not products are connected to these sources. The sources are Radio, CD, A.Mem, N.Radio, N.Music and A.Aux.



# Distribute sound from video sources

Distribution of sound from video sources may not be available in the current software version.

In the **Sound from video sources** menu, you set up whether or not your build-in or connected video sources should be able to distribute sound to other sources connected to your home network.

If your setup includes a wireless connection to the home network, you may experience lip sync problems, because the sound is delayed a little on the way to the speakers of the link product. To avoid this, we recommend that you set **Sound from video sources** to off. Alternatively, you can connect both the television and all link products to the home network by means of an Ethernet cable instead of having a wireless connection.

## HDMI Matrix

The HDMI Matrix itself is a physical product that can be connected allowing you to connect up to 32 external sources to up to 32 televisions in different rooms and access the sources either individually from each television or simultaneously from several rooms via BeoRemote One.

The HDMI Matrix must be connected and set up by your Bang & Olufsen retailer.

You cannot connect more than one HDMI Matrix in a setup.

### Settings in the HDMI MATRIX menu

In the **HDMI Matrix** menu, you can select settings for your HDMI Matrix.

Connect an HDMI Matrix ...

1. In the Product Integration menu, highlight **HDMI Matrix** and press **>**.
2. Select an **HDMI IN** socket and press the **centre** button.
3. Follow on-screen instructions.

After selecting **Finish**, the HDMI Matrix is configured and the **Source** list is shown for you to configure the sources connected to the HDMI Matrix. This is done the same way as other connected products. For information about setting up connected products, press the **red** button in the on-screen help and find '[Set up connected products](#)'.

If you at a later time disable a saved HDMI Matrix configuration by setting the **HDMI Matrix** field to **No**, your settings for inputs are still saved. This means that if you enable the HDMI Matrix again, the settings are remembered.

To unconfigure a source, press the **red** button in the on-screen help and find '[Reset all settings for a source](#)'.

# Service and software update

## Service and software update – introduction

We recommend that you enable automatic software update on your television to ensure that your television always has the latest features and functions.

If your television is set up in a system, it is essential that you enable the automatic system update to ensure that all products in your system are kept up to date and are able to communicate.

You can always look up software information and update the TV software manually.

⌂  
Settings ● ▾  
Service > ▾  
...

## See software information

In the **Latest release** menu, you can look up information about the current software version, its release date, and any release notes available.

## Update software

### Update software – introduction

To download available software updates in the **Software update** menu, your television must be connected to the Internet. It is recommended that you set the television to update software automatically.

You can also download available software updates from [www.bang-olufsen.com](http://www.bang-olufsen.com) onto a USB device. Connect the USB device to the USB port on the connection panel.

On some markets, it is also possible to update the software via the antenna signal (OAD).

Contact your retailer for more information about software updates.

### Check for update

Select if the television should check for new software on a connected USB, via the Internet or via the antenna signal, if possible. If any updates are available, press the **centre** button to start updating and follow on-screen instructions.

While the television is updating with new software, the standby indicator flashes red and the television should remain connected to the mains.

When updating is completed, the **Latest release** information will be shown. Press the **centre** button to remove the information.

### Auto system updates

## Auto system updates – introduction

If you have a system setup with several Bang & Olufsen products, the entire system is updated when you check for updates. You should enable automatic software update of the system in the TV menu. You can set the time of day you want automatic software updates to take place to ensure that they do not interfere with the use of your television, and select whether or not you want to be notified about updates. Available software updates for all the Bang & Olufsen products in your setup will then be downloaded automatically on a regular basis.\* If system setup is not available in the current software version, you can still perform automatic software update of the television.

\*You can only enable or disable automatic software updates on the entire system and not on a single product.

## Activation

Set up your entire system to be updated automatically when new software is available. It is strongly recommended to enable automatic software updates to ensure an optimum performance of the products in your setup. Follow on-screen instructions.

If system setup is not available in the current software version, you can still perform automatic software update of the television.

## Time of the day

Set a time of the day the television should check for available software updates.

## Notifications

Select if you want to receive notifications when software updates are available. The Notifications menu is only available if Activation in the Auto system update menu is disabled. However, it is recommended to enable the Activation menu.

