Panasonic

Model No.

eHELP

English

Read first

Before use

How to use
License
Note

Features

4K resolution
Home

Watching

Basic

Basic connection
Selecting channel
Information banner
Options menu
Closed Caption
Time Zone
Language

4K resolution

4K-compatible equipment
HDMI Auto Setting
Valid 4K format

External equipment

External connection
Watching external input
HDMI features
HDMI Settings
HDMI-CEC Device Control
Speaker Selection
Valid input signals

For best picture

Picture Mode

Aspect

Ambient Sensor

Brightness

Color

Clarity

Motion

Color Management Settings

Option Settings

Screen Settings

For best audio

Sound Mode

Each Sound Mode Advanced Settings

Balance

Auto Gain Control

Option Settings

Bluetooth Audio Delay

Audio Output

Sound Focus Setting

Tuning and editing channels

Setting menu

Network

Network connections

Internet connection

Note

Network settings

Network connection

Functions

Home

How to use

HDMI-CEC Device Control

HDMI connection

Preparations

Settings

Note

Parental Controls

Using Parental Controls

Power LED Indicator

Using Power LED Indicator

Reset to Factory Defaults

Reset to Factory Defaults

Bluetooth devices

Bluetooth Setup

Settings

Setting menu

How to use

Support

FAQs

Picture

Digital TV

Sound

HDMI

Network

Other
Detailed information

Maintenance

Care and Cleaning

Read first

Before use

How to use

■ Meaning of signs

[ ] :

Icons in brackets indicate remote control buttons.

Picture Mode :

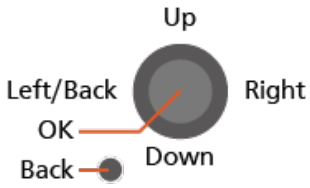
Letters in cyan indicate on-screen display items.

:

References in this eHELP

You can jump to the page by selecting the reference with the cursor.

■ Operation guide



= Note =

- The design and specifications are subject to change without notice.
- Some features of this unit may require a future version upgrade (software update). Be sure to follow the on-screen instructions and update the software via network.
- 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.
- Also refer to Help for the detailed instructions according to the following procedure.

  1) Display Home with [ ] and select .

  2) Select Help .

  3) Follow the on-screen instructions.

License

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

Wi-Fi ® is a registered trademark of Wi-Fi Alliance ®.

WPA3™, WPA2™, WPA™ are trademarks of Wi-Fi Alliance ®.

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

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

© 2022 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, FreeSync and combinations thereof are trademarks of Advanced Micro Devices, Inc.

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

Manufactured under license from Dolby Laboratories.

Confidential unpublished works.

Copyright © 1992–2022 Dolby Laboratories.

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 Entertainment & Communication Co., Ltd.,

(2) the software owned by third party and licensed to Panasonic Entertainment & Communication Co., Ltd.,

(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.

The detailed terms and conditions can be shown according to the following steps.

(1) Display Home with [ ] and select .

(2) Select Device & Software > Legal & Compliance > Legal Notices .

Note

- When using your own contents (music, video, picture, etc.) with this unit, pay attention not to harm the copyright, intellectual property, privacy, etc. of the subject. Pay attention to the privacy, image rights, etc. of display images, and use this unit at your own risk.
- Keep your personal information (password of broadband router, etc.) safe to prevent such information from being stolen by a third party while you input or display the information on the TV screen.

Features

4K resolution

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

Watching > 4K resolution > 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.

Functions > Home > How to use

Watching

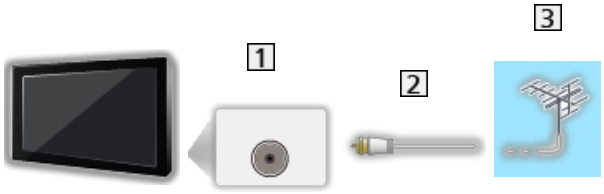
Basic

Basic connection

Please ensure that the unit is disconnected from the wall outlet before attaching or disconnecting any cables.

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

■ Antenna



1 Terrestrial / cable terminal

2 RF cable

3 Antenna

= Note =

- Keep the TV away from electronic equipment (video equipment, etc.) or equipment with an infrared sensor, otherwise distortion of image / sound may occur or operation of other equipment may be affected.
- Check the terminal type and cable plugs are correct for connection.

Selecting channel

1. Display Home with [ ] and select .
2. Select Cable/Antenna .
3. Select a channel.

■ To display the channel guide

1. Display the channel guide with [ ] .
2. Select a channel.

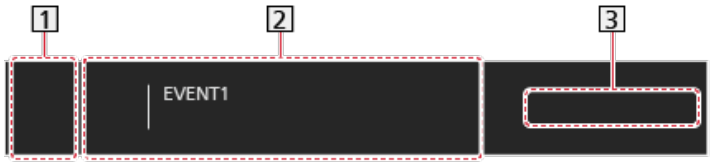
= Note =

- To pause and rewind the current program within the maximum recordable time, follow the on-screen instructions.

Information banner

The information banner appears when changing a channel.

(Example)



1 Icon of the broadcasting station (or the input source)

2 Broadcast station name, channel number, program name and the information as show below.

Bad signal :

Poor quality TV signal

CC :

Closed caption service available

Dolby Digital , Dolby Digital+ , DAC4 , HE-AAC :

Dolby Audio (Dolby Digital, Dolby Digital Plus, Dolby AC-4), Dolby Atmos or HE-AAC audio track

3 Information on the next program

- Press up / down to confirm another tuned channel.
- To display Dolby notification

1) Display Home with [ ] and select .

2) Select Display & Sounds > Picture Settings .

– Select the input mode.

3) Select Option Settings > Dolby Vision Notification .

4) Set the item.

Options menu

Confirm or change the current status.

1. Display the option menu with [ ] .
2. Follow the on-screen instructions.

Closed Caption

You can display / hide subtitles from Closed Caption in the menu.

1. Display Home with [ ] and select .
2. Select Accessibility > Closed Caption .
3. Follow the on-screen instructions.

Time Zone

Adjusts the time data.

1. Display Home with [ ] and select .
2. Select Preferences > Time Zone .
3. Follow the on-screen instructions.

Language

Changes language for on-screen displays.

1. Display Home with [ ] and select .
2. Select Preferences > Language .
3. Follow the on-screen instructions.

4K resolution

4K-compatible equipment

Some features are not available on all models.

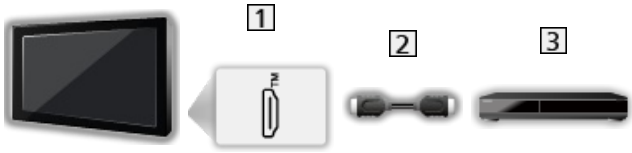
You can watch content in 4K format that has twice the horizontal and vertical resolution of the 1080p signal.

- For details of valid 4K format

  Watching > 4K resolution > Valid 4K format

- Connect the 4K-compatible equipment to HDMI terminal using a 4K-compatible cable and you can watch content in 4K format.

■ 4K-compatible equipment



1 HDMI terminal

2 HDMI cable

3 4K-compatible equipment

- Check the terminal type and cable plugs are correct for connection.
- Use a fully wired HDMI compliant cable.
- Use a high speed HDMI cable for high resolution images.
- Use a Premium High Speed HDMI cable for HDR images.
- Use a Ultra High Speed HDMI cable and connect to HDMI1 or HDMI2 for 4K high frame rate (120 Hz / 144 Hz) images.

HDMI Auto Setting

Some features are not available on all models.

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select HDMI Settings > HDMI Auto Setting .

4. Set the item.

HDMI Auto Setting

(Mode1 / Mode2 / Mode3)

Reproduces the image more precisely with the expanded color gamut and more smoothly with the high frame rate when connecting the 4K-compatible equipment. Mode2 is a mode that supports higher definition signals than Mode1 . Mode3 is a mode that supports higher frame rate signals than Mode2 . Set to Mode1 when the image or sound in HDMI input is not played properly.

Mode1 :

For high 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

Mode3 :

For the 4K 120 / 144 Hz-compatible equipment that has the function to output the high frame rate image (This mode is available for HDMI1 / HDMI2.)

