

Panasonic[®]

Model No.

*e***HELP**

Read first

Before use

- License 10

Features

- 4K resolution 13
- Home 14
- Easy Mirroring 15

Using Home

Home

- Information 16
- How to use 17
- Pin to HOME 19
- Option menu 20

Devices

- How to use 21
- Option menu 22

Apps

- How to use 23
- Option menu 24

Live TV

- How to use 25
- Option menu 26

Watching TV

Cable / Satellite / Fiber Optic box

- Initial setting 27

Antenna / Cable service without a box

- Initial setting 28
- Select channels 29
- Favorite channels 30
- Closed Caption 31
- SAP 32

• Other	33
<hr/>	
4K compatible equipment	
• Connecting and viewing	34
• About 4K format	35
• Input signal (AV)	36
<hr/>	
Blu-ray, DVD, Game Console, etc.	
• Connecting and viewing	37
• Example of AV connections	38
• HDMI HDR setting	41
• HDMI connection notice	42
• HDMI connection caution	43
• Input signal	44
<hr/>	
For best picture	
• Picture mode	45
• Auto brightness (ECO)	47
• Aspect setting	48
• Screen mode	49
• Screen mode for 4K format	51
• Zoom adjustments	52
• Lock settings	53
• Copy adjustments	54
<hr/>	
For best audio	
• Sound mode	55
• DIGITAL AUDIO OUT terminal	56
<hr/>	
Network services	
Connect to network	
• Network connections	57
• Network connection types	58
<hr/>	
Network settings	
• Setting the menu	60
• Network connection / Network status	61
• TV name	62
<hr/>	

• TV remote App settings	63
• Network link	64
• Smart Speaker Settings	65
• Mirroring settings	66
• VOD content refresh	67
• Control4 settings	68
• Software update	69
• New software notice	70
• Terms of Service and Settings	71

How to use

• Operate	72
-----------	----

Home network

Get started

• Information	73
---------------	----

Photos

• Viewing Photos	74
• Photo view	75
• Options menu	76
• Using Slideshow	77
• Slideshow settings	78

Videos

• Viewing Videos	79
• Video view	80
• Options menu	81

Music

• Playing Music	82
• Music view	83
• Options menu	84

Media player

Get started

• Information	85
---------------	----

• Media warning messages	86
• Notice	87
Easy List View	
• Selecting file	88
• Filtering files	90
Mix Folder View	
• Selecting file	91
• Filtering files	93
• Sorting files	94
Playback	
• Playback	95
• Slideshow settings	97
• Video options	98
Convenience features	
Eco navigation	
• Eco navigation	99
Timer	
• Setting the menu	100
Parental control	
• Setting the menu	101
• Password setting	102
• Parental control ratings	103
Power LED Indicator	
• Using Power LED Indicator	105
Closed Caption	
• Setting the menu	106
• Closed Caption notices	107
VIERA Link™ “HDAVI Control™”	
• Basic feature	108
• Connecting note	109
• VIERA Link connections	111

• VIERA Link settings	114
• VIERA Link settings feature	115
• VIERA Link	117
• VIERA Link menu	118
Using Voice guidance	
• Voice guidance	120
Using Bluetooth devices	
• Settings	121
Control by Smartphone, etc.	
• Smartphone remote	123
• Turn on the TV via IP	124
• Mirroring	125
Using USB Keyboard	
• Keyboard	126
All settings	
How to use	
• Setting the menu	127
Picture	
• Basic settings	128
• HDR brightness setting	133
• Pro settings	134
• Advanced picture	138
• Screen settings	141
• Other settings	144
Sound	
• Basic settings	145
• Advanced settings	148
• Headphone terminal output setting	152
• Voice guidance settings	154
Network	
• Network settings	155

Timer

• Sleep (Off timer)	159
• Timer (On/Off timer)	160
• Clock settings	161
• Auto turn off settings	162

Setup

• Eco navigation	163
• USB device setup	164
• Bluetooth settings	165
• Parental control	166
• ANTENNA/Cable setup	168
• Language settings	170
• Display customization	171
• Closed Caption	172
• VIERA Link settings	174
• System settings	175
• Other settings	176
• Useful settings	177

Support / FAQ

Help menu

• Using Help menu	179
-------------------	-----

FAQ

• Picture - Viewing	180
• Picture - Snowy / none	181
• Picture - Distortion	182
• Picture - Unusual	183
• Picture - Continue	184
• Sound - None	185
• Sound - Unusual	186
• Networking	187
• Software update	188
• Voice guidance	189
• Eco navigation	190

• Other	191
• Menu - Gray-out or missing items	193
• Reset to factory defaults	194

Information

• Detailed information	195
• Data information	196

Care and Cleaning

• Display panel	199
• Cabinet	200
• Pedestal / Power cord	201

How to use

Before using eHELP, check the followings.

■ Meaning of signs



Press the Remote control button



Letters enclosed in brackets: Remote control button



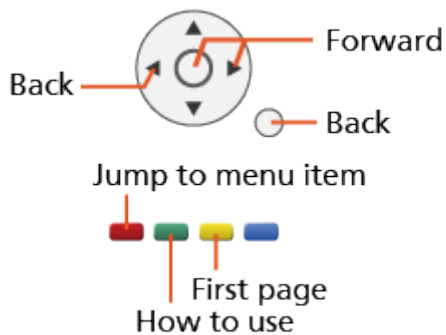
Letters in Cyan: Menus on screen display



References in this eHELP

You can jump to the page by pressing **OK** while the cursor is on the references.

■ Operation guide



- The design and specifications are subject to change without notice.
- The images shown in this eHELP are for illustrative purposes only.
- This eHELP covers all models, however, some features may not be available on certain models.
- Refer to the paper manual and the actual menu in the TV etc. to confirm your model's features.

Read first

Before use

License

Even if no special notation has been made of company or product trademarks, these trademarks have been fully respected.

THX and the THX logo are trademarks of THX Ltd., registered in the United States and other countries.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license.

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

x.v.Color™ is a trademark.

Dolby, Dolby Vision, Dolby Atmos, Dolby Audio, and the double-D symbol are trademarks of Dolby Laboratories.

Manufactured under license from Dolby Laboratories.

Confidential unpublished works.

Copyright © 2013-2015 Dolby Laboratories. All rights reserved.

Text-to-Speech Powered by Nuance

2002-2019 Nuance Communications, Inc. All rights reserved.

“PlayReady” is a trademark registered by Microsoft. Please be aware of the following.

(a) This product contains technology subject to certain intellectual property rights of Microsoft. Use or distribution of this technology outside of this product is prohibited without the appropriate license(s) from Microsoft.

(b) Content owners use Microsoft PlayReady™ content access technology to protect their intellectual property, including copyrighted content. This device uses PlayReady technology to access PlayReady-protected content and/or WMDRM-protected content. If the device fails to properly enforce restrictions on content usage, content owners may require Microsoft to revoke the device’s ability to consume PlayReady-protected content. Revocation should not affect unprotected content or content protected by other content access technologies.

Content owners may require you to upgrade PlayReady to access their content.

If you decline an upgrade, you will not be able to access content that requires the upgrade.

This product incorporates the following software:

- (1) the software developed independently by or for Panasonic Corporation,
- (2) the software owned by third party and licensed to Panasonic Corporation,
- (3) the software licensed under the GNU General Public License, Version 2.0 (GPL V2.0),
- (4) the software licensed under the GNU LESSER GENERAL PUBLIC LICENSE Version 2.1 (LGPL V2.1), and/or,
- (5) open sourced software other than the software licensed under the GPL V2.0 and/or LGPL V2.1.

The software categorized as (3) - (5) are distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. Please refer to the detailed terms and conditions thereof shown in the “Software license” menu on this product.

At least three (3) years from delivery of this product, Panasonic will give to any third party who contacts us at the contact information provided below, for a charge no more than our cost of physically performing source code distribution, a complete machine-readable copy of the corresponding source code covered under GPL V2.0, LGPL V2.1 or the other licenses with the obligation to do so, as well as the respective copyright notice thereof.

Contact Information: oss-cd-request@gg.jp.panasonic.com

The source code and the copyright notice are also available for free in our website below.

<https://panasonic.net/cns/oss/tv/DTV19U.html>

Features

4K resolution

You can watch content in 4K format that has twice the horizontal and vertical resolution of the 1080p signal.

 → [Watching TV > 4K compatible equipment](#)

Home

“Home” is a gateway to the TV programs, applications and connected devices.

It provides you an easy way to access all the features.

 → [Using Home](#) > [Home](#) > [Information](#)

Easy Mirroring

You can watch and display images of other devices (smartphone, etc.) on the TV screen using a mirroring function. You can also start the mirroring function from the other devices without operating the TV.

 → [Convenience features > Control by Smartphone, etc. > Mirroring](#)

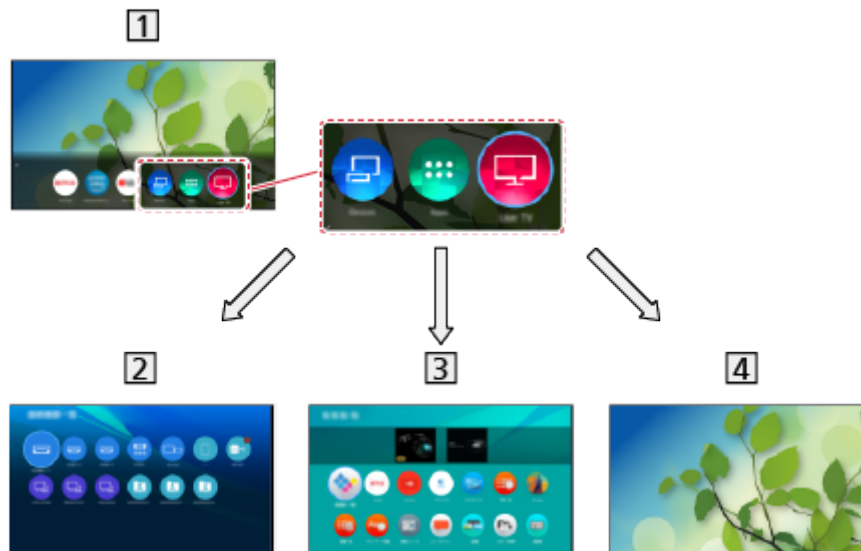
Using Home

Home

Information

“Home” is a gateway to the TV programs, applications and connected devices.

Home is displayed by pressing **HOME** and it provides you an easy way to access all the features as shown below (example).



1 Home

2 Devices

- Gateway to connected devices (HDMI equipment, USB device, network equipment, etc.)

 → [Using Home > Devices](#)

3 Apps

- Gateway to various applications (Internet content, etc.)

 → [Using Home > Apps](#)

4 Live TV

- Gateway to TV programs

 → [Using Home > Live TV](#)

- Be sure to update the software when a software update notice is displayed on the TV screen. If the software is not updated, you may not be able to use Home. You can update the software later manually.

 → [Network services > Network settings > Software update](#)

How to use

From Home, you can access all the features such as TV programs, applications and connected devices.

1. Display Home with **HOME**.

(Example)



- Press Δ / ∇ to display the tabs which provide you with the relevant program information, recommended content, etc.
- A broadband network environment is required to use internet services.

 \rightarrow [Network services](#) > [Connect to network](#) > [Network connection types](#)

2. Select **Devices** / **Apps** / **Live TV** and press **OK** to access.

- To watch full-screen TV, select **Live TV**.

(Example)



= Note =

- The design and specifications are subject to change without notice.

■ Search

You can search for content from various sources.

1. Display Home with **HOME**.

2. Press Δ to select **Search** and press **OK** to access.

- A search history may be displayed and you can select it for keyword search.
- To delete the search history

1) Select **Search** or a keyword and press **OPTION**.

2) Select **Delete all histories** / **Delete a history** and press **OK**.

3. Follow the on-screen instructions.

■ Settings

You can set up Home, tabs, etc.

1. Display Home with **HOME**.
2. Press ▾ repeatedly to display the setting tab.
3. Select one of the following items and press **OK** to access.

[Tab Settings](#) / [Enable Auto Pin](#) / [Disable Auto Pin](#)

4. Follow the on-screen instructions.
-

[Tab Settings](#)

Edits the tabs of Home.

[Enable Auto Pin](#) / [Disable Auto Pin](#)

Selects whether to automatically add a shortcut for a feature frequently used on Home.

Pin to HOME

You can add a shortcut for frequently used feature on Home.

1. Display Home with **HOME**.
2. Select **Devices** / **Apps** / **Live TV** and press **OK** to access.
3. Select a feature (device / application / TV program).
4. Display the option menu with **OPTION**.
5. Select **Pin to HOME** and press **OK** to set.
6. Select the position to add on Home and press **OK** to set.
 - To remove a shortcut from Home, set **Unpin from HOME**.

 → Using Home > Home > Option menu

Option menu

You can customize Home.

1. Display the option menu with **OPTION**.
2. Select one of the following items and press **OK** to access.

Unpin from HOME / Move

3. Set the item and press **OK** to store.
-

Unpin from HOME

Removes a shortcut from Home.

Move

Arranges the position of the icons.

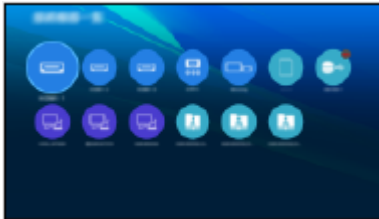
Devices

How to use

Connected devices (HDMI equipment, USB device, network equipment, etc.) can be accessed easily from **Devices**.

1. Display Home with **HOME**.
2. Select **Devices** and press **OK** to access.

(Example)



- To exit **Devices**

RETURN / **EXIT**

- To add a shortcut icon

 → Using Home > Home > Pin to HOME

3. Select a device and press **OK** to access.

- For external equipment

 → Watching TV > Blu-ray, DVD, Game Console, etc.

- For devices for Media Player

 → Media player > Get started

- For network equipment

 → Home network > Get started

- For mirroring function

 → Convenience features > Control by Smartphone, etc. > Mirroring

= Note =

- The design and specifications are subject to change without notice.

Option menu

1. Display the option menu with **OPTION**.
 2. Select one of the following items and press **OK** to access.
Pin to HOME / Accessibility / Switch to Component / Switch to Video / Show Info.
 3. Set the item and press **OK** to store.
-

Pin to HOME

Adds a shortcut for a frequently used feature on Home.

 → Using Home > Home > Pin to HOME

Accessibility

Guidance settings for visually impaired users

 → Convenience features > Using Voice guidance > Voice guidance

Switch to Component / Switch to Video

You can select **Component** and **Video** in **AV**.

Show Info.

Displays the information about the selected device.

Apps

How to use

Various applications (Internet content, etc.) can be accessed easily from **Apps**.

1. Display Home with **HOME**.
2. Select **Apps** and press **OK** to access.

(Example)



- To exit **Apps**
RETURN / **EXIT**
 - To add a shortcut icon
🖱️ → Using Home > Home > Pin to HOME
 - You can assign a favorite application to **MY APP** of the TV's remote control.
🖱️ → Using Home > Apps > Option menu
3. Select an application and press **OK** to access.
 4. Follow the on-screen instructions.

= Note =

- The design and specifications are subject to change without notice.
- Internet apps are provided by their respective service providers, and may be changed, interrupted, or discontinued at any time.
- A broadband network environment is required to fully use this function.

Option menu

1. Display the option menu with **OPTION**.
 2. Select one of the following items and press **OK** to access.
Pin to HOME / Set as My App / Move / Lock / Unlock / Uninstall / Show Info.
 3. Set the item and press **OK** to store.
-


Pin to HOME

Adds a shortcut for a frequently used feature on Home.

 → Using Home > Home > Pin to HOME

Set as My App

Assigns your favorite application to **MY APP** of the TV's remote control.

-  is displayed on the assigned application.
 - To change the assignment, set **Set as My App** while the cursor is on another application.
-

Move

Arranges the position of the applications.

Lock, Unlock

Locks / unlocks a specific application to restrict access (if available).

- Password is required to access to locked application.

 → Convenience features > Parental control > Password setting

Uninstall

Deletes an application from **Apps** (if available).

Show Info.

Displays the information about the selected application.

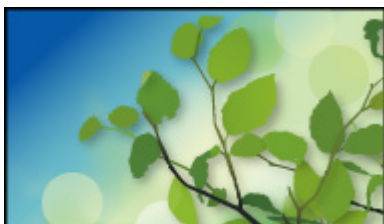
Live TV

How to use

Live TV is a gateway to the TV programs.

1. Display Home with **HOME**.
2. Select **Live TV**.
3. Press **OK** to access.

(Example)



- For details of watching TV

 → [Watching TV > Antenna / Cable service without a box](#)

- To add a shortcut icon

 → [Using Home > Home > Pin to HOME](#)

Option menu

1. Display the option menu with **OPTION**.
2. Select one of the following items and press **OK** to access.

Pin to HOME / Accessibility / AV Options

3. Set the item and press **OK** to store.
-

Pin to HOME

Adds a shortcut for a frequently used feature on Home.

 → Using Home > Home > Pin to HOME

Accessibility

Guidance settings for visually impaired users

 → Convenience features > Using Voice guidance > Voice guidance

AV Options

Easy optional setting for viewing, sound, etc.

 → Watching TV > Antenna / Cable service without a box > Other

- Menu items and selectable options vary depending on the TV mode.

Watching TV

Cable / Satellite / Fiber Optic box

Initial setting

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting cables.

1. Connecting

Select the wiring method connecting your box to the TV, AV IN or Antenna/Cable in.

- HDMI will provide the best HD picture

2. Change INPUT



Press the **INPUT** button to select the proper connection. Wait for 2 seconds.

- The menu choices vary depending on which input is selected.

3. Power on your Cable, Satellite or Fiber Optic box

Use the box's remote control to change channels.

- If the box is connected to the TV using a COAX cable (Antenna/Cable in), then set the TV channel to CH3 or CH4. Note that the picture will not be in HD.
- CC/SAP is not available when watching TV with a Cable or Satellite box connected via HDMI.
- If you have a High Definition box, ensure that it is outputting 720p or 1080i signal.

Tip: press the TV's **INFO** button to verify.