# PUC tables

## PUC tables – introduction

In the PUC management menu, download or delete peripheral unit controller (PUC) tables or check for updates for tables already downloaded to the television. The peripheral unit controller enables you to operate a connected non-Bang & Olufsen product with the Bang & Olufsen remote control. The peripheral unit controller built into your television "translates" signals from the remote control into signals understood by the connected product. For the "translation" to take place correctly, the appropriate PUC table must be downloaded into the television.

The number of supported products is updated on a regular basis. However, we cannot guarantee that you can find your product in the list.

## Download PUC tables

### Download PUC tables – introduction

In the Download more menu, you can download PUC tables either online from the Internet or from a connected USB device. The PUC tables enable you to operate non-Bang & Olufsen products with the Bang & Olufsen remote control.

If you have more than one connected USB device, you must first select the desired USB device.

You can search for peripheral units by entering the connected product's name or you can browse for peripheral units by brand name.

If your connected equipment is not in the download list, there is currently no control solution for it and you must select **Unsupported source**. You will not be able to operate your equipment with your Bang & Olufsen remote control. You can inquire with your Bang & Olufsen retailer about support of sources.

## Browse for PUC tables

Browse for available peripheral units.

1. Highlight a brand name and press **>**.
2. Highlight one or more peripheral units from the list brought up and press the **centre** button to select them.
3. Select **Download** to download the selected PUC tables.
4. Repeat the procedure, if you wish to download PUC tables for other brands.

## Search for PUC tables

Search for peripheral units.

1. Enter the connected product's name or brand name and press the **centre** button.
2. Highlight a peripheral unit from the list brought up and press the **centre** button to select it. Repeat the procedure if you wish to download more PUC tables.
3. When you have selected the relevant units, press the **green** button to be able to download them.
4. Select **Add more** if you wish to add more units or **Download** to start downloading.

## Transfer all PUC tables

If you download PUC tables from a USB device, you can also select **Transfer all** to transfer all the PUC tables saved to the television provided that there is enough memory available.

## Manage existing PUC tables

### Update PUC tables

Check if there are any updates available for your currently downloaded PUC tables.

1. In the PUC management menu, bring up **Manage existing**.
2. Press **>** and press the **green** button to check for updates.
3. In the list of available updates, use the arrow buttons to highlight the PUC tables you wish to update and press the **centre** button. If a table you do not wish to update is already selected, highlight it and press the **centre** button to deselect it.
4. To bring up information on the selected tables, highlight **View release notes** and press the **centre** button. Press the **centre** button again to leave the release notes.
5. To update the selected tables, highlight **Update** and press the **centre** button.
6. When updating has completed, press the **centre** button.

PUC tables are updated separately and are not a part of automatic software update when the **Auto system update** function is enabled.

## Delete PUC tables

Delete peripheral unit controller tables from the television. Make sure not to delete tables currently used by connected products.

1. In the PUC management menu, bring up **Manage existing**.
2. Press **>** and press the **yellow** button to bring up a list of downloaded tables.
3. Use the arrow buttons to highlight the PUC tables you wish to delete and press the **centre** button. If a table you wish to keep is already selected, highlight it and press the **centre** button to deselect it.
4. To delete the selected tables, highlight **Delete** and press the **centre** button.

## User system feedback

To help us improve our range of available products and services offered to you, we may request certain information from your product about its performance and usage patterns. The information will at all times be provided on an anonymous basis only. You can at any time enable or disable this function in the **User system feedback** menu.

# Open Source License

README for the source code of the parts of Bang & Olufsen A/S TV software that fall under open source licenses.

This is a document describing the distribution of the source code used on the Bang & Olufsen A/S television, which fall either under the GNU General Public License (the GPL), or the GNU Lesser General Public License (the LGPL), or any other open source license. Instructions to obtain copies of this software can be found in the Directions For Use.

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## Android (5.1)

This tv contains the Android Lollipop Software. The original download site for this software is : <https://android.googlesource.com/> This piece of software is made available under the terms and conditions of the Apache license version 2, which can be found below. Android APACHE License Version 2 (<http://source.android.com/source/licenses.html>)

## Busybox (1.18.5)

The original download site for this software is : <http://www.busybox.net/> This piece of software is made available under the terms and conditions of the GPL v2 license.

