• Please choose your favorite page from the content. If you want to close the operation manual, press the EXIT button. Also, if you want to return to the previously displayed page, press the (Back) button.
1. Part Names
   1-1. TV
   1-3. Remote Control Unit
   1-5. Touchpad Remote Control Unit

2. How to select the TV Mode
   2-1. Using the Remote Control Unit
   2-2. Using the Touchpad Remote Control Unit
   2-5. HOME screen
   2-7. Settings
   Google Cast™ devices
   2-8. Devices
   2-11. TV Setup

3. TV Setup Operation
   3-1. Introduction
   3-2. Picture
   3-19. Audio
   3-27. General

4. Devices Operation
   4-1. Video In
   4-4. Audio Out

5. Direct Button Operation
   5-1. Changing Channels
   5-2. Changing Volume
   5-3. MUTE
   5-4. FLASHBACK
   5-5. AUDIO
   5-6. Sleep Timer
   5-7. VIEW MODE
   5-10. NETFLIX

6. Enjoying Photo/Music/Video Playback
   6-1. Preparation
   6-3. Selecting the Folders to Play Back
   6-6. Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server
   6-15. Playing Back Files from a Portable Device

7. Using LINK Operation
   7-1. Controlling HDMI Equipment Using LINK Operation
   7-3. Using a Smartphone with the TV

8. Using a PC
   8-1. Setting Audio Input
   8-2. Control of the TV
   8-8. PC Compatibility Chart

9. Using the Internet
   9-1. Connecting to the Internet
   9-3. Using Keyboard and Mouse
   9-4. Notes

10. Appendix
    10-1. Troubleshooting
    10-3. Troubleshooting - Error Message
    10-4. Information on the Software License for This Product

11. Trademarks

12. Specifications
    12-1. TV
    12-2. Wireless LAN

13. Dimensional Drawings
    13-1. LC-65UE630X
    13-2. LC-60UE630X
    13-3. LC-58UE630X
    13-4. LC-50UE630X

14. Enjoying Photo/Music/Video Playback

15. Devices Operation

16. Direct Button Operation

17. TV Setup Operation

18. Using the Internet

19. Using a PC

20. Appendix

21. Trademarks

22. Specifications

23. Dimensional Drawings
Precautions For Daily Use

Observe the following items

Maintenance of the cabinet
- When cleaning the cabinet, use a soft cloth (made of cotton, flannel, etc.) to clean gently.
- Do not use a dry or damp rag mixed with chemicals, as this could cause the ingredients of the cabinet body to deteriorate or crack.
- Be careful not to use an abrasive cloth for cleaning or clean with excessive force, as this could scratch the surface of the cabinet.
- If the cabinet is greatly soiled, clean with a soft cloth (made of cotton, flannel, etc.) soaked with a small amount of diluted neutral detergent and wrung out, and then clean with a soft dry cloth.
- Solvents such as benzene or thinner could cause the cabinet to deteriorate, or make its coating come off. Therefore do not use such solvents to clean the cabinet.
- Because plasticizer is included in the plastics, deterioration or the coating peeling off could occur when the cabinet comes into contact with some substances. Therefore keep it away from volatile substances such as insecticide, in addition, do not let it come into contact with objects made of rubber, resin, etc. for a long time.

Maintenance of the LCD panel
- Before cleaning the LCD panel, be sure to turn off the TV set and unplug the power cord from the outlet.
- When cleaning the LCD panel, use a dry and soft cloth (made of cotton, flannel, etc.) to clean the surface of the LCD panel gently. For protecting the LCD panel, do not clean with a dirty cloth, detergent, or a dry or damp rag mixed with chemicals, as this could cause peeling of the panel surface.
- Be careful not to clean with an abrasive cloth or with excessive force, as this could cause the panel surface to be scratched.
- If the LCD panel is greatly soiled, clean it gently with a soft cloth (made of cotton, flannel, etc.) soaked with a small amount of water (Do not clean with excessive force, so as to not to scratch the surface of the panel).
- If dust sticks on the surface of the LCD panel, clean the panel with a commercially available cleaning brush (anti-static brush).

Important safety precautions

Caring for the cabinet
- Use a soft cloth (cotton, flannel, etc.) and gently wipe the surface of the cabinet.
- Using a chemical cloth (wet/dry sheet type cloth, etc.) may deform the components of the main unit cabinet or cause cracking.
- Wiping with a hard cloth or using strong force may scratch the surface of the cabinet.
- If the cabinet is very dirty, wipe with a soft cloth (cotton, flannel, etc.) soaked in neutral detergent diluted with water and thoroughly wrung out, and then wipe with a soft dry cloth.
- The cabinet is primarily made of plastic. Avoid using benzene, thinner, and other solvents, as these may deform the cabinet and cause the paint to peel off.
- Do not apply insecticides or other volatile liquids.
- Also, do not allow the cabinet to remain in contact with rubber or vinyl products for a long period of time. Plasticizers inside the plastic may cause the cabinet to deform and cause the paint to peel off.
- When relocating the product placed on a cart, it must be moved with utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.

Caring for the front panel
- Turn off the main power and unplug the AC cord from the wall outlet before handling.
- Gently wipe the surface of the front panel with a soft cloth (cotton, flannel, etc.).
- To protect the front panel, do not use a dirty cloth, liquid cleaners, or a chemical cloth (wet/dry sheet type cloth, etc.). This may damage the surface of the front panel.
- Wiping with a hard cloth or using strong force may scratch the surface of the front panel.
- Use a soft damp cloth to gently wipe the front panel when it is really dirty (It may scratch the surface of the front panel when wiped strongly).
- If the front panel is dusty, use an anti-static brush, which is commercially available, to clean it.

- Water and moisture — Do not use the product near water, such as bathtub, washbasin, kitchen sink, laundry tub, swimming pool and in a wet basement.
**Introduction**

- Do not place vases or any other water-filled containers on this product. The water may spill onto the product causing fire or electric shock.
- Stand — Do not place the product on an unstable cart, stand, tripod or table. Doing so can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer’s instructions. Use only the mounting hardware recommended by the manufacturer.
- Ventilation — The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer’s instructions are followed.
- In case the product is dropped and the cabinet is damaged, be sure to turn off the power of the product, and unplug the power cord. If you continue to use the product, it may cause fire or electric shock. Contact your dealer.
- Do not open the rear cover of the cabinet to reconstruct the circuits. There exists high voltage within the cabinet and it may cause electric shock and injury. If maintenance is required, contact your dealer.
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is struck forcibly or with a sharp object. If the LCD panel is broken, be careful not to be injured by broken glass.
- Heat sources — Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).

**Do not install the TV in a location in which it will be subject to water drops such as underneath an air conditioning unit or in the vicinity of a humidifier**

- Water drops falling onto the TV and water entering inside it may result in fire, electric shock, or malfunctions. We recommend that you install the TV at least 1 m away from the outlet of an air conditioner.
- To prevent fire, never place any type of candle or naked flames on the top or near the TV set.
- To prevent fire or shock hazard, do not place the AC power cord under the TV set or other heavy items.
- Do not place heavy objects on this product or stand on it. Doing so could cause injury if the product overturns. Take special care near children and pets.
- Unplug the power cord before you move the TV set. If not unplugged beforehand, the power cord may become damaged and cause electric shock.

The LCD panel is a very high technology product with 8,294,400 pixels, giving you fine picture details. Due to the very large number of pixels, occasionally a few non-active pixels may appear on the screen as a fixed point of blue, green, red or yellow. This is within product specifications and does not constitute a fault.

**Precautions when transporting the TV**

- When transporting the TV, never carry it by holding or otherwise putting pressure onto the display. Be sure to always carry the TV by two or more people holding it with two hands — one hand on each side of the TV.

If a television is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as:

- Using cabinets or stands recommended by the manufacturer of the television.
- Only using furniture that can safely support the television.
- Ensuring the television is not overhanging the edge of the supporting furniture.
- Not placing the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television to a suitable support.
- Not standing the television on cloth or other materials placed between the television and supporting furniture.
- Educating children about the dangers of climbing on furniture to reach the television or its controls.
- Do not display a still picture for a long time, as this could cause an afterimage to remain.
- Install the product on the place where the AC cord can be unplugged easily from the AC outlet, or from the AC INPUT terminal on the rear of the product.

**NOTE**

- The above are pictures for reference only; the actual item might be different.
The illustrations and on-screen displays in this operation manual are for explanation purposes and may vary slightly from the actual operations. The drawings used throughout this manual are based on the LC-65UE630X model.

*1 See page 3-3.
HDMI IN 1, 2, 3 and 4 terminals are all capable of receiving 4K60P 4:4:4 signals. To receive 4K60P 4:4:4 signals, on the Devices menu, set the HDMI type to "Full". (See page 4-1)

1 See the Setup Guide. And see page 7-1 for external equipment connection.
2 See page 8-1 for details on the Audio Select function.
3 Use HDMI IN 1 to connect ARC-compatible equipment.
4 See page 7-3.
5 See page 4-3 for details on the Component/Video select function.
6 This function applicable for certain countries only.
Remote Control Unit

1 POWER: Switch the TV power on or enter standby.
2 External equipment operational buttons: Operate the external equipment.
3 OPC: To switch the optical picture control on and off. (See page 3-3.)
4 TV: Press to access analogue and digital TV mode.
5 0-9: Set the channel. (See page 5-1.)
6 (FLASHBACK): Return to the previous channels, HDMI IN 1 through 4, or video/Component input mode. (See page 5-4.)
7 NETFLIX: Display the NETFLIX screen. If you press the NETFLIX button when the TV is turned off, the TV turns on and the NETFLIX screen is displayed. (See page 5-10.)
8 DEVICES: Display the Devices screen. Select a TV input source. (See pages 2-8 to 2-10.)
9 ▲ / ▼ / ◀ / ◁, ø (ENTER): Select a desired item on the screen.
10 (Back): Return to the previous screen.
11 MUTE: Mute the sound. (See page 5-3.)
12 VOL+/-: Set the volume. (See page 5-2.)
13 R, G, Y, B: The coloured buttons are correspondingly used to select the coloured items on the screen.
14 AV MODE: Select an audio or video setting. (See page 3-2.)
15 VIEW: Select the screen size. (See pages 5-7 to 5-9.)
16 MANUAL: Display the operation manual.
17 EQ: Select the sound quality. (See page 3-21.)

NOTE
** This button does not work on this model.
• This LCD only included one remote control, B is the latest remote control with added NETFLIX button only.
Remote Control Unit (Continue)

18 Buttons for useful operations

- **(Reveal hidden teletext)**
  Display hidden characters.

- **(Hold)**
  Stop updating teletext pages automatically or release the hold mode.

- **(Top/Bottom/Full)**
  Set the area of magnification.

- **(Subpage)**
  Display the teletext subpage directly.

- **(Teletext)**
  Select the teletext mode.

- **(Subtitle)**
  Switch subtitle languages on / off.

19 EXIT: Turn off the menu screen and application.

20 TV SETUP: Display the TV Setup screen. *(See pages 2-11 to 2-12.)*

21 (HOME): Display the HOME screen. *(See pages 2-1 and 2-5 to 2-6.)*

22 EPG: DTV: Display the EPG screen.

23 CH ∧ / ∨: Select the channel. *(See page 5-1.)*

24 SLEEP: Set the sleep timer. *(See page 5-6.)*

25 AUDIO: Selects the audio mode during multichannel audio broadcasts. *(See page 5-5.)*

26 DISPLAY: Display the channel information.

27 INFO
  DTV: Display the programme information.
1 Power: Switch the TV power on or enter standby. Infrared rays are only used when you press the POWER button on the Touchpad Remote Control Unit, so you only have to point the unit at the remote control sensor when you press this button.