- Check your box's "aspect" or "format" settings. It should be set to 16:9, Widescreen or Full.
- If the audio volume is too low, check the box's audio settings.
- Contact your Cable or Satellite provider for instructions of any box settings.

Antenna / Cable service without a box

Initial setting

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting cables.

1. Connect coax

Connect a COAX wire from either an Antenna or Basic Cable service to the TV's "ANTENNA/CABLE IN" screw terminal.



1 TV (ANTENNA/CABLE IN)

2 Antenna

2. Scan the channel

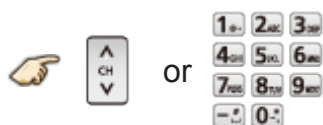
 **MENU** → **Menu** > **Setup** > **ANTENNA/Cable setup** > **ANTENNA/Cable signal, Auto program**

- 1) Select either Cable or Antenna programming source in **ANTENNA/Cable signal**.
- 2) Select **Auto program** and then the appropriate scan mode:
(**All channels** / **Analog only** / **Digital only**)
- 3) Start scanning.

- The tuner setup menu (auto scan, etc.) is only available when INPUT is set to TV.
- If no channels are found by the end of the scan, then check the following:
 - Antenna's position - or availability of Cable service.
 - Cable, Satellite or Fiber Optic services with a box are typically connected to the TV's A/V inputs, preferably HDMI, for best HD picture. In such case, the channel scanning is not needed.

Select channels

■ Select desired channel



- CH buttons are also available on the TV.

■ Select desired digital channel

To directly enter a digital channel number use  button to enter the dash.

(e.g. CH15-1, press    )

Favorite channels

Channel numbers registered in Favorite are displayed on the favorite tune screen. Select the desired broadcast station with the cursor or use the number buttons.

- Favorite channels cannot be set when using Cable or Satellite box

■ Set the Favorite channel

 **OPTION** ⇒ **AV Options** > **Set favorite**


Select the list number using Δ / ∇ and **OK** or **0-9** / **9** / **-** directly to save the displayed channel.

■ Delete a Favorite channel

 **OPTION** ⇒ **AV Options** > **Set favorite**

Select the list number using Δ / ∇ and **OK** to delete.

- To change the page in **Set favorite**


 **FAVORITE** or \triangleleft / \triangleright repeatedly

■ Display a Favorite channel

 **FAVORITE** ⇒ **Favorite channels**

Select the list number using Δ / ∇ and **OK** or **0-9** / **9** / **-** directly.

- To change the page in **Favorite channels**

 **FAVORITE** or \triangleleft / \triangleright repeatedly

Closed Caption

■ Viewing with Closed Caption



Switches the Closed Caption mode.

(**On mute** / **On** / **Off**)

- CC is not available when watching TV with a Cable or Satellite box connected via HDMI.
- Contact your Cable or Satellite operator for instructions on enabling CC with their box.
- The TV's CC button does not operate the Satellite or Cable box's CC function.
- For viewing the CC of digital broadcasting, set the aspect to Full (If viewing with JUST, ZOOM or 4:3, characters might be cut off).
- If the CC is set to On on both the receiver and TV when the signal is 480i (except for the HDMI connection), the CC may overlap on the TV.
- If a digital program is being output in analog format, the CC data will also be output in analog format.
- If the recorder or output monitor is connected to the TV, the CC needs to be set up on the recorder or output monitor.

SAP

■ Listen with SAP (Secondary Audio Programming)

- SAP is not available when watching TV with a Cable or Satellite box connected via HDMI.
- Contact your Cable or Satellite operator for instructions on enabling SAP with their box.
- The TV's **SAP** button does not operate the Satellite or Cable box's **SAP** function.

Select the Audio mode for watching TV.



SAP

Digital mode:

Select available audio service when receiving a digital channel.

Audio track is automatically selected as **Preferred audio type** and **Preferred SAP language** settings.



MENU



Menu > Sound > Preferred audio type



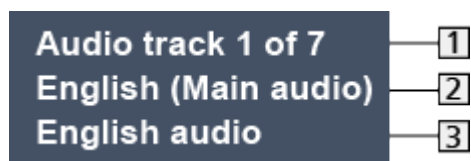
MENU



Menu > Setup > Language > Preferred SAP language

- If you change the audio settings with the **SAP** button, **Preferred SAP language** and **Preferred audio type** settings will not change.

(Example)



1 Track number / Number of tracks

2 Current audio track information

3 Audio service information

Analog mode:

Select the desired Audio mode.

(**Stereo** / **SAP** / **Mono**)

Other

1. Information banner

Displays TV status information. Also, when watching programs via the Antenna/Cable input, INFO will include the channel banner.



Channel / Station identifier / Program title / Closed Caption / SAP / Rating level / Signal resolution / Picture mode / Aspect ratio / Sleep timer remaining time / Clock

2. Options menu

This menu consists of shortcuts to convenient functions.

(Options menu is also available in [Menu](#).)



Channel surf mode:

Specifies favorites or type of channels to view when pressing the channel up/down button.

Set favorite:

Sets favorite channel.

Edit CH caption:

Edits the channel identifier.

Signal meter:

Checks the antenna's signal strength.

- Options menu is only available when the TV is using the Antenna/Cable input, not when using Cable or Satellite box.

4K compatible equipment

Connecting and viewing

You can watch content in the 4K format that has twice the horizontal and vertical resolution of the 1080p signal.

- External equipment and cables shown are not supplied with this TV.
- To watch 4K content, connect the 4K compatible equipment to the HDMI input with a 4K compatible HDMI cable respectively.
- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting cables.

■ Connections for 4K contents



- 1 HDMI IN
- 2 HDMI cable (4K compatible cable)
- 3 HDMI OUT
- 4 4K compatible equipment

1. Connect device

2. Select input and display

- 1) Display **Input select** menu (with the connected equipment turned On)



- 2) Select HDMI input using Δ / ∇ and press **OK**.

= Note =

- Use a high speed HDMI cable for high resolution images.
- The menu choices vary depending on which input is selected.

About 4K format

4K format refers to approximately 4,000 pixels of horizontal resolution which has several different digital formats.

- This TV supports 4K UHD and DCI 4K (4,096 x 2,160).

■ 4K format of HDMI

- 4K UHD
3,840 x 2,160 (60p, 50p, 30p, 25p, 24p)
 - Aspect is fixed to **FULL**.
- DCI 4K
4,096 x 2,160 (60p, 50p, 30p, 25p, 24p)
 - Actual resolution is 3,840 x 2,160p.
 - Aspect is fixed to **V Full**.

- The above signals are reformatted for optimal viewing on your display.
- Aspect is fixed to **FULL** when watching the content of 4K format except DCI 4K.

- For more information about Aspect

 → [Watching TV > For best picture > Screen mode for 4K format](#)

Input signal (AV)

- Signals other than those below may not be displayed properly.
- The signals are reformatted for optimal viewing on your display.

■ Component / HDMI

Input signal	Component	HDMI
525 (480) / 60i, 60p	○	○
750 (720) / 60p	○	○
1,125 (1,080) / 60i	○	○
1,125 (1,080) / 60p	○	○
1,125 (1,080) / 30p, 24p		○
3,840 × 2,160 / 60p, 50p, 30p, 25p, 24p		○
4,096 × 2,160 / 60p, 50p, 30p, 25p, 24p		○

○ : Applicable input signal

Blu-ray, DVD, Game Console, etc.

Connecting and viewing

1. Connect device

Verify that the device is connected to the TV properly and connect to desired terminal. Note which terminal the device is connected to (HDMI, Component or Video)

Component and Composite (Video) in terminals are shared.

Please be careful not to confuse the connection when you use Component or Video.

- For Example of AV connections

 → [Watching TV > Blu-ray, DVD, Game Console, etc. > Example of AV connections](#)

2. Select Input

- 1) Display **Input select** menu (with the connected equipment turned On)



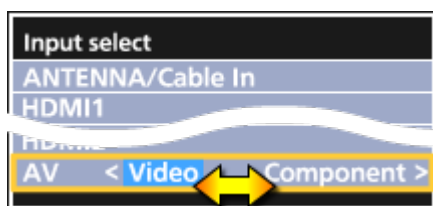
INPUT

- 2) Select the input used in step 1

Select correct input source, using Δ / ∇ and press **OK**.

When you connect to Component or Video input, you need to select **Video** or **Component**.

- Press **INPUT** and select **AV: Video** ↔ **Component**.
- Press \triangleleft / \triangleright to choose **Video** or **Component**.



- To edit and customize the TV's input label

 → [All settings > Setup > Display customization](#)

- 3) Operate using your device's remote control

- The menu choices vary depending on which input is selected.

Example of AV connections

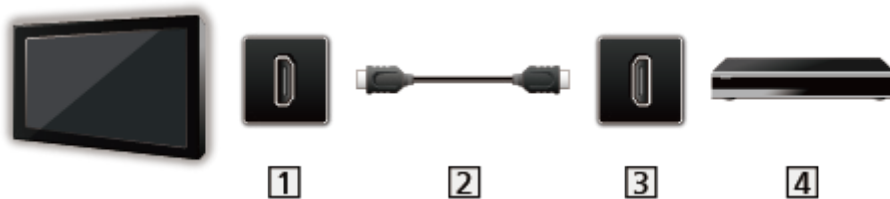
Some features are not available on all models.

External equipment and cables shown are not supplied with this TV.

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting cables.

■ Connecting to the HDMI input (Best for HD viewing)

Recommended to use this connection, if the connected equipment has HDMI terminal.



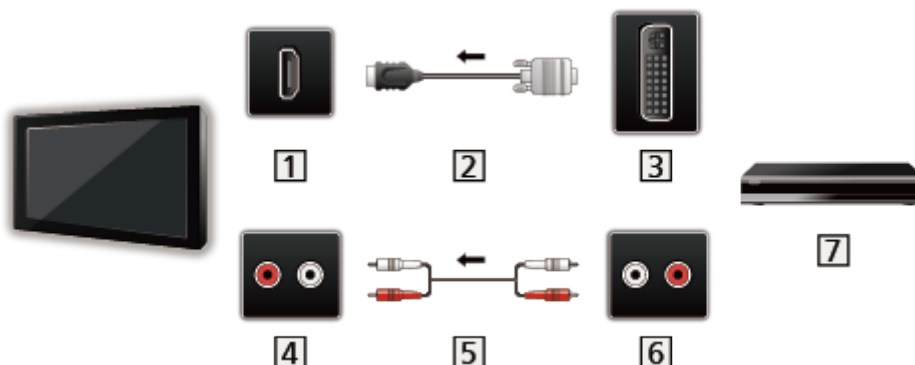
- 1 HDMI IN
- 2 HDMI cable
- 3 HDMI OUT
- 4 AV Equipment (e.g. Blu-ray Disc player)

= Note =

- Use a high speed HDMI cable for high resolution images.

■ For devices with DVI output

Recommended to use this connection, if the connected equipment has DVI terminal only.

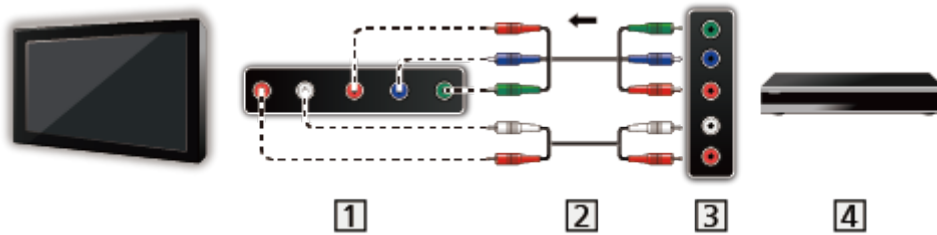


- 1 HDMI IN
- 2 HDMI-DVI Conversion cable
- 3 DVI OUT
- 4 AUDIO IN

- 5 Audio cables (Shielded)
 - Use shielded audio cables.
- 6 AUDIO OUT
- 7 AV Equipment (e.g. Blu-ray Disc player)

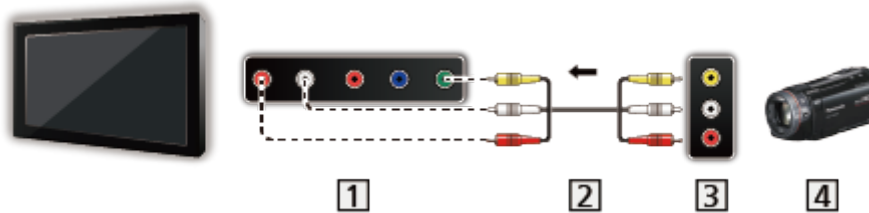
■ Connecting to the COMPONENT input

Recommended to use this connection, if the connected equipment has the Component terminal only.



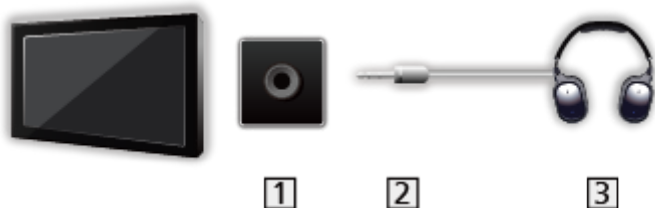
- 1 COMPONENT IN
- 2 Component cables (Shielded)
 - Use shielded component cables.
- 3 COMPONENT OUT
- 4 AV Equipment (e.g. Blu-ray Disc player)

■ Connecting to the VIDEO input (For SD (Standard Definition) only)



- 1 COMPOSITE IN
- 2 Composite cables (Shielded)
 - Use shielded composite cables.
- 3 COMPOSITE OUT
- 4 AV Equipment (e.g. Camcorder)

■ Headphones



1 Headphone jack

2 1/8 inches (3.5 mm) stereo mini plug

3 Headphones

- To use headphones, set **Headphone terminal output** to **Headphone**.

 → All settings > Sound > Headphone terminal output setting

- Do not connect a sub woofer while **Headphone terminal output** is set to **Headphone**.

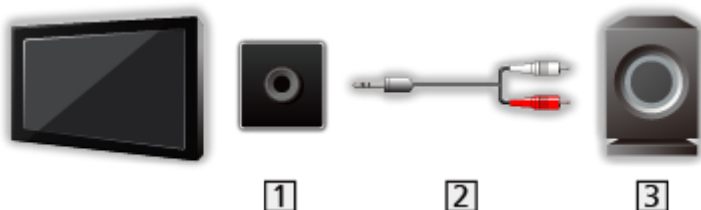
- To adjust the volume, set **Headphone volume**.

 → All settings > Sound > Headphone terminal output setting

- To select the sound output to adjust the volume, set **TV speakers setting**.

 → All settings > Sound > Advanced settings

■ Sub woofer



1 Headphone jack

2 Audio cable (1/8 inches (3.5 mm) stereo mini plug - audio pin plug)

3 Sub woofer

- To use a sub woofer, set **Headphone terminal output** to **Sub Woofer**.

 → All settings > Sound > Headphone terminal output setting

- Do not connect headphones while **Headphone terminal output** is set to **Sub Woofer**.

- To adjust the volume, set **Sub Woofer adjustment**.

 → All settings > Sound > Headphone terminal output setting

- The volume of the sub woofer can be also controlled when adjusting the volume of this unit with this TV's remote control.

HDMI HDR setting

1. Display the **Menu** and select **Setup**.

 **MENU** → **Menu > Setup**

2. Select **HDMI HDR setting** and press **OK**.

3. Set the item and press **OK**.

 → **All settings > Setup > Useful settings**

HDMI connection notice

HDMI (High-Definition Multimedia Interface) allows you to enjoy high-definition digital images and high-quality sound by connecting the TV unit and HD devices.

HDMI-compatible equipment*¹ with an HDMI or DVI output terminal, such as a Cable or Satellite box or a DVD player, can be connected to the HDMI connector using an HDMI compliant (fully wired) cable.

- HDMI is the world's first complete digital consumer AV interface complying with a non-compression standard.
- If the external equipment has only a DVI output, connect to the HDMI terminal via a DVI to HDMI adapter cable*².
- When the DVI to HDMI adapter cable is used, connect the audio cable to the audio input terminal.

- Input audio signal:

LPCM, Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby TrueHD),
Dolby Atmos

- Audio settings can be made on **HDMI audio format** in the Sound Menu.

 → [All settings > Sound > Advanced settings](#)

*1 : The HDMI logo is displayed on an HDMI-compliant device.

*2 : Inquire at your local digital equipment retailer shop.

HDMI connection caution

- Audio settings can be made on **HDMI audio format** / **HDMI input** in the Sound menu.

 → [All settings](#) > [Sound](#) > [Advanced settings](#)

- If the connected device has an aspect adjustment function, set the aspect ratio to “16:9”.
- The HDMI connectors are “type A”.
- The HDMI connectors are compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection.
- Devices with no digital output terminal may be connected to the input terminal of either “COMPONENT IN”, or “VIDEO IN” to receive analog signals.

Input signal

- Signals other than those listed below may not be displayed properly.
- The signals are reformatted for optimal viewing on your display.

■ Component / HDMI

Input signal	Component	HDMI
525 (480) / 60i, 60p	○	○
750 (720) / 60p	○	○
1,125 (1,080) / 60i	○	○
1,125 (1,080) / 60p	○	○
1,125 (1,080) / 30p, 24p		○
3,840 × 2,160 / 60p, 50p, 30p, 25p, 24p		○
4,096 × 2,160 / 60p, 50p, 30p, 25p, 24p		○

○ : Applicable input signal

- For more information about viewing 4K content



→ [Watching TV > 4K compatible equipment](#)

For best picture

Picture mode

Some features are not available on all models. Available menu items are displayed on your TV screen.

1. Change picture mode to suit your settings and preferences.

- 1) Select **Picture mode**.

 **MENU** → **Menu** > **Picture** > **Picture mode**

Select the desired menu using Δ / ∇ from menu bar and press **OK**.

- 2) Adjust using Δ / ∇ .

- HDMI will provide the best HD picture

2. Picture mode type

Vivid:

Provides enhanced picture contrast and sharpness for viewing in a well-lit room.

Standard:

Recommended for normal viewing conditions with subdued room lighting.

Professional photo:

Reproduces the original image for photo.