## linux kernel (3.10.27)

This tv contains the Linux Kernel. The original download site for this software is : <http://www.kernel.org/> This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below. Additionally, following exception applies : "NOTE! This copyright does \*not\* cover user programs that use kernel services by normal system calls - this is merely considered normal use of the kernel, and does \*not\* fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the linux kernel) is copyrighted by me and others who actually wrote it. Also note that the only valid version of the GPL as far as the kernel is concerned is \_this\_ particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated. Linus Torvalds"

## libcurl (7.26.0)

libcurl is a free and easy-to-use client-side URL transfer library, supporting DICT, FILE, FTP, FTPS, Gopher, HTTP, HTTPS, IMAP, IMAPS, LDAP, LDAPS, POP3, POP3S, RTMP, RTSP, SCP, SFTP, SMTP, SMTPS, Telnet and TFTP. libcurl supports SSL certificates, HTTP POST, HTTP PUT, FTP uploading, HTTP form based upload, proxies, cookies, user+password authentication (Basic, Digest, NTLM, Negotiate, Kerberos), file transfer resume, http proxy tunneling and more! The original download site for this software is : <http://curl.haxx.se/libcurl/COPYRIGHT AND PERMISSION NOTICE> Copyright (c) 1996 - 2010, Daniel Stenberg, [daniel@haxx.se](mailto:daniel@haxx.se). All rights reserved. Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT OF THIRD PARTY RIGHTS. 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. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

## libfreetype (2.4.2)

FreeType is a software development library, available in source and binary forms, used to render text on bitmaps and provides support for other font-related operations. The original download site for this software is : <https://github.com/juliemr/libfreetype-androidFreetype License>

#### libjpeg (8a)

This package contains C software to implement JPEG image encoding, decoding, and transcoding. This software is based in part on the work of the Independent JPEG Group.-----The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy. This software is copyright (C) 1991-1998, Thomas G. Lane. All Rights Reserved except as specified below. Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:(1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.(2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".(3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind. These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us. Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software". We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

#### libpng (1.4.1)

libpng is the official Portable Network Graphics (PNG) reference library (originally called pnglib). It is a platform-independent library that contains C functions for handling PNG images. It supports almost all of PNG's features, is extensible. The original download site for this software is : <https://github.com/julienc/libpng-androidlibpng> license

#### openssl (1.0.1j)

OpenSSL is an open-source implementation of the SSL and TLS protocols. The core library, written in the C programming language, implements the basic cryptographic functions and provides various utility functions. The original download site for this software is : [http://openssl.org/OpenSSL\\_license](http://openssl.org/OpenSSL_license)

#### Zlib compression library (1.2.7)

zlib is a general purpose data compression library. All the code is thread safe. The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format) Developed by Jean-loup Gailly and Mark Adler(C) 1995-2012 Jean-loup Gailly and Mark Adler This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software. Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions: 1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required. 2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software. 3. This notice may not be removed or altered from any source distribution. Jean-loup Gailly Mark Adler [jloup@gzip.org](mailto:jloup@gzip.org) [madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)

#### dvbsnoop (1.2)

dvbsnoop is a DVB / MPEG stream analyzer program. For generating CRC32 values required for composing PAT, PMT, EIT sections The original download site for this software is : <https://github.com/a4tunado/dvbsnoop/blob/master/src/misc/crc32.c> GPL v2 <http://dvbsnoop.sourceforge.net/dvbsnoop.html>

#### ezxml (0.8.6)

ezXML is a C library for parsing XML documents. The original download site for this software is : <http://ezxml.sourceforge.net>. Copyright 2004, 2005 Aaron Voisine. This piece of software is made available under the terms and conditions of the MIT license, which can be found below.

#### Protobuf (2.0a)

Protocol Buffers are a way of encoding structured data in an efficient yet extensible format. Google uses Protocol Buffers for almost all of its internal RPC protocols and file formats. The original download site for this software is :

<http://code.google.com/p/protobuf>Copyright 2008, Google Inc.All rights reserved.Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USEOF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

#### guava (11.0.2)

The Guava project contains several of Google's core libraries that we rely on in our Java-based projects: collections, caching, primitives support, concurrency libraries, common annotations, string processing, I/O, and so forth.The original download site for this software is : <http://code.google.com/>This piece of software is made available under the terms and conditions of the Apache License version 2.