2 EPG: DTV: Display the EPG screen.

3 AV MODE: Select an audio or video setting. (See page 3-2.)

4 VIEW: Select the screen size. (See pages 5-7 to 5-9.)

5 Slide bar: Can be used to display the Devices screen. (See page 2-2.)

6 Touchpad: In Mouse mode, touch this to perform operations. In Flick mode, flick your finger up, down, left, or right to move the focus. (See pages 2-3 to 2-4.)

7 (Back): Return to the previous screen.

8 VOL+/-: Set the volume. (See page 5-2.)

9 MUTE: Mute the sound. (See page 5-3.)

10 R, G, Y, B colour key: The coloured buttons are correspondingly used to select the coloured items on the screen.

11 Mouse/Flick mode switch button: Switch the touchpad between Mouse mode and Flick mode. (See page 2-2.)

12 EXIT: Turn off the menu screen and application.

13 SLEEP: Set the sleep timer. (See page 5-6.)

14 AUDIO: Selects the audio mode during multichannel audio broadcasts. (See page 5-5.)

15 (HOME): Display the HOME screen. (See pages 2-1 and 2-5 to 2-6.)

16 CH \ / \: Select the channel. (See page 5-1.)

17 TV SETUP: Display the TV Setup screen. (See pages 2-11 to 2-12.)

18 Voice: Start a Voice search. (See page 2-4.)

19 Microphone: Used in Voice searches and apps. When you are using the microphone, do not cover this part with your hand. (See page 2-4.)
How to select the TV Mode

Using the Remote Control Unit

The main TV modes can be displayed by pressing the DEVICES, and TV SETUP buttons on the remote control unit.

HOME screen

Press (HOME) to display the HOME screen.

Example

Devices

Press DEVICES again to display the Devices full screen.
Press DEVICES to display the Devices peek screen.

See pages 2-8 to 2-9 and 4-1 to 4-6 for details of Devices.

TV Setup

Press TV SETUP again to display the TV Setup full screen.
Press TV SETUP to display the TV Setup peek screen.

See pages 2-11 to 2-12 and 3-1 to 3-46 for details of TV Setup.
Using the Touchpad Remote Control Unit

Preparation

Before using the Touchpad Remote Control Unit, you have to follow the procedure shown below to pair the unit with the TV.

1. Select (HOME) > "Settings" > "Remote & accessories" > "Add accessory".

2. Press the (HOME) and (Back) buttons on the Touchpad Remote Control Unit at the same time for 5 seconds.
   About 20 seconds later, "SHARP Remote control device" is shown on TV screen.

3. Select "SHARP Remote control device" on TV screen, and then press (ENTER) on the IR Remote Control.
   About 5-10 seconds later, PAIRED is shown. Preparation is complete.

NOTE
- In preparation 3, if COULDN'T PAIR is shown, please try "preparation 1-3" again.
- Pairing success/failure may be influenced by the surrounding wireless/RF environment.

Mouse/Flick mode switch button

Switch the touchpad between Mouse mode and Flick mode.

NOTE
- The default is Flick mode.
- Some apps may not function in Mouse mode. If an app does not function, switch to Flick mode.

Slide bar

You can slide to display the Devices screen.

- Slide from the left edge to the center to display the Devices peek screen.
- Slide from the left edge to the right edge to display the Devices full screen.
How to select the TV Mode

Using the Touchpad Remote Control Unit (Continue)

Touchpad

Switch between Mouse mode and Flick mode when using the touchpad. Use the Mouse/Flick mode switch button to switch between Mouse mode and Flick mode. The following operations can be performed in Flick mode and Mouse mode.

NOTE

- If you perform no operations on the touchpad remote control unit for 1 minute or longer, it will enter Sleep mode. You can return the touchpad remote control unit from Sleep mode by pressing the center of the touchpad. However, it will take the touchpad remote control unit 2 to 3 seconds to return from Sleep mode.

Flick mode

Press the touchpad or slide your fingers across it to operate the TV.
- Slide one finger horizontally or vertically: Move the focus.
- Press a "•" mark with a finger: Move up, down, left, or right.
- Press the center with a finger: Confirm a selection.
How to select the TV Mode

Using the Touchpad Remote Control Unit (Continue)

Touchpad

Mouse mode

- You can perform the following operations.
  - Move one finger: Perform the same movement as moving a mouse.
  - Click (press the touchpad): Perform the same operation as clicking a mouse.

- Scroll bars
  Can be used to scroll vertically through screens.

- Scroll bar
  Can be used to scroll horizontally through screens.

NOTE
- If the AC plug is disconnected, the touchpad remote control unit will return to Flick mode.

Voice

Start a Voice search.
Speak the word that you want to search for into the microphone at the bottom of the remote control.
When you are using the microphone, do not cover this part with your hand.

NOTE
- The Voice search may not start depending on the status of the TV.
To display the HOME screen, press the (HOME) button on the remote control unit.

Example

- Start a Search.
- The recommended contents will be displayed.
- The icons for applications installed on the TV are shown here. Also shown here is an icon for the built-in operation manual.
- Added applications are displayed here.

**NOTE**
- When you are using the microphone, see page 2-4.
Switch the input.

Various Android™ settings can be configured here. For details on the settings, see the next explanation.

The network connection status is displayed.

- Wireless connection:
- Ethernet connection:
- No connection:
How to select the TV Mode

Settings

Various Android settings can be configured from Settings on the HOME screen. The follow settings can be configured.

| Device | Network: Configure the WiFi and Ethernet settings. |
| Daydream | Network: Configure the HTTP and Ethernet settings. |
| | Inputs: Change the label for an input terminal, and switch between HDMI CEC control settings. |
| | Google Cast: Configure various Google Cast settings. |
| | System sounds: Switch System Sounds On/Off for HOME screen. |
| | Apps: View a list of applications. |
| | Daydream: Configure the Daydream (screensaver) settings. |
| | When to daydream: Set how many minutes from now to start the Daydream. |
| | No operation OFF: The TV automatically shuts down if no operation is performed. |
| | Start now: Start the Daydream immediately. |
| | Power Indicator Light: When this function is set to "On", the LED on the front of the TV turns on. |
| | Power Control [ECO1] Standard: Optimizes power reduction based upon video content. |
| | Off: This function does not work. |
| | Wake on LAN/MHL: Enable the TV to be started by a signal over a LAN or MHL from another device. |
| Storage & Reset: View the memory usage status or perform a reset. When you perform a reset, the TV will be returned to the factory preset values, and the Google™ Accounts will also be deleted. |
| About: Check for system updates and view various information. |

Preference

Date & time: Set the date and time. |
Language: You can select a language. Select from among 11 languages. (English (UK), English (US), French, Portuguese, Simplified Chinese, Indonesian, Thai, Vietnamese, Arabic, Russian and Persian) |
Keyboard: Switch the keyboard setting. |
Home screen: Home screen customise settings. |
Search: Switch the Search function setting. |
Speech: Switch the Voice search setting. |
Accessibility: Configure Caption, Talkback, and SwitchAccess settings. |
Some of the Caption settings may not be applied. |
Remote & accessories: Add accessory: Pair a Bluetooth device. |
TV Setup: Jump to TV Setup: Configure various TV Setup. |

NOTE

- The menu may be different depending on when you purchased the TV.

Google Cast devices

When you connect a device such as a Google Cast-compatible smartphone or tablet to this TV, you can enjoy video and audio from the device on the TV’s large screen and speakers.

1 Configure the settings from "HOME" > "Settings" > "Device" > "Google Cast".
2 Enable the Google Cast function on the Google Cast-compatible device and connect to the TV.
(The TV screen changes according to the behavior of the device)

NOTE

- When the TV is turned off or the connection is ended on the device, you must connect the device again.
- For details about the operation of the Google Cast-compatible device, check the manual for that device.
Switching between connected devices is possible on the Devices full screen.

1. Press ▲ / ▼ / ◀ /▶ to select the input source, and then press ◆ (ENTER).
2. Press ▲ / ▼ to select the "Switch to Device", and the press ◆ (ENTER).
   - An image from the selected source automatically displays.
   - If the target input is not connected, you will be able to switch to the input, but the correct video and audio will not be output. Be sure to connect the equipment beforehand.

**NOTE**
- To display the Devices in the full screen or as a peek screen, see page 2-1.
- Changing from a full screen view to another mode is possible.
The most commonly used input devices can be shown on the Devices peek screen.
Devices (Continue)

Peek screen configuration

It is possible to configure which input devices to display on the peek screen. Six devices are set by default.

To add a different device, first delete a current device, and then add the device.

1. Select the device in Devices full screen and open the Devices menu.
2. Set “Show in Peek” to “Yes”.

![Device configuration menu](image-url)
All menus for Picture, Audio, and General can be configured on the TV Setup full screen.

- Item displayed in red
- This indicates the item currently selected.
- Press ● (ENTER) to go to the adjustment screen for this item.
- This indicates the current setting for the item.
The AV Mode, View Mode, Surround, and Equalizer menus can be configured on the TV Setup peek screen. See pages 3-2, 3-21, 3-22, and 5-7 for details on the settings for each menu.

NOTE
- To display the TV Setup in the full screen or as a peek screen, see page 2-1.
- Changing from a full screen view to another mode is possible.
Introduction

About Menu Items

- Some menu items may not be displayed depending on the selected input source.

NOTE

- The screens in the operation manual are for explanation purposes (some are enlarged, others cropped) and may vary slightly from the actual screens.
- The order of explanations for each menu item in the following pages is not necessarily in accordance with the alignment of the items on the screen.
### Picture

#### AV Mode (Changing Pic. Quality)

AV MODE gives you several viewing options to choose from to best match the surrounding environment of the TV, which can vary due to factors like room brightness, type of program watched or the type of device connected. These settings will be automatically saved on each input for convenience.

- **STANDARD**: For a highly defined image in a normal lighting.
- **MOVIE**: For a movie.
- **GAME**: Lowers image brightness for easier viewing.
- **DYNAMIC**: For a clear-cut image emphasizing high contrast, useful for sports viewing.
- **DYNAMIC (Fixed)**: Changes the image and sound settings to the factory preset values. No adjustments are allowed.
- **PC**: For PC.

#### Example

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPC</td>
<td>Off</td>
</tr>
<tr>
<td>Backlight</td>
<td></td>
</tr>
<tr>
<td>Contrast</td>
<td>32</td>
</tr>
<tr>
<td>Brightness</td>
<td>0</td>
</tr>
<tr>
<td>Colour</td>
<td>5</td>
</tr>
<tr>
<td>Tint</td>
<td>0</td>
</tr>
<tr>
<td>Sharpness</td>
<td>5</td>
</tr>
<tr>
<td>Advanced</td>
<td></td>
</tr>
</tbody>
</table>

#### NOTE

- When you play games, “GAME” is recommended for AV MODE.
- You can select AV MODE by pressing AV MODE on the remote control unit.
Example

**Picture (Continue)**

**OPC (Light Sensor)**

Automatically adjusts the brightness of the screen.

- Off: The brightness is fixed at the value set in "Backlight".
- On: Automatically adjusts.