- Not valid when NVIDIA Auto Game Mode is set to On and some of NVIDIA PC graphics cards supporting HDMI 2.1 VRR are detected (HDMI Auto Setting is fixed to Mode3 .)
- 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)
  - Mode3 : 4:4:4 / 4:2:2 (30p, 25p, 24p), 4:4:4 / 4:2:2 / 4:2:0 (144p, 120p, 100p, 60p, 50p)

Valid 4K format

Some features are not available on all models.

■ Valid 4K format (HDMI)

- 4K UHD

  3 840 × 2 160 (144p, 120p, 100p, 60p, 50p, 30p, 25p, 24p)

  – Aspect is fixed to 16:9 .

= Note =

- The above signals are reformatted for optimal viewing on your display.
- Use HDMI1 / HDMI2 for the following 4K format.
  – 4K UHD 50 Hz / 60 Hz 4:4:4 (10 bit / 12 bit)
  – 4K UHD 100 Hz / 120 Hz / 144 Hz
- For details of aspect

  Watching > For best picture > Aspect

External equipment

External connection

Some features are not available on all models.

These diagrams show our recommendations for connection of your TV to various pieces of equipment. For other connections, consult the instructions for each piece of equipment.

- For details of basic connection

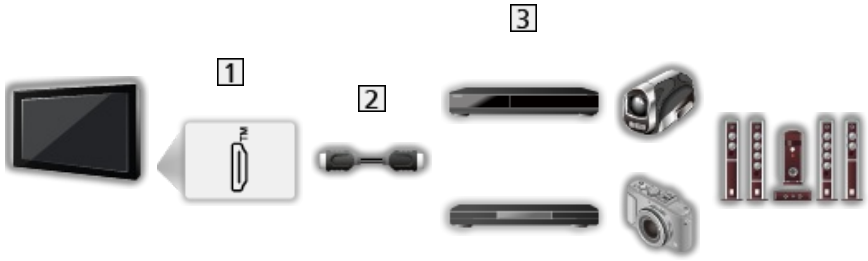
  Watching > Basic > Basic connection

- To use the specific devices supporting Bluetooth wireless technology

  Functions > Bluetooth devices

- Check the terminal type and cable plugs are correct for connection.
- External equipment and cables shown are not supplied with this TV.

■ HDMI equipment



1 HDMI terminal

2 HDMI cable

3 Recorder / Player / Satellite box / Camcorder / Amplifier with speaker system / Game

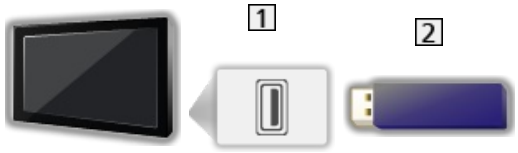
= Note =

- Use a fully wired HDMI compliant cable.
- Use a high speed HDMI cable for high resolution images.
- Use a Premium High Speed HDMI cable for HDR images.
- Use a Ultra High Speed HDMI cable and connect to HDMI1 or HDMI2 for 4K high frame rate (120 Hz / 144 Hz) images.
- For details of HDMI CEC connections

  Functions > HDMI-CEC Device Control > HDMI connection

- Use HDMI2 to connect the TV to an amplifier which has eARC (Enhanced Audio Return Channel) / ARC (Audio Return Channel) function.
- Use HDMI1 / HDMI2 to connect the device that supports 4K high frame rate (120 Hz / 144 Hz), VRR (Variable Refresh Rate), NVIDIA G-SYNC Compatible, AMD FreeSync Premium function.

■ USB devices



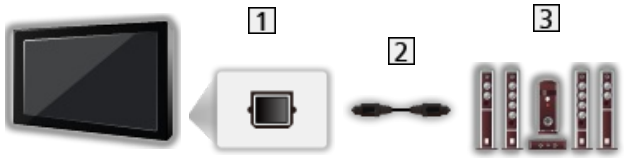
1 USB port

2 USB devices

= Note =

- It is recommended to connect the device to the TV's USB port directly.
- You cannot use two or more of the same kind of USB devices simultaneously except USB Flash Memory.
- Some USB devices or USB HUB may not be used with this TV.
- You cannot connect any devices by using USB card reader.

■ Listening with external speakers



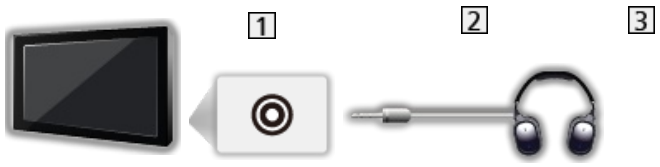
1 DIGITAL AUDIO

2 Optical digital audio cable

3 Amplifier with speaker system

- To enjoy multi-channel sound from external equipment (e.g. Dolby Audio (Dolby Digital) 5.1ch), connect the equipment to the amplifier. For information about the connections, read the manuals of the equipment and amplifier.

■ Headphones



1 Headphone / Subwoofer jack

2 3.5 mm stereo mini plug

3 Headphones

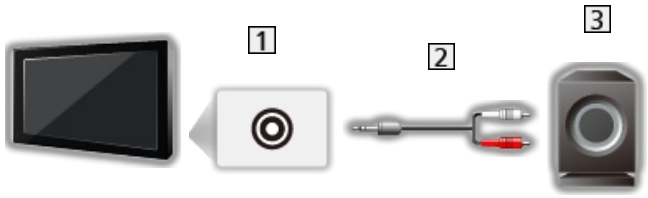
- Set Headphone Jack to Connect to enable the audio output from the headphone terminal.

  Watching > For best audio > Audio Output

- To adjust the volume, set Headphone Volume .

  Watching > For best audio > Audio Output

■ Sub woofer



1 Headphone / Subwoofer jack

2 Audio cable (3.5 mm stereo mini plug - audio pin plug)

3 Sub woofer

- To adjust the volume, set Sub Woofer Adjustment .

  Watching > For best audio > Audio Output

- The volume of the sub woofer can be also controlled when adjusting the volume of this unit with this TV’s remote control.
- If the sub woofer unit has volume control, check the level as well.

Watching external input

Connect the external equipment to allow you to watch the external input.

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select the input mode connected to the equipment. (The selected mode is displayed on the bottom right of the screen.)

= Note =

- If the external equipment has an aspect adjustment function, set it to 16:9 .
- For details, read the manual of the equipment or ask your local dealer.

HDMI features

Some features are not available on all models.

HDMI (high-definition multimedia interface) is the world's first complete digital consumer AV interface complying with a non-compression standard.

HDMI allows you to enjoy high-definition digital images and high-quality sound by connecting the TV to external equipment.

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

Watching > External equipment > External connection

* : The HDMI logo is displayed on HDMI-compliant equipment.

Applicable HDMI features

- Input audio signal:

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

- Input video signal:

  Matches the output setting of the digital equipment.

  Watching > External equipment > Valid input signals

- HDMI CEC function

  Functions > HDMI-CEC Device Control > HDMI connection

- Content Type
- Deep Color
- eARC (Enhanced Audio Return Channel) / ARC (Audio Return Channel)
  - eARC (Enhanced Audio Return Channel) / ARC (Audio Return Channel) are functions to send digital sound signals via an HDMI cable.
  - For HDMI2
- 4K

  Watching > 4K resolution > Valid 4K format

- VRR (Variable Refresh Rate) / NVIDIA G-SYNC Compatible / AMD FreeSync Premium
  - VRR (Variable Refresh Rate) / NVIDIA G-SYNC Compatible / AMD FreeSync Premium provides smoother gaming experience with low latency and without image stuttering or tearing.
  - For HDMI1 / 2

DVI connection

If the external equipment has only a DVI output, connect to the HDMI terminal via a DVI to HDMI adaptor cable.

- Enquire HDMI adaptor cable at your local digital equipment retailer shop.

= Note =

- If the connected equipment has an aspect adjustment function, set the aspect ratio to “16:9”.
- These HDMI connectors are “type A”.
- These HDMI connectors are compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection.
- This TV incorporates HDMI ™ technology.

HDMI Settings

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select HDMI Settings .

4. Set the item.

Input Lag

(Auto / Fast / Normal)

Provides suitable images for fast response signals when playing games.