Allows you to set the professional picture settings in **Pro settings**.

- For photo content

Home theater:

For watching movies in a darkened room. It provides a soft, film-like picture.

THX Cinema / THX Bright Room:

Reproduces the original image quality precisely in a darkened room/bright room.

- THX modes are used to mirror the picture settings used by professional filmmakers, faithfully reproducing the image quality of THX Certified movies. THX Certified movies have the THX logo on the disc. THX modes are not available for photo content.
- THX and the THX logo are trademarks of THX Ltd., registered in the United States and other countries.

Cinema:

Reproduces the original image quality precisely without any revision.

Allows you to set the professional picture settings in **Pro settings** and **Copy adjustments**.

■ Use the mode below to adjust the picture mode in more detail.

Custom:

Customizes each item according to your preference.

Allows you to set the professional picture settings in **Pro settings** and **Copy adjustments**.

Professional1/2:

Allows you to set the professional picture settings in **Pro settings**, **Lock settings** and **Copy adjustments**.

- If the certified professional dealer sets these modes, **Professional1** and **Professional2** may be displayed as **ISF Day** and **ISF Night**.

Dolby Vision Vivid:

Reproduces Dolby Vision content precisely in a bright room.

Dolby Vision Bright:

Reproduces Dolby Vision content precisely in a normal lighting condition.

Dolby Vision Dark:

Reproduces Dolby Vision content precisely in a darkened room.

- Adjust the Picture mode in more detail.

 → [All settings > Picture > Pro settings](#)

■ Netflix calibrated mode

Reproduces the image quality based on the professional monitor settings while watching Netflix.

1. Display the menu with **MENU**.
 2. Select **Picture > Netflix calibrated mode** and press **OK** to access.
 3. Select **On / Off** and press **OK** to set.
- **C.A.T.S. / HDR auto brightness** are not available and **Picture mode** is fixed to **Netflix** when **Netflix calibrated mode** is set to **On**.
 - For Netflix content

Auto brightness (ECO)

Contrast Automatic Tracking System (C.A.T.S.) adjusts the screen brightness and contrast according to the room's ambient light conditions. This ECO feature automatically dims the brightness of the screen when the room lighting is lowered.

C.A.T.S. features a built-in delay when the lighting conditions change. The adjustment happens gradually.

If you prefer a consistent brightness, disable C.A.T.S. by:

- **Menu** > **Picture** > scroll down to **C.A.T.S.** and turn it off.

Or

- **Menu** > **Picture** > **Picture mode** then select viewing mode such as **Custom**.

Aspect setting

Some features are not available on all models. Available menu items are displayed on your TV screen.

Use this function when the picture has black bars (sides or top/bottom) or to zoom the picture.

Use **FORMAT** button to change the aspect ratio.



FORMAT (to cycle through the aspect modes)

480i, 480p, 1080p, 1080i, 720p:

Full / JUST / 4:3 / ZOOM / H-FILL

4K format:

Full / V Full

- For screen format settings

 → [All settings > Picture > Screen settings](#)

- Use when the picture does not fill the whole screen or portions of the picture are trimmed.
- Some content, such as film-based movies, are available in extra-wide format. Top and bottom bars are unavoidable.
- Connected devices, such as Cable/Satellite box, DVD/Blu-ray players and game consoles have their own aspect (format) settings. Adjust the device's aspect settings.
- Aspect is fixed to **FULL** in the following conditions:
 - 4K content except DCI 4K
 - **1080p pixel by 4pixels** is set to **On**.
 - **Game mode** is set to **On**.
 - Pure direct menu is set to **On**.

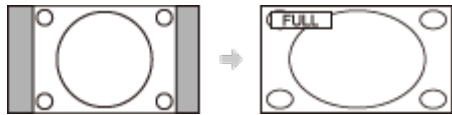
Screen mode

Some features are not available on all models. Available menu items are displayed on your TV screen.

Adjust the screen mode when the picture has black bars (sides or top/bottom)

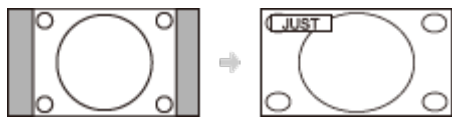
- Mainly for Standard Definition (480i, 480p)

Full



Enlarges the image horizontally to the screen's edges.

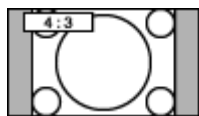
JUST



Justifies the image by stretching it to the four corners on the screen.

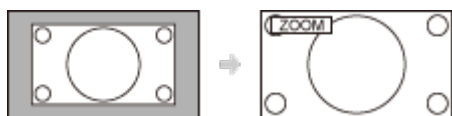
(Recommended for normal TV broadcast)

4:3



Displays the image as original size.

ZOOM



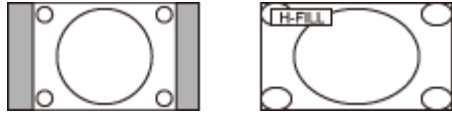
Enlarges the image to the entire screen.

(Recommended for Letterboxed content)

■ Side cut mode for High Definition (1080p, 1080i, 720p)

If the High Definition image has the bars on the both side of the screen, side cut it to enlarge the image to 16:9.

H-FILL

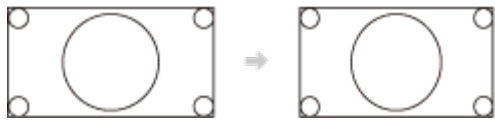


Enlarges the image horizontally to the screen's side edges.

The side edges of the image are cut off.

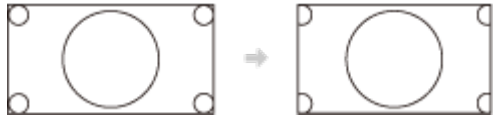
Screen mode for 4K format

FULL



Reduces the images to fit to entire screen.

V Full (only for DCI 4K format)



Reduces the images to fit to the top and bottoms of the screen without changing the aspect ratio.

The side edges of the image are cut off.

Zoom adjustments

If there is a problem with the image position on the screen, vertical image position and size can be adjusted in “ZOOM”

1. Select **Zoom adjustments** in the **Picture** menu.

 **MENU** → **Menu** > **Picture** > **Screen settings** > **Zoom adjustments**

2. Adjust the **V-position** or **V-size**.

V-position:

Vertical position adjustment

Adjust using Δ / ∇ to desired position.



V-size:

Vertical size adjustment

Adjust using \triangleleft / \triangleright to desired size.



- Press **OK** to reset

Lock settings

Only for the OLED TV

Locks the picture menu for **Professional1/Professional2** and each input.

Settings are basic picture settings and Pro settings.

1. Select **Lock settings**.

 **MENU** → **Menu** > **Picture** > **Lock settings**

Select the desired menu using Δ / ∇ and press **OK**.

2. Enter the 4-digit PIN number.

- Enter the PIN number twice at first setting.
- Make a note of the PIN number in case you forget it.

3. Select **Adjustment Lock** and set to **On**.

Select the menu using Δ / ∇ and press **OK**.

Then, select **On** using Δ / ∇ and press **OK** to set.

■ To change the PIN number

1. Select **Change password** using Δ / ∇ and press **OK**.
2. Enter a new PIN number twice with numeric buttons.

Copy adjustments

Some features are not available on all models. Available menu items are displayed on your TV screen.

You can copy the selected **Cinema**, **Custom**, **Professional1**, **Professional2**, **Dolby Vision Bright** or **Dolby Vision Dark** settings and apply them to all or another input.

Settings are basic picture settings and Pro settings.

1. Select **Copy adjustments**.

 **MENU** → **Menu** > **Picture** > **Copy adjustments**

Select the desired menu using Δ / ∇ and press **OK**.

2. Select **Destination input** and set (Default: **All**).

Select the menu using Δ / ∇ and press **OK**.

Then, select the destination using Δ / ∇ and press **OK** to set.

3. Select **Copy start to copy**.

Select the menu using Δ / ∇ and press **OK**.

4. Select **Yes** to set.

Select the item using \triangleleft / \triangleright and press **OK** to set.

For best audio

Sound mode

Selects your favorite sound mode.

- The selected mode affects all input signals.

 **MENU** → **Menu** > **Sound** > **Sound mode**

Standard:

Provides the suitable sound quality for all types of scenes.

Music:

Improves sound quality for watching music videos, etc.

Speech:

Improves sound quality for watching news, drama, etc.

Stadium:

Improves sound quality for watching sports, etc.

User:

Adjusts the sounds manually by using the equalizer to suit your favorite sound quality.

- For the **User** mode, **Equalizer** will appear on the Sound Menu instead of **Bass** and **Treble**. Select **Equalizer** and adjust the frequency.
- Gray-out when using Home Theater.
- Adjusts the Sound mode in more detail.

 → **All settings** > **Sound**

DIGITAL AUDIO OUT terminal

You can enjoy your Home Theater by connecting a Dolby Audio (Dolby Digital) 5.1 channel decoder and “Multi Channel” amplifier to the DIGITAL AUDIO OUT terminals.

- Depending on your DVD player and DVD-Audio software the copyright protection function may operate and disable optical output.
- When an ATSC channel is selected, the output from the DIGITAL AUDIO OUT jack will be Dolby Audio (Dolby Digital). When an NTSC channel is selected, the output will be PCM.
- When playing the movie on Movie player, when the sound has been recorded in Dolby Audio (Dolby Digital), then the output from the DIGITAL AUDIO OUT terminal will be Dolby Audio (Dolby Digital). When the sound is recorded in other formats, the output will be PCM.

Network services

Connect to network

Network connections

1. Contact your broadband Internet service provider

To obtain broadband Internet service:

- Required speed (effective): at least 1.5 Mbps for SD and 6 Mbps for HD picture quality, respectively.
- Dial-up Internet Access cannot be used.

2. Select wired or wireless connection

If a wired network connection is available near the TV, then using this LAN (Ethernet) connection is recommended.

- Wired LAN connection

Recommended for viewing high quality video at high bit-rates and to avoid interference with 2.4 GHz devices.

- Wireless LAN connection

Use when your network router is not close enough to the TV or when a wired connection is not feasible.

3. Connecting to the network

- There are some connection type.



→ [Network services](#) > [Connect to network](#) > [Network connection types](#)

Network connection types

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting the LAN cable.

■ Wireless connection



- 1 TV (Built-in Wireless LAN)
- 2 Home network (Modem/Wireless router)
- 3 Computer/Media server

- To use and operate only in-house streaming, a broadband network service is not needed.

You can simply connect the TV directly to the equipment with a LAN crossover cable.

■ Wired connection (Using Router)



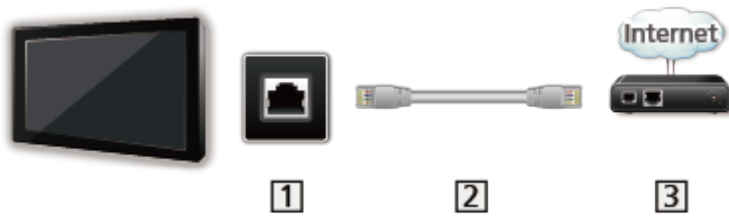
- 1 TV (Ethernet port)
- 2 LAN (Ethernet) cable
- 3 Home network (Modem/Router)
- 4 Computer/Media server

- To use and operate only in-house streaming, a broadband network service is not needed.

You can simply connect the TV directly to the equipment with a LAN crossover cable.

■ Wired connection (Directly connected)

If you are not using the network for connecting anything else but the TV, you can just connect the TV directly to the Cable/DSL Ethernet modem with LAN (Ethernet) cable.



- 1 TV (Ethernet port)
- 2 LAN (Ethernet) cable
- 3 Modem

Network settings

Setting the menu

This menu is used for connecting to a broadband service.

1. Display the **Menu** and select **Network**.

 **MENU** → **Menu** > **Network**

Select **Network** using \triangle / ∇ from menu bar and press **OK**.

2. Select the options and set.

(**Network connection** / **Network status** / **TV name** / **TV Remote App settings** / **Network link** / **Smart Speaker Settings** / **Mirroring settings** / **Control4 settings** / **VOD content refresh** / **Software update** / **New software notice** / **Terms of Service and Settings**)

Network connection / Network status

1. Select **Network connection** using \triangle / ∇ and press **OK**.

2. Select **Quick setup** to launch Network connection setup wizard.

Follow the directions on the screen to complete the network connection.

- Manual settings are also available.

Select **Custom** and select your connection type.

Displays setting menu according to selected connection type.

Set the desired menu and complete the network connection.

3. Displays **Network status**.

Select **Try again** and press **OK** to start connection test.

Success

→ Completion message is displayed.

Error

→ Select **Status details** / **Help** and press **OK** to display solution of the connection error.

Follow the directions on the screen to complete the network settings.

- You can also display **Network status** from **Network** menu.

(**Network** > **Network status**)

4. Exit the screen.

Select **Done** and press **OK** to exit from this screen.

TV name

Set your favorite name for this TV.

1. Select **TV name** using \triangle / ∇ and press **OK**.
2. Enter favorite name with screen keyboard.

TV remote App settings

1. Select **TV Remote App settings** using Δ / ∇ and press **OK**.
2. Select the item and set.

■ TV Remote

Enables to control the TV from the network equipment (smartphone, etc.).

- Set to **On** to enable the settings below.
 1. Select **TV Remote** using Δ / ∇ and press **OK**.
 2. Switch **On** or **Off** with Δ / ∇ .

■ Wake on LAN / Wireless LAN

This function allows you to turn on the TV when you use Remote control via IP.

1. Select **Wake on LAN / Wireless LAN** using Δ / ∇ and press **OK**.
2. Switch **On** or **Off** with Δ / ∇ .

■ Device to upload contents

Selects device to upload content from the network equipment (smartphone, etc.).

1. Select **Device to upload contents** using Δ / ∇ and press **OK**.
2. Select device and press **OK**.

■ Delete All Pairings

Delete the pairing information for all paired devices.

Network link

Settings for the media server.

■ Home Network Server

Enables to use this TV as DMS (Digital Media Server) for network devices (TV).

- Set to **On** to enable the settings below.
1. Select **Home Network Server** using Δ / ∇ and press **OK**.
 2. Switch **On** or **Off** with Δ / ∇ .

■ Registration type

Selects the limitation of access to this TV for each device on the home network.

1. Select **Registration type** using Δ / ∇ and press **OK**.
2. Switch **Auto** or **Manual** with Δ / ∇ .

Auto:

All the available device on the home network are accessible. (maximum 16 equipment)

Manual:

Sets the access limitation for each device in the Remote device List.

■ Remote device list

Lists the available device on the home network.

1. Select **Remote device list** using Δ / ∇ and press **OK**.
2. Select the desired device with Δ / ∇ and set access limitation.

Smart Speaker Settings

Controls this TV such as selecting a channel, changing volume, etc. with the smart speaker function.

1. Select **Smart Speaker Settings** using \triangle / ∇ and press **OK**.
2. Follow the on-screen instructions.

Mirroring settings

1. Select **Mirroring settings** using \triangle / ∇ and press **OK**.
2. Select the item and set.

■ Easy Mirroring

Enables starting the mirroring function from the other devices (smartphone, etc.) without operating the TV.

1. Select **Easy Mirroring** using \triangle / ∇ and press **OK**.
2. Switch **On** or **Off** with \triangle / ∇ .
 - Not available when the TV is set to **TV as Access Point**.

■ Delete All Pairings

Delete the pairing information for all paired devices.

VOD content refresh

Selects whether to update the VOD content to the latest even when the TV is in Standby mode.

1. Select **VOD content refresh** using \triangle / ∇ and press **OK**.
2. Switch **On** or **Off** with \triangle / ∇ .

Control4 settings

1. Select **Control4 settings** using Δ / ∇ and press **OK**.
2. Select the item and set.
(**Control4 discovery** / **Send identify**)

■ Control4 discovery

Switch to Control4 mode.

- Set to **On** to enable **Send identify** menu.
 1. Select **Control4 discovery** using Δ / ∇ and press **OK**.
 2. Set to **On** to switch to Control4 mode.

■ Send identify

Send Identify message to Control4 controller.

1. Select **Send identify** using Δ / ∇ and press **OK**.
2. Sending message is displayed for a few seconds.

- | |
|---|
| <ul style="list-style-type: none">• Please consult with local Control4 dealer for settings and operation. |
|---|

Software update

1. Select **Software update** using \triangle / ∇ and press **OK**.
2. Press **OK** to start the Software update screen.
3. Follow the on-screen instructions.
 - Make sure to set this TV's **Clock** before the update starts.

New software notice

Select On/Off to display new software update information when TV is turned on.

1. Select **New software notice** using \triangle / ∇ .
2. Switch **On** or **Off** with \triangle / ∇ .

Terms of Service and Settings

Displays the terms of service and settings.

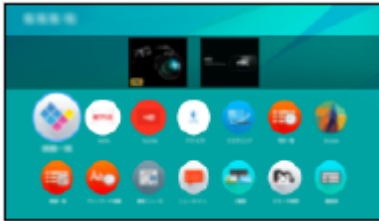
1. Select **Terms of Service and Settings** using \triangle / ∇ and press OK .
2. Follow the on-screen instructions.

How to use

Operate

Now, you can access some specific websites supported by Panasonic, and enjoy Internet content / Network services such as videos, games, communication tools, etc. from **Apps**.

1. Display **Apps** with **APPS**.



2. Select the desired content and press **OK**.

- A keyboard is available. Set **Keyboard type** in **Setup** menu.

 **MENU** → **Menu** > **Setup** > **System** > **Keyboard type**

■ Browser

You can browse websites.

- Some internet services may not be available or may not be displayed properly depending on the website.

- You need a broadband environment to use this service.
- Please confirm Network connections and Network settings before using this function.
- Depending on the usage conditions, it may take a while to download all the data.
- Internet services available for this TV are subject to change without notice.
- Not all content is available depending on the country and area.

Home network

Get started

Information

- Please confirm Network connection and Network settings before using this function.

 → [Network services > Connect to network](#)

■ Media server

You can share the content (Photo, Video, Music, etc.) stored in media server with your home network system.