**NOTE**

- When set to "On", the Light Sensor senses the surrounding light and automatically adjusts the backlight brightness. Make sure nothing obstructs the Light Sensor, which could affect its ability to sense surrounding light.
Example

**Picture (Continue)**

**Backlight**

Adjusts the picture to your preference with the following picture settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◀ button</th>
<th>▶ button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backlight</td>
<td>The screen dims</td>
<td>The screen brightens</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", press ◁ (ENTER), press ▲ / ▼ to select "Yes", and then press ◁ (ENTER)

**NOTE**

- "Backlight" is not available when you set "OPC" (Light Sensor) to "On".
Example

Picture (Continue)

Contrast

Adjusts the picture to your preference with the following picture settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◀ button</th>
<th>▶ button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrast</td>
<td>For less contrast</td>
<td>For more contrast</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", press ● (ENTER), press ▲ / ▼ to select "Yes", and then press ● (ENTER)
Example

Picture (Continue)

Brightness

Adjusts the picture to your preference with the following picture settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◄ button</th>
<th>► button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>For less brightness</td>
<td>For more brightness</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", press ◆ (ENTER), press ▲ / ▼ to select "Yes", and then press ◆ (ENTER)
Example

**Picture (Continue)**

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◀ button</th>
<th>▶ button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>For less colour intensity</td>
<td>For more colour intensity</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", press ◁ (ENTER), press ▲ / ▼ to select "Yes", and then press ◁ (ENTER)
**Example**

### Picture (Continue)

**Tint**

Adjusts the picture to your preference with the following picture settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◄ button</th>
<th>► button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tint</td>
<td>Skin tones become reddish</td>
<td>Skin tones become greenish</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", press ◼ (ENTER), press ▲ / ▼ to select "Yes", and then press ◼ (ENTER)
Example

**Picture (Continue)**

**Sharpness**

Adjusts the picture to your preference with the following picture settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◄ button</th>
<th>► button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharpness</td>
<td>For less sharpness</td>
<td>For more sharpness</td>
</tr>
</tbody>
</table>

- For resetting all Picture adjustment items to the factory preset values, press ◄ / ▼ to select "Reset Picture", press ◁ (ENTER), press ◄ / ▼ to select "Yes", and then press ◁ (ENTER)
C.M.S. (Colour Management System)

Colour tone is managed using the six-colour adjustment setting.

C.M.S.-hue: This is a standard to adjust the colour either more reddish or more bluish in tone.

A lower value makes the image darker.

NOTE

- For resetting all adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", and then press ● (ENTER).
Colour tone is managed using the six-colour adjustment setting.

C.M.S.-saturation: Increases or decreases the saturation of a selected colour.

A lower value makes the image darker.

NOTE
- For resetting all adjustment items to the factory preset values, press ▲/▼ to select "Reset Picture", and then press ● (ENTER).
Colour tone is managed using the six-colour adjustment setting.

**C.M.S.-value:**
- A higher value makes the image brighter.
- A lower value makes the image darker.

**NOTE**
- For resetting all adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", and then press ● (ENTER).
For a better white balance, use colour temperature correction.

- **High:** White with bluish tone
- **Mid-High:**
- **Middle:**
- **Mid-Low:**
- **Low:** White with reddish tone

**NOTE**

- For resetting all adjustment items to the factory preset values, press ▲ / ▼ to select "Reset Picture", and then press ◼ (ENTER).
Example

Advanced Gamma Adjustment

Adjusts the differences of picture tones between bright parts and dark parts. The adjustment range of the gamma can be set to a maximum of +3 and a minimum of -3 by pressing \ or \.
This function provides high-quality playback of images originally encoded at 24 frames/second, such as films.

On: Provides smoother image motion while ensuring high-quality playback.

Off: Normal viewing mode.

**NOTE**

- “Film Mode” does not function depending on input signal type.
Example

Picture > Advanced

Advanced Digital Noise Reduction

Produces a clearer video image.
- **Auto:** Automatically adjusts the level of noise reduction.
- **High/Middle/Low:** You can select a desired level for viewing a clearer video image.
- **Off:** No adjustment.

**NOTE**
- "Digital Noise Reduction" is not available when PC format is being input.
Example

**Picture > Advanced**

- **AV Mode**
- **OPC**
- **Background**
- **Contrast**
- **Brightness**
- **Colour**
- **Tint**
- **Sharpness**

**Advanced**

- **C.M.S.-hue**
- **C.M.S.-saturation**
- **C.M.S.-value**
- **Colour temp.**
- **Gamma Adjustment**
- **Film Mode**
- **Digital Noise Reduction**

**Active Contrast**

- **Advanced**
- **Standard**

Automatically adjusts the image contrast according to the scene.

- **Advanced**: Produces higher contrast image in any scene.
- **Standard**: Produces high contrast image in bright scene.
- **Off**: No adjustment.
Returns Picture Settings to their factory preset values. To reset, select "YES" and then press (ENTER).
Example

Audio

Auto Volume

Different sound sources sometimes do not have the same loudness level, such as a programme and its commercial breaks. The Automatic Volume Control (Auto Volume) reduces this problem by equalizing.

ON: Reduces the loudness gaps among different sound source. The result is automatically adjusted according to the sound sources.
OFF: No adjustment.

NOTE
- The Audio menu is grayed out when "Output Select" is set to "Variable". (See page 4-4.)
Example

Audio (Continue)

Balance

You can adjust the sound quality to your preference with the following settings.

<table>
<thead>
<tr>
<th>Selected item</th>
<th>◀ button</th>
<th>▶ button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>Decrease audio from the right speaker</td>
<td>Decrease audio from the left speaker</td>
</tr>
</tbody>
</table>

NOTE

- The Audio menu is grayed out when "Output Select" is set to "Variable". (See page 4-4.)
- For resetting Audio adjustment items to the factory preset values, press ▲/▼ to select "Reset Audio", press ◆ (ENTER), press ▲/▼ to select "Yes", and then press ◆ (ENTER).
Audio (Continue)

Equalizer

This function allows you to change the sound quality.
Select from the following available settings.
Rock/Pop/Live/Dance/Techno/Classic/Soft/Off

NOTE

- The Audio menu is grayed out when "Output Select" is set to "Variable".
  (See page 4-4.)
The surround function produces Surround effect from the speakers.

**NOTE**
- The Audio menu is grayed out when "Output Select" is set to "Variable". (See page 4-4.)
- For some discs, setup may be required on your BD/DVD player. In this case, please refer to the operation manual of your BD/DVD player.
Audio (Continue)

Bass Enhancer

This function improves the sound quality. The low range will be extended and the sounds in the medium and high ranges, which have been lost due to the data being compressed, will be restored.

NOTE

- The Audio menu is grayed out when "Output Select" is set to "Variable". (See page 4-4.)
Example

Audio (Continue)

Wall Mount Setup

This selects the optimal audio for the programme you are currently watching even when the TV is mounted to a wall.
This function allows you to enable output of audio description if the TV receives a signal including audio description.

**NOTE**

- The audio description sound is superimposed on the main audio when you select a broadcast compatible with audio description.
- This function is available only for DTV broadcasts. This “Audio Description Setting” menu is not displayed for the ATV or the external inputs.
- The audio description sound is superimposed on the main audio only when the sound is output on the speaker sound output, headphone sound output and sound for audio out output. The sound is not output on the digital audio output and the HDMI sound output.
- This function is not available for the AQUOS Audio speaker system.
- This function does not work during USB-recording playback.
Audio (Continue)

Reset Audio

Returns Audio Settings to their factory preset values. To reset, select "YES" and then press (ENTER).

NOTE

- The Audio menu is grayed out when "Output Select" is set to "Variable". (See page 4-4.)
General
Auto installation

When the TV is powered on for the first time after purchase, the initial auto installation wizard appears. Follow the menus and make the necessary settings one after another.

Confirm the following before turning on the power
- Is the antenna cable connected?
- Is the AC cord plugged in?

1 Press POWER on the TV.
- The initial auto installation wizard appears.

2 Setting the OSD language.
   Press ▲ / ▼ to select the desired language, and then press ◆ (ENTER).
3 Press ▲ / ▼ to select your Wi-Fi network.
4 Press ▲ / ▼ to view Google Terms of Service and Google Privacy Policy.
5 Press "YES" or "NO" to allow Google use your device location.
6 Press "YES" or "NO" to set permission for Google to use your TV diagnosis and usage data.
7 Press ▲ / ▼ to view Sharp Terms of Use and Sharp Privacy Policy.

8 Selecting the location of the TV.
   Press ▲ / ▼ to select where you will use this TV, and then press ◆ (ENTER).
   HOME:
   - Settings are optimised for normal home viewing and energy efficiency.
   - "STANDARD" will be the default value for the "AV mode" setting.
   STORE:
   - Settings are designed for maximum impact in retail store displays.
   - "DYNAMIC (Fixed)" will be the default value for the "AV mode" setting. If the "AV mode" is changed, the TV will automatically switch back to "DYNAMIC (Fixed)" when there is no operation using the TV or remote control unit for 30 minutes.

   NOTE
   - STORE: A demonstration image will be displayed after initial auto installation is completed. If you have chosen "STORE" by mistake, go to "General" > "Factory Reset - TV" > "Yes" > select "HOME" again.

9 Setting the country.
   Press ▲ / ▼ to select your country or area, and then press ◆ (ENTER).
   - This setting screen only appears during the initial auto installation.

   NOTE
   - Digital (DVB-T/T2) broadcasting cannot be viewed in the area where digital broadcasting is not yet launched.
   - DTV concerned menu may not displayed in some country.

10 Please select ▲ / ▼ to start TV channel setup.
11 Starting Channel Search. Go to "General" > "Channel Search".
<table>
<thead>
<tr>
<th>Channel Setting</th>
<th>Programme Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can run the auto search procedure again at any time by accessing the “Setup” menu and “Programme setup”. Channels can be tuned automatically or manually.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digital setting (DTV only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can reconfigure the DTV channel settings automatically or manually.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manual search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add new services within a specified frequency band.</td>
</tr>
<tr>
<td>• Enter the frequency using ▲ /▼ buttons.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Channel Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can select the channels to skip.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analogue setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can reconfigure the TV channel settings automatically or manually.</td>
</tr>
</tbody>
</table>

**NOTE**

- The “Analogue setting” menu is available only for watching TV in ATV mode.
If you install a DTV antenna for the first time or relocate it, you should adjust the alignment of the antenna to receive a good reception while checking the antenna setup screen.
**Parental Control (DTV only)**

Used to enable or disable the parental control function. This function will not be selectable from the menu if you do not first configure your secret number. (Default: 1234)

**Rating (Singapore)**

- **General (G):** Suitable for all ages.
- **Parental Guidance (PG):** Suitable for all, but parents should guide their young.
- **Parental Guidance 13 (PG13):** Suitable for persons ages 13 and above but parental guidance is advised for children below 13.
- **No Children Under 16 (NC16):** Suitable for persons aged 16 and above.
- **Mature (M18):** Suitable for persons aged 18 and above.
- **Restricted 21 (R21):** Restricted to persons aged 21 and above.

**Rating (Other)**

This is used in countries other than Singapore.
Searching for updates

The TV automatically determines whether a new software version is available when the TV is in standby mode.

<table>
<thead>
<tr>
<th>Item</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Automatically searches for new software updates available when the TV is in standby mode.</td>
</tr>
<tr>
<td>No</td>
<td>Does not search for update information.</td>
</tr>
</tbody>
</table>
If Teletext information does not display correctly, perform the procedure below. Select from among six kinds of language tables: West Europe, East Europe, Greek/Turkish, Cyrillic, Arabic and Farsi. Each table is compatible with the Teletext languages listed below.