- Not valid in the following conditions:
  - TV mode
  - Pure Direct is set to On .
  - Picture Mode is set to Game / True Game / Dolby Vision Game . (Input Lag is fixed to Fast .)
  - VRR input signal (Input Lag is fixed to Fast .)
  - 120 Hz video signal from 120 Hz-compatible equipment (Input Lag is fixed to Fast .)

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 in the following conditions:
  - HDMI Auto Setting is set to Mode1 .
  - NVIDIA Auto Game Mode is set to On and some of NVIDIA PC graphics cards supporting HDMI 2.1 VRR are detected. (ALLM is fixed to On .)

NVIDIA Auto Game Mode

(On / Off)

Set to On to enable NVIDIA HDMI 2.1 gaming function.

- For HDMI1 / 2

VRR

(On / Off)

Provides smoother gaming experience with low latency and without image stuttering or tearing. Set to On to enable VRR (Variable Refresh Rate) / NVIDIA G-SYNC Compatible / AMD FreeSync Premium function when the equipment supporting VRR / NVIDIA G-SYNC Compatible / AMD FreeSync Premium function is connected to this TV.

- For HDMI1 / 2
- Not valid in the following conditions:
  - HDMI Auto Setting is set to Mode1 or Mode2 .
  - NVIDIA Auto Game Mode is set to On and some of NVIDIA PC graphics cards supporting HDMI 2.1 VRR are detected. (ALLM is fixed to On .)

60Hz Refresh Mode

(On / Off)

Reduces the input lag when connecting 60Hz output game equipment.

- For HDMI
- This function is available when Input Lag is set to Fast .
- Not valid for VRR input signal

Pure Direct

(On / Off)

Reproduces the original image quality in detail for an input signal.

- Not valid in the following conditions:
  - Picture Mode is set to the mode of Dolby Vision.

HDMI Content Type

(Graphics / Photos / Auto / Off)

Adjusts the picture settings of each HDMI input according to the selected content type.

Auto :

Automatically adjusts the picture settings according to the received HDMI content if the connected equipment supports HDMI Content Type.

- For HDMI
- Not valid when Picture Mode is set to the mode of Dolby Vision

---

HDMI Colorimetry Type

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

Selects the colorimetry type for each HDMI input.

- For HDMI
- Not valid when Picture Mode is set to the mode of Dolby Vision

---

HDMI/DVI RGB range

(Auto / Full / Normal)

Adjusts the black level of the image for each HDMI input.

- When the black level is not suitable, select Full .
- For HDMI
- Not valid when Picture Mode is set to the mode of Dolby Vision

---

HDMI YCbCr Range

(Auto / Full / Normal)

Adjusts the black level of the image in the YCbCr signal for each HDMI input.

- For HDMI
- Not valid when Picture Mode is set to the mode of Dolby Vision

---

HDR Setting

(Dynamic / Static / Off)

Set to Dynamic or Static when the HDR device is connected to the TV.

- 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 Dolby Vision functionality for the HDMI input signal.

= Note =

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

HDMI-CEC Device Control

Enables the HDMI CEC (Consumer Electronics Control) function.

1. Display Home with [ ] and select .
2. Select Display & Sounds > HDMI-CEC Device Control .
3. Follow the on-screen instructions.

Speaker Selection

1. Display Home with [ ] and select .
2. Select Display & Sounds > Speaker Selection .
3. Set the item.

Speaker Selection

(TV Speaker / External Speaker)

Enables controlling the theater speaker with this TV's remote control by pointing at the TV's signal receiver.

TV Speaker :

TV speakers are active.

External Speaker :

The sound is delivered from theater speakers. Player theater, Blu-ray Disc theater or Amplifier will be automatically turned on 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 adjust or mute the volume with the remote control.

Valid input signals

Some features are not available on all models.

■ HDMI

Signal name
525 (480) / 60i, 60p
625 (576) / 50p
750 (720) / 60p, 50p
1 125 (1 080) / 60i, 50i
1 125 (1 080) / 144p, 120p, 100p, 60p, 50p, 24p
2 560 × 1 440 / 144p, 120p
3 840 × 2 160 / 144p, 120p, 100p, 60p, 50p, 30p, 25p, 24p

= Note =

- Signals other than those above may not be displayed properly.
- The above signals are reformatted for optimal viewing on your display.
- For details of valid 4K format

Watching > 4K resolution > Valid 4K format

For best picture

Picture Mode

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Picture Mode .

4. Select the mode.

Picture Mode

(Dynamic / Auto AI / Normal / Sport / Cinema / FILMMAKER MODE / True Cinema / Professional1 / Professional2 / Game / True Game / Dolby Vision Vivid / Dolby Vision IQ / Dolby Vision Dark / Dolby Vision Game)

Selects your favorite picture mode for each input.

Dynamic :

Improves contrast and sharpness for viewing in a bright room.

Auto AI :

Adjusts the luminance, color temperature, shades of black, etc. to suit your watching environment.

- To adjust the effect level, set Auto AI – Picture Effect Level .

Normal :

Normal use for viewing in a normal lighting condition.

Sport :

Improves picture quality for watching sports, etc.

- The sound mode is automatically set to Stadium when Picture Mode is set to Sport . To cancel the linkage of the sound and viewing mode, set Sport Link to Off .

Watching > For best audio > Option Settings

Cinema :

Improves the performance of contrast, black and color reproduction for watching a film in a darkened room.

FILMMAKER MODE :

Reproduces the original image quality precisely. Reacts to room brightness.

True Cinema :

Reproduces the original image quality precisely without any revision.

Professional1 / 2 :

Allows you to set and lock the professional picture settings.

Watching > For best picture > Option Settings

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

Game :

Improves picture quality for playing games, etc.

- For HDMI
- Input Lag is automatically set to Fast when Picture Mode is set to Game .

Watching > External equipment > HDMI Settings

True Game :

Improves picture quality for playing games with the suitable calibration.

- For HDMI
- Input Lag is automatically set to Fast when Picture Mode is set to True Game .

Watching > External equipment > HDMI Settings

Dolby Vision Vivid :

Reproduces Dolby Vision content precisely in a bright room.

Dolby Vision IQ :

Automatically adjusts to reproduce Dolby Vision content according to the content, lighting condition, etc.

Dolby Vision Dark :

Reproduces Dolby Vision content precisely in a darkened room.

Dolby Vision Game :

Reproduces Dolby Vision content precisely for playing games.

- For HDMI
- Input Lag is automatically set to Fast when Picture Mode is set to Dolby Vision Game .

Watching > External equipment > HDMI Settings

- This function can be stored respectively for input or TV mode.

■ Netflix Adaptive Calibrated Mode

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

1. Press and hold [ ] .
2. Select Picture .
3. Select Netflix Adaptive Calibrated Mode .
4. Select On / Off .

- Picture Mode is fixed to Netflix when Netflix Adaptive Calibrated Mode is set to On .
- For Netflix content

■ Auto AI – Picture Effect Level

Adjusts the effect level when Picture Mode is set to Auto AI . The effect level is automatically higher when setting high.

- This function is available when Picture Mode is set to Auto AI .

1. Display Home with [ ] and select .
   - You can also access by pressing and holding [ ] .
2. Select Display & Sounds > Picture Settings .
   - Select the input mode.
3. Select Auto AI – Picture Effect Level .
4. Set the item.

■ SDR/HDR Picture Mode Sync

Selects whether to switch the mode for SDR/HDR input signal simultaneously or switch the mode individually for each when changing the viewing mode.

1. Display Home with [ ] and select .
   - You can also access by pressing and holding [ ] .
2. Select Display & Sounds > Picture Settings .
   - Select the input mode.
3. Select Option Settings > SDR/HDR Picture Mode Sync .
4. Select On / Off .

- Not valid for Dolby Vision content

Aspect

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

Changes the aspect ratio (image size).

■ To change the aspect ratio manually

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Screen Settings .

- Select the input mode.

3. Select Aspect .

4. Set the item.

Auto :

The best ratio is selected automatically (if available).

16:9 :

Directly displays the image at 16:9 without distortion (anamorphic).

4:3 :

Displays the image at the standard 4:3 without distortion.

Zoom :

Displays a 16:9 letterbox or 4:3 image without distortion.