- For data information

 → [Support / FAQ > Information > Data information](#)

Photos

Viewing Photos

1. Display **Devices** from Home.

 **HOME** → Home > **Devices**

2. **Select the media server.**

Select the desired server using \triangle / ∇ / \triangleleft / \triangleright and press **OK**.

3. **Select photo.** (Thumbnails and contents are displayed)

Select the desired content using \triangle / ∇ from file list and press **OK**.



4. **View.**

Follow the Navigation and guide to operate.

- Displayed Navigation and guide will be different depending on data type.

Photo view

■ Thumbnail view



Display [Slideshow settings](#)



Information panel (File name, Date, Size, etc.)

- Information differs depending on selected data.

■ Playback screen



Display/hide Guide and Banner

Photo status:

Displays current photo status (Slideshow/Single view)

Navigation Guide:

Displays available functions.

- In DMR (Digital Media Renderer) mode, Slideshow is not available.
- In DMR (Digital Media Renderer) mode, OK/Next/Prev. are not available.

Options menu

In Photo view, some optional menus are available by pressing the **OPTION** button.

1. Display Options menu with **OPTION.**

(Options menu is also available in **Menu**.)

2. Select the item.

Select the desired menu using Δ / ∇ and press **OK**.

(**Slideshow settings**)

- Available menus are displayed on **Options menu** depending on data condition and situation.

Using Slideshow

1. Display **Slideshow settings**.

  → **Slideshow settings**

2. Adjust items.

Select the item by Δ / ∇ and adjust the settings using Δ / ∇

- Picture quality may deteriorate depending on the slideshow settings.
- Picture setting may not work depending on the slideshow settings.

3. Start Slideshow.

After adjusting each setting, select **Start slideshow** with Δ / ∇ and press .

 **RETURN** → Stop in mid-cycle

Slideshow settings

Display interval

(**Long** / **Normal** / **Short**)

Sets the time each image is displayed in the Slideshow mode.

Repeat playback

(**On** / **Off**)

Turn the Slideshow Repeat (cycle) function on or off.

Soundtrack settings

(**Off** / **Music 1** / **Music 2** / **Music 3** / **Music 4** / **Music 5**)

Select the music.

Videos

Viewing Videos

1. Display **Devices** from Home.

 **HOME** → Home > **Devices**

2. Select the media server.

Select the desired server using \triangle / ∇ / \triangleleft / \triangleright and press **OK**.

3. Select video. (Thumbnails and contents are displayed)

Select the desired content using \triangle / ∇ from file list and press **OK**.

4. Play.

Follow the Navigation and guide to operate.

- Displayed Navigation and guide will be different depending on data type.

- 4K video contents may not be played correctly.

Video view

■ Thumbnail view



INFO



Information panel (File name, Date, Size, etc.)

- Information differs depending on selected data.

■ Playback screen



INFO



Display/hide Guide and Banner

Movie banner:

Displays current Video status

(Drive type, Date and time or File name and Elapsed time.)

Navigation Guide:

Displays available functions.

- In DMR (Digital Media Renderer) mode, Next skip/Prev. skip are not available.

Forward/Reverse:

Five levels of speed from 1 to 5 are available.

- In DMR (Digital Media Renderer) mode, Resume playback is not available

Options menu

In Video view, some optional menus are available by pressing the **OPTION** button.

1. Display Options menu with **OPTION.**

(Options menu is also available in **Menu**.)

2. Select the item.

Select the desired menu using \triangle / ∇ and press **OK**.

(**Video options**)

● **Multi audio, Dual Mono**

Selects for selectable sound tracks (if available).

- It may take several seconds to change the sound.
- This function is available during playback.

● **Subtitle settings**

Sets the subtitle setting.

- This function is available during playback.

Subtitle:

Display / hide subtitles (if available).

Subtitle Text:

Selects the font type to display subtitles correctly (if available).

Subtitle text size:

Selects the font size of subtitles.

Subtitle text color:

Selects the color of subtitles.

Subtitle text position:

Adjusts the position of subtitles on the screen.

Subtitle text delay:

Adjusts the delay time for the subtitles.

● **Repeat playback**

Set play repeat function (**Off/On**)

- Available menus are displayed on **Options menu** depending on the data condition and situation.

Music

Playing Music

1. Display **Devices** from Home.

 **HOME** → Home > **Devices**

2. **Select the media server.**

Select the desired server using \triangle / ∇ / \triangleleft / \triangleright and press **OK**.

3. **Select music.** (Thumbnails and contents are displayed)

Select the desired content using \triangle / ∇ from file list and press **OK**.

4. **Play.**

Follow the Navigation and guide to operate.

- Displayed Navigation and guide will be different depending on the data type.

Music view

■ Thumbnail view



INFO



Information panel (File name, Date, Size, etc.)

- Information differs depending on selected data.

■ Playback screen



INFO



Display/hide Guide and Banner

Music Guide:

Displays current Music status

(Artist name/Album name/Song name, Elapsed time)

Navigation Guide:

Displays available functions.

Forward/Reverse:

Five levels of speed from 1 to 5 are available.

- In DMR (Digital Media Renderer) mode, Next skip/Prev. skip/User BGM settings are not available.

Options menu

In Music view, some optional menus are available by pressing the **OPTION** button.

1. Display Options menu with **OPTION.**

(Options menu is also available in **Menu**.)

2. Select the item.

Select the desired menu using Δ / ∇ and press **OK**.

(**Music options**)

● **Repeat playback**

Set play repeat function (**Off/Repeat folder/One song**)

- Available menus are displayed on **Options menu** depending on the data condition and situation.

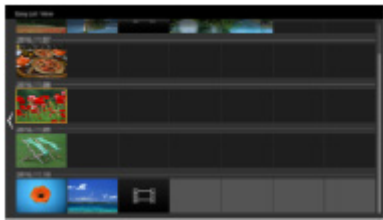
Media player

Get started

Information

You can view still and motion images and play music saved on a USB flash memory.

(Example)



■ USB flash memory

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before inserting or removing the USB Flash Memory.

When you use a USB device, insert straight in and pull straight out.



- Media player only supports USB Mass storage class devices.
- Remove USB device safely with **USB device setup**.

(**Setup** > **USB device setup**)

Media warning messages

Message	Meaning
<p>Cannot access the selected USB device.</p> <p>Please ensure the device is connected correctly.</p>	<ul style="list-style-type: none">• The device is not inserted.• The device is removed.
<p>There is no content created by digital camera or digital video camera.</p> <p>There is no content to display with current filter setting.</p>	<ul style="list-style-type: none">• The device has no data or this type of data is not supported.
<p>Cannot read file</p>	<ul style="list-style-type: none">• The file is broken or unreadable. The TV does not support the format.

Notice

- The picture may not appear correctly on this TV depending on the recording equipment used.
- When there are many files and folders, operation may take time to complete or some files may not be displayed or playable.
- Depending on how you create the files and the structure of folders, the files and folders may not be displayed.
- Partly degraded files might be displayed at a reduced resolution.
- The folder and file names may be different depending on the digital camera used.
- The function cannot display still images that are not DCF formatted (i.e. TIFF, BMP).
- Images imported from a PC must be compatible with EXIF 2.0, 2.1 and 2.2.

Easy List View

Selecting file

Still pictures / moving pictures recorded with digital camera or digital video camera are played back.

1. Insert the **USB Flash Memory** to the TV.

2. Display **Devices** from Home.

 **HOME** → Home > **Devices**

- You can also display **Devices** pressing **MEDIA PLAYER**.


3. Select the device in **Devices**. (Displays connected drive)


Select the drive using  /  and press .

4. Select **Easy List View**.

5. Select the file in the thumbnail view and press  to start playback.

- If a file or folder is edited or renamed by digital camera, digital video camera, PC, etc., the thumbnail may not be displayed properly.

 : Error display

- To sort by month
 - 1) Display the option menu with **OPTION**.
 - 2) Select **Calendar** and press  to access.
- For details of supported file formats

 → Support / FAQ > Information > Data information


- To play back the file

 → Media player > Playback > Playback

■ Settings

1. Display the option menu with **OPTION**.

2. Select  and press  to access.

3. Select one of the following items and press  to access.

Play Select / Repeat playback / Shuffle

4. Set the item and press  to store.

Play Select

Settings for playback file selection

Repeat playback

(**Repeat folder** / **File Repeat** / **Off**)

Playback repeat

Repeat folder:

Playback repeat within the selected folder

File Repeat:

Playback repeat of the selected one file

Shuffle

(**On** / **Off**)

Files are played back at random.

Filtering files

You can filter the files as the content type. (Photos / Video)

1. Display the option menu with **OPTION**.
2. Select **Filter** and press **OK** to access.
3. Select **Photos / Video** and press **OK** to set.
4. Select **OK** and press **OK** to change.
 - To select the music file

 → [Media player > Mix Folder View > Filtering files](#)


Mix Folder View

Selecting file

Displays the thumbnail of all files which are grouped by folder.




1. Insert the **USB Flash Memory to the TV.**

2. Display **Devices** from Home.

 **HOME** → Home > **Devices**


- You can also display **Devices** pressing **MEDIA PLAYER**.

3. Select the device in **Devices**. (Displays connected drive)

Select the drive using  /  and press .

4. Select **Mix Folder View**.

5. Select the file in the thumbnail view and press  to start playback.

 : Error display

- For details of supported file formats

 → [Support / FAQ > Information > Data information](#)


- To play back the file

 → [Media player > Playback > Playback](#)

■ Settings

1. Display the option menu with **OPTION**.

2. Select  and press  to access.

3. Select one of the following items and press  to access.

Play Select / Repeat playback / Shuffle

4. Set the item and press  to store.

Play Select

Settings for playback file selection

Repeat playback

(**Repeat folder** / **File Repeat** / **Off**)

Playback repeat

Repeat folder:

Playback repeat within the selected folder

File Repeat:

Playback repeat of the selected one file

Shuffle

(**On** / **Off**)

Files are played back at random.

Filtering files

You can filter the files as the content type. (Photos / Video / Music)

1. Display the option menu with **OPTION**.
2. Select **Filter** and press **OK** to access.
3. Select **Photos / Video / Music** and press **OK** to set.
4. Select **OK** and press **OK** to change.

Sorting files

You can sort the files in alphabetical / date order.

1. Display the option menu with **OPTION**.
2. Select **Sort** and press **OK** to access.
3. Select **Alphabet(A...Z)** / **Alphabet(Z...A)** / **Date(1...9)** / **Date(9...1)** and press **OK** to change.

Playback

Playback

■ Photo playback



To the previous photo



To the next photo



Stop



Rotate



Switch the playback mode (Single view / Slideshow).

INFO :

Display / hide the operation guide.

RETURN :

Return to thumbnail.

■ Video / Music playback



Rewind



Fast forward



Stop



Pause (displays the time seek bar) / Playback

- To jump to the specified time point
 - 1) Display the time seek bar with .
 - 2) While the time seek bar is displayed

Press / .

Search approx. 10 seconds

Press and hold / .

Search rapidly

- 3) Jump to the specified time point with .

INFO :

Display / hide the operation guide.

RETURN :

Return to thumbnail.

- To set **Repeat playback** / **Shuffle** for playback

→ Media player > Easy List View > Selecting file

→ Media player > Mix Folder View > Selecting file

Slideshow settings

In Photo view, some optional menus are available by pressing the **OPTION** button.

1. Display Options menu with **OPTION.**

(Options menu is also available in **Menu**.)

2. Select the item.

Select the desired menu using Δ / ∇ and press **OK**.

(**Slideshow settings**)

Photo size

(**Normal** / **ZOOM**)

Removes the black borders that are added according to the size of the photo being displayed.

Display interval

(**Long** / **Normal** / **Short**)

Sets the time each image is displayed in the Slideshow mode.

Soundtrack settings

(**Off** / **Music 1** / **Music 2** / **Music 3** / **Music 4** / **Music 5** / **User selected** / **Auto**)

Select the music.

User selected:

Plays the soundtrack registered in the **Soundtrack settings** menu.

Auto:

Plays the songs stored in the current device.

Video options

In Video view, some optional menus are available by pressing the **OPTION** button.

1. Display Options menu with **OPTION.**

(Options menu is also available in **Menu**.)

2. Select the item.

Select the desired menu using Δ / ∇ and press **OK**.

(**Video options**)

Multi audio, Dual Mono

Selects for selectable sound tracks (if available).

- It may take several seconds to change the sound.
 - This function is available during playback.
-

Subtitle settings

Sets the subtitle setting.

- This function is available during playback.

Subtitle:

Display / hide subtitles (if available).

Subtitle Text:

Selects the font type to display subtitles correctly (if available).

Subtitle text size:

Selects the font size of subtitles.

Subtitle text color:

Selects the color of subtitles.

Subtitle text position:

Adjusts the position of subtitles on the screen.

Subtitle text delay:

Adjusts the delay time for the subtitles.

- Available menus are displayed on **Options menu** depending on data condition and situation.

Convenience features

Eco navigation

Eco navigation

This setting allows you to set the TV to the most suitable energy-saving mode automatically.

1. Select [Eco navigation](#).

 **MENU** → [Menu](#) > [Setup](#) > [Eco navigation](#)

2. Press [Set to ECO](#).

Optimizes the TV's various modes to save energy.

- The TV's brightness will adjust and adapt as the room lighting changes.

Timer

Setting the menu

The TV can automatically turn On/Off at a designated date and time.

1. Display the menu.

 **MENU** → **Menu**

2. Select **Timer**.

Select the desired menu using Δ / ∇ from menu bar and press .

3. Select the item and adjust.

Select the desired item using Δ / ∇ and adjust with Δ / ∇ .

- Set On/Off timer.

 → All settings > Timer > Timer (On/Off timer)

- Set Sleep timer.

 → All settings > Timer > Sleep (Off timer)

Parental control

Setting the menu

Locks specified channels or shows to prevent children from watching inappropriate content.

You will be asked to enter your password each time you display the Lock menu.

Set **Custom** in **Mode** to specify **Channel**, **Game** and **Program** settings.

1. Display the menu.

 **MENU** → **Menu**

2. Select **Setup** from menu bar.

Select the desired menu using Δ / ∇ from menu bar and press **OK**.

3. Select **Parental control**.

Select the menu using Δ / ∇ and press **OK**.

4. Select the item and adjust.

Select the desired item using Δ / ∇ and adjust with Δ / ∇ .

- The Off rating is independent of other ratings.
- When placing a lock on a specific-age-based-rating level, the Off rating and any other more restrictive ratings will also be blocked.
- The channels will be blocked regardless of the program rating.

- For Parental control settings

 → [All settings > Setup > Parental control](#)

Password setting

You need to enter the password when you access locked channels or inputs.



(Input your 4-digit password)

- If it is your first time entering the password, enter the password twice in order to register it.
- Make a note of your password. Do not forget it. (If you have forgotten your password, consult your local dealer.)
- When you select a locked channel, a message will be displayed that allows you to view the channel after you input your password.

Parental control ratings

“V-chip” technology enables you to lock channels or shows according to standard ratings set by the entertainment industry.

■ U.S. MOVIE RATINGS (MPAA)

NR	Not Rated.
G	All children and General Audience.
PG	Parental Guidance suggested.
PG-13	Parental Guidance for children under 13.
R	Restricted Viewing, parental guidance is suggested for children under 17.
NC-17/X	No one 17 or under allowed.

■ U.S. TV PROGRAMS RATINGS (U. S. TV) - Age-Based Ratings

TV-NR	Not Rated.
TV-Y	All children.
TV-Y7	Directed to children age 7 and older.
TV-G	General Audience.
TV-PG	Parental Guidance suggested.
TV-14	Parents strongly cautioned, parental guidance is suggested for children under 14.
TV-MA	Mature Audience only.

■ CANADIAN ENGLISH RATINGS (C. E. L. R.)

E	Exempt programming.
C	All children.
C8+	Children 8 years and older.
G	General programming.
PG	Parental Guidance.
14+	Viewers 14 and older.
18+	Adult programming.

■ CANADIAN FRENCH RATINGS (C. F. L. R.)

E	Exempt programming.
G	General programming.
8 ans+	Not recommended for young children.
13 ans+	Not recommended for ages under 13.
16 ans+	Not recommended for ages under 16.
18 ans+	Programming restricted to adults.

■ Contents-Based Ratings

FV	Fantasy Violence.
D	Suggestive Dialogue.
L	Strong Language.
S	Sexual situations.
V	Violence.

The V-Chip system used in this set is capable of blocking “NR” programs (non rated, not applicable and none) as per FCC Rules Section 15.120(e) (2). If the option of blocking “NR” programs is chosen “unexpected and possibly confusing results may occur, and you may not receive emergency bulletins or any of the following types of programming:”

- Emergency Bulletins (Such as EAS messages, weather warnings and others)
- Locally originated programming
- News
- Political
- Public Service Announcements
- Religious
- Sports
- Weather

Power LED Indicator

Using Power LED Indicator

Selects the power LED indication mode.

1. Display the menu with **MENU**.
2. Select **Setup > Other settings** and press **OK** to access.
3. Select **Power LED Indicator** and press **OK** to access.
4. Select **On / Off** and press **OK** to set.

On:

The power LED indicator illuminates continuously.

Off:

The power LED indicator is turned off.

= Note =

- The power LED indicator may light when switching the TV status or activating some functions.
- The TV may not display any image on the screen depending upon the input source after setting. This may make it impossible to know whether the TV is turned on or not. In particular, when **Off** is selected, notifications while the TV is in standby, cannot be provided.

Closed Caption

Setting the menu

The television includes a built-in decoder that is capable of providing a text display of the audio. The program being viewed must be transmitting the Closed Caption (CC) information.

- The settings are “Analog” or “Digital” depending on the broadcaster.


1. Display the menu.



2. Select **Setup** from menu bar.

Select the desired menu using Δ / ∇ from menu bar and press .

3. Select **Closed Caption** in **Display customization**.

Select the menu using Δ / ∇ and press .

4. Select the item and adjust.

Select the desired item using Δ / ∇ and adjust with Δ / ∇ .

- Some functions will be disabled depending on the type of input signal.
Reset to defaults will be grayed out if no changes are made.

- For Closed Caption settings



- For Smart TV Internet content CC settings (U.S. only)

“IPTV-CC settings” App is available on the **Apps**.