- West Europe — English, French, Scandinavian, Turkish, German, Spanish, Italian
- East Europe — Polish, French, Scandinavian, Czech, German, Slovenian/Croatian, Italian, Rumanian
- Greek/Turkish — English, French, Scandinavian, Turkish, German, Spanish, Italian, Greek
- Cyrillic — English, Russian, Estonian, Czech, German, Slovenian/Croatian, Ukrainian, Lettish
- Arabic — English, French, Scandinavian, Turkish, German, Hebrew, Italian, Arabic
- Farsi — English, French, Scandinavian, Turkish, German, Hebrew, Italian, Farsi

NOTE

- Teletext can be displayed only when it is sent by a network. Not used to convert between languages.
If you set the language of the initial page (this page is displayed for the first time after pressing for teletext in DTV mode), it will start from the selected language page.

**NOTE**
- This function is available for teletext in DTV mode. This is not available for teletext in ATV or external input mode.
- If the initial teletext page of the selected language in this function is not included in a received broadcast, the default initial page will be displayed.
Switching the multi audio languages
Set up to two preferred multi audio languages to display if the audio languages are available.
Each time you press AUDIO on the remote control unit, the audio language switches.

**NOTE**
- This function depends on audio language information from broadcasters.
- If audio for the selected language is not included in a received broadcast, audio will not be output for that language.
Set up to two preferred subtitle languages (including subtitles for the hearing impaired) to display if subtitles are available.

**Selectable items**
- 1st language
- 2nd language
- For Hearing Impaired

**Switching subtitle languages**
Each time you press on the remote control unit, the subtitle switches.

Set "For Hearing Impaired" to "Yes"
Subtitles for the hearing impaired have priority over each of the subtitle language settings (e.g., "1st language", "2nd language", etc.).

**NOTE**
- Subtitles will not be displayed when the programme does not contain subtitle information.
Set this function when operating the TV from equipment connected by LAN or wireless LAN. (See page 8-2.)
When this function is enabled, the TV automatically shuts down if no signal is received for more than 15 minutes.

**NOTE**
- When it is 5 minutes before the power shuts down, the remaining time will start to keep appearing every minute.
- When a TV programme finishes, this function may not operate.
General (Continue)

Advanced

Secret No.

Allows you to use a secret number to protect certain settings from being accidentally changed.

Input Secret No.:
Input the Secret No. currently set.
(Default: 1234)

Setting Secret No.
You can set and change the secret number by using 0-9.

Yes: Change or sets the Secret No.
No: The previous screen will be displayed.

NOTE

- As a precautionary measure, make a note of your secret number and keep it in a familiar place.
- The TV Channel Setup and Parental Control will not be selectable from the menu if you do not first configure your secret number.
This function allows you to display programme information such as the title and airtime by tuning a channel.

**NOTE**
- This function is available only when the DTV mode is selected.
The “Auto wide” allows the TV to switch automatically among the different picture size.

**NOTE**
- Use “Wide mode” if an image does not switch to the appropriate picture size. When the broadcast signal contains no aspect ratio information, the function will not work even if enabled.
In order to receive coded digital stations, a common interface module (CI module) and a CA card must be inserted in the CI slot of the TV.

1. Carefully insert the CI module in the CI slot with the contact side forward.
2. The logo on the CI module must be facing outward from the rear of the TV.

Checking CI module information
- This menu is only available for digital stations.
- The content of this menu depends on the provider of the CI module.

Module
General information on CI module displays.
Menu
Adjustment parameters of each CA card displays.
Enquiry
You can input numerical values such as passwords here.
NOTE

- It takes a few minutes to certify the licence key when you insert a CA card into the CI module for the first time. This process may fail when there is no antenna input or you have never run "Auto installation".
- The CI module sometimes upgrades its firmware. You may not receive any TV images before upgrading. You can only use the POWER during upgrading.
- Copy protected content may not be output or may be output with a copy control signal. The protect icon* is displayed when INFO is pressed while watching copy protected contents.
- *Protect icon: 
- If the TV displays an update confirmation message for the CA card while receiving CI compatible broadcasts, follow the screen prompts.
- Make sure that the CI module is properly inserted.
- If the old CAM is used, authentication may fail. In such cases, contact the contracted service provider.
This function locks the operation buttons on the TV and the remote control.

Off: No adjustment.

RC Control Lock: All buttons on the remote control are locked.

Button Control Lock: All buttons on the TV, except POWER, are locked.

When "RC Control Lock" or "Button Control Lock" is selected, a confirmation screen appears.

Yes: Locks the operation buttons.

No: No adjustment.

NOTE

- To unlock the buttons on the remote control by using the control panel of the TV. (See the Setup Guide.)
Example

**General > Advanced**

- Channel Search
- Channel Setting
- Individual Setting
- AGUOS Remote Control
- No signal off

**Advanced**

- Secret No.
- Programme Title Display
- Auto Wide (DTV)
- CI Menu
- Operation Lock Out
- TV Location
- Demo

**TV Location**

Select "Home" or "Store" for the location where you plan to install the TV.

**NOTE**

- Normally set "TV Location" to "HOME".
- If you set "TV Location" to "Store", you will not be able to use some menus.
You can select the image from several types of demo mode.

**NOTE**
- What kinds of setting item are available depends on the model of your TV.
- This function will be canceled when you press EXIT on the remote control unit.
- "Demo" may not be selected depending on input signal type or application status.
- "Demo" may be automatically canceled depending on input signal type.
Factory Reset - TV

If complex adjustments are made and the settings cannot be restored to normal, you can reset the settings to the factory preset values.

- If you have already set the Secret No., input the 4-digit secret number here.

**NOTE**

- The Language settings will not be changed.
- To reset all data, including Google Accounts, execute "Storage & Reset" from Settings on the HOME screen.
Video In

HDMI Type Selection.

Sets the HDMI type for HDMI IN 1, 2, 3 and 4 terminals.
Set to "Full" when an HDMI 4K60P 4:4:4 device is connected, and set to "Limited" when an HDMI 4:2:0 device is connected.
This function sets the terminal to output the computer audio. The adjustment items vary depending on the input source. Select the input source corresponding to the terminal connected to the PC and then adjust the desired item. To perform the operation, refer to "Devices" > "Video In" > "HDMI 3" > "Audio Select".

HDMI 3

HDMI(Digital): Select this when the TV and PC are connected using an HDMI-certified cable and audio is input via the same cable.

HDMI+Analog: Select this when the TV and PC are connected using a HDMI-certified cable and the audio is input via a Ø 3.5 mm stereo minijack.

NOTE

- When "Audio Select" is set to "HDMI+Analog", sound will not be produced if you use only an HDMI-certified cable to connect HDMI-compatible equipment. To produce sound, you should make an analog audio connection.
- If you want to connect HDMI-compatible equipment using only an HDMI-certified cable, set "Audio Select" to "HDMI(Digital)".
- "Audio Select" can only be set for the HDMI IN 3.
For image input applied to the COMPONENT IN or VIDEO IN terminal, switch to "Component" or "Video", respectively.

Component: Select component video.
Video: Select composite video.

NOTE
- If no (colour) image displays, try changing to another signal type.
- Check the operation manual of the external equipment for the signal type.
Audio Out

Output Select

Allows you to select what controls the audio output.

Fixed: Sound via speaker is adjusted with VOL+/− on the remote control unit or on the TV.

Sound via the AUDIO OUT terminal is not adjustable and outputs at a consistent level.

Variable: Sound via the AUDIO OUT terminal is adjusted with VOL+/− on the remote control unit or on the TV.

Sound via speaker is muted.
You can output digital audio to an AV amplifier or similar device whose DIGITAL AUDIO INPUT terminal is connected to the DIGITAL AUDIO OUT terminal on the TV. Please select an audio output format compatible with the audio format of the programme you are watching and the equipment connected.

**PCM:** For connecting to equipment that does not support Dolby Digital. The same audio (main, sub, or main/sub) as the audio of the programme being viewed is output. 2-channel audio with a sampling rate of 48 kHz or less is output as linear PCM audio.

**Bitstream:** For connecting to an audio system that supports Dolby Digital. Audio is output through both the main and sub channels.

**NOTE**
- Analog channel audio, Video/Component input audio, PC input audio and HDMI-Analog input audio are output in PCM mode even when "Bitstream" is selected.
- PCM digital input signals are output in PCM mode even when "Bitstream" is selected.
Audio

Out (Continue)

Speaker Select
You can select to listen to the TV sound only from the LINK-compatible audio system.

Internal Speaker: The sound is output from the TV speaker.

External Devices: The sound from the TV speaker is muted and only the sound from the LINK-compatible audio system is audible.
- You can use VOL+- and MUTE.

Audio Setup
You can output digital audio to an AV amplifier or similar device whose HDMI terminal is connected to the HDMI1/ARC terminal on the TV. Please select an audio output format compatible with the audio format of the programme you are watching and the equipment connected.

(See page 4-5.)
Changing Channels

You can change channels in several ways.

Method 1
Using CH ▲ / ▼ on the remote control unit or on the TV.

Method 2
Using remote control buttons 0-9.

Examples:
To select a 1 or 2-digit channel number (e.g., Channel 5):
Press 5 → (ENTER)
To select a 3-digit channel number (e.g., Channel 115):
Press 1 → 1 → 5 → (ENTER)

NOTE
- When selecting a 1-digit channel number, it is not necessary to press 0 before the number.
- When you enter 0-9 only, channel selection will be made if there is no operation within a few seconds.
- If you push "0" by itself, nothing will happen.
- Complete the above steps within a few seconds.
- When you enter 0-9, channel selection will be made if there is no operation within a few seconds.
Changing Volume

You can change the volume by pressing VOL+/- on the TV or on the remote control unit.
- To increase the volume, press VOL +.
- To decrease the volume, press VOL -.

Audio status

<table>
<thead>
<tr>
<th>Output device</th>
<th>Output Select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Variable</td>
</tr>
<tr>
<td>TV Speaker</td>
<td>Variable Sound</td>
</tr>
<tr>
<td>AUDIO OUT</td>
<td>Fixed Sound (Volume MAX)</td>
</tr>
<tr>
<td>DIGITAL AUDIO OUT, HDMI IN 1 (ARC)</td>
<td>Fixed Sound (Volume MAX)</td>
</tr>
</tbody>
</table>

EN 5-2
MUTE
Mutes the current sound output.
Press MUTE.

- "\(^{\text{MUTE}}\)" will be displayed on the screen for 30 minutes.

NOTE
- Mute can be cancelled by pressing VOL+/- or MUTE.
FLASHBACK

Press (FLASHBACK) to switch to the previously tuned channel or previous input mode.

- Press (FLASHBACK) again to switch back to the currently tuned channel.

**NOTE**

- (FLASHBACK) will not work if no channel has been changed after the TV is turned on.
- With (FLASHBACK), only input from TV, HDMI 1 through 4, or Video/Component will be stored in Memory.
Switching the digital audio format (DTV only)

If multi sound modes are received, each time you press AUDIO the mode switches.

Note
- The sound mode screen disappears in six seconds.
- Selectable items vary depending on the received broadcasts.
- The audio description sound is selected depending on the main audio.

Switching the analogue audio format

You can switch between multiple audio modes when watching a multiple audio or stereo broadcast programme.

When receiving a bilingual signal
Each time you press AUDIO, the mode switches among Nicam Dual1, Nicam Dual2 and Mono.

Bilingual mode
Nicam Dual1 ➔ Nicam Dual2
Mono ↓

When receiving a monaural signal
Each time you press AUDIO, the mode switches between Nicam Mono and Mono.

Monaural mode
Nicam Mono ➔ Mono

In the TV mode of A2 TV broadcasts
When receiving a stereo signal
Each time you press AUDIO, the mode switches between Stereo and Mono.

Stereo mode
Nicam Stereo ➔ Mono

When receiving a bilingual signal
Each time you press AUDIO, the mode switches among Dual1 and Dual2.