4:3 Full :

Displays a 4:3 image enlarged horizontally to fit the screen.

= Note =

- Display the image full-screen to use this function completely.
- Aspect mode can be stored separately for SD (Standard definition) and HD (High definition) signals.
- Aspect cannot be set when Picture Mode is set to FILMMAKER MODE .
- Aspect is fixed to 16:9 in the following conditions:
  - Input Lag is set to Fast .
  - 4K content
  - Pure Direct is set to On .

Ambient Sensor

Automatic Brightness Control function

Adjusts picture settings automatically depending on ambient lighting condition.

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Ambient Sensor .

4. Set the item.

Auto Brightness

(On / Off)

Adjusts brightness automatically depending on ambient lighting conditions.

- This function may not be available when Picture Mode is set to Dolby Vision Dark .

Auto White Balance

(On / Off)

Adjusts the white balance depending on ambient lighting conditions.

- This function may not be available when Picture Mode is set to Dolby Vision Dark .

Brightness

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Brightness .

4. Set the item.

Luminance Level , Contrast

Adjusts the levels of these options according to your personal preference.

Adaptive Backlight Control

Automatically controls the level of backlight according to the images.

- Not valid for VRR input signal

Advanced Settings

You can adjust and set up the detailed picture settings.

Peak Luminance

Adjusts the maximum luminance level.

Gamma

Switches the gamma curve.

- Please note the numerical values are reference for the adjustment.

Adaptive Gamma Control

Adjusts the gamma curve to make the image brighter.

Black Level

Changes the black level of the image to the suitable level.

Black Expander

Gradually adjusts the shades of black.

Dark Visibility

Adjusts the black level or middle luminance level.

HDR Settings

EOTF Type

(Auto / Traditional Gamma / HLG / PQ)

Selects the EOTF type of broadcast or video content.

It works correctly only when the signal corresponds to each EOTF type. Set to Auto for general use.

- Automatically switches to Auto for broadcast each time another input / channel is selected.
- HDR10+ function is available when EOTF Type is set to Auto .
- Not valid when Picture Mode is set to the mode of Dolby Vision

HDR Tonemap

(Dynamic / Normal / Clipping)

Dynamic :

Controls the HDR tonemap according to the image luminance.

Normal :

Automatically controls the clipping brightness of the HDR tonemap using the metadata of the input signal.

Clipping :

Clips the HDR tonemap at Clipping Threshold .

- Not valid when Picture Mode is set to the mode of Dolby Vision

Clipping Threshold

Adjust clipping luminance (nit) of tonemap.

Color

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Color .

4. Set the item.

Color , Tint

Adjusts the levels of these options according to your personal preference.

Color Temperature

Sets the overall color tone of the picture (bluer - redder).

Color Remaster

(Max / Min / Off)

Displays the vivid images with the expanded color gamut.

Clarity

1. Display Home with [ ] and select .
- You can also access by pressing and holding [ ] .
2. Select Display & Sounds > Picture Settings .
- Select the input mode.
3. Select Clarity .
4. Set the item.

Sharpness

Adjusts the levels of the option according to your personal preference.

- Not valid in the following conditions:
  - Pure Direct is set to On .
  - 120 Hz video signal from 120 Hz-compatible equipment

Random Noise Reduction

(Auto / Max / Mid / Min / Off)

Reduces unwanted picture noise.

- Not valid in the following conditions:
  - Input Lag is set to Fast .
  - Pure Direct is set to On .
  - 120 Hz video signal from 120 Hz-compatible equipment
  - VRR input signal

Block Noise Reduction

(Auto / Max / Mid / Min / Off)

Reduces flicker noise in contoured parts of a picture and block noise.

- Not valid in the following conditions:
  - Pure Direct is set to On .
  - 120 Hz video signal from 120 Hz-compatible equipment
  - VRR input signal

Gradation Smoothing

(Auto / Max / Mid / Min / Off)

Reduces banding noise in the image to make the image smoother.

- Not valid in the following conditions:
  - Pure Direct is set to On .
  - 120 Hz video signal from 120 Hz-compatible equipment
  - VRR input signal

Resolution Remaster

(Auto / Max / Mid / Min / Off)

Enhances picture resolution to make the image sharper.

- Not valid in the following conditions:
  - Pure Direct is set to On .
  - 120 Hz video signal from 120 Hz-compatible equipment

Film Cadence Mode

(On / Off)

Improves vertical resolution for movie images.

Dolby Vision Precision Detail

(On / Off)

Enables the details of precision for Dolby Vision content.

- Not valid in the following conditions:
  - Picture Mode is set to Dolby Vision Dark .
  - Input Lag is set to Fast .
  - 120 Hz video signal from 120 Hz-compatible equipment
  - VRR input signal

Motion

Some features are not available on all models.

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Motion .

4. Set the item.

Intelligent Frame Creation

(Custom / Max / Mid / Min / Off)

Automatically compensates the picture frame rate and removes juddering movements to make the images smooth.

- Depending on the content, images may be noisy. To prevent the noise, change the setting.
- Select Custom to set Intelligent Frame Creation manually.

  Blur Reduction :

  Adjusts the smoothness of camera content to minimize blur.

  Film Smooth :

  Adjusts the smoothness of film content.

  Reset to Defaults :

  Resets items for Intelligent Frame Creation .

- Not valid in the following conditions:
  - Input Lag is set to Fast .
  - Pure Direct is set to On .
  - 60Hz Refresh Mode is set to On .
  - 120 / 144 Hz video signal from 120 / 144 Hz-compatible equipment
  - VRR input signal

  Auto AI – Film Interlock :

  Reproduces image more precisely for the film content. Set to Off when the image looks unnatural.

  - Set Picture Mode to Auto AI to use this function.
  - Not valid in the following conditions:
    - Input Lag is set to Fast .
    - Pure Direct is set to On .
    - 60Hz Refresh Mode is set to On .
    - 120 / 144 Hz video signal from 120 / 144 Hz-compatible equipment

– VRR input signal

Accurate IFC :

Reproduces image like the original filming image for the film content. Set to Off when the image looks unnatural.

- Set Intelligent Frame Creation to Off to use this function.
- Not valid in the following conditions:
  – Input Lag is set to Fast .
  – Pure Direct is set to On .
  – 60Hz Refresh Mode is set to On .
  – 120 / 144 Hz video signal from 120 / 144 Hz-compatible equipment
  – VRR input signal

Clear Motion :

Makes the moving pictures clearer.

- Not valid in the following conditions:
  – Input Lag is set to Fast .
  – Pure Direct is set to On .
  – 120 / 144 Hz video signal from 120 / 144 Hz-compatible equipment
  – VRR input signal

Color Management Settings

1. Display Home with [ ] and select .
- You can also access by pressing and holding [ ] .
2. Select Display & Sounds > Picture Settings .
- Select the input mode.
3. Select Color Management Settings .
4. Set the item.

■ Color Gamut

Color Gamut

(Auto / Native / Rec. 709 / sRGB / Adobe / Rec. 2020 / DCI-P3)

Reproduces image color precisely according to the color gamut standards.

Auto :

Automatically adjusts the color gamut according to the input signal.

Native :

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

Rec. 709 / sRGB :

Standard for HD (High definition) / sRGB

Adobe :

Standard for AdobeRGB

Rec. 2020 :

Provides the suitable color gamut for Rec. 2020 .

DCI-P3 :

Provides the suitable color gamut for DCI.

- Not valid when Picture Mode is set to the mode of Dolby Vision

■ White Balance Adjustment

R-Gain / G-Gain / B-Gain

Adjusts the white balance of bright red / green / blue components.

R-Cutoff / G-Cutoff / B-Cutoff

Adjusts the white balance of dark red / green / blue components.

More Detailed Adjustment

Adjusts more detailed items for White Balance Adjustment .

Input Signal Level :

Adjusts the input signal level.

Gamma :

Switches the gamma curve.

R-Gain / G-Gain / B-Gain :

Adjusts the detailed white balance of bright red / green / blue components.

■ Color Gamut Adjustment

R-Hue / R-Saturation / R-Luminance

Adjusts the picture hue / saturation / luminance of red areas.

G-Hue / G-Saturation / G-Luminance

Adjusts the picture hue / saturation / luminance of green areas.