- Some Internet services have their own separate CC settings.

Closed Caption notices

Some features are not available on all models. Available menu items are displayed on your TV screen.

- For viewing the CC of digital broadcasting, set the aspect to **Full** (If viewing with **H-FILL**, **JUST**, **ZOOM** or **4:3**, characters might be cut off).
- The CC can be displayed on the TV only when the receiver (such as a Cable box or satellite receiver) has the CC set to ON within the device itself. Check with your Cable or Satellite provider for instructions. The TV's CC button does not operate the Satellite or Cable box's CC function.
- If the CC is set to On on both the receiver and TV when the signal is 480i (except for the HDMI connection), the CC may overlap on the TV.
- If a digital program is being output in analog format, the CC data will also be output in analog format.
- If the recorder or output monitor is connected to the TV, the CC needs to be set up on the recorder or output monitor.

VIERA Link™ “HDAVI Control™”

Basic feature

Simultaneously control all Panasonic “HDAVI Control” equipped components using one button on the TV remote. Enjoy additional HDMI Inter-Operability with compatible Panasonic products. This TV supports “HDAVI Control 5” function. Connections to equipment (Blu-ray Disc player, DVD recorder, HD Camcorder, Home Theater System, Amplifier, etc.) with HDMI cables enables VIERA Link controls.

■ Available HDAVI Control functions

Version	Operations
HDAVI Control or later	<ul style="list-style-type: none">• Automatic Input Switching• Power on link• Power off link• Speaker control
HDAVI Control 2 or later	<ul style="list-style-type: none">• VIERA Link control only with the TV’s remote control• Unselected device auto off (for available equipment only)
HDAVI Control 3 or later	<ul style="list-style-type: none">• Automatic lip-sync function
HDAVI Control 4 or later	<ul style="list-style-type: none">• Energy saving mode (with Quick Start mode)
HDAVI Control 5	<ul style="list-style-type: none">• Audio Return Channel <p>Audio Return Channel (ARC) is a function that enables digital sound signals to be sent via an HDMI cable back from the TV to a connected audio device.</p>

Connecting note

■ When adding new equipment...

When adding new equipment, reconnecting equipment or changing the setup after the connection, turn the equipment on and then switch the TV on. Set the input mode to correct HDMI terminal, and make sure that the image is displayed correctly.

VIERA Link “HDAVI Control”, is based on the control functions provided by HDMI and industry standard known as HDMI CEC (Consumer Electronics Control), with unique function that we have developed and added. As such, its operation with other manufacturers’ equipment that supports HDMI CEC cannot be guaranteed. Please refer to the individual manuals for other manufacturers’ equipment supporting the VIERA Link function.

■ HDMI cable

This function needs an HDMI compliant (fully wired) cable. Non-HDMI-compliant cables cannot be utilized.

- For more details on the external equipment’s connections, please refer to the operating manual for the equipment.

HDMI connections to some Panasonic equipment allow you to interface automatically.

- This function may not work normally depending on the equipment condition.
- The equipment can be operated by other remote controls with this function on, even if the TV is in Standby mode.
- Image or sound may not be available for the first few seconds when playback starts.
- Image or sound may not be available for the first few seconds when input mode is switched.
- Volume function will be displayed when adjusting the volume of the equipment.
- If you connect equipment that has “HDAVI Control 2” or later function to the TV with an HDMI cable, the sound from the DIGITAL AUDIO OUT terminal can be output as multi-channel surround.
- “HDAVI Control 5” is the newest standard for the HDAVI Control compatible equipment.

This standard is compatible with the conventional HDAVI equipment.

If the connection (or setting) of equipment compatible with HDAVI control is changed, switch the power of this unit Off and On again while the power of all equipment is On (so that the unit can correctly recognize the connected equipment) and check that the connected equipment playback operates.

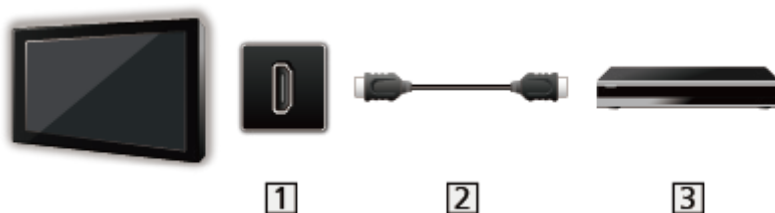
VIERA Link connections

- Depending on the model, it may be necessary to remove the terminal cover / cable cover before connecting or disconnecting cables.

■ Connecting Blu-ray Disc player/DVD Recorder

Connect the HDMI terminal of this TV to the DVD recorder with VIERA Link function using a fully wired HDMI cable.

- You can use any HDMI terminal on this TV.
- Use a high speed HDMI cable for high resolution images.



- 1 TV (HDMI)
- 2 HDMI cable
- 3 DVD recorder with VIERA Link function

■ Connecting Home theater system/AV amp

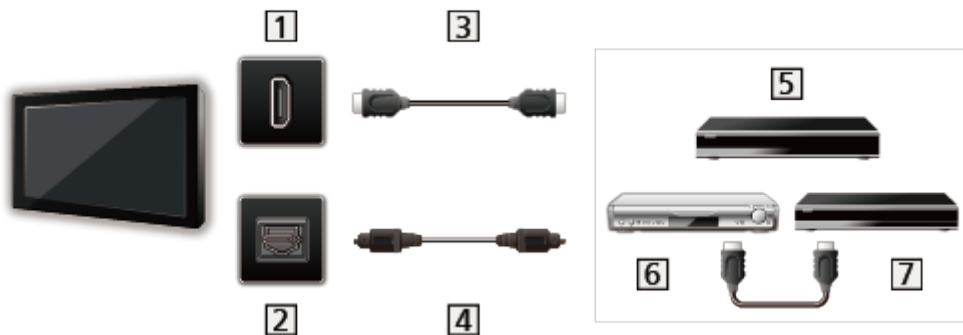
HDMI and Audio connection.

Connect the HDMI terminal and DIGITAL AUDIO OUT to Home Theater System/AV amp with VIERA Link function using each fully wired HDMI cable and Optical audio cable.

- Use a high speed HDMI cable for high resolution images.
- HDMI 2 is recommended.
- No optical cable is necessary when connecting a Home Theater supporting “HDAVI control 5” with an HDMI cable.

Audio will be supported via ARC (Audio Return Channel)

- One AV amp and one Blu-ray Disc player/DVD recorder can be operated with this unit by connecting with an HDMI cable.

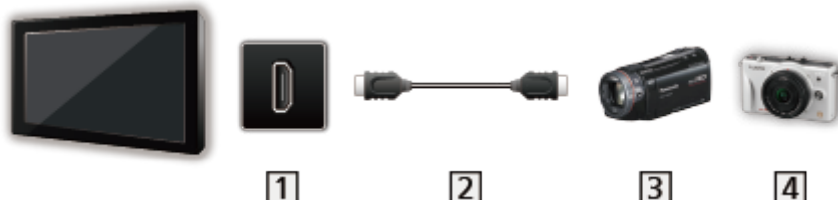


- 1 TV (HDMI)
- 2 TV (DIGITAL AUDIO OUT)
- 3 HDMI cable
- 4 Optical cable
- 5 Home theater system with VIERA Link function
- 6 AV amp with VIERA Link function
- 7 DVD recorder with VIERA Link function

■ Connecting an HD Camcorder/Digital camera

Press **INPUT** and select an available HDMI terminal, then connect the HD camcorder/Digital camera with VIERA Link function to this input with fully wired HDMI/mini HDMI cable.

- Use a high speed HDMI cable for high resolution images.



- 1 TV (HDMI)
- 2 HDMI / mini HDMI cable
- 3 HD Camcorder with VIERA Link function
- 4 LUMIX with VIERA Link function

- Individual HDMI equipment may require additional menu settings specific to each model. Please refer to their respective manuals.
- When audio from other equipment connected to this unit via the HDMI is output using “DIGITAL AUDIO OUT” of this unit, the system switches to 2CH audio.
(When connecting to an AV amp via HDMI, you can enjoy higher sound quality.)
- Some devices use Mini-HDMI terminal. HDMI (type A) to Mini-HDMI (type C) cable or adapter should be used.

VIERA Link settings

To use all VIERA Link functions: After everything is connected, set **VIERA Link** to **On** in VIERA Link settings menu.

Some features are disabled depending on the “HDAVI Control” version of the equipment.

1. Display the menu.

 **MENU** → **Menu** > **Setup**

2. Select **VIERA Link settings** with Δ / ∇ and press **OK**.

3. Select **VIERA Link** and press **OK** then select **On** with Δ / ∇ .

4. Select and set other **VIERA Link settings**.

(**Power on link** / **Power off link** / **Energy saving mode** / **Unselected device auto off**)

VIERA Link settings feature

■ Automatic Input Switching

When using a Blu-ray Disc player, DVD player/recorder or Home theater system, the TV will automatically change to the appropriate input, when playback begins on one of those devices.

- For a Home Theater System the speakers automatically switch to the theater system.

■ Power on link

Yes:

The TV is turned on automatically and switches to the appropriate HDMI input whenever VIERA Link compatible equipment is initially turned on and the Play mode is selected.

■ Power off link

When **Yes** is selected and the TV is turned off, all connected VIERA Link compatible equipment is also automatically turned off.

- A Panasonic DVD Recorder will not turn off if it is still in Rec mode.
- The TV remains on even if the VIERA Link compatible equipment is turned off.

■ Energy saving mode

Quick start:

When TV is turned off, all connected VIERA Link compatible equipment is moved to ECO Standby mode* automatically under these conditions.

- **Power off link (Yes):**
The connected equipment has “HDAVI Control 4 or later (with Quick Start mode)”

* : Minimum power consumption of Standby condition for the equipment.

■ Unselected device auto off

On:

The connected VIERA Link compatible equipment will be turned off automatically when not in use under these conditions. For example, when the input mode is switched from HDMI.

- The connected equipment has “HDAVI Control 2 or later” (for available equipment only)

■ Automatic lip-sync function

Minimizes time delay between the picture and audio when you connect to a Panasonic theater system or Amplifier.

VIERA Link

Some features are disabled depending on the “HDAVI Control” version of the equipment.

1. Display the VIERA Link menu.

 **APPS** → **Apps**

2. Select the item and set. (VIERA Link control / Speaker output / Back to TV)

Select the desired menu using Δ / ∇ and set with Δ / ∇ .

- Items in the VIERA Link menu may be grayed out if no compatible equipment is connected (must be HDAVI Control 2 or later) or if the equipment has not initiated a connection with the TV. In that case, switch the equipment's power Off and On while the TV is On.

VIERA Link menu

■ Speaker control

You can select the Home theater or TV speakers for audio output. Control the theater speakers with the TV remote control. This function is available only when a Panasonic Amplifier or Player theater is connected.

1. Select **Speaker output** using Δ / ∇ .
2. Select **Home theater** or **TV** with Δ / ∇ .

Home theater:

Adjustment for the equipment

VOL(+/-) and **MUTE** buttons are available

- The sound of the TV is muted.
- When the equipment is turned off, the TV speakers take over.
- Selecting **Home theater** turns the equipment on automatically if it is in Standby mode.

TV:

The TV speakers are on.

■ VIERA Link control only with the TV's remote control

1. Select **VIERA Link control** using Δ / ∇ .
2. Select the desired equipment with Δ / ∇ .

(You can select available items only.)

(**Recorder** / **Home theater** / **Player** / **Camcorder** / **LUMIX** / **Other**)

- If there is more than one equipment item, a number after the name indicates the number of items. (e.g. Recorder 1/Recorder 2/Recorder 3...)
 - The number of equipment items that can be connected is three for recorders, and a total of three for Home Theater/Player/Camcorder/LUMIX/Others.
3. Operate the equipment with the TV remote control, pointing it at the TV

- There is a limit to the number of HDMI connectors.
- To operate the equipment, read the manual for the equipment.
- For available TV remote control buttons, whether or not an operation is available depends on the connected equipment.

■ Back to TV

Returns the input selection of the device selected with the VIERA Link Control to the TV input.


1. Select **Back to TV** using \triangle / ∇ and press **OK**.

Using Voice guidance

Voice guidance

This function provides a useful audio readout of basic features.

1. Set **Voice guidance** to **On**.

 **MENU** → **Menu** > **Sound** > **Voice guidance settings** > **Voice guidance**

Select the menu using Δ / ∇ and press **OK**.

Then, switch to **On** using Δ / ∇ and press **OK**.

2. Set other items.

Select the desired menu using Δ / ∇ and press **OK**.

Then, change or adjust the item using Δ / ∇ and press **OK**.

(**Voice guidance** / **Speed** / **Volume** / **Language** / **User level** / **Web Browser**)

- Voice guidance function may not correspond exactly.

- For Voice guidance settings

 → **All settings** > **Sound** > **Voice guidance settings**

Using Bluetooth devices

Settings

This setting enables you to use Bluetooth keyboards*1, Bluetooth mice*1 and Bluetooth audio devices*2 (headphones, smartphone, etc.).

*1 : HID (Human Interface Device Profile) and HOGP (Human interface device Over Generic attribute Profile) compliant keyboards and mice are available.

*2 : A2DP (Advanced Audio Distribution Profile) and AVRCP (Audio Video Remote Control Profile) compliant audio devices are available.

- Up to 5 devices can be used simultaneously.

1. Display the **Menu** and select **Bluetooth settings**.

 **MENU** → **Menu** > **Setup** > **Bluetooth settings**

Select **Bluetooth settings** using \triangle / ∇ from menu bar and press .

2. Select the options and set.

(**Bluetooth devices** / **Bluetooth Audio Mode Setting** / **Bluetooth audio settings**)

■ Bluetooth devices

Searches the available device and displays the status.

1. Select **Bluetooth devices** using \triangle / ∇ and press .

Follow the directions on screen to complete the register.

- For more details about Bluetooth settings

 → **All settings** > **Setup** > **Bluetooth settings**

■ Bluetooth Audio Mode Setting

Selects the TV's Bluetooth audio mode.

1. Select **Bluetooth Audio Mode Setting** using \triangle / ∇ and press .

2. Select **Transmitter** / **Receiver** and press .

Transmitter:

Connects an audio device such as headphones, speaker, etc.

Receiver:

Connects an audio device such as a smartphone, audio player, etc.

■ Bluetooth audio settings

Adjusts the volume for an audio device, etc. in the transmitter mode.

1. Select **Bluetooth audio settings** using Δ / ∇ and press **OK**.

Follow the directions on screen to complete the setting.

- To use Audio Link
 - 1) Display **Apps** with **APPS**.
 - 2) Select **Audio Link** and press **OK** to access.
 - 3) Follow the on-screen instructions.
- If using the 2.4 GHz band on the wireless router, simultaneous use with Bluetooth device may result in connection interruptions. If your wireless router supports 5 GHz band, try using the 5 GHz band. If you have a wired LAN connection, try using the wired LAN connection.
- If the sound interruption occurs, place Bluetooth device closer to the TV.
- When a Bluetooth device is connected to the TV, it is possible that the Bluetooth audio output may not be synchronized (i.e. be delayed) with relation to the images on the screen. This is not a defect of the TV or the device. The delay time will differ depending on the device.
- For more details about Bluetooth settings

 → [All settings > Setup > Bluetooth settings](#)

Control by Smartphone, etc.

Smartphone remote

You can use your smartphone as the TV's remote control.

1. Select [Network](#).

 **MENU** → [Menu](#) > [Network](#)

2. Select [TV Remote](#) in [TV Remote App settings](#).

Select the desired menu using Δ / ∇ .

3. Set the item.

Switch to [On](#) using Δ / ∇ .

- This function is subject to change without notice.

For more information

 → [Support / FAQ](#) > [Information](#) > [Detailed information](#)

Turn on the TV via IP

This function enables you to turn on the TV with control command by the PC etc.

- When you need to turn on the TV using this system, set **Wake on LAN / Wireless LAN** to **On**.

 **MENU** → **Menu** > **Network** > **TV Remote App settings** > **Wake on LAN / Wireless LAN**

Mirroring

You can watch and display images of other devices (smartphone, etc.) on the TV screen using a mirroring function.



1 Smartphone, etc.

2 TV

1. Display **Devices** from Home.

 **HOME** → Home > **Devices**

2. Select **Mirroring** and press **OK**.

3. Follow the on-screen instructions.

- Pairing information of the device (smartphone, etc.) is registered once you use this function.

■ Easy Mirroring

You can also start the mirroring function from the other devices (smartphone, etc.) when **Easy Mirroring** is set to **On**.

 → All settings > Network > Network settings

- You cannot use Easy mirroring function while the TV is set to **TV as Access Point**.

- This function is available with the other devices (smartphone, etc.) supporting the mirroring function. For details, refer to the operating instructions of the devices.

Using USB Keyboard

Keyboard

Keyboards requiring the drivers are not supported.

■ To select the language type for the keyboard

 **MENU** → **Menu** > **Setup** > **System** > **Keyboard type**

■ Key map

Some of the keys of USB keyboards may correspond to the operation of the remote control.

Keyboard	Remote Control
↑ / ↓ / ← / →	△ / ▽ / ◀ / ▶
Enter	OK
Back Space	RETURN
ESC	EXIT
0 - 9	Numeric buttons
F1	HOME
F2	APPS
F3	MENU
F4	INPUT
F5 / F6	Channel down/Channel up
F7 / F8	Volume down/Volume up
F9 / F10 / F11 / F12	Colored buttons

All settings

How to use

Setting the menu

Various menus allow you to set the picture, sound and other functions.

- Some menus are grayed out depending on the input signal or condition.
(e.g. **Zoom adjustments** will be grayed out if the aspect is not set to **ZOOM**.)

1. Display the menu.

 **MENU** → **Menu**

2. Select the menu from menu bar.

Select the desired menu using Δ / ∇ from menu bar and press **OK**.

3. Select the item and adjust.

Select the desired item using Δ / ∇ .