Bilingual mode
Dual1 ➔ Dual2

When receiving a monaural signal
When you press AUDIO, “Mono” displays.

Monaural mode
Mono
Sleep Timer

Allows you to set a time when the TV automatically switches to standby.
Press SLEEP.

- The remaining time displays when the sleep timer has been set.
- Each time you press SLEEP, the remaining time switches as shown below.

  OFF  30min  60min  90min
  120min  150min  180min

- When set, the time automatically starts counting down.
- If you want to adjust the sleep timer, you can press SLEEP twice then change the time setting.
- When it is 5 minutes before the time expires, the remaining time will start to keep appearing every minute.

NOTE

- Select “Off” by pressing SLEEP to cancel the sleep timer.
- The TV will enter standby when the remaining time reaches 0.
VIEW MODE

You can select the screen size.

1 Press VIEW.
   - Current View Mode is displayed.

2 Press VIEW while the View Mode indicator is displayed to select a desired item on the menu.
   - View Mode will toggle within selectable options for the type of video signal currently being received when you press VIEW button.

For HD programmes

<table>
<thead>
<tr>
<th></th>
<th>Full</th>
<th>Underscan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image1" alt="Full Image" /></td>
<td><img src="image2" alt="Underscan Image" /></td>
</tr>
</tbody>
</table>

Displays with an overscan image. Crops all sides of screen. Displays an image with the same number of pixels on the screen when receiving HD signals only.

NOTE

- When using Underscan, it is possible to see noise or bars around different outer portions of the screen. Please change view mode to correct this.
- This feature is available with TV, HDMI IN 1-4, and Video/Component input. Availability in other input modes varies according to the individual App specifications.
- Some items do not appear depending on the type of received signal.
VIEW MODE (Continue)

For 4:3 programmes
Example: Screen size images

<table>
<thead>
<tr>
<th>Normal</th>
<th>Full</th>
<th>Cinema 16:9</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Normal" /></td>
<td><img src="image" alt="Full" /></td>
<td><img src="image" alt="Cinema 16:9" /></td>
</tr>
</tbody>
</table>

Keeps the original aspect ratio in a full screen display.

For 16:9 squeeze pictures.

For 16:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.

---

<table>
<thead>
<tr>
<th>Cinema 14:9</th>
<th>Zoom 14:9</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Cinema 14:9" /></td>
<td><img src="image" alt="Zoom 14:9" /></td>
</tr>
</tbody>
</table>

For 14:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.

For 14:9 letterbox pictures. A thin side bar appears on each side, and you may also see bars on the top and bottom with some programmes.
### VIEW MODE (Continue)

For PC

Example: Screen size images

<table>
<thead>
<tr>
<th>Input signal</th>
<th>Normal</th>
<th>Full</th>
<th>Cinema 16:9</th>
<th>Dot by Dot</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep the original aspect ratio in a full screen display.</td>
<td>An image fully fills the screen.</td>
<td>For viewing widescreen programmes. The top and bottom of the image is cropped.</td>
<td>Detects the resolution of the signal and displays an image with the same number of pixels on the screen.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input signal</th>
<th>Full</th>
<th>Dot by Dot</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An image fully fills the screen.</td>
<td>Detects the resolution of the signal and displays an image with the same number of pixels on the screen.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**
- Connect the PC before making adjustments. See the Setup Guide.
- Selectable screen size may vary with input signal type.
Direct Button Operation

NETFLIX

Displays the NETFLIX screen.

Press NETFLIX.

NOTE

- If you press the NETFLIX button when the TV is turned off, the TV turns on and the NETFLIX screen is displayed.
- To enjoy Netflix, you need to make:
  — a broadband Internet connection (See page 9-1.)
  — settings of Internet Setup (See page 9-1.)
Preparation
You can connect the TV to a USB memory device, USB hard drive, SD memory card, Home Network server, Smartphone or Tablet to enjoy viewing pictures, listening to music, and watching videos.

NOTE
- Depending on the USB memory device/USB hard drive/SD memory card/Home Network server, the TV may not be able to recognize the recorded data.
- It may take time to read the recorded data if the USB memory device/USB hard drive/SD memory card/Home Network server contains many files or folders.
- Use only alphanumeric characters for naming files.
- File names over 80 characters (may vary depending on character set) may not be displayed.

Connecting a USB Memory Device/USB Hard Drive/SD Memory Card
Insert the USB memory device or SD memory card with recorded photos, music or videos into the USB 1, USB 2 or USB 3 terminal or SD memory card slot on the TV.
- If USB memory devices are inserted into multiple terminals, the USB 1 terminal has priority.
Preparation (Continue)

- When connecting a USB hard drive, be sure to use a hard drive with an AC adapter.
- Do not remove a USB memory device or SD memory card from the TV while transferring files, using the slide show function, or switching screens, or before you exit "Content Player".
- Do not insert and remove a USB memory device/USB hard drive/SD memory card to and from the TV repeatedly.
- When using a card reader, be sure to insert a USB memory device first.

CAUTION

- Do not use a USB extension cable when connecting a USB memory device to the USB terminal on the TV.
- Using a USB extension cable with the USB memory device may prevent the TV from performing correctly.

Connecting a Home Network Server

Connect the TV to the Home Network server using an ETHERNET cable.

- You can also connect a Home Network server by using a wireless LAN.

NOTE

- Do not disconnect a Home Network server from the TV while transferring files, when a screen is switching to another or before you exit "Content Player".
- Do not connect and disconnect a Home Network server from the TV repeatedly.
Selecting the Folders to Play Back

To play back data on a USB memory device or SD memory card, insert the USB memory device or SD memory card on the TV.

1. Select "Content Player" from the Devices screen, or launch the Content Player app from HOME screen.

2. Press ↓ / ↑ to select "Photo", "Music" or "Video", and then press ● (ENTER).

Example

3. Press ▲ / ▼ (or ↓ / ↑) to select the drive/server where you want to find your file, and then press ● (ENTER).

4. Press ↓ / ↑ to select the desired folder, and then press ● (ENTER).
Selecting the Folders to Play Back (Continue)

NOTE
- If the TV is turned off and then on again, the number assigned to the USB may change.

USB Device Compatibility

<table>
<thead>
<tr>
<th>USB device</th>
<th>USB Memory, USB card reader (Mass Storage class), USB hard drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>File system</td>
<td>FAT/FAT32</td>
</tr>
</tbody>
</table>

SD memory card Compatibility

<table>
<thead>
<tr>
<th>SD card</th>
<th>SD/SDHC memory card</th>
</tr>
</thead>
<tbody>
<tr>
<td>File system</td>
<td>FAT/FAT32</td>
</tr>
</tbody>
</table>

Photo file format

<table>
<thead>
<tr>
<th>Format</th>
<th>JPEG, PNG, BMP</th>
</tr>
</thead>
</table>

Music file format

<table>
<thead>
<tr>
<th>Format</th>
<th>Sampling rate [KHz]</th>
<th>Bitrate [Kbps]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP3</td>
<td>8/11.025/12/16/22.050/24/32/44.1/48</td>
<td>8~320</td>
</tr>
<tr>
<td>AAC</td>
<td>32/44.1/48</td>
<td>8~320</td>
</tr>
<tr>
<td>WMA</td>
<td>8/11.025/16/22.050/32/44.1/48/64/88.2/96</td>
<td>8~384</td>
</tr>
<tr>
<td>WAV</td>
<td>8/11.025/12/16/22.050/24/32/44.1/48</td>
<td>8~1024</td>
</tr>
</tbody>
</table>
### Video file format

<table>
<thead>
<tr>
<th>Container</th>
<th>Video</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVI</td>
<td>MPEG-1</td>
<td>PCM</td>
</tr>
<tr>
<td></td>
<td>MPEG-2</td>
<td>MP2: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>MPEG-4</td>
<td>Layer2</td>
</tr>
<tr>
<td></td>
<td>H.264</td>
<td>MP3: MPEG-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Layer3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AAC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AC3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WMA</td>
</tr>
<tr>
<td>MKV</td>
<td>MPEG-1</td>
<td>PCM</td>
</tr>
<tr>
<td></td>
<td>MPEG-4</td>
<td>MP2: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>H.264</td>
<td>Layer2</td>
</tr>
<tr>
<td></td>
<td>VP8</td>
<td>MP3: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>H.265(HEVC)</td>
<td>Layer3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AAC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AC3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WMA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VORBIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DTS</td>
</tr>
<tr>
<td>ASF</td>
<td>MPEG-4</td>
<td>MP3: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>VC1(WMV3)</td>
<td>Layer3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WMA</td>
</tr>
<tr>
<td>PS</td>
<td>MPEG-1</td>
<td>MP2: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>MPEG-2</td>
<td>Layer2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MP3: MPEG-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Layer3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AAC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AC3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DTS</td>
</tr>
<tr>
<td>TS</td>
<td>MPEG-2</td>
<td>MP2: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>VC1(WMV3)</td>
<td>Layer2</td>
</tr>
<tr>
<td></td>
<td>H.264</td>
<td>AAC</td>
</tr>
<tr>
<td></td>
<td>H.265(HEVC)</td>
<td>AC3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DTS</td>
</tr>
<tr>
<td>MP4</td>
<td>MPEG-4</td>
<td>MP2: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>H.264</td>
<td>Layer2</td>
</tr>
<tr>
<td></td>
<td>H.265(HEVC)</td>
<td>MP3: MPEG-1</td>
</tr>
<tr>
<td></td>
<td>VP8</td>
<td>Layer3</td>
</tr>
<tr>
<td></td>
<td>VC1(WMV3)</td>
<td>AAC</td>
</tr>
</tbody>
</table>

### Home Network Server Compatibility

<table>
<thead>
<tr>
<th>Photo file format</th>
<th>JPEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music file format</td>
<td>WAV, MP3</td>
</tr>
<tr>
<td>Video file format</td>
<td>MPEG2-PS, MPEG2-TS, WMV, ASF, MP4, MOV, AVI</td>
</tr>
</tbody>
</table>

### NOTE
- Progressive format jpeg files are not supported.
- USB 1.1 devices may not be played properly.
- Operation using USB hubs is not guaranteed.
- Some video file formats may not be played depending on the file.
- Some images may not be displayed in the appropriate aspect ratio depending on the file format.
- File extensions are not used to determine the file format.
- If you insert any card other than the SD/SDHC (class 6 or higher), it will not work.
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server

Photo Mode

Viewing Thumbnails

Example

Buttons for thumbnail/list operations

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲/▼</td>
<td>Select a desired item.</td>
</tr>
<tr>
<td>▼</td>
<td>In Thumbnail mode: Select a desired item. In List mode. Return to the previous process.</td>
</tr>
<tr>
<td>▶</td>
<td>In Thumbnail mode: Select a desired item. In List mode, when selecting a folder icon: Enter this directory. In List mode, when selecting a photo file: Enlarge the photo.</td>
</tr>
<tr>
<td>(ENTER)</td>
<td>When selecting a folder icon: Enter this directory. When selecting a photo file: Enlarge the photo.</td>
</tr>
<tr>
<td>(Back)</td>
<td>In Thumbnail mode: Return to the previous process. In List mode: Exit application.</td>
</tr>
<tr>
<td>B (blue)</td>
<td>Change Thumbnail/List mode.</td>
</tr>
<tr>
<td>Y (yellow)</td>
<td>Display the Menu screen.</td>
</tr>
</tbody>
</table>
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Menu for thumbnail operations
Press ▲ / ▼ to select an item and make settings to your preferences.