B-Hue / B-Saturation / B-Luminance

Adjusts the picture hue / saturation / luminance of blue areas.

More Detailed Adjustment

Adjusts more detailed items for Color Gamut Adjustment .

C-Hue / M-Hue / Y-Hue :

Adjusts the picture hue of cyan / magenta / yellow areas.

C-Saturation / M-Saturation / Y-Saturation :

Adjusts the saturation of cyan / magenta / yellow areas.

C-Luminance / M-Luminance / Y-Luminance :

Adjusts the luminance of cyan / magenta / yellow areas.

Option Settings

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Picture Settings .

- Select the input mode.

3. Select Option Settings .

4. Set the item.

Dolby Vision Notification

Enables a notification to change the picture mode for Dolby Vision content.

FILMMAKER MODE Notification

Displays the notification to enable FILMMAKER MODE for an input signal.

FILMMAKER MODE Detection

Enables the detection of the FILMMAKER MODE signal.

SDR/HDR Picture Mode Sync

Selects whether to switch the mode for SDR/HDR input signal simultaneously or switch the mode individually for each when changing the viewing mode.

All Inputs Picture Settings Sync

Selects whether to switch the picture settings for all input sources simultaneously or switch settings individually for each broadcast and input source.

Calman Ready Connect

This is a professional-grade colour calibration feature. To utilise this feature, you will need to purchase separate software, “Calman”, from Portrait Displays. For more information on Calman, please visit portrait.com.

Copy Adjustment

Copies the picture settings of the current picture mode to those of another input mode or picture mode.

- Option Settings and HDMI Settings are not copied.
- You cannot copy to the locked mode.

Lock Settings

Locks the settings of FILMMAKER MODE / True Cinema / Professional1 / Professional2 / True Game / Dolby Vision IQ / Dolby Vision Dark / Dolby Vision Game for each input.

- Select FILMMAKER MODE / True Cinema / Professional1 / Professional2 / True Game / Dolby Vision IQ / Dolby Vision Dark / Dolby Vision Game in picture mode in advance.

  Watching > For best picture > Picture Mode

  - Option Settings and HDMI Settings are not locked.
  - Make a note of the password in case you forget it.
  - To change the password, select Change Password and follow the onscreen instructions.

Screen Settings

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Screen Settings .

- Select the input mode.

3. Set the item.

Aspect

Changes the aspect ratio (image size).

Watching > For best picture > Aspect

16:9 Overscan

(On / Off)

Selects the screen area displaying the image for 16:9 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 occurs on the edge of the screen.
- This function can be stored for SD (Standard definition) and HD (High definition) signals respectively.
- Not valid in the following conditions:
  - Input Lag is set to Fast .
  - 4K content
  - Pure Direct is set to On .
  - 60Hz Refresh Mode is set to On .
  - 120 / 144 Hz video signal from 120 / 144 Hz-compatible equipment
  - VRR input signal
  - Dolby Vision content

Pixel Orbiter

(On / Off)

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

Logo Luminance Control

(Max / Mid / Min)

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

Panel Maintenance

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

- It takes approx. 10 minutes to finish the maintenance.
- LED lights orange during adjustment of the panel.
- To cancel the maintenance, turn the TV on while the maintenance is in progress.
- Completion message will be displayed when turning the TV on after panel maintenance.

For best audio

Sound Mode

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Sound Settings .

- Select the input mode.

3. Select Sound Mode .

4. Select the mode.

Sound Mode

(Auto AI / Standard / Music / Speech / Stadium / Game(RPG) / Game(FPS) / User)

Selects your favorite sound mode for each input.

Auto AI :

Adjusts the sound quality to suit your watching environment.

- To adjust the effect level, set Auto AI – Sound Effect Level .

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.

- The sound mode is automatically set to Stadium when Picture Mode is set to Sport . To cancel the linkage of the sound and viewing mode, set Sport Link to Off .

Watching > For best audio > Option Settings

Game(RPG) :

Provides the suitable sound quality for playing RPG games.

- Set Input Lag to Fast for low latency of video and audio signals.
- For HDMI

Game(FPS) :

Provides the suitable sound quality for playing FPS games.

- Set Input Lag to Fast for low latency of video and audio signals.
- For HDMI

User :

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

- Each Sound Mode Advanced Settings can be adjusted and stored for each mode.
- For the User mode, Equalizer is available in the Sound Menu instead of Bass and Treble . Select Equalizer and adjust the frequency.

Watching > For best audio > Each Sound Mode Advanced Settings

- This function is effective only for the sound from TV speakers.

■ Auto AI – Sound Effect Level

Adjusts the effect level when Sound Mode is set to Auto AI . Setting low is close to the standard sound and high can provide a dynamic sound effect.

- This function is available when Sound Mode is set to Auto AI .

1. Display Home with [ ] and select .
   - You can also access by pressing and holding [ ] .
2. Select Display & Sounds > Sound Settings .
   - Select the input mode.
3. Select Auto AI – Sound Effect Level .
4. Set the item.

Each Sound Mode Advanced Settings

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Sound Settings .

- Select the input mode.

3. Select Each Sound Mode Advanced Settings .

4. Set the item.

Bass

Adjusts level to enhance or minimize lower, deeper sound output.

- Not valid when Sound Mode is set to Auto AI or User

Treble

Adjusts level to enhance or minimize sharper, higher sound output.

- Not valid when Sound Mode is set to Auto AI or User

Equalizer

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 adjust the frequency level.
- 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 .
- This function is effective only for the sound from TV speakers.

Sound Field Creation

(Talk / Standard / Theater / Theater Pro / Live / Sport / Direct Through)

Selects your favorite sound field setting.

Talk :

Provides the suitable sound field for talk scenes and makes it easier to hear voice.

Standard :

Provides the suitable sound field for all types of scenes.

Theater / Theater Pro :

Provides the suitable sound field for cinema like an immersive cinema sound field.

Live :

Provides the suitable sound field for music live and makes powerful music live sound field.

Sport :

Provides the suitable sound field for sport and makes spacious stadium sound field.

Direct Through :

Provides the sound according to the content with the supported speakers.

- Not valid in the following conditions:
  - Dolby Atmos content
  - Sound Mode is set to Auto AI , Music , Game(RPG) or Game(FPS) .
  - Sound Focus Mode is set to Pinpoint , Area or Ambient .

Bass Boost

(On / Off)

Enhances the effect of bass sounds.

- This function is effective only for the sound from TV speakers.
- Not valid when Sound Mode is set to Auto AI or Music

Balance

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

Adjusts the volume level of right and left speakers.

- Not valid when Sound Mode is set to Auto AI

Auto Gain Control

Automatically regulates large sound level differences between channels and inputs.

Option Settings

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

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Sound Settings .

- Select the input mode.

3. Select Option Settings .

4. Set the item.

Dolby Atmos

(On / Off)

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

- Not valid in the following conditions:
  - Sound Mode is set to Auto AI .
  - Sound Focus Mode is set to Pinpoint , Spot , Area or Ambient .

Sport Link

(On / Off)

Automatically sets the sound mode to Stadium when Picture Mode is set to Sport .

Space Tune Setting

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

- This function is effective only for the sound from TV speakers.

Enable 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.

Clear Sound Adjustment

(On / Off)

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

- This function is effective only for the sound from TV speakers.

Dialogue enhancement

(On / Off)

Enhances the intelligibility of dialog and commentary.

- Not valid when Sound Mode is set to Auto AI

Bluetooth Audio Delay

Adjusts the audio delay for the Bluetooth audio device.

Audio Output

1. Display Home with [ ] and select .
2. Select Display & Sounds > Audio Output .
3. Set the item.

Headphone Jack

Set to Connect to enable the audio output from the headphone terminal.

- When Headphone Jack is set to Connect , the audio is not output to AV receiver which is connected to this TV using HDMI cable.

Audio Output Mode

(Headphone / TV Speaker and Headphone / TV Speaker and Sub Woofer / Bluetooth / TV Speaker and Bluetooth / TV Speaker, Headphone and Bluetooth / TV Speaker, Sub Woofer and Bluetooth)

When headphones, earphones, or Bluetooth devices are connected, or when both are connected, you can set the audio output to also come from the speakers and subwoofer of this device.