- You can also access to the desired menu using $\triangleleft / \triangleright$.
 - Adjust the item: Using $\triangleleft / \triangleright$
 - Set/change the item: Using Δ / ∇

- Displays the functions that can be adjusted.
- Some functions will be disabled depending on the type of input signal.
- Some settings in Picture menu may also affect the menu screen when watching the 4K contents.
- Depending on the model, the initial setting value of **Picture mode** may differ between **Home** and **Store** even when selecting the same picture mode.

The setting value can be adjusted by pressing **MENU** and selecting **Picture**.

Picture

Basic settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

Adjust the image or picture quality.

 **MENU** → **Menu** > **Picture**

Picture mode

(**Vivid** / **Standard** / **Professional photo** / **Home theater** / **THX Cinema** / **THX Bright Room** / **Cinema** / **Custom** / **Professional1** / **Professional2** / **Dolby Vision Vivid** / **Dolby Vision Bright** / **Dolby Vision Dark**)

Select from preset picture modes for optimal viewing. Mode is saved separately for each input.

Luminance level

Adjusts the panel's luminance (light intensity).

- Gray-out if Professional mode (isfccc) Lock is on.
-

Back light

Adjusts backlight's luminance (light intensity).

Contrast, Brightness, Color, Tint, Sharpness

Adjusts the color, brightness, etc. for each picture mode to suit your preference.

- Display range
 - **Contrast** / **Color** / **Sharpness**: 0 - 100
 - **Brightness** / **Tint**: -50 - +50
 - Gray-out conditions:
 - Professional mode (isfccc) Lock is on.
 - **1080p pixel by 4pixels** is set to **On**. (only for **Sharpness**)
-

Color temp.

Selects color temperature preference, from “cool” (bluish) to “warm” (reddish) or normal.

- Gray-out if Professional mode (isfccc) Lock is on.
-

Vivid color

(On / Off)

Enhances green and blue color reproduction, especially outdoor scenes.

- Gray-out if Professional mode (isfccc) Lock is on.
-

Color remaster

(Max / Min / Off)

Reproduces vivid images with the appropriate process for the panel color gamut and input signal.

- Gray-out conditions:
 - **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**.
 - **Picture mode** is set to **THX**.
-

Rec.2020 color remaster

(On / Off)

Reproduces vivid images with the appropriate process for Rec. 2020 signal.

- **Rec.2020 color remaster** is only available when Rec. 2020 signal is received.
 - Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

Adaptive backlight control

Adjusts backlight level to make dark areas of the picture appear more natural. If the picture appears unnatural, try setting it **Off**.

C.A.T.S.

(On / Off)

Contrast Automatic Tracking System (C.A.T.S.) adjusts the screen brightness and contrast according to the room's ambient light conditions.

This ECO feature automatically dims the brightness of the screen when the room lighting is lowered. C.A.T.S. features a built-in delay when the lighting conditions change. The adjustment happens gradually.

If you prefer a consistent brightness, disable C.A.T.S. by:

Menu > **Picture** > scroll down to **C.A.T.S.** and turn it off.

Or

Menu > **Picture** > **Picture mode** then select viewing mode such as **Custom**.

- Gray-out if HDR video signal is received.
-

Video NR

(Auto / High / Mid / Low / Off)

Reduces noise, commonly called snow. Leave it off when receiving a strong signal.

- Gray-out conditions (The condition may differ depending on the model.):
 - **Game mode** is set to **On**.
 - **1080p pixel by 4pixels** is set to **On**.
 - Pure direct menu is set to **On**.
-

MPEG remaster

(Auto / Strong / Medium / Weak / Off)

Reduces signal noise generated by input devices playing MPEG compressed videos, and provide clear contours.

- Gray-out conditions (The condition may differ depending on the model.):
 - **Game mode** is set to **On**.
 - **1080p pixel by 4pixels** is set to **On**.
 - Pure direct menu is set to **On**.
-

Resolution remaster

(Auto / Strong / Medium / Weak / Off)

Enhances the picture resolution to make the image clearer.

- Gray-out conditions:
 - Professional mode (isfccc) Lock is on.
 - **1080p pixel by 4pixels** is set to **On**.
-

Dynamic range remaster

(On / Off)

Reproduces bright areas of the image to be closer to the original luminance and contrast, and improves the picture impact.

- This menu is available only for full screen mode.
 - Gray-out conditions:
 - HDR video signal
-

Motion picture setting

(Custom / Strong / Mid / Weak / Off)

Improves motion picture quality by reducing motion blur. If **Motion picture setting** is set to **Custom**, these menus are enabled.

Blur reduction:

Adjusts the smoothness of camera content to minimize blur.

Film smooth:

Adjusts the smoothness of film content.

Black frame insertion:

Makes the blurring image clearer for video content, etc.

- Not valid for photo content

Reset to defaults:

Reset to default for **Custom** setting.

- Gray-out conditions:
 - Game mode
 - Photo content
 - **1080p pixel by 4pixels** is set to **On**.
 - Pure direct menu is set to **On**.
-

Clear motion

(On / Off)

Makes the moving pictures clearer by controlling the level of backlight.

- Gray-out conditions:
 - Photo content

HDR brightness setting

 **MENU** → **Menu** > **Picture** > **HDR brightness setting**

Dynamic HDR Effect

(On / Off)

Automatically adjusts the luminance according to an HDR video signal.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDR auto brightness

(On / Off)

Automatically adjusts the luminance according to a lighting condition.

HDR brightness enhancer

Adjusts the luminance when watching an HDR video in a bright environment.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

- Supporting HDR does not increase the peak brightness capabilities of the TV panel.

Pro settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

Adjusts the picture mode in more detail.

Set **Picture mode** to **Custom/Professional photo/Cinema/Professional1/Professional2/Dolby Vision Bright/Dolby Vision Dark** first.

 **MENU** → **Menu** > **Picture** > **Pro settings**

Contrast A.I.

(**Custom** / **Auto** / **Off**)

Automatically controls contrast according to the images. **Auto** is Panasonic setting.

Contrast A.I. setting

Adjusts the detail of contrast control setting. If **Contrast A.I.** is set to **Custom**, this menu is enabled.

AGC:

(0-15)

Automatic Gamma Control. Increases automatically the brightness of a dark signal.

Black extension:

(0-15)

Adjusts the gradations in dark shades of the image.

Cool white effect:

(0-15)

Adjusts the white temperature point toward cool.

Reset to defaults:

Reset **Contrast A.I. setting** to factory defaults settings.

Color gamut

(**Auto** / **Normal** / **Native** / **Rec. 709** / **SMPTE-C** / **EBU** / **Rec. 2020** / **DCI-P3**)

Each color space is a matrix composed of red, green & blue colors. Select your preference.

Auto:

Automatically adjusts the color gamut according to the input signal.

Normal:

Displays colors according to the color gamut.

Native:

Displays deep colors by expanding the color gamut to its maximum.

Rec. 709:

Standard for HD (High definition)

SMPTE-C:

Standard for NTSC

EBU:

Standard for PAL

Rec. 2020:

Provides the suitable color gamut for Rec. 2020.

DCI-P3:

Provides the suitable color gamut for DCI 4K.

- Set **Color remaster** to **Off** to use this function.
 - Set **Rec.2020 color remaster** to **Off** to use this function for the Rec. 2020 signal.
 - Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

Photo Color Gamut

(**Auto** / **sRGB** / **Adobe** / **Rec. 2020**)

Auto:

Automatically adjusts the color gamut according to the input signal.

sRGB:

Standard for sRGB

Adobe:

Standard for AdobeRGB

Rec. 2020:

Provides the suitable color gamut for Rec. 2020.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

W/B detail adjustment

W/B high R, G, B (+/-50)

Adjusts the white balance for light red/green/blue areas.

W/B low R, G, B (+/-50)

Adjusts the white balance for dark red/green/blue areas.

More detail adjustment

Adjusts more detailed White Balance items.

Input signal level:

Adjusts the IRE picture level in relation to the gain of the red, green & blue colors.

Red, Green, Blue gain:

Adjusts the red/green/blue gain value of each Input signal level.

Reset to defaults:

Resets all **More detail adjustment** to factory defaults settings.

Reset to defaults

Resets **W/B detail adjustment** to factory defaults settings.

Color detail adjustment

Red, Green, Blue hue (+/-50)

Adjusts the red/green/blue hue between light, pastel and vivid.

Red, Green, Blue saturation (+/-50)

Adjusts the difference of the red/green/blue color against its own brightness.

Red, Green, Blue luminance (+/-50)

Adjusts the luminance of red/green/blue areas.

More detail adjustment

Adjusts more detailed Color management items.

Cyan, Magenta, Yellow hue (+/-50):

Adjusts the yellow/cyan/magenta hue between light, pastel and vivid.

Cyan, Magenta, Yellow saturation (+/-50):

Adjusts the difference of the yellow/cyan/magenta color against its own brightness.

Cyan, Magenta, Yellow luminance (+/-50):

Adjusts the luminance of red/green/blue/yellow/cyan/magenta areas.

Reset to defaults:

Resets all **More detail adjustment** to factory defaults settings.

Reset to defaults

Resets **Color detail adjustment** to factory defaults settings.

Gamma detail adjustment

Gamma

Gamma correction. Adjusts the intermediate brightness of the image.

More detail adjustment

Adjusts more detailed Gamma items.

Input signal level:

Adjusts the IRE picture level in relation to the gain of the red, green & blue colors.

Gain:

Adjusts the gain value of each Input signal level.

Reset to defaults:

Resets all **More detail adjustment** to factory defaults settings.

Reset to defaults

Resets **Gamma detail adjustment** to factory defaults settings.

Reset to defaults

Resets all **Pro settings** adjustments to factory default settings.

Advanced picture

Some features are not available on all models. Available menu items are displayed on your TV screen.

 **MENU** → **Menu** > **Picture** > **Advanced picture**

Game mode

(On / Off)

Optimizes the TV image for fast response signal when playing video games.

- Not available in TV mode.

3:2 pulldown

(Auto / On / Off)

Reduces judder in film-based content by transforming 24 fps to 30 fps (non-HDMI).

- Available for interlaced content (480i or 1080i) via analog source.
- Gray-out if **Game mode** is set to **On**.

1080p pure direct

(On / Off)

Enables the support of a 4:4:4 digital video format signal. Use only with a 4:4:4 capable source.

- This function is available only for HDMI 1080p input.
- Gray-out conditions:
 - **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**.
 - **1080p pixel by 4pixels** is set to **On**.

4K pure direct

(On / Off)

Enables the support of a 4K 4:4:4 digital video format signal. Use only with a 4K 4:4:4 capable source.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**

1080p pixel by 4pixels

(On / Off)

Displays like pixel by pixel on FHD resolution display for 1080p signal.

- Not all image may be displayed as dot by dot precisely.
 - Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDMI content type

(Graphics / Photos / Auto / Off)

Graphics:

Best setting for On-Screen display of connected equipment.

Photos:

Best setting for JPEG viewing.

Auto:

Switches content type automatically depending on the HDMI signal information.

Auto detail setting

Set the availability of each content type for **Auto** mode.

- Not valid when **Picture mode** is set to **Professional photo**, **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDMI EOTF type

(Auto / Traditional gamma / HLG / PQ)

Changes the EOTF type for HDMI input mode. Set to **Auto** for general use.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDMI colorimetry type

(Auto / Rec. 601 / Rec. 709 / Rec. 2020)

Changes the colorimetry type for HDMI input mode. Set to **Auto** for general use.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDMI/DVI RGB range

(**Auto** / **Nonstandard** / **Standard (16-235)**)

Prevents the blown out highlights and blocked up shadows when a wide-range signal is received. Selects between standard RGB range (16-235 bits) or non compliance (0-255 bits).

Auto:

Switches the RGB range (**Nonstandard/Standard (16-235)**) depending on the HDMI signal information.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

HDMI YCbCr range

(**Nonstandard** / **Standard (16-235)**)

Selects between standard YCbCr range (16-235) or non-compliance (0-255).

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

Black level

(**Light** / **Dark**)

Select **Dark** when details are washed out in dark areas of picture.

EOTF type

(**Auto** / **Traditional gamma** / **HLG** / **PQ**)

Selects the EOTF type for video content. Set to **Auto** for general use.

- Not valid when **Picture mode** is set to **Dolby Vision Vivid**, **Dolby Vision Bright** or **Dolby Vision Dark**
-

3D Y/C filter

(**On** / **Off**)

Minimizes rough edges (dot crawl) in the picture from a composite source.

Screen settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

 **MENU** → **Menu** > **Picture** > **Screen settings**

Screen format

SD signal/HD signal:

Full / JUST / 4:3 / ZOOM / H-FILL

4K format:

Full / V Full

Changes the format (aspect ratio). Lets you choose the aspect depending on the format of received signal.

Overscan

(On / Off)

Selects the screen area displaying the image for FULL aspect.

On:

Enlarges the image to hide the edge of the image.

Off:

Displays the image in the original size.

Set to **On** if noise is generated on the edge of the screen.

- Gray-out conditions:
 - 4K content
 - Photo content
 - **Game mode** is set to **On**.
 - Pure direct menu is set to **On**.
-

H size

Adjusts the horizontal display range to reduce noise of both side edges of an image.

- Gray-out conditions:
 - Photo content
-

Zoom adjustments

Adjusts vertical position and size when FORMAT setting is set to **JUST** or **ZOOM**.

JUST:

V-size max is 3

ZOOM:

V-size max is 15

- Gray-out if input signal is 4K.
-

Screen display

(**On / Off**)

Turns the screen off when you select.

- The sound is active even if the screen turns off.
 - Press any buttons to turn the screen on.
 - This feature is effective in reducing power consumption when listening to the sounds without watching the TV screen.
-

Pixel orbiter

(**On / Off**)

Sets the pixel shifting of the image to prevent panel “image retention”.

Logo Luminance Control

(**Max / Mid / Min**)

Adjusts the luminance level of the displayed logo to prevent panel “image retention”.

Panel maintenance

Turns the screen off and perform the maintenance to prevent the panel “image retention”.

- It takes approx. 80 minutes to finish the maintenance.
 - LED turns to orange during adjustment of the panel.
 - To cancel the maintenance, turn the TV on while the maintenance is in progress.
 - A white horizontal line appears on the screen for a while to adjust the panel. This is not a malfunction.
 - Completion message will be displayed when turning the TV on after panel maintenance.
-

Panel maintenance message

(On / Off)

Enables to display the regular panel maintenance notification.

On:

The message automatically displays for maintenance when the TV is turned off after watching for a certain period of time.

Off:

The message does not display. Select **Panel maintenance** and perform the panel maintenance manually. (see above)

Other settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

Lock settings

Locks the picture menu for **Professional1/Professional2** and each input.

Settings are basic picture settings and Pro settings.

Copy adjustments

You can copy the selected **Cinema**, **Custom**, **Professional1**, **Professional2**, **Dolby Vision Bright** or **Dolby Vision Dark** settings and apply them to all or another input.

Settings are basic picture settings and Pro settings.

Reset to defaults

Resets all picture adjustments to factory default settings except for the advanced settings.

Sound

Basic settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

Adjusts audio quality.

 **MENU** → **Menu** > **Sound**

Sound mode

(**Standard** / **Music** / **Speech** / **Stadium** / **User**)

Selects your favorite sound mode.

- The selected mode affects all input signals.

Standard:

Provides the suitable sound quality for all types of scenes.

Music:

Improves sound quality for watching music videos, etc.

Speech:

Improves sound quality for watching news, drama, etc.

Stadium:

Improves sound quality for watching sports, etc.

User:

Adjusts the sounds manually by using the equalizer to suit your favorite sound quality.

- For the **User** mode, **Equalizer** will appear on the Sound Menu instead of **Bass** and **Treble**. Select **Equalizer** and adjust the frequency.
 - Gray-out when using the Home Theater.
-

Bass

Increases or decreases the bass response.

- Gray-out if **Sound mode** is set to **User**.
 - Gray-out when using Home Theater.
-

Treble

Increases or decreases the treble response.

- Gray-out if **Sound mode** is set to **User**.
 - Gray-out when using Home Theater.
-

Equalizer

(**150Hz / 250Hz / 500Hz / 1kHz / 2kHz / 4kHz / 8kHz / 12kHz / Reset to defaults**)

Adjusts the frequency level to suit your favorite sound quality.

- This function is available when **Sound mode** is set to **User**.
 - Select the frequency and change the frequency level by using the cursor button.
 - To enhance the bass sound, raise the level of the lower frequency. To enhance the treble sound, raise the level of the higher frequency.
 - To reset the levels of each frequency to the default settings, select **Reset to defaults** by using the cursor button, and then press the **OK** button.
 - Gray-out when using Home Theater.
-

Balance

Adjusts the volume level of speakers.

L/R:

Adjusts the volume level of Front Left, Upward-firing Left speakers and Front Right, Upward-firing Right speakers.

Center:

Adjusts the volume level of center speaker and other speakers.

Up/Down:

Adjusts the volume level of Upward-firing speakers and others.

Reset to Defaults:

Resets Balance to the default settings.

- Gray-out when using Home Theater.
-

Dolby Atmos

(**On / Off**)

Provides the precise sound of Dolby Atmos when playing Dolby Atmos content. Set to **On** for general use.

Sound Field Creation

(**Standard / Studio / Theater / Stadium / Direct Through**)

Selects your favorite sound field setting.

Advanced settings

Some features are not available on all models. Available menu items are displayed on your TV screen.

 **MENU** → **Menu** > **Sound**

Surround

(**Dolby surround** / **Cinema surround Pro** / **Cinema surround** / **Stadium surround** / **Off**)

Selects surround sound settings.

- Gray-out when using Home Theater.
 - Not valid for Dolby Atmos content
-

Bass boost

(**On** / **Off**)

Enhances bass sound and provides powerful sound.

- Gray-out when using Home Theater.
-

TV speakers setting

(**TV speakers** / **Headphone** / **Off**)

Selects the sound output to adjust the volume.

- Sound from TV speaker turns off when **Headphone** or **Off** is selected.
-

TV speakers

(**On** / **Off**)

Enables the TV's built-in speakers.

Switch to **Off** when using external speakers.

Speaker output

(**TV** / **Home theater**)

Select the Home theater or TV speakers for audio output.

TV:

The TV speakers are on.

Home theater:

Selecting **Home theater** turns the equipment on automatically if it is in Standby mode.