Example

<table>
<thead>
<tr>
<th>Sort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Type</td>
</tr>
<tr>
<td>Thumbnail Size</td>
</tr>
<tr>
<td>Recursive Parser</td>
</tr>
</tbody>
</table>

Sort
You can change the way in which files are ordered.
Press ▲ / ▼ to select “Type”, “Date” or “Name”, and then press ◎ (ENTER).

Media Type
Switch the media type when the Recursive Parser display is displayed.

Thumbnail Size
Change the thumbnail size.
  - Small/Medium/Large

Recursive Parser
Display all files according to the Media Type settings.

NOTE
- You can see the file name, file size and pixel size of the selected photo in the upper-left corner of the screen.
- When you are viewing the Content Player app, you cannot configure Picture/Audio settings.
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Slide Show

The photos displayed on the thumbnail selection screen are displayed as a slide show.

Buttons for slide show operation

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶️</td>
<td>Play the Slide Show.</td>
</tr>
<tr>
<td>▪️</td>
<td>Pause the Slide Show.</td>
</tr>
<tr>
<td>▲ / ▼ / ▼ / ▶️</td>
<td>Select the desired item.</td>
</tr>
<tr>
<td>◀️ (ENTER)</td>
<td>Return to the thumbnail selection screen.</td>
</tr>
<tr>
<td>Y (yellow)</td>
<td>Display the USB Menu screen.</td>
</tr>
</tbody>
</table>

Menu for slide show

Example

Repeat
Set whether to show the slide show repeatedly.
   None/Repeat One/Repeat All

Shuffle
Shuffle the image files within the folder and display as a slide show.

Duration
Specify the length of time before the next image appears.
Press ▲ / ▼ to select the desired length of the time, and then press ◀️ (ENTER).
   Short/Medium/Long

Effect
Specify the effect for transitioning to the next image.
   None/Dissolve/Wipe right/Wipe left/Wipe up/Wipe down
   Box in/Box out/Random

Rotate*
Rotate the photo by 90 degrees to the right.
   * Only displayed when playback is paused.

Zoom*
Zoom in on the image.
   Normal/Zoom 1/Zoom 2
   * Only displayed when playback is paused.

Sort
You can change the way in which files are ordered.
Press ▲ / ▼ to select "Type", "Date" or "Name", and then press ◀️ (ENTER).

NOTE
- The slide show continues until you press ◀️ (Back).
- For setting the slide show speed, select "Duration" on the Menu screen.
Music Mode

Viewing Thumbnails

Example

Buttons for thumbnail/list operations

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲ / ▼</td>
<td>Select a desired item.</td>
</tr>
<tr>
<td>◀</td>
<td>In Thumbnail mode: Select a desired item. In List mode: Return to the previous process.</td>
</tr>
<tr>
<td>▶</td>
<td>In Thumbnail mode: Select a desired item. In List mode, when selecting a folder icon: Enter this directory. In List mode, when selecting a music file: Play music.</td>
</tr>
<tr>
<td>(ENTER)</td>
<td>When selecting a folder icon: Enter this directory. When selecting a music file: Play music.</td>
</tr>
<tr>
<td>◄ (Back)</td>
<td>In Thumbnail mode: Return to this directory. In List mode: Exit application.</td>
</tr>
<tr>
<td>B (blue)</td>
<td>Change Thumbnail/List mode.</td>
</tr>
<tr>
<td>Y (yellow)</td>
<td>Display the MENU screen.</td>
</tr>
</tbody>
</table>

NOTE

- When you are viewing the Content Player app, you cannot configure Picture/Audio settings.
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Menu for thumbnail operations

Example

Sort
You can change the way in which files are ordered.
Press ▲ / ▼ to select "Date", "Genre", "Artist" or "Album", and then press ◎ (ENTER).

Media Type
Switch the media type when the Recursive Parser display is displayed.

Thumbnail Size
Change the thumbnail size.
  - Small/Medium/Large

Recursive Parser
Display all files according to the Media Type settings.
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

**Playing Mode**

**Buttons for playing mode**

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;&lt;</td>
<td>The fast reverse speed changes every time you press &lt;&lt;</td>
</tr>
<tr>
<td>&gt;&gt;</td>
<td>The fast forward speed changes every time you press &gt;&gt;</td>
</tr>
<tr>
<td>II</td>
<td>Pause the music.</td>
</tr>
<tr>
<td>&lt;&lt;</td>
<td>Go to the previous file.</td>
</tr>
<tr>
<td>&gt;&gt;</td>
<td>Go to the next file.</td>
</tr>
<tr>
<td>▼ / ▲ / ◀ / ▶ / (ENTER)</td>
<td>Select a desired item.</td>
</tr>
<tr>
<td>◀ (Back)</td>
<td>Return to the previous process.</td>
</tr>
<tr>
<td>(yellow) Y</td>
<td>Display the Menu screen.</td>
</tr>
</tbody>
</table>

**NOTE**

- The displayed play time may differ slightly from the actual play time depending on the files.

**Menu for playing mode**

- Repeat
  - Configure the repeat playback settings.
  - None/Repeat One/Repeat All

- Shuffle
  - Shuffle the music within the folder.

- Hide Spectrum/Show Spectrum
  - Show or hide the spectrum.

- Lyric
  - You can change the lyric display type.
  - This is only available when a lyrics file (".lrc") is present.
  - Only UTF-8 character code lyric files (without BOM) are supported.
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Video Mode

Viewing Thumbnails

Example

Buttons for thumbnail/list operations

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲/▼</td>
<td>Select a desired item.</td>
</tr>
<tr>
<td>▲</td>
<td>In Thumbnail mode: Select a desired item. In List mode. Return to the previous process.</td>
</tr>
<tr>
<td>▼</td>
<td>In Thumbnail mode: Select a desired item. In List mode, when selecting a folder icon: Enter this directory. In List mode, when selecting a video file: Play the video file.</td>
</tr>
<tr>
<td>(ENTER)</td>
<td>When selecting a folder icon: Enter this directory. When selecting a video file: Play the video file.</td>
</tr>
<tr>
<td>(Back)</td>
<td>In Thumbnail mode: Return to the previous process. In List mode. Exit application.</td>
</tr>
<tr>
<td>B (blue)</td>
<td>Change Thumbnail/List mode.</td>
</tr>
<tr>
<td>Y (yellow)</td>
<td>Display the Menu screen.</td>
</tr>
</tbody>
</table>
Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Menu for thumbnail operations

Example

Sort
You can change the way in which files are ordered.
Press ▲ / ▼ to select "Type", "Date" or "Name", and then press (ENTER).

Media Type
Switch the media type when the Recursive Parser display is displayed.

Thumbnail Size
Change the thumbnail size.
   Small/Medium/Large

Recursive Parser
Display all files according to the Media Type settings.

NOTE
• When you are viewing the Content Player app, you cannot configure Picture/Audio settings.
Enjoys Photo/Music/Video Playback

Playing Back Files on a USB Memory Device/SD Memory Card/Home Network Server (Continue)

Playing Mode

Buttons for playing mode

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>◀▶</td>
<td>The fast reverse speed changes every time you press ◀▶.</td>
</tr>
<tr>
<td>◁▶</td>
<td>Play the video.</td>
</tr>
<tr>
<td>◄▶</td>
<td>The fast forward speed changes every time you press ◄▶.</td>
</tr>
<tr>
<td>⏯</td>
<td>Pause the video.</td>
</tr>
<tr>
<td>◀◄</td>
<td>Go to the previous file.</td>
</tr>
<tr>
<td>◄</td>
<td>Stop the video.</td>
</tr>
<tr>
<td>►►</td>
<td>Go to the next file.</td>
</tr>
<tr>
<td>▲▼◄▶</td>
<td>Select a desired item.</td>
</tr>
<tr>
<td>● (ENTER)</td>
<td></td>
</tr>
<tr>
<td>◄ (Back)</td>
<td>Return to the previous process.</td>
</tr>
<tr>
<td>Y (yellow)</td>
<td>Display the Menu screen.</td>
</tr>
</tbody>
</table>

Menu for playing mode

Example

Repeat
Configure the repeat playback settings.
None/Repeat One/Repeat All

Screen Mode
Set the screen size.
Auto/Original
Playing Back Files from a Portable Device

With the remote playback function, you can use your portable device to play back pictures, video, and music on the Home Network server.

**Preparation**

Use Wi-Fi to connect the smartphone or tablet to the TV.

![Image of a TV, smartphone, and wireless router/access point]

**NOTE**

- A wireless access point is required to use a portable device.
Playing Back Files from a Portable Device (Continue)

1. Select “Content Player” from the Devices screen, or launch the Content Player app from HOME screen.

2. Press ◀/▶ to select “Remote play” icon, and then ● (ENTER).

3. While the TV is in standby mode, send photos/music/video from the smartphone, tablet, or similar device to the TV.
   - To use the remote playback function, your portable device must be a DLNA Certified Digital Media Controller.

**NOTE**
- This function will only start when the standby screen of Remote play is displayed after you launch the Content Player app from the HOME screen.
- This function may not work while an Internet application is being used.
- For information on the compatible formats, see "Home Network Server Compatibility" on page 6-5.
- Some Digital Media Controllers and Remote play applications are not supported. In this situation, regardless of whether the file can be played back, the message "Playback not possible" may be displayed, and playback may be stopped.
### Controlling HDMI Equipment Using LINK Operation

#### What's LINK Operation?
- Using the HDMI CEC (Consumer Electronics Control) protocol, with LINK Operation you can interactively operate compatible system equipment (Blu-ray disc equipment, AV amplifier, DVD).
- By connecting LINK-compatible devices with HDMI-certified cables to the TV, you can control a recorder or AV amplifier using the remote control of the TV.
- LINK Operation allows you to operate the HDMI-connected equipment with one remote control.

#### NOTE
- HDMI IN 1, 2, 3 and 4 terminals are all capable of receiving 4K60P 4:4:4 signals. To receive 4K60P 4:4:4 signals, on the Devices menu, set the HDMI type to "Full". (See page 4-1)
- For connecting the TV to LINK-compatible equipment, use commercially available cables.
- Point the remote control toward the TV, not to connected HDMI equipment.
- Video noise may occur depending on the type of HDMI cable used. Make sure to use an HDMI-certified cable.
- Up to 3 pieces of HDMI recording equipment and one AV amplifier can be connected using this system.

#### Example

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI 1</td>
<td>HDMI 2</td>
</tr>
<tr>
<td>HDMI 2</td>
<td>HDMI 3</td>
</tr>
<tr>
<td>HDMI 3</td>
<td>HDMI 4</td>
</tr>
</tbody>
</table>

## Single remote control
The LINK Operation automatically recognizes the connected HDMI device and you can control the TV and the devices as if using a universal remote control.

## Control the LINK-compatible audio system
Set the volume of LINK-compatible audio system.

#### NOTE
- The above description is an example of the LINK Operation function.
- Refer to this operation manual and the operation manual of the LINK-compatible device to be used with this TV.

---

**Connecting AQUOS BD player via LINK-compatible audio system**

- AQUOS BD player
- HDMI-certified cable
- Optical fiber cable
- Link-compatible audio system
- Back panel horizontal inputs
- Back panel vertical inputs

---

**Example**

- HDMI 1
- HDMI 2
- HDMI 3
- HDMI 4

---

**EN 7-1**
Controlling HDMI Equipment Using LINK Operation (Continue)

One Touch Playback

LINK Operation allows you to operate the HDMI-connected equipment with one remote control.

Press ▶ to start playing back a title.
- The last played program is played back.
- You can use the following buttons during broadcast viewing.