- This function is available when Headphone Jack is set to Connect , when a Bluetooth device is connected, or when both are connected.

Headphone Volume

Adjusts the volume of headphones.

- You can set this when both the speakers and headphones of this device are outputting sound simultaneously.

Sub Woofer Adjustment

Adjusts the sound output of sub woofer.

- You can set this when both the speakers and the subwoofer of this device are outputting sound simultaneously.

  Sub Woofer Volume :

  Adjusts the volume of sub woofer.

  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.

  Reset to defaults :

  Resets Sub Woofer Adjustment to the default settings.

Bluetooth Volume

Adjust the volume of the Bluetooth device.

- This can be set when both the speaker and the Bluetooth device are outputting sound simultaneously.

Digital Audio Format

(Auto / PCM / Passthrough / Dolby Audio)

Selects the digital audio format.

Auto :

Dolby Audio is output as Dolby Audio Bitstream. AAC on the digital broadcasting are output as Dolby Audio Bitstream with the transcoding method. Other digital audio output signals are output as PCM.

PCM :

For the audio device not supporting AAC or Dolby Audio, the digital audio signal is output as PCM.

Passthrough :

Dolby Audio is output as Dolby Audio Bitstream. Other digital audio output signals are output as PCM.

Dolby Audio :

Digital audio signal is output as Dolby Audio with the transcoding method.

---

eARC

(On / Off)

Set to On to enable the eARC (Enhanced Audio Return Channel) function when the equipment supporting eARC function is connected to this TV.

- The ARC (Audio Return Channel) function is enabled only when the connected equipment supports the ARC function.
- Use HDMI2 to connect the TV to an amplifier which has eARC / ARC function.
- Use an HDMI cable supporting eARC function or HEC (HDMI Ethernet Channel) function.

Sound Focus Setting

1. Display Home with [ ] and select .

- You can also access by pressing and holding [ ] .

2. Select Display & Sounds > Sound Focus Setting .

- Select the input mode.

3. Follow the on-screen instructions.

Sound Focus Mode

(Off / Pinpoint / Spot / Area / Ambient)

Selects your favorite Sound Focus mode.

Off :

Provides the suitable sound quality for general use (standard sound).

Pinpoint :

Provides the voice sound to the specific direction with beamforming. It is suitable to hear the sound alone.

Spot :

Provides the both standard sound and Pinpoint. It is suitable to turn the personal volume up in a group.

Area :

Provides the listening area in your environment. It is suitable to output the sound to one of the connecting rooms.

Ambient :

Standardizes the sound output of your room and provides the relaxing sound like a coffee shop's BGM.

- The sound position can be adjusted in Sound Focus Positioning .
- This function is effective only for the sound from TV speakers.
- When Sound Focus Mode is set to an item other than Off , Space Tune function may weaken.
- Sound Field Creation is not available when Sound Focus Mode is set to Pinpoint , Area or Ambient .
- Dolby Atmos is not available when Sound Focus Mode is set to Pinpoint , Spot , Area or Ambient .

Sound Focus Positioning

(Pinpoint Positioning / Spot Positioning / Area Positioning)

Adjusts the sound focusing position and balance for line array speakers.

Pinpoint Positioning :

Adjusts the position of Pinpoint .

Spot Positioning :

Adjusts the position of Spot .

Area Positioning :

Adjusts the position for Area .

- The setting of adjusting position is stored. Select Reset to defaults to reset to the default position.
- This function is available when Sound Focus Mode is set to Pinpoint , Spot or Area .

Startup Mode Setting

(Always Off / Keep Last Mode)

You can choose whether to keep the sound focus mode settings when turning the TV on the next time.

Always Off :

The sound focus mode is set to Off each time the TV is turned on. The settings of Sound Focus Positioning are not reset.

Keep Last Mode :

The sound focus mode remains as previously set when the TV is turned on.

Tuning and editing channels

Setting menu

You can retune channels, edit channel lists, create your favorite channel lists, etc.

1. Display Home with [ ] and select .
2. Select Live TV > Channel Scan .
3. Set the item.

- Select Favorite Channels / Manage Channels to edit the channels.

= Note =

- If no channels are found when the scan ends, 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 HDMI for best HD pictures. In such case, channel scanning is not needed.

Network

Network connections

Internet connection

A broadband network environment is required to use internet services.

- If you do not have any broadband network services, please consult your retailer for assistance.

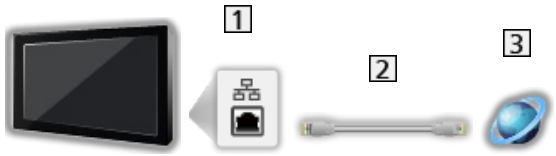
■ Wireless connection

1 Built-in wireless LAN (Rear of the TV)

2 Access point

3 Internet environment

■ Wired connection



1 ETHERNET terminal

2 LAN cable (Shielded)

- Use Shielded Twist Pair (STP) LAN cable.

3 Internet environment

Note

- For secure connection, it is recommended to use a device supporting WPA2 / WPA3 as wireless LAN type. The encryption type depends on the connected device.
- Ensure to use a LAN straight cable.
- Set up and connect equipment required for the network environment. You cannot make such settings on this TV. Read the manual of the equipment.
- If your modem has no broadband router functions, use a broadband router.
- If your modem has broadband router functions but there are no vacant ports, use a hub.
- Ensure that the broadband routers and hubs are compatible with 10BASE-T / 100BASE-TX.
- If you use the equipment compatible only with 100BASE-TX, category 5 or later LAN cables are required.
- Contact your Internet Service Provider (ISP) or telecommunications company for further assistance regarding the network equipment.
- Confirm the terms and conditions of the contracts with your Internet Service Provider (ISP) or telecommunications company. Depending on the contracts, additional fees may be charged or multiple connections to the internet may be impossible.
- Depending on the network condition, the content may not be played back properly.
- In case the password of the registered device or user is known by a third party, there is a risk of unauthorized entries. Keep your password safe. Panasonic will make no warranty for the unauthorized entries.
- To prevent a risk of interception, unauthorized entries and hacking, set up the proper security settings (encryption setting).

Network settings

Network connection

Ensure the connections are completed before starting network setup.

Network > Network connections

1. Display Home with [ ] and select .
2. Select Network .
3. Follow the on-screen instructions.

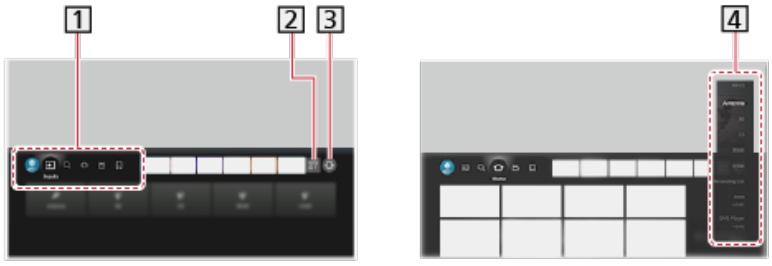
Functions

Home

How to use

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

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



1 Profile / Inputs / Find / Home / Live / My Stuff

2 Applications

3 Setting menu

Settings > Setting menu > How to use

4 Input mode selection screen

Watching > External equipment > Watching external input

■ Game Control Board

You can set up the picture settings, etc. for playing games in HDMI input or check the setting status.

1. Press and hold [ ] .
2. Select Display Features > Game Control Board .
3. Follow the on-screen instructions.

- The setting items depend on the input signal or connected device.

= Note =

- A broadband network environment is required to use internet services.

Network > Network connections

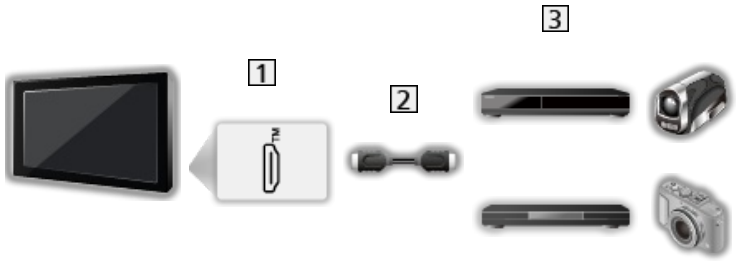
HDMI-CEC Device Control

HDMI connection

■ HDMI connection

- Use a fully wired HDMI compliant cable.
- Connect the equipment to the TV's HDMI terminal via an HDMI cable.