- The sound of TV speakers is mute. When the equipment is turned off, TV speakers will be activated.
 - You can use **VOL(+/-)** and **MUTE**.
 - This function is available when the theater speakers supporting VIERA Link function is connected to this TV.
-

A.I. sound

(On / Off)

Equalizes overall volume levels across all channels and external inputs.

- Gray-out when using Home Theater.
-

Volume leveler

Minimizes volume disparity after switching to external inputs.

- Gray-out when using Home Theater.
-

Clear sound adjustment

(On / Off)

If the sound from TV speakers is unclear due to installation environment, **On** is recommended.

- Gray-out when using Home Theater.
-

Dialogue enhancement

(On / Off)

Enhances the intelligibility of dialogue and commentary.

Space Tune Setting

Adjusts the sound quality automatically according to the installation location or room condition.

Space Tune

(On / Off)

Enables the sound setting which has been adjusted by Space Tune Adjustment.

Space Tune Adjustment

Adjusts the sound setting with the Space Tune function.

Preferred audio type

(Main Audio / Hearing Impaired / Visually Impaired)

Allows setting of the accessible audio format when its broadcast and the language setting matches.

Digital audio out selection

(Auto / PCM / Dolby Audio)

Selects the initial setting for digital audio output signal from DIGITAL AUDIO OUT and HDMI 2 (ARC function) terminals.

Auto:

Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby AC-4), Dolby Atmos and HE-AAC multi-channel are output as Dolby Digital Bitstream. MPEG is output as PCM.

- Dolby Atmos may be output as Dolby Atmos Bitstream, Dolby Digital Plus and Dolby AC-4 may be output as Dolby Digital Plus Bitstream from HDMI2 (ARC function) terminal depending on the connected equipment.

PCM:

Digital output signal is fixed to PCM.

Dolby Audio:

Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby AC-4), Dolby Atmos, HE-AAC and AAC are output as Dolby Digital Bitstream or Dolby Digital Plus Bitstream.

- Dolby Atmos may be output as Dolby Atmos Bitstream from HDMI2 (ARC function) terminal depending on the connected equipment.
 - For TV mode, video content
 - ARC (Audio Return Channel):
A function of digital audio output using HDMI cable.
-

HDMI audio format

(Auto / Bitstream / PCM)

Selects valid audio format when HDMI viewing.

Auto:

Dolby Audio is output as Dolby Audio Bitstream. Other digital audio output signals are output as PCM. When the sound is delivered from theater speakers, Dolby Audio is output with pass-through method.

Bitstream:

Dolby Audio is output as Dolby Audio Bitstream. Other digital audio output signals are output as PCM. When the sound is delivered from theater speakers, Dolby Audio is output with transcoding method.

PCM:

Digital audio signal is output as PCM.

HDMI input

(**Digital** / **Analog**)

The default setting is **Digital** for the HDMI connection. (Digital input signal)

Select audio input terminal when a DVI cable is connected along with an analog audio input signal.

Reset to defaults

Resets all Audio adjustments to factory default settings.

- Gray-out when using Home Theater.

Headphone terminal output setting

Some features are not available on all models. Available menu items are displayed on your TV screen.

1. Display the menu with **MENU**.
2. Select **Sound** and press **OK** to access.
3. Select one of the following items and press **OK** to access.

Headphone terminal output / Headphone volume / Sub Woofer adjustment

4. Set the item and press **OK** to store.
-

Headphone terminal output

(**Headphone / Sub Woofer**)

Selects the sound output from the headphone terminal.

Headphone:

The sound outputs for using headphones.

Sub Woofer:

The sound outputs for using sub woofer.

= Note =

- Normally set **Headphone terminal output** to **Headphone**.
 - When **Headphone terminal output** is set to **Sub Woofer**, the headphones cannot be used properly because only the low-frequency sounds are output.
 - The volume of the sub woofer can be also controlled when adjusting the volume of this unit with this TV's remote control.
-

Headphone volume

Adjusts the volume of headphones.

Sub Woofer adjustment

Adjusts the sound output of sub woofer.

Sub Woofer Volume:

Adjusts the volume of sub woofer.

- Confirm the actual sound volume from this TV and sub woofer and adjust the volume.

Cut Off Frequency:

Adjusts the cut-off frequency of sub woofer signal output.

- The frequency output to the sub woofer is less than the set cut-off frequency.
- The frequency can be adjusted from 100 Hz to 400 Hz.
- Confirm the actual sound volume from this TV and sub woofer and adjust the volume.

Reset to defaults:

Resets **Sub Woofer adjustment** to the default settings.

Voice guidance settings

Settings for using voice guidance.

 **MENU** → **Menu** > **Sound** > **Voice guidance settings**

Voice guidance

(**On** / **Off**)

On:

Enables voice guidance of the basic features (Channel banner and input source).

Speed

(**Fast** / **Normal** / **Slow**)

Adjusts the readout speed of the voice guidance.

Volume

(**High** / **Mid** / **Low**)

Selects the volume for voice guidance.

Language

(**English** / **Español** / **Français** / **中文**)

Selects the language for voice guidance.

User level

(**Beginner** / **Expert**)

Selects the level of complexity for voice guidance.

Web Browser

(**On** / **Off**)

Enables voice guidance on web page.

Network

Network settings

 **MENU** → **Menu** > **Network**

Network connection

Connects the TV to the home network. Searches for wireless network or establishes wired connection.

Follow the directions on the screen to complete the network settings.

Network status

Tests the connection between the TV to the local router and the Internet.

Displays Current settings and status screen. (Network type/Wireless settings/MAC address/IP Address, etc.)

- Displayed items differ depending on the type of network connection.
-

TV name

Set your favorite name for this TV.

TV Remote App settings

Sets a network-based remote control.

TV Remote:

(On / Off)

Enables to control the TV from the network equipment (smartphone, etc.).

- Set to **On** to enable the settings below.

Wake on LAN / Wireless LAN:

(On / Off)

Turns on the TV via Ethernet using a wake-up message sent from a device within the home network.

Device to upload contents:

Selects device to upload contents from the network equipment (smartphone, etc.).

Delete All Pairings:

Delete the pairing information for all paired devices.

Network link

Settings for the media server.

Home Network Server:

(On / Off)

Enables to use this TV as DMS (Digital Media Server) for network devices (TV).

- Set to **On** to enable the settings below.

Registration type:

(Auto / Manual)

Selects the limitation of access to this TV for each device on the home network.

Auto:

All the available devices on the home network are accessible.
(maximum 16 equipment)

Manual:

Sets the access limitation for each device in the Remote device List.

Remote device list:

Lists the available device on the home network.

Smart Speaker Settings

Controls this TV such as selecting a channel, changing volume, etc. with the smart speaker function.

- Ensure the network connections and network settings are completed.

 → [Network services > Connect to network](#)

- For the operations, refer to the support information.

 → [Support / FAQ > Information > Detailed information](#)

Mirroring settings

You can set the items for mirroring function.

Easy Mirroring:

(On / Off)

Enables starting the mirroring function from the other devices (smartphone, etc.) without operating the TV.

- To deactivate wireless, set **Easy Mirroring** to **Off** and confirm the network connection type is set to **Ethernet cable**.

 → [Network services > Network settings > Network connection / Network status](#)

- Not available when the TV is set to **TV as Access Point**.

Delete All Pairings:

Delete the pairing information for all paired devices.

VOD content refresh

(**On / Off**)

Selects whether to update the VOD content to the latest even when the TV is in Standby mode.

- Changing the default configuration may increase Annual Power Consumption.
 - LED turns to orange while updating in Standby mode when **VOD content refresh** is set to **On**.
-

Control4 settings

Settings for Control4.

Control4 discovery:

(**On / Off**)

Switch to Control4 mode.

- Set to **On** to enable **Send identify** menu.

Send identify:

Send Identify message to Control4 controller.

- Please consult with local Control4 dealer for settings and operation.
-

Software update

Check if software (firmware) update for the TV is available.

Press **OK** to start the Software update screen. Follow directions on the screen.

- Set **Clock** first.
-

New software notice

(**On / Off**)

Selects whether or not to display a notification message when a software (firmware) update is available for download. Follow the directions on the screen to download.

Terms of Service and Settings

Displays the terms of service and settings.

Timer

Sleep (Off timer)

 **MENU** → **Menu** > **Timer** > **Sleep**

Sleep

(**90 minutes** / **60 minutes** / **30 minutes** / **15 minutes** / **Off**)

Selects how long the TV stays on before it automatically turns off.

Timer (On/Off timer)

 **MENU** ➔ **Menu** > **Timer** > **Timer**

Timer set

(On / Off)

Enables or disables the Timer.

Inputs

Sets which input will be selected when the TV turns on.

Channel

Sets the channel to display when the TV turns on.

Day

Sets the day when the TV turns on.

On time

Sets the time that the TV will turn on at. The TV will turn off after 90 minutes or as specified.

Off time

Sets the time that the TV will turn off at within 24 hours.

Clock settings

 **MENU** → [Menu](#) > [Timer](#) > [Clock](#)

Mode

([Auto](#) / [Manual](#))

Sets the date and time manually or automatically via an Internet connection.

Date, Time

Sets current date or time.

Time zone

([EST](#) / [CST](#) / [MST](#) / [PST](#) / [AKST](#) / [HST](#) / [NST](#) / [AST](#))

Selects your time zone, to enable correct automatic date and time settings.

DST

([On](#) / [Off](#))

Selects if Daylight Saving Time is currently observed.

Auto turn off settings

 **MENU** → **Menu** > **Timer**

No activity for 4 hours

(**Power TV off** / **Stay on**)

To conserve energy, the TV automatically turns off when no operation of remote and side panel key continues for more than 4 hours.

Not in use when “On/Off Timer” is set. “No activity for 4 hours was activated” will be displayed for about 10 seconds when the TV is turned on for the first time after the power was turned off by “No activity for 4 hours” feature. The on-screen display will flash 3, 2 and 1 to indicate the last three (3) remaining minutes prior to the shut-off.

- Changing the default configuration may increase Annual Power Consumption.

No signal for 10 minutes

(**Power TV off** / **Stay on**)

To conserve energy, the TV automatically turns off when NO SIGNAL and NO OPERATION continue for more than 10 minutes.

Not in use when “On/Off Timer” is set. “No signal for 10 minutes was activated” will be displayed for about 10 seconds when the TV is turned on for the first time after the power was turned off by “No signal for 10 minutes” feature. The on-screen display will flash 3, 2 and 1 to indicate the last three (3) remaining minutes prior to the shut-off.

Setup

Eco navigation

 **MENU** → [Menu](#) > [Setup](#) > [Eco navigation](#)

Set to ECO

Sets the TV to the most suitable energy-saving mode automatically.

Optimizes the TV's various modes to save energy.

- The TV's brightness will adjust and adapt as the room lighting changes.

USB device setup

 **MENU** ➔ **Menu** > **Setup** > **USB device setup**

Remove USB device safely to prevent the damage of the data or device.

Bluetooth settings

Settings for the specific devices supporting Bluetooth wireless technology

 **MENU** → **Menu** > **Setup** > **Bluetooth settings**

Bluetooth devices

Search and pair Bluetooth devices in range. Display the status of previously registered devices.

Bluetooth Audio Mode Setting

(**Transmitter** / **Receiver**)

Selects the TV's Bluetooth audio mode.

Transmitter:

Connects an audio device such as headphones, speaker, etc.

Receiver:

Connects an audio device such as a smartphone, audio player, etc.

Bluetooth audio settings

Adjusts the volume for an audio device, etc. in the transmitter mode.

Audio out

(**All** / **Bluetooth only**)

Selects audio out when the device is connected.

- To get sound from Speakers and Bluetooth device, select **All**.

Volume

Adjusts the volume of a Bluetooth audio device.

Audio Control

Sets to control a Panasonic Bluetooth audio device with this TV.

- Settings on a Panasonic Bluetooth audio device are also required to use this audio control function.

Parental control

 **MENU** → **Menu** > **Setup** > **Parental control**

Change password

Creates a new password. Input the new 4-digit password twice.

Show Adult App

(**On** / **Off**)

Set to **Off** to lock specific applications to restrict access to them (if available).

- For Internet content
-

Mode

(**Custom** / **All** / **Off**)

Locks (**All**) or Unlocks (**Off**) all channels, programs or inputs. For **Custom**, locks specified inputs of **Channel**, **Game** and **Program**.

Set **Custom** in **Mode** to specify **Channel**, **Game** and **Program** settings.

Channel

These channels will be blocked regardless of the program ratings.

Mode:

(**Custom** / **All** / **Off**)

Locks (**All**) or Unlocks (**Off**) all channels. For **Custom**, locks specified channels. Set **Channel 1** - **Channel 7**.

Channel 1-7:

Designates channel number to be blocked at any time, regardless of its broadcast content.

Game

(**On** / **Off**)

Restricts access to channel 3, channel 4 and all the TV's inputs.

Program

Prohibits viewing of TV content based on the rating provided by the broadcasters.

Mode

(On / Off)

Sets program lock status. "V-chip" technology enables restricted shows to lock according to TV ratings. Sets each rating level (MPAA, U.S.TV, C.E.L.R., C.F.L.R.).

MPAA:

Selects U.S. movie ratings to lock.

U.S.TV:

U.S. TV program ratings.

C.E.L.R.:

Canadian English ratings.

C.F.L.R.:

Canadian French ratings.

DRRT:

This television is designed to support the "Downloadable U.S. Region Rating System" when available. (Currently available only in U.S.)

ANTENNA/Cable setup

 **MENU** → **Menu** > **Setup** > **ANTENNA/Cable setup**

ANTENNA/Cable signal

(**Cable** / **Antenna**)

Selects signal source connected directly to the ANTENNA/Cable In terminal.

- When using a Cable or Satellite box, it is recommended to connect the box to an AV IN terminal and skip this setting.
-

Channel surf mode

(**All** / **Favorite** / **Analog only** / **Digital only**)

Sets the mode to select the channel with the Channel up/down button.

Favorite:

Only channels registered as FAVORITE.

Auto program

(**All channels** / **Digital only** / **Analog only**)

- Select scan type and press **OK** to start scanning automatically.
After the scanning is completed, select **Apply**.
 - All previously saved channels are erased.
-

Manual program

Changes the channel setting or channel display.

Edit

Edits these items.

Caption:

Changes the station identifier. (maximum 7 characters available)

Favorite:

Registers channels to the Favorite List from **Set favorite**.

Add:

Adds (**Yes**) or skips (**No**) channels

Apply

After the editing is completed, press **OK** to save the settings.

Cancel

Cancels the changes.

Signal meter

Check the signal strength if interference is found or freezing occurs on a digital image.

- If the signal is weak, check the antenna.
- If you cannot figure out the problem, consult your local dealer.
- Not available if **Cable** is selected in **ANTENNA/Cable signal**.
- Available only for digital antenna channels.

Language settings

 **MENU** → **Menu** > **Setup** > **Language**

Menus language

(**English** / **Español** / **Français** / 中文)

Selects the screen menu language.

Preferred SAP language

(**English** / **Spanish** / **French**)

Selects the preferred language for hearing or visually impaired, if offered during digital broadcast

- Preferred language takes precedence over the preferred audio type.
(Available only in the U.S.)

Display customization

 **MENU** → **Menu** > **Setup** > **Display customization**

Input labels

Selects the terminal and label of the external equipment. Devices connected to external input terminals can be labeled for easier identification during the input selection.

- When you label an input as **Not used**, then it will be hidden from the **Input select** menu.
- Select **Customize** to enter your own labels for the input (e.g. "Computer").

Notification

(**On** / **Off**)

Enables to display Notification.

Dolby notification

(**On** / **Off**)

Displays a Dolby notification.

Closed Caption

 **MENU** → **Menu** > **Setup** > **Display customization** > **Closed Caption**

Mode

(**CC on mute** / **On** / **Off**)

CC on mute:

Displays Closed Captions when the audio is muted. (When not using, select **Off**.)

On:

Displays Closed Captions.

Analog

(**CC1-4** / **T1-4**)

Choose the Closed Caption service of Analog broadcasting.

CC1-4:

Information related to pictures (Appears at the bottom of the screen)

T1-4:

Textual information (Appears over the entire screen)

Digital

(**Primary** / **Second.** / **Service 3** / **Service 4** / **Service 5** / **Service 6**)

The Digital Closed Caption menu lets you configure the way you choose to view the digital captioning.

Digital setting

Sets display settings in digital programs.

Size:

Selects the text size.

Font:

Selects the text font.

Style:

Selects the text style (Raised, Depressed, etc.).

Foreground:

Selects the color of text.

Foreground opacity:

Selects the opacity of text.

Background:

Selects the color of text box.

Background opacity:

Selects the opacity of text box.

Outline:

Selects the outline color of text (Identifies the settings options on the screen).

Reset to defaults

Resets all Closed Caption settings to factory default settings.

VIERA Link settings

 **MENU** → **Menu** > **Setup** > **VIERA Link settings**

VIERA Link

(**On** / **Off**)

To use all VIERA Link functions, set to **On** after everything is connected.

Power on link

(**Yes** / **No**)

The TV is turned on automatically and switches to the appropriate HDMI input whenever VIERA Link compatible equipment is initially turned on and the Play mode is selected.

Power off link

(**Yes** / **No**)

When **Yes** is selected and the TV is turned off, all connected VIERA Link compatible equipment is also automatically turned off. The TV remains on even if the VIERA Link compatible equipment is turned off.

Energy saving mode

(**Save** / **Quick start**)

Quick start:

When TV is turned off, all connected VIERA Link compatible equipment is moved to ECO Standby mode* automatically under these conditions.

- **Power off link (Yes)**: The connected equipment has “HDAVI Control 4 or later (with Quick Start mode)”

* : Minimum power consumption of Standby condition for the equipment.

Unselected device auto off

(**On** / **Off**)

The connected VIERA Link compatible equipment will be turned off automatically when not in use under these conditions. The connected equipment has “HDAVI Control 2 or later” (for available equipment only)

System settings

 **MENU** → **Menu** > **Setup** > **System**

Keyboard type

(**U.S.** / **Canadian French** / **Canadian multilingual std.** / **Spanish(Latin America)** / **Spanish (Spain)**)

Selects the country/region of the keyboard connected to this TV.