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOURCE</td>
<td>Turns the power of the HDMI connected devices on and off.</td>
</tr>
<tr>
<td>◀◀</td>
<td>Hold down this button to go in reverse.</td>
</tr>
<tr>
<td>▶</td>
<td>Starts playback.</td>
</tr>
<tr>
<td>◀▶</td>
<td>Hold down this button to fast forward.</td>
</tr>
<tr>
<td>■</td>
<td>Stops playback.</td>
</tr>
<tr>
<td></td>
<td>Sets pauses and still pictures.</td>
</tr>
<tr>
<td>◀◀</td>
<td>Pressing quickly once takes you to the start of the chapter currently playing. Each time you press it, you move back to the start of the previous chapter.</td>
</tr>
<tr>
<td>◀▶</td>
<td>Pressing quickly once takes you to the start of the next chapter. Each time you press it, you move ahead to the start of the next chapter.</td>
</tr>
</tbody>
</table>
Using a Smartphone with the TV

This function enables you to connect the TV to a smartphone that supports Mobile High-Definition Link (MHL®) using an MHL cable. To connect the TV to your MHL-compatible smartphone, be sure to use an MHL cable (commercially available).
- You can view pictures and video on a large screen.
- You can play back music files.

NOTE
- An MHL-compatible portable device is required to use this function. Connect the device to the HDMI IN 2 terminal.
- This product incorporates MHL 3.
- To use the MHL function, configure the settings from "HOME" > "Settings" > "Device" > "Control".

Auto Power On
When an MHL-compatible device is connected to the TV, the TV turns on automatically.

Operation Using the Remote Control
The remote control of the TV can be used to operate a portable device.
- ▲ / ▼ / ◄ / ►, ● (ENTER), EXIT, 0-9, etc.
- The operations vary depending on the connected equipment and content being viewed.

MHL cable
Back panel vertical inputs
Setting Audio Input

Audio Select HDMI

This function sets the terminal to output the computer audio. The adjustment items vary depending on the input source. Select the input source corresponding to the terminal connected to the PC and then adjust the desired item.

To perform the operation, refer to "Devices" > "Video in" > "HDMI 3" > "Audio Select".

HDMI 3

HDMI(Digital): Select this when the TV and PC are connected using an HDMI-certified cable and audio is input via the same cable.

HDMI+Analog: Select this when the TV and PC are connected using a HDMI-certified cable and the audio is input via a Ø 3.5 mm stereo minijack.

NOTE

- When "Audio Select" is set to "HDMI+Analog", sound will not be produced if you use only an HDMI-certified cable to connect HDMI-compatible equipment. To produce sound, you should make an analog audio connection.
- If you want to connect HDMI-compatible equipment using only an HDMI-certified cable, set "Audio Select" to "HDMI(Digital)".
- "Audio Select" can only be set for the HDMI IN 3.
Control of the TV

- The TV can be controlled from a PC, control panels and other devices using the RS-232C.
- Use a cross-type RS-232C cable (commercially available) for the connections.

**NOTE**

- This operation system should be used by a person who is accustomed to using computers.

**AQUOS Remote Control**

Set this function when operating the TV from equipment connected by LAN or wireless LAN. To perform the operation, refer to "TV Setup" > "General".

**Remote Control App**

When "Remote Control App" is selected, "Change" will be highlighted. Press ● (ENTER).

**Detailed Settings**

Make the detailed settings (Login ID, password).
Follow the on-screen instructions to configure the settings.

**Device Name**

Set the name of the TV displayed on other network devices.
Configure the settings from "HOME" > "Settings" > "Device" > "About" > "Device Name".

---

**Communication Conditions for RS-232C**

Set the RS-232C communication settings on the PC to match the TV's communication conditions.

The TV's communication settings are as follows:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud rate</td>
<td>9,600  bps</td>
</tr>
<tr>
<td>Data length</td>
<td>8 bits</td>
</tr>
<tr>
<td>Parity bit</td>
<td>None</td>
</tr>
<tr>
<td>Stop bit</td>
<td>1 bit</td>
</tr>
<tr>
<td>Flow control</td>
<td>None</td>
</tr>
</tbody>
</table>

Communication procedure
Send the control commands from the PC via the RS-232C.
The TV operates according to the received command and sends a response message to the PC.
Do not send multiple commands at the same time.
Wait until the PC receives the OK response before sending the next command.
Control of the TV (Continue)

Command format
Eight ASCII codes +CR

Command 4-digits: Command. The text of four characters.
Parameter 4-digits: Parameter 0-9, x, blank, ?

Parameter
Input the parameter values, aligning left, and fill with blank(s) for the remainder. (Be sure that 4 values are input for the parameter.)

When the input parameter is not within an adjustable range, "ERR" returns. (Refer to "Response code format")

Any numerical value can replace the "x" on the table.

0 0 0 0
0 0 0 9
− 3 0

Response code format
Normal response
O K

Problem response
(communication error or incorrect command)
ERR

Command table
- Commands not indicated here are not guaranteed to operate.

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT SELECTION</td>
<td>TOGGLE</td>
<td>T G D x ? ? ?</td>
<td>(Toggle) It input-switches by the toggle. (It is the same as an input change key)</td>
</tr>
<tr>
<td>TV</td>
<td>I T V D</td>
<td>0 ? ? ?</td>
<td>It input-switches to TV. (A channel remains as it is. (Last memory))</td>
</tr>
<tr>
<td>1-5</td>
<td>I A V D</td>
<td>* ? ? ?</td>
<td>1: HDMI IN 1, 2: HDMI IN 2, 3: HDMI IN 3, 4: HDMI IN 4, 5: COMPONENT/VIDEO IN</td>
</tr>
</tbody>
</table>

NOTE
- If an underbar (_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- Any numerical value can replace the "x" on the table.
## Control of the TV (Continue)

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV MODE SELECTION</td>
<td>A V M D</td>
<td>* * * _</td>
<td>0: (Toggle), 1: STANDARD, 2: MOVIE, 3: GAME, 5: DYNAMIC (Fixed), 6: DYNAMIC 7: PC Although it can choose now, it is toggle operation in inside.</td>
</tr>
<tr>
<td>VOLUME</td>
<td>V O L M</td>
<td>* * * _</td>
<td>Volume (0-100)</td>
</tr>
</tbody>
</table>

### Control Contents

**NOTE**

- If an underbar (_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- Any numerical value can replace the “x” on the table.

**CONTROL ITEM** | **COMMAND** | **PARAMETER** | **CONTROL CONTENTS**
---|---|---|---
VIEW MODE | W I D E | * * _ _ | 0: (Toggle), 1: Normal, 2: Zoom 14:9, 3: Cinema 16:9, 4: Full, 6: Cinema 14:9, 8: Dot by Dot, 9: Underscan, 10: Auto, 11: Original It is the same as View Mode key.
MUTE | M U T E | * _ _ _ | 0: (Toggle), 1: On, 2: Off
### Control of the TV (Continue)

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURROUND</td>
<td>A</td>
<td>C S U</td>
<td>0: (Toggle), 1: On, 2: Off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUDIO SELECTION</td>
<td>A</td>
<td>C H A</td>
<td>(Toggle)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQUALIZER</td>
<td>E</td>
<td>Q L Z</td>
<td>0: (Toggle), 1: Off, 2: Rock, 3: Pop, 4: Live, 5: Dance, 6: Techno, 7: Classic, 8: Soft</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TELETEXT</td>
<td>T</td>
<td>E X T</td>
<td>TEXT OFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>C P G</td>
<td>Direct page jump (100-899)</td>
</tr>
</tbody>
</table>

### CONTROL CONTENTS

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANNEL</td>
<td>D</td>
<td>C C H</td>
<td>TV DIRECT CHANNEL (1-99)</td>
</tr>
<tr>
<td></td>
<td>D A</td>
<td>2 P *</td>
<td>DTV DIRECT CHANNEL (1-899)</td>
</tr>
<tr>
<td></td>
<td>I A</td>
<td>T V X</td>
<td>An input change to ATV</td>
</tr>
<tr>
<td></td>
<td>I D</td>
<td>T V X</td>
<td>An input change to DTV</td>
</tr>
</tbody>
</table>

### NOTE

- If an underbar (_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- Any numerical value can replace the "x" on the table.
### Control of the TV (Continue)

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANNEL</td>
<td>CH UP</td>
<td>C H U P x</td>
<td>The channel number of TV +1 If it is not TV display, it will input-switch to TV. (same function as CH +)</td>
</tr>
<tr>
<td></td>
<td>CH DOWN</td>
<td>C H D W x</td>
<td>The channel number of TV -1 If it is not TV display, it will input-switch to TV. (same function as CH \−)</td>
</tr>
<tr>
<td>SUBTITLE</td>
<td>C L C P x</td>
<td></td>
<td>Toggle operation of a subtitle.</td>
</tr>
<tr>
<td>DEVICE NAME</td>
<td>T V N M 1</td>
<td></td>
<td>The device name set in &quot;Device Name&quot; is displayed.</td>
</tr>
<tr>
<td>MODEL NAME</td>
<td>M N R D 1</td>
<td></td>
<td>The model name of the TV.</td>
</tr>
</tbody>
</table>

### CONTROL CONTENTS

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOFTWARE VERSION</td>
<td>S W V N 1</td>
<td>– – –</td>
<td>The current version of the TV software is displayed.</td>
</tr>
<tr>
<td>IP PROTOCOL VERSION</td>
<td>I P P V 1</td>
<td>– – –</td>
<td>The currently supported version of IP protocol is displayed.</td>
</tr>
</tbody>
</table>

**NOTE**

- If an underbar (\_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- Any numerical value can replace the "x" on the table.
### Control of the TV (Continue)

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE CONTROL</td>
<td>R</td>
<td>C K Y</td>
<td>** ( ) _ _ 0-9,</td>
</tr>
<tr>
<td>BUTTONS</td>
<td></td>
<td></td>
<td>12: POWER,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13: DISPLAY,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14: POWER (SOURCE)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15: ➤,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16: ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17: ➤ ➤,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18:  ✖,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>19: ➤ ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20: ➤ ➤ ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21: ➤ ➤ ➤ ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24: SLEEP,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28: AV MODE,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29: VIEW,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30: ➤ (FLASHBACK),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31: MUTE,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>32: VOL - ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>33: VOL + ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34: CH Æ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35: CH Æ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36: DEVICES,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38: TV SETUP,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>39: HOME,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40: ➤ (ENTER),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>41: ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42: ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>43: ➤ ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>44: ➤ ,</td>
</tr>
</tbody>
</table>

### Control of the TV (Continue)

<table>
<thead>
<tr>
<th>CONTROL ITEM</th>
<th>COMMAND</th>
<th>PARAMETER</th>
<th>CONTROL CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE CONTROL</td>
<td>R</td>
<td>C K Y</td>
<td>** ( ) _ _ 45: BACK,</td>
</tr>
<tr>
<td>BUTTONS</td>
<td></td>
<td></td>
<td>46: EXIT,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>49: AUDIO,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50: R (red),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>51: G (green),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>52: B (blue),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>53: Y (yellow),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>59: NETFLIX,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>61: MANUAL,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>64: SUBTITLE,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>65: TELETEXT,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>66: EPG,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>67: SUBPAGE,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>68: HOLD,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>69: TV,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>70: TOP/BOTTOM/FULL,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>71: INFO,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>72: REVEAL/HIDDEN,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>73: OPC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>79: EQUALIZER</td>
</tr>
</tbody>
</table>

**NOTE**

- If an underbar (_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- Any numerical value can replace the "x" on the table.
PC Compatibility Chart

It is necessary to set the PC correctly to display XGA and WXGA signal.