#### gSoap (2.7.15)

The gSOAP toolkit is an open source C and C++ software development toolkit for SOAP/XML Web services and generic (non-SOAP) C/C++ XML data bindings.Part of the software embedded in this product is gSOAP software. Portions created by gSOAP are Copyright 2001-2009 Robert A. van Engelen, Genivia inc. All Rights Reserved. THE SOFTWARE IN THIS PRODUCT WAS IN PART PROVIDED BY GENIVIA INC AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### restlet (2.1.4)

Restlet is a lightweight, comprehensive, open source REST framework for the Java platform. Restlet is suitable for both server and client Web applications. It supports major Internet transport, data format, and service description standards like HTTP and HTTPS, SMTP, XML, JSON, Atom, and WADL.The original download site for this software is : <http://restlet.org/>This piece of software is made available under the terms and conditions of the Apache License version 2.

#### Opera Web Browser (SDK 3.5)

This TV contains Opera Browser Software.

#### dlmalloc (2.7.2)

Opera uses Doug Lea's memory allocatorThe original download site for this software is : <http://gee.cs.oswego.edu/dl/html/malloc.html>

#### double-conversion

Opera uses double-conversion library by Florian Loitsch, faster double : string conversions ( dtoa and strtod).The original download site for this software is : <http://code.google.com/p/double-conversion>Copyright 2006-2011, the V8 project authors. All rights reserved.Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: \* Redistributions of source code must retain the above copyright notice, this list of

conditions and the following disclaimer. \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USEOF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### EMX (0.9c)

Opera uses EMX, which is an OS/2 port of the gcc suite. Opera uses modified versions of the sprintf and sscanf methods from this C library.\* The emx libraries are not distributed under the GPL. Linking an \* application with the emx libraries does not cause the executable \* to be covered by the GNU General Public License. You are allowed \* to change and copy the emx library sources if you keep the copyright \* message intact. If you improve the emx libraries, please send your \* enhancements to the emx author (you should copyright your \* enhancements similar to the existing emx libraries).

#### freetype (2.4.8)

Opera uses freetype FreeType 2 is a software-font engine that is designed to be small, efficient, highly customizable and portable, while capable of producing high-quality output (glyph images).The original download site for this software is :  
<http://www.freetype.org/freetype2/index.html>

#### HKSCS (2008)

Opera uses HKSCS: The Government of the Hong Kong Special Administrative Region HKSCS mappingsThe original download site for this software is :  
<http://www.ogcio.gov.hk>Before downloading the Software or Document provided on this Web page, you should read the following terms (Terms of Use). By downloading the Software and Document, you are deemed to agree to these terms.1. The Government of the Hong Kong Special Administrative Region (HKSARG) has the right to amend or vary the terms under this Terms of Use from time to time at its sole discretion.2. By using the Software and Document, you irrevocably agree that the HKSARG may from time to time vary this Terms of Use without further notice to you and you also irrevocably agree to be bound by the most updated version of the Terms of Use.3. You have the sole responsibility of obtaining the most updated version of the Terms of Use which is available in the "Digital 21" Web site ([http://www.ogcio.gov.hk/en/business/tech\\_promotion/ccli/terms/terms.htm](http://www.ogcio.gov.hk/en/business/tech_promotion/ccli/terms/terms.htm)).4. By accepting this Terms of Use, HKSARG shall grant you a non-exclusive license to use the Software and Document for any purpose, subject to clause 5 below.5. You are not allowed to make copies of the Software and Document except it is incidental to and necessary for the normal use of the Software. You are not allowed to adapt or modify the Software and Document or to distribute, sell, rent, or make available to the public the Software and Document, including copies or an adaptation of them.6. The Software and Document are protected by copyright. The licensors of the Government of Hong Kong Special Administrative Region are the owners of all copyright works in the Software and Document. All rights reserved.7. You understand and agree that use of the Software and Document are at your sole risk, that any material and/or data downloaded or otherwise obtained in relation to the Software and Document is at your discretion and risk and that you will be solely responsible for any damage caused to your computer system or loss of data or any other loss that results from the download and use of the Software and Document in any manner whatsoever.8. In relation to the Software and Document, HKSARG hereby disclaims all warranties and conditions, including all implied warranties and conditions of merchantability, fitness for a particular purpose and non-infringement.9. HKSARG will not be liable for any direct, indirect, incidental, special or consequential loss of any kind resulting from the use of or the inability to use the Software and Document even if HKSARG has been advised of the possibility of such loss.10. You agree not to sue HKSARG and agree to indemnify, defend and hold harmless HKSARG, its officers and employees from any and all third party claims, liability, damages and/or costs (including, but not limited to, legal fees) arising from your use of the Software and Document, your violation of the Terms of Use or infringement of any