  About HDMI cable for connecting Panasonic HD Video Camera or LUMIX Camera, read the manual of the equipment.



1 HDMI terminal

2 HDMI cable

3 Equipment with HDMI CEC function (DVD Recorder / DVD Player / Blu-ray Disc Player / HD Video Camera / LUMIX Camera)

■ Available features (HDMI connection)

DVD Recorder / DVD Player / Blu-ray Disc Player

- Easy playback
- Power on Link
- Power off Link

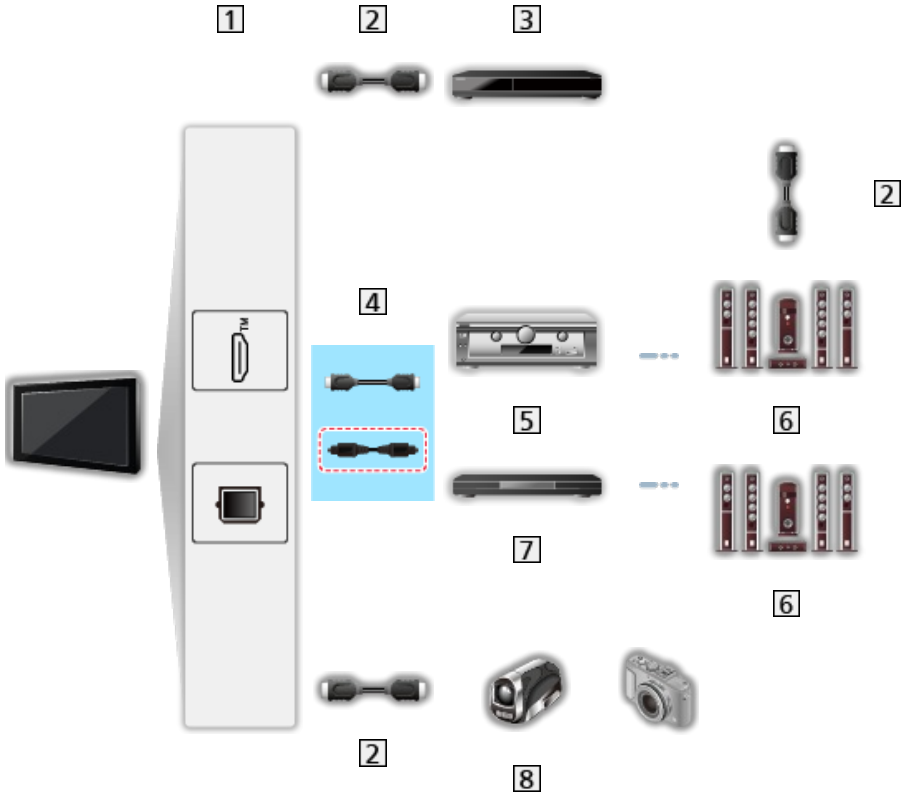
HD Video Camera / LUMIX Camera

- Easy playback
- Power on Link
- Power off Link

■ HDMI and Audio out connections

- Use a fully wired HDMI compliant cable.

- Connect the equipment to the TV's HDMI terminal via an HDMI cable.
- Use the optical digital audio cable for audio output from the TV.



1 HDMI terminal / DIGITAL AUDIO

2 HDMI cable

3 DVD Recorder

4 HDMI cable (Optical digital audio cable *)

5 Amplifier

6 Speaker system

7 Player theater / Blu-ray Disc theater

8 HD Video Camera / LUMIX Camera

* : If the connected equipment has "HDAVI Control 5" function, you do not have to use this audio cable (Optical digital audio cable). In this case, connect the equipment to the TV's HDMI2 terminal via an HDMI cable.

■ Available features (HDMI and Audio out connections)

Player theater

- Easy playback *
- Power on Link

- Power off Link
- Speaker Selection

Blu-ray Disc theater

- Easy playback *
- Power on Link
- Power off Link
- Speaker Selection

Amplifier

- Power off Link
- Speaker Selection

---

* : While playing a disc

Preparations

- Connect the equipment supporting HDMI CEC.
- For details of HDMI CEC connections

  Functions > HDMI-CEC Device Control > HDMI connection
- Use a fully wired HDMI compliant cable.
- Set up the connected equipment. Read the manual of the equipment.
- Set up the TV. After connection, turn the equipment on and then switch the TV on. Select the HDMI input and make sure that an image is displayed correctly. (This setup should be done each time the following conditions occur.)
  - First time operation
  - Adding or reconnecting equipment
  - Changing setup

Settings

Set HDMI-CEC Device Control / Speaker Selection to use the HDMI CEC functions with the connected HDMI devices.

Watching > External equipment > HDMI-CEC Device Control

Watching > External equipment > Speaker Selection

Note

- These functions may not work properly depending on the connected equipment.
- Image or sound may not be delivered for the first few seconds when the input mode is switched.
- “HDAVI Control 5” is the newest standard for HDAVI Control compatible equipment. This standard is compatible with conventional HDAVI equipment.

Parental Controls

Using Parental Controls

You can lock specific contents to restrict access to them. When the locked content is selected, a message appears.

1. Display Home with [ ] and select .
2. Select Preferences > Parental Controls .
3. Follow the on-screen instructions.

Power LED Indicator

Using Power LED Indicator

Selects the power LED indication mode.

1. Display Home with [ ] and select .
2. Select Preferences > Power LED > Power LED Indicator .
3. Select On / On(Standby Only) / On(Power on Only) / Off .

On :

The power LED indicator illuminates continuously.

On(Standby Only) :

The power LED indicator illuminates only when the TV is in Standby mode.

On(Power on Only) :

The power LED indicator illuminates only when the TV is turned on.

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.

Reset to Factory Defaults

Reset to Factory Defaults

Resets the TV to its original condition (i.e. no channels tuned in).

All settings are reset (channels, picture, sound settings, etc.).

1. Display Home with [ ] and select .
2. Select Device & Software > Reset to Factory Defaults .
3. Follow the on-screen instructions.

= Note =

- To retune TV channels only (e.g. after moving house), set Channel Scan .

Watching > Tuning and editing channels > Setting menu

Bluetooth devices

Bluetooth Setup

You can use Bluetooth keyboards * 1 , Bluetooth mouses * 1 and Bluetooth audio devices * 2 (headphones, smartphone, etc.) with this TV.

* 1 : HID (Human Interface Device Profile) and HOGP (Human interface device Over Generic attribute Profile) compliant keyboards and mouses can be used.

* 2 : A2DP (Advanced Audio Distribution Profile) and AVRCP (Audio Video Remote Control Profile) compliant audio devices can be used.

1. Display Home with [ ] and select .
2. Select Controllers & Bluetooth Devices .
3. Follow the on-screen instructions.

- To adjust the audio delay for the Bluetooth audio device, set Bluetooth Audio Delay .

Watching > For best audio > Bluetooth Audio Delay

= Note =

- Settings in the Sound Menu may not be effective for the Bluetooth audio devices.
- For secure connection, it is recommended to use a device supporting Bluetooth 4.2 or later. The encryption type depends on the connected device.
- 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 or 6 GHz band, try using the 5 GHz or 6 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.

Settings

Setting menu

How to use

Various menus allow you to make settings for the picture, sound and other functions.

1. Display Home with [ ] and select .
   - Displayed items vary depending on the input signal.
   - Some menu items can be accessed by pressing [ ] .
   - Quick access menu is available by pressing and holding [ ] or [ ] while viewing any input.
2. Follow the on-screen instructions.

- To reset the settings
  - To initialize picture or sound settings only, select Reset to Defaults in each setting menu.
  - To initialize all settings, select Reset to Factory Defaults .

    Functions > Reset to Factory Defaults

- To exit the menu screen / To return to the previous screen

  [ ]

= Note =

- Not all menu items are shown in this eHELP.
- The menu items and names are subject to change without notice.
- Some settings in Picture menu may also affect the menu screen when watching content in 4K format.