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Horizontal Frequency</th>
<th>Vertical Frequency</th>
<th>VESA Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VGA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>720 x 400</td>
<td>31.5 kHz</td>
<td>70 Hz</td>
<td>—</td>
</tr>
<tr>
<td>640 x 480</td>
<td>31.5 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>37.9 kHz</td>
<td>72 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>37.5 kHz</td>
<td>75 Hz</td>
<td>○</td>
</tr>
<tr>
<td><strong>SVGA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800 x 600</td>
<td>35.1 kHz</td>
<td>56 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>37.9 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>48.1 kHz</td>
<td>72 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>46.9 kHz</td>
<td>75 Hz</td>
<td>○</td>
</tr>
<tr>
<td><strong>XGA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1024 x 768</td>
<td>48.4 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>56.5 kHz</td>
<td>70 Hz</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>60.0 kHz</td>
<td>75 Hz</td>
<td>○</td>
</tr>
<tr>
<td><strong>WXGA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1360 x 768</td>
<td>47.7 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td><strong>SXGA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1280 x 1024</td>
<td>64.0 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td><strong>SXGA+</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400 x 1050</td>
<td>65.3 kHz</td>
<td>60 Hz</td>
<td>○</td>
</tr>
<tr>
<td>1080p</td>
<td>1920 x 1080</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>67.5 kHz</td>
<td>60 Hz</td>
<td>—</td>
</tr>
<tr>
<td><strong>2160p</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3840 x 2160</td>
<td>53.95 kHz</td>
<td>24 Hz</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>56.25 kHz</td>
<td>25 Hz</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>67.5 kHz</td>
<td>30 Hz</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>135 kHz</td>
<td>60 Hz</td>
<td>—</td>
</tr>
</tbody>
</table>

VGA and XGA are registered trademarks of International Business Machines Corp.

**NOTE**

- HDMI IN 1, 2, 3 and 4 terminals are all capable of receiving 4K60P 4:4:4 signals.
  To receive 4K60P 4:4:4 signals, on the Devices menu, set the HDMI type to "Full". *(See page 4-1)*
Connecting to the Internet

By connecting your TV to a broadband system, you can access the Internet from the TV.
- You can enjoy a variety of streaming content and Internet applications.
- It is necessary to configure the network settings in order to enjoy streaming content and internet applications. These settings can be configured from "HOME" > "Settings" > "Device" > "Network".

**NOTE**

- To connect your TV to the Internet, you must have a broadband Internet connection.
- If you do not have a broadband Internet connection, consult the store where you purchased your TV or ask your Internet service provider or telephone company.
- When an Internet connection is made, an Ethernet and wireless connection cannot be used at the same time. Use only one of the connection types.

**Using an ETHERNET cable**

Use an ETHERNET cable (commercially available) to connect the ETHERNET terminal on the TV to your broadband router (commercially available).

**Using the wireless LAN**

This TV is equipped with a wireless LAN function.
For a wireless LAN connection, you must use wireless setup to connect the access point and TV.
Connecting to the Internet (Continue)

NOTE

- This TV has a built-in wireless LAN function. Using a separate wireless USB LAN adapter may result in radio communications that do not comply with regulations on radio communications. Therefore, do not use a separate wireless LAN adapter.
- A wireless LAN connection and performance cannot be guaranteed for all residential environments. In the following cases, the wireless LAN signal may be poor or drop, or the connection speed may become slower.
  - When used in buildings made with concrete, reinforced steel, or metal
  - When placed near objects that obstruct the signal
  - When used with other wireless devices that emit the same frequency
  - When used in the vicinity of microwave ovens and other devices that emit a magnetic field, electrostatic charge, or electromagnetic interference
- When there is significant interference in the 2.4-GHz frequency (such as from other wireless LAN devices, Bluetooth® devices, 2.4-GHz cordless telephones, and microwave ovens), it is recommended that you use a wireless LAN router/access point that supports IEEE802.11ac (5 GHz) and set the access point to transmit at 5 GHz. For setup details, see the operation manual of your access point.
- Operations cannot be guaranteed when used with access points that do not have Wi-Fi® certification.
- A wireless LAN router/access point is required to connect the TV to the Internet using a wireless LAN. See the operation manual of your access point for setup.
- If your access point is set to a stealth mode (that prevents detection by other devices), you may not be able to establish a connection. In this case, disable the stealth mode on the access point.
- A stable connection speed is required to play back streaming content. Use an Ethernet connection if the wireless LAN speed is unstable.
- Before transferring to a third party or disposal, be sure to initialize the wireless LAN settings.
- Please follow the legislation in your country when using the wireless LAN outdoors.
- If you have failed to connect to the Internet in the above operation, then an error message will appear. In this case, press EXIT to exit from the connected TV feature to make changes to the network settings.
- If you still cannot connect to the Internet, please consult your Internet service provider or telephone company.
- You cannot configure the settings from "HOME" > "Settings" > "Device" > "Network" while using an application. If you must configure your "Network" settings, press the EXIT key to exit the function.

EN 9-2
Using Keyboard and Mouse

You can use a keyboard or mouse for operating the TV when using applications.

- When you use the USB devices, connect the device to the USB terminal on the TV.
- When you use the bluetooth device, make necessary settings with “Bluetooth”.

**NOTE**

- The keyboard or mouse may not operate properly depending on the application being used.
- The bluetooth device may not operate properly depending on the device being used.
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## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Solution</th>
</tr>
</thead>
</table>
| **No power** | - Check if you pressed POWER on the remote control unit.  
- Is the AC cord disconnected?  
- Has the power been turned on? |
| **Unit cannot be operated.** | - External influences such as lightning, static electricity, may cause improper operation. In this case, operate the unit after first turning off the power of the TV or unplugging the AC cord and re-plugging it in after 1 or 2 minutes. |
| **Remote control unit does not operate.** | - Is the equipment to be operated by the remote control unit set correctly?  
- Press TV to set the remote control unit to the setting for operating the TV.  
- Are batteries inserted with polarity (+, -) aligned?  
- Are batteries worn out? (Replace with new batteries.)  
- Are you using it under strong or fluorescent lighting?  
- Is a fluorescent light illuminated near the remote control sensor?  
- Is "RC Control Lock" selected in "Operation Lock Out"?  
  ![Page 3-43]  
- If you are using a touchpad remote control unit, has the pairing operation finished?  
  ![Page 2-2] |
| **Picture is cut off/with sidebar screen.** | - Are screen mode adjustments such as picture size made correctly?  
  ![Pages 5-7 to 5-9] |
| **Strange colour, light colour, or colour misalignment** | - Adjust the picture tone.  
  ![Pages 3-2 to 3-18]  
- Is the room too bright? The picture may look dark in a room that is too bright. |
| **Power is suddenly turned off.** | - Is the sleep timer set?  
  ![Pages 5-6]  
- Check the power control settings.  
  ![Page 2-5]  
- The unit's internal temperature has increased. Remove any objects blocking vent or clean. |
| **No picture** | - Is connection to other components correct?  
- If the PC image is not displayed, check the following:  
  - When connecting a laptop PC to the TV, check that display output mode of the PC is set to external monitor.  
  - Check the resolution setting on the PC. Is a non-compatible signal being input?  
  ![Page 8-8]  
- For 4K60P signals applied to an HDMI input, the external device may not be outputting signals correctly. Set "HDMI Type Selection" to "Limited".  
  ![Page 4-1] |
| **Picture quality of HD programs is poor.** | - To enjoy HD images from external equipment, you are required to set up HDMI connection or component connection.  
- If the program content is not of HD quality, HD images cannot be displayed. Check that the program you are viewing provides HD images.  
- The HD cable/satellite set-top box may need to be configured to output HD images via cable/satellite.  
- The cable/satellite broadcast may not support a signal resolution of 1080p. |
| **The TV sometimes makes a cracking sound.** | - This is not a malfunction. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the TV's performance. |
### Troubleshooting (Continue)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Solution</th>
</tr>
</thead>
</table>
| No sound | - Is connection to other components correct?  
- Is the volume too low?  
- Is "Variable" selected in "Output Select"?  
- Have you pressed MUTE on the remote control unit?  
- Check the audio output of the connected external equipment. Is the volume too low or muted?  
- When external equipment is connected via an HDMI cable, you may need to configure the audio to be output through the HDMI cable.  
- When audio is not output from external equipment connected to the HDMI IN 3 terminal, check the "Audio Select" setting.  
- Even when external equipment is connected using an HDMI-certified cable, an audio cable connection may be required depending on the type of equipment and the media being played back. In this case, in addition to connecting an HDMI-certified cable to the HDMI IN 3 terminal, connect a Ø 3.5 mm stereo minijack cable to the AUDIO IN terminal and set "Audio Select" to "HDMI+Analog".  
- When connecting a PC via an HDMI-certified cable, check the following:  
  - Is the audio output of the PC configured correctly? Check the audio output settings and output audio format in Sound Properties on the PC.  
  - Depending on the board, only video signals may be output. In this case, in addition to connecting an HDMI-certified cable to the HDMI IN 3 terminal, connect a Ø 3.5 mm stereo minijack cable to the AUDIO IN terminal and set "Audio Select" to "HDMI+Analog".  |

<table>
<thead>
<tr>
<th></th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google Cast image/audio cannot be output to the TV.</td>
<td>- Check pairing.</td>
</tr>
</tbody>
</table>
## Troubleshooting - Error Message

<table>
<thead>
<tr>
<th>The example of an error message displayed on a screen</th>
<th>Possible Solution</th>
</tr>
</thead>
</table>
| • No broadcast now.                                  | • Check the antenna cable. Check that the antenna is correctly setup.  
  • Check the broadcast time in the program guide.     |
| • An incompatible audio signal has been received. Check the output device settings. | • This message is displayed when an audio format other than PCM, Dolby Digital is input.  
  - Set the audio output format of connected external HDMI equipment to PCM, Dolby Digital.  
  - Refer to the operation manual of the external equipment for setting details. |
## Information on the Software License for This Product

### Software License

You can read the software licenses in the on-screen display menu. Refer to "HOME" > "Settings" > "Devices" > "About" > "Legal information" > "Open source licenses".

### Software composition

The software included in this product is comprised of various software components whose individual copyrights are held by SHARP or by third parties.

### Cautions regarding use in high and low temperature environments

- When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
- Do not leave the unit in a hot or cold location. Also, do not leave the unit in a location exposed to direct sunlight or near a heater, as this may cause the cabinet to deform and the front panel to malfunction.

Storage temperature: -20°C to +60°C
### Trademarks

- Google, Google Cast, Android and Android TV are trademarks of Google Inc.

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

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  - The Wi-Fi Protected Setup Mark is a mark of the Wi-Fi Alliance.

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## TV Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model: LC-50UE630X</th>
<th>Model: LC-58UE630X</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD panel</td>
<td>126 cm</td>
<td>146 cm</td>
</tr>
<tr>
<td>Resolution</td>
<td>8,294,400 pixels (3840 x 2160)</td>
<td></td>
</tr>
<tr>
<td>Video colour system</td>
<td>PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital: DVB-T / DVB-T2</td>
<td>NTSC: M</td>
</tr>
<tr>
<td>Receiving Channel</td>
<td>VHF/UFH: 44.25—863.25 MHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CATV: S1—S41 ch (including Hyperband)</td>
<td></td>
</tr>
<tr>
<td>TV-tuning system</td>
<td>Auto Preset 99 ch</td>
<td></td>
</tr>
<tr>
<td>STEREO/BILINGUAL</td>
<td>NICAM: B/G, I, D/K</td>
<td>A2 stereo: B/G</td>
</tr>
<tr>
<td>Audio amplifier</td>
<td>10 W x 2</td>
<td></td>
</tr>
<tr>
<td>Terminals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANT (Antenna