intellectual property or other right of any person or entity.11. The Terms of Use will be governed by and construed in accordance with the laws of Hong Kong.12. Any waiver of any provision of the Terms of Use will be effective only if in writing and signed by HKSARG or its representative.13. If for any reason a court of competent jurisdiction finds any provision or portion of the Terms of Use to be unenforceable, the remainder of the Terms of Use will continue in full force and effect.14. The Terms of Use constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes and replaces all prior or contemporaneous understandings or agreements, written or oral, regarding such subject matter.15. In addition to the licence granted in Clause 4, HKSARG hereby grants you a non-exclusive limited licence to reproduce and distribute the Software and Document with the following conditions:(i) not for financial gain unless it is incidental;(ii) reproduction and distribution of the Software and Document in complete and unmodified form; and(iii) when you distribute the Software and Document, you agree to attach the Terms of Use and a statement that the latest version of the Terms of Use is available from the "Office of the Government Chief Information Officer" Web site ([http://www.ogcio.gov.hk/en/business/tech\\_promotion/ccli/terms/terms.htm](http://www.ogcio.gov.hk/en/business/tech_promotion/ccli/terms/terms.htm)).

IANA (Dec 30 2013)

Opera uses Internet Assigned Numbers Authority: Character encoding tag names and numbers.The original download site for this software is : <https://www.iana.org>

ICU (3)

Opera uses ICU : International Components for Unicode: Mapping table for GB18030The original download site for this software is : <http://site.icu-project.org/><http://source.icu-project.org/repos/icu/icu/trunk/license.html>

MozTW (1.0)

Opera uses MozTW : MozTW project: Big5-2003 mapping tables.The original download site for this software is : <https://moztw.org>This piece of software is made available under the terms and conditions of CCPL

NPAPI (0.27)

Opera uses NPAPI : Netscape 4 Plugin API: npapi.h, npfunctions.h, npruntime.h and nptypes.h. Distributed as part of the Netscape 4 Plugin SDK.The original download site for this software is : [wiki.mozilla.org](http://wiki.mozilla.org)This piece of software is made available under the terms and conditions of mozilla license as described below.

Unicode (4.0)

Opera uses Unicode : Data from the Unicode character database.The original download site for this software is : [www.unicode.org](http://www.unicode.org)<http://www.unicode.org/copyright.html>

Webp (0.2.0)

Opera uses Webp : libwebp is a library for decoding images in the WebP format. Products may use it to decode WebP images. The turbo servers will eventually re-decode images to WebP.The original download site for this software is :  
<https://developers.google.com/speed/webp/?csw=1>  
[https://chromium.googlesource.com/webm/libwebp/Additional IP Rights Grant \(Patents\)](https://chromium.googlesource.com/webm/libwebp/Additional IP Rights Grant (Patents))"This implementation" means the copyrightable works distributed by Google as part of the WebM Project.Google hereby grants to you a perpetual, worldwide, non-exclusive,no-charge, royalty-free, irrevocable (except as stated in this section)patent license to make, have made, use, offer to sell, sell, import,transfer, and otherwise run, modify and propagate the contents of this implementation of VP8, where such license applies only to those patentclaims, both currently owned by Google and acquired in the future,licensable by Google that are necessarily infringed by this implementation of VP8. This grant does not include claims that would be infringed only as a consequence of further modification of this implementation. If you or your agent or exclusive licensee institute or order or agree to the institution of patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that this implementation of VP8 or any code incorporated within this implementation of VP8 constitutes direct or contributory patent infringement, or inducement of patent infringement, then any patent rights granted to you under this License for this implementation of VP8shall terminate as of the date such litigation is filed.

FaceBook SDK (3.0.1)

This TV contains Facebook SDK. The Facebook SDK for Android is the easiest way to integrate your Android app with Facebook's platform. The SDK provides support for Login with Facebook authentication, reading and writing to Facebook APIs and support for UI elements such as pickers and dialogs.The original download site for this software is : <https://developer.facebook.com/docs/android>This piece of software is made available under the terms and conditions of the Apache License version 2.