Support

FAQs

Picture

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

Before requesting service or assistance, please follow these simple guides to solve the problem. Also makes a diagnosis of picture problem in TV Self Test .

1) Display Home with [ ] and select .
2) Select Device & Software > TV Self Test .
3) Follow the on-screen instructions.

If the problem still persists, please contact your local Panasonic dealer for assistance.

Black and white picture

- Check that the output of the external equipment matches the input of the TV.

Chaotic image, noisy

- Set Clarity in the Picture Menu to remove noise.

  Watching > For best picture > Clarity

- Check nearby electrical equipment (car, motorcycle, fluorescent lamp).

No image is displayed

- Check the correct input mode is selected.
- Is Luminance Level , Contrast or Color in the Picture Menu set to the minimum?

  Watching > For best picture

- Check all required cables and connections are firmly in place.

Blurry or distorted image (no sound or low volume)

- Reset channels.

  Watching > Tuning and editing channels > Setting menu

There may be a short black image

- A black image is displayed to avoid picture distortion when an input signal changes.

There may be white, red, blue, green and black spots on the screen

- This is a characteristic of the panels and is not a problem. The panel is built with very high precision technology giving you fine picture details. Occasionally, a few non-active pixels may appear on the screen as a fixed point of white, red, green, blue or black. Please note this does not affect the performance of the panel.

Digital TV

Before requesting service or assistance, please follow these simple guides to solve the problem.

If the problem still persists, please contact your local Panasonic dealer for assistance.

Block noise, frozen or disappearing image occurs / Some channels cannot be tuned

- Check the position, direction and connection of the antenna.
- Weather conditions affect signal reception (heavy rain, snow, etc.), in particular in poor reception areas. Even during good weather, the high pressure can cause poor reception of some channels.
- Select Device & Software > Restart in the setting menu and reboot this TV.

Sound

Before requesting service or assistance, please follow these simple guides to solve the problem. Also makes a diagnosis of sound problem in TV Self Test .

1) Display Home with [ ] and select .

2) Select Device & Software > TV Self Test .

3) Follow the on-screen instructions.

If the problem still persists, please contact your local Panasonic dealer for assistance.

No sound is produced

- Is “Sound mute” active? Turn mute on and off with the remote control.
- Is the volume set to the minimum?
- Check connections and setting of external equipment.

  Watching > External equipment
- Ensure that Speaker Selection is set to TV Speaker .

  Watching > External equipment > Speaker Selection

Sound level is low or sound is distorted

- Sound signal reception may be poor.

HDMI

Before requesting service or assistance, please follow these simple guides to solve the problem.

If the problem still persists, please contact your local Panasonic dealer for assistance.

Sound is unusual

- Set HDMI Auto Setting to Mode1 .

  Watching > 4K resolution > HDMI Auto Setting

Pictures from external equipment are unusual when the equipment is connected via HDMI

- Check the HDMI cable is connected properly.

  Watching > External equipment > External connection

- Turn the TV and equipment off, then turn them on again.
- Check an input signal from the equipment.

  Watching > External equipment > Valid input signals

- Use equipment compliant with EIA/CEA-861/861D.
- Set HDMI Auto Setting to Mode1 .

  Watching > 4K resolution > HDMI Auto Setting

- The valid 4K format varies depending on the HDMI terminal.

  Watching > 4K resolution > Valid 4K format

Network

Before requesting service or assistance, please follow these simple guides to solve the problem.

If the problem still persists, please contact your local Panasonic dealer for assistance.

Cannot connect to the network

- Check the LAN cable or wireless LAN is connected properly.

  Network > Network connections

- Check the connections and settings.

  Network > Network connections

  Network > Network settings

- Check the network equipment and network environment.
- The router may not be set to issue IP address automatically. If the network administrator prefers to allocate an IP address, set an IP address manually.
- The router may be using MAC address filtering (security setting). Confirm the MAC Address of this TV and set the router to use it.
- If the problem persists, consult your Internet Service Provider or telecommunications company.

Cannot operate internet content

- Check the connections and settings.

  Network > Network connections

  Network > Network settings

- The server or connected line may be busy now.

Other

Some features are not available on all models.

Before requesting service or assistance, please follow these simple guides to solve the problem.

If the problem still persists, please contact your local Panasonic dealer for assistance.

How to check the current version of firmware used on your TV

1. Display Home with [ ] and select .
2. Select Device & Software > About > Panasonic System Information .
3. Follow the on-screen instructions.

Remote control cannot be paired

- When the pairing instructions are displayed on the screen, follow the instructions on the screen.
- When no instructions are displayed on the screen, reset the remote control as shown below.
  - Remove the batteries from the remote control and wait for 1 minute, then reinsert the batteries.
  - Press and hold left, [ ] and [ ] simultaneously for 12 seconds to initialize the remote control.
- After resetting the remote control or the TV to its original condition, pair the remote control as shown below.
  1) Display Home with [ ] and select .
  2) Select Controllers & Bluetooth Devices > Voice Remotes with Alexa > Add New Remote .
  3) Follow the on-screen instructions.

HDMI CEC function does not work and an error message appears

- Check the connections.

  Functions > HDMI-CEC Device Control > HDMI connection
- Turn the connected equipment on and then switch the TV on.

  Functions > HDMI-CEC Device Control

Parts of the TV become hot

- Parts of the TV may become hot. These temperature rises do not pose any problems in terms of performance or quality.

Overcurrent error message appears

- Check foreign objects are not inside the USB port.

An error message appears

- Follow the message’s instructions.
- If the problem persists, contact your local Panasonic dealer or the authorized service center.

TV does not turn on after plugging the power cord plug

When the power cord plug is plugged, TV enters the Standby mode. To turn on the TV, press the power button of remote control.

LED does not light

- Set Power LED Indicator to On .

  Functions > Power LED Indicator > Using Power LED Indicator

---

LED does not light red in Standby mode

- LED lights orange during adjustment of the panel (approx. 10 minutes). LED lights orange again in standby mode when the TV is turned on / off before the panel adjustment is completed.

When pushed with a finger, the display panel moves slightly and makes a noise

- There is a little gap around the panel to prevent damage to the panel. This is not a malfunction.

How to operate the TV with Power Button on this unit

- Perform the following procedure to operate the TV such as selecting a channel, changing volume, etc.

1. Press Power Button on this unit.
   - The operation guide is displayed.
2. Press Power Button to select an item while the operation guide is displayed.
   - The displayed item switches each time the button is pressed. Follow the on-screen instructions.
3. Press Power Button for approx. 2 seconds.
   - The selected operation is executed.
   - For the input selection screen, press Power Button to select an input and press Power Button for approx. 2 seconds to switch the input mode.

= Note =

- If you press and hold Power Button on this unit for about 15 seconds, the unit will automatically restart.

Detailed information

Support information about the application, optional devices, operation, etc. may be found on the following website.

https://panasonic.jp/support/global/cs/tv/ (English only)

Maintenance

Care and Cleaning

First, unplug the Power cord plug from the wall outlet.

■ Display panel, Cabinet, Pedestal

Regular care:

Gently wipe the surface of the display panel, cabinet, or pedestal by using a soft cloth to remove dirt or fingerprints.

For stubborn dirt:

(1) First clean the dust from the surface.

(2) Dampen a soft cloth with clean water or diluted neutral detergent (1 part detergent to 100 parts water).

(3) Wring out the cloth firmly. (Please note, do not let liquid enter the TV inside as it may lead to product failure.)

(4) Carefully wipe moisten and wipe away the stubborn dirt.

(5) Finally, wipe away all the moisture.

= Caution =

- Do not use a hard cloth or rub the surface too hard, otherwise this may cause scratches on the surface.
- Take care not to subject the surfaces to insect repellent, solvent, thinner or other volatile substances. This may degrade surface quality or cause peeling of the paint.
- The surface of the display panel is specially treated and may be easily damaged. Take care not to tap or scratch the surface with your fingernail or other hard objects.
- Do not allow the cabinet and pedestal to make contact with a rubber or PVC substance for a long time. This may degrade surface quality.

■ Power cord

- Wipe the power cord plug with a dry cloth at regular intervals. Moisture and dust may lead to fire or electrical shock.