Factory defaults

Clears all TV settings and memory to factory defaults.

License

Displays the software license information.

Other settings

 **MENU** → **Menu** > **Setup** > **Other settings**

Power save

(**Saving** / **Standard**)

Reduces screen brightness to lower power consumption. Eye-friendly for viewing in a dark room.

Power LED Indicator

Selects the power LED indication mode.

Useful settings

 **MENU** ➔ **Menu** > **Setup**

HDMI auto setting

(**Mode1** / **Mode2**)

Reproduces the image more precisely with the expanded color gamut when connecting the 4K compatible equipment. Select the mode depending on the equipment.

Mode1:

For better compatibility. Set to **Mode1** when the image or sound in HDMI input is not played properly.

Mode2:

For the 4K compatible equipment that has the function to output the image precisely with the expanded color gamut.

- The setting can be stored for each HDMI input.
 - Valid format (4K)
 - **Mode1:** 4:4:4 / 4:2:2 (30p, 25p, 24p), 4:2:0 (60p, 50p)
 - **Mode2:** 4:4:4 / 4:2:2 (30p, 25p, 24p), 4:4:4 / 4:2:2 / 4:2:0 (60p, 50p)
-

HDMI HDR setting

HDR setting:

(**Dynamic** / **Static** / **Off**)

Set to **Dynamic** or **Static** when the HDR device is connected to the TV.

- Please turn **Off** this function if the image looks unnatural. This may occur in some cases such as compatibility with the connected device or source images.
 - Image may disappear for a few seconds when the setting is changed.
 - For HDMI
-

HDR dynamic setting

HDR10+ Functionality:

(On / Off)

Enables the HDR10+ function for HDMI input signal.

Dolby Vision:

(On / Off)

Enables the Dolby Vision function for HDMI input signal.

- Supporting HDR does not increase the peak brightness capabilities of the TV panel.
-

HDMI 2.1 Settings

ALLM:

(On / Off)

Automatically switches the TV to Game Mode according to the ALLM information when using this TV in single window mode.

- For HDMI
- Not valid when **HDMI auto setting** is set to **Mode1**

Support / FAQ

Help menu

Using Help menu

The TV's built-in self-help resources.

1. Display the menu.

 **MENU** → **Menu**

2. Select **Help** from menu bar.

Select the desired menu using Δ / ∇ from menu bar and press **OK**.

3. Select the Help menu.

Select the desired menu using Δ / ∇ and press **OK**.

(**eHELP** / **TV Self-test** / **Version** / **Device information**)

eHELP:

This screen

TV Self-test:

Verifies proper function of the TV for picture and sound.

- Follow the instructions on the screen to complete the self test.

Version:

Displays TV's software (firmware) version.

Device information:

Displays the device information of this TV.

FAQ

Picture - Viewing

■ Frequently Asked Questions

For updated information, please visit Panasonic web site.

How do I view the picture from devices such as: Cable/Satellite box, game console, Blu-ray or DVD player?

- Press the **INPUT** button on the remote to select the correct input source.
- Check that the device is turned on and functioning correctly.

Why doesn't the picture look like it is in High Definition?

- Press the **INFO** button on the remote to confirm the type of signal being received. HD signal should be 720p, 1080i or 1080p.
- Select a High Definition channel from your HD source (Cable, Satellite or fiber optic service). HD channels sometimes broadcast non-HD content.
- Ensure that your HD source (HD box, Blu-ray player, etc.) is connected to the TV with an HDMI or Component cable and set to output an HD video signal.

Picture - Snowy / none

Why is there no picture or just a blue, black or snowy screen being displayed?

- Press **MENU** and select **Help**. Then select **TV Self-test**. If the test picture displays correctly, then the problem is with the external device (e.g. Cable box, DVD player, etc.) or its connection to the TV.
- Check if the power cord is plugged in and the TV is turned on (front red LED light should be on; not blinking)
- Press the **INPUT** button on the remote to select the correct input source.
- Ensure all connections are correct and secure. Especially check for Component and VIDEO connection since these terminals are shared.
- When using an external video source, such as a Cable/Satellite box or DVD player, check that the device is on and functioning correctly.
- Press **MENU** on the TV's remote control. If the menu is displayed, then the TV is working; recheck above steps.

Why is the picture snowy when **ANTENNA/Cable setup** is selected?

- When using a cable service (without a box), check that all connections are secure.
- When using a cable or satellite box, change the connection (wiring) to Composite, Component or HDMI.
- If you're using an antenna, then check that connections are secure. Change the position or direction of the antenna and check the **Signal meter**.

 **MENU** → **Menu** > **Setup** > **ANTENNA/Cable setup** > **Signal meter**

Picture - Distortion

The picture is distorted after selecting the “AV” input. What should I do?

- Ensure that the device is connected correctly to the TV's Video/Component green connector.
- If using VIDEO or COMPONENT:

Press **INPUT**, scroll to AV, press ◀ / ▶ to select **Video** or **Component**.



Why do black bars appear on the top and bottom and/or sides of the screen?





- Change the format (aspect ratio) of the picture by pressing the **FORMAT** button on the remote control.
- Check the aspect settings on your external video source, such as Cable/Satellite box, DVD/Blu-ray Disc player, etc.
- Some content, such as film-based movies, are available in extra-wide format. Top and bottom bars are unavoidable.

Why is the picture chaotic and/or torn and/or with a buzz in the speakers?

- Check if electrical products such as kitchen appliances, fluorescent lights or light dimmers are nearby. They may interfere with the TV's picture.
- Try viewing a picture from another device, such as a DVD player or a game console, to narrow down the source of the problem.

Picture - Unusual

Why the pictures from external equipment are unusual when the equipment is connected via HDMI?

- Check the HDMI cable is connected properly.
 → [Watching TV > Blu-ray, DVD, Game Console, etc. > Connecting and viewing](#)
- Turn the TV and equipment off, then turn them on again.
- Check an input signal from the equipment.
 → [Watching TV > Blu-ray, DVD, Game Console, etc. > Input signal](#)
- Use equipment compliant with EIA/CEA-861/861D.
- Set **HDMI auto setting** in the **Setup** Menu to **Mode1**.
 → [Watching TV > 4K compatible equipment > Connecting and viewing](#)
- The valid 4K format varies depending on the HDMI terminal.
 → [Watching TV > 4K compatible equipment > About 4K format](#)

Picture - Continue

Some features are not available on all models.

Why is there a black box on the screen?

- Check the settings of Closed Caption (CC).

Why do some small spots on the screen remain bright or dark?

- The panel is made up of a few million pixels and is produced with advanced technology through an intricate process. Sometimes, a few pixels may be bright or dark.
- These pixels do not indicate a defective panel and will have no impact on the performance of the TV.

Why is the picture brightness changing?

- Turn the C.A.T.S. feature off.

 **MENU** → **Menu** > **Picture** > **C.A.T.S.**

Why does the screen turn off?

- Check if the TV is in energy saving mode.

 → **Convenience features** > **Eco navigation** > **Eco navigation**

Why is there a short black image on the screen?

- A black image is displayed to avoid picture distortion when an input signal changes.

Only for the OLED TV

A white horizontal line appears in Standby mode.

- A white horizontal line may appear on the screen for a while to adjust the panel. This is not a malfunction.

Sound - None

Why is there no sound coming from the TV?

- Make sure the volume is up and mute is off.
- Check that the correct **SAP** (Secondary Audio Program) is selected by pressing the **SAP** button on the remote control.
- If the TV is connected to a Panasonic Home Theater via HDMI cable, then check VIERA Link controls.
- If the TV is connected to a Home Theater via optical cable, then: Check the connection, the audio system is on, the correct input is selected.
- Check **HDMI in** analog/digital audio settings.

 **MENU** → **Menu** > **Sound** > **HDMI input**

Sound - Unusual

Why is the sound unusual, distorted, low volume or in another language?

- Check that the correct **SAP** (Secondary Audio Program) is selected by pressing the **SAP** button on the remote control.
- Check that all connections of external equipment connected to the TV are secure.
- When using Cable or Satellite box, check the device's audio settings. (Example: try changing the box's Audio Range to "narrow")
- Set **HDMI auto setting** in the **Setup** Menu to **Mode1**.



→ [Watching TV > 4K compatible equipment > Connecting and viewing](#)

Why is there a clicking, ticking or buzzing sound coming from the TV unit?

- When TV power is turned on or shut off there are electrical components that make a click sound. This is normal operation.
- Changes in the temperature and humidity of the room may cause thermal expansion and contraction that can produce sounds. This is not a sign of faulty operation or a malfunction.

Networking

How do I get Internet services to work on my TV?

1. You need a broadband (High-Speed) Internet service with a speed of no less than 1.5 Mbps.
2. Connect the TV to the Internet through your router by an Ethernet cable or a Panasonic Wireless LAN (built-in).
3. Start **Network connection** wizard, then follow the directions on the screen to connect. If the connections still fails, then check with your Internet service provider or router/modem manufacturer if there are firewall, content filter or proxy settings that may block the TV from accessing the Internet.

Software update

How do I check for the latest software (firmware) version for my TV?

- In the main menu, select **Network**. Select **Software update**. The current version and latest version software will be displayed. If software update is grayed out, the TV is not connected to the Internet. If a newer version is available, update your TV. Follow the on screen instructions, do not power off the TV until the update is complete. Be patient; firmware update may take a while.

How do I get the software update information and download periodically?

- In the main menu, select **Network**. Highlight **New software notice**. Make sure that setting is **On**.

When the TV is turned On, update message is displayed if available. Follow the directions on the screen to download.

Voice guidance

How does the voice guidance feature work?

- This function provides you with useful voice guidance for basic features.
- For more information about settings or operation of voice guidance, please refer to the page below.

 → [Convenience features > Using Voice guidance](#)

Eco navigation

Why does my picture look dim and/or sometimes changes brightness levels?

- This TV is equipped with a money saving feature called Eco Navigation. The TV automatically dims the brightness to save energy. It also puts the picture in “Standard” mode and enables the C.A.T.S. feature so it will adjust the picture brightness automatically depending on the rooms ambient lighting conditions. This mode will also turn the TV power off if no signal is detected for 10 minutes.
- For more information about Eco navigation, please refer to the page below.

 → [Convenience features > Eco navigation > Eco navigation](#)

Other

Some features are not available on all models. Available menu items are displayed on your TV screen.

What is the easiest and best way to connect a High-Definition Cable or Satellite box to the TV?

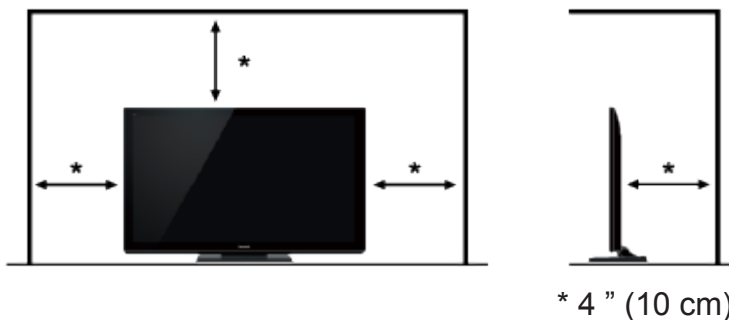
- Use an HDMI cable. It carries both digital video and audio signal in HD. The HDMI cable is the only cable needed to connect an HD device to the TV.

Why does the **CC** button not display Closed Caption?

- Check if the setting is turned **On** or **CC on mute**.
- When viewing TV via an HDMI connected device, such as a Cable or Satellite box, CC must be enabled on the device.
- Closed Caption is available only for supported TV programming and supported contents via Video (Composite) input.

Why does the screen and back cover of the TV get warm?

- The main unit radiates heat and some of the parts may become hot. This is normal operation and does not affect the performance of the set.
- Ensure good ventilation.
- Do not block the ventilation holes of the TV and do not place the TV on top of other equipment.



Where is the power source and power consumption?

- For information about the power source and power consumption, refer to the nameplate on the rear enclosure.

LED does not light.


- Set **Power LED Indicator** in the **Setup** Menu to **On**.

 → [Convenience features > Power LED Indicator > Using Power LED Indicator](#)

LED turns to orange.

- LED turns to orange during adjustment of the panel (approx. 10 minutes to maximum 80 minutes). LED turns to orange again in standby mode when the TV is turned on / off before the panel adjustment is completed.

The panel maintenance notification is displayed when turning the TV off.

- Perform the panel maintenance. Select **Turn the TV off now** and press  to start the panel maintenance.
 - The panel maintenance is interrupted when selecting **Don't start panel maintenance this time** or turning the TV off while the notification is displayed.

Menu - Gray-out or missing items

Why the **Antenna/Cable** option or available inputs are not listed in the **Input select** menu?

- When you label an input as **Not used**, then it will be hidden from the **Input select** menu. To make the input visible again:
 1. Display the **Menu** and select **Setup**.
 2. Select **Input labels** from **Display customization** and press **OK**.
 3. Select the desired input and press **OK** to change the label.

Some menu items are grayed-out and unable to be selected. Why?

- Depending on certain modes or the selected input, some options are not available.

Reset to factory defaults

How do I reset my TV to all factory defaults and settings?

- In the main menu, select **Setup** and then select **System**. Highlight **Factory defaults** and press **OK**.

Enter your password (if locked).

Confirmation message will be displayed.

Follow the directions on screen to reset the TV to its original factory defaults.

Information

Detailed information

Support information about the application, optional devices, operation, etc. may be found on the following website.

<http://panasonic.jp/support/global/cs/tv/> (English only)

Data information

■ Supported Photo format for Media player/media server

- HLG Photo (.hsp)*
CTA-2072 standard
Still pictures recorded with HLG standard are supported.
- JPEG files (DCF and EXIF standards)
Sub-sampling - 4:4:4, 4:2:2 and 4:2:0
Image resolution - 8 x 8 to 30,719 x 17,279 pixels

* : for Media player only

■ Supported Video format for Media player/media server

- MP4 files
Video codec:
H.264 / H.265 (HEVC) / MPEG1 / MPEG2
Audio codec:
AAC / Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby AC-4) /
Dolby Atmos / HE-AAC / MP3
- MKV files
Video codec:
H.264 / H.265 (HEVC) / MPEG1 / MPEG2
Audio codec:
AAC / Dolby Audio (Dolby Digital, Dolby Digital Plus) / HE-AAC / MP3 /
Vorbis
- FLV files
Video codec:
H.264
Audio codec:
AAC / MP3
- 3GPP files
Video codec:
H.264
Audio codec:
AAC / HE-AAC

- PS files

Video codec:

H.264* / MPEG1 / MPEG2

Audio codec:

AAC* / Dolby Audio (Dolby Digital, Dolby Digital Plus*) / HE-AAC* /
LPCM / MP3*

- TS files

Video codec:

H.264 / H.265 (HEVC) / MPEG1 / MPEG2

Audio codec:

AAC / Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby AC-4) /
Dolby Atmos / HE-AAC / MP3*

- WebM files

Video codec:

VP9

Audio codec:

Vorbis

* : for Media player only

■ Supported Music format for Media player/media server

- MP3 files (MP3)
- M4A files (AAC / Apple Lossless)
 - Copy-protected files cannot be played back.
- FLAC files (FLAC)
- WAV files (LPCM)

■ Supported Subtitles formats

● MicroDVD, SubRip, TMLayer (.srt, .sub, .txt)

- The video file and subtitles text file are inside the same folder, and the file names are the same except for the file extensions.
- If there are more than one subtitles text files inside the same folder, they are displayed in the following order of priority: “.srt” “.sub” “.txt”.

- Some files may not be played back even if they fulfill these conditions.
- Some files may not be played back correctly depending on the resolution, frame rate condition, etc.
- Some subtitles or chapter functions may not be available.
- Do not use multi-byte characters or other special codes for file names.
- Connected devices may become unusable with this TV if the file or folder names are changed.

Care and Cleaning

Display panel

First, unplug the Power cord plug from the wall outlet.

■ Display panel

The front of the display panel has been specially treated. Wipe the panel surface gently using only a cleaning cloth or a soft, lint-free cloth.

- If the surface is particularly dirty, after cleaning up the dust, soak a soft, lint-free cloth in diluted mild liquid dish soap (1 part mild liquid dish soap diluted by 100 times the amount of water) and then wring the cloth to remove excess liquid. Use this cloth to wipe the surface of the display panel, then wipe it evenly with a dry cloth of the same type until the surface is dry.
- Do not scratch or hit the surface of the panel with fingernails or other hard objects. Furthermore, avoid contact with volatile substances such as insect sprays, solvents, and thinner, otherwise, the quality of the surface may be adversely affected.

Cabinet

First, unplug the Power cord plug from the wall outlet.

■ Cabinet

If the cabinet becomes dirty, wipe it with a soft, dry cloth.

- If the cabinet is particularly dirty, soak the cloth in a weak mild liquid dish soap and then wring the cloth dry. Use this cloth to wipe the cabinet and then wipe it dry with a dry cloth.
- Do not allow any mild liquid dish soap to come into direct contact with the surface of the TV. If water droplets get inside the unit, operating problems may result.
- Avoid contact with volatile substances such as insect sprays, solvents, and thinner, otherwise, the quality of the cabinet surface may be adversely affected or the coating may peel off.
- Do not let articles made from rubber or PVC be in contact with the TV for long periods of time.

Pedestal / Power cord

First, unplug the Power cord plug from the wall outlet.

■ Pedestal

Cleaning

- Wipe the surfaces with a soft, dry cloth. If the unit is particularly dirty, clean it using a cloth soaked with water to which a small amount of mild liquid dish soap has been added and then wipe with a dry cloth. Do not use products such as solvents, thinner, or household wax for cleaning, as they can damage the surface coating. (If using a chemically-treated cloth, follow the instructions supplied with the cloth.)
- Do not attach sticky tape or labels, as they can make the surface of the pedestal dirty. Do not allow long-term contact with rubber, vinyl products, or the like. (Doing so will cause deterioration.)

■ Power cord

- Wipe the plug with a dry cloth at regular intervals. (Moisture and dust can lead to fire or electrical shock.)