#### iptables (1.4.7)

iptables is a user space application program that allows a system administrator to configure the tables provided by the Linux kernel firewall (implemented as different Netfilter modules) and the chains and rules it stores. Different kernel modules and programs are currently used for different protocols; iptables applies to IPv4The original download site for this software is : <https://android.googlesource.com/>This piece of software is made available under the terms and conditions of the GPL v2.

#### libyuv (814)

libyuv is an open source project that includes YUV conversion and scaling functionality.The original download site for this software is :  
<http://code.google.com/p/libyuv>This piece of software is made available under the terms and conditions BSD.

#### ffmpeg (1.1.1)

This TV uses FFmpeg. FFmpeg is a complete, cross-platform solution to record, convert and stream audio and video.The original download site for this software is :  
<http://ffmpeg.org>This piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below.

#### u-boot (2011-12)

U-boot is a boot loader for embedded boards based on ARM, MIPS and other processors, which can be installed in a boot ROM and used to initialize and test the hardware or to download and run application codeThis piece of software is made available under the terms and conditions of the GPL v2 license, which can be found below.

#### live555 (0.82)

Live555 provides RTP/RTCP/RTSP client.The original download site for this software is :  
<http://www.live555.com>This piece of software is made available under the terms and conditions of the LGPL v2.1 license, which can be found below.

#### Bluetooth Stack (Bluedroid)

This TV uses Bluetooth stack.The original download site for this software is :This piece of software is made available under the terms and conditions of Android Apache License Version 2.

#### EXIF (NA)

Exif JPEG header manipulation tool.The original download site for this software is :  
<http://www.sentex.net/~mwandel/jhead/>Portions of this source code are in the public domainCopyright (c) 2008, The Android Open Source ProjectAll rights reserved.Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. \* Neither the name of The Android Open Source Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### EXPAT (2.1.0)

EXPAT is a XML Parser.The original download site for this software is :  
<http://expat.sourceforge.net>Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd and Clark CooperCopyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Expat maintainers.Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.THE SOFTWARE IS PROVIDED "AS IS",

WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#### neven face recognition library (NA)

This TV uses neven face recognition library which is used for face recognition. This piece of software is made available under the terms and conditions of Android Apache License version 2.

#### Unicode (4.8.1.1)

This TV uses Unicode which specifies the representation of text. The original download site for this software is : <http://icu-project.org/> ICU License - ICU 1.8.1 and later  
COPYRIGHT AND PERMISSION NOTICE  
Copyright (c) 1995-2008 International Business Machines Corporation and others. All rights reserved. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON INFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder. All trademarks and registered trademarks mentioned herein are the property of their respective owners.

#### IPRoute2 (NA)

IPRoute2 is used for TCP/IP, Networking and Traffic control. The original download site for this software is : <http://www.linuxfoundation.org/collaborate/workgroups/networking/iproute2> This piece of software is made available under the terms and conditions of GPL V2.

#### mtpd (NA)

mtpd is used for VPN Network. The original download site for this software is : <http://libmtp.sourceforge.net/> This piece of software is made available under the terms and conditions of Apache License version 2.0.

#### MDNS Responder (NA)

MDNS Responder. The mDNSResponder project is a component of Bonjour, Apple's ease-of-use IP networking initiative. The original download site for this software is : <http://www.opensource.apple.com/tarballs/mDNSResponder/> This piece of software is made available under the terms and conditions of Apache License version 2.0.

#### NFC (NA)

NFC Semiconductor's NFC Library. Near Field Communication (NFC) is a set of short-range wireless technologies, typically requiring a distance of 4cm or less to initiate a connection. NFC allows you to share small payloads of data between an NFC tag and an Android-powered device, or between two Android-powered devices. This piece of software is made available under the terms and conditions of Apache License version 2.0.

#### Skia (NA)

Skia is a complete 2D graphic library for drawing Text, Geometries, and Images. The original download site for this software is : <http://code.google.com/p/skia/> Copyright (c) 2011 Google Inc. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. \* Neither the name

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#### Sonic Audio Synthesis library (NA)

The original download site for this software is : <http://www.sonivoxmi.com>This piece of software is made available under the terms and conditions of Apache License version 2.0.

#### Sqlite (307100)

The original download site for this software is : [www.sqlite.org](http://www.sqlite.org).This piece of software is made available under the terms and conditions of Apache License version 2.0.

#### Nuance Speech Recognition engine (NA)

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#### C++Standard Template Library library (5)

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#### libUpNp (1.2.1)

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dnsmasq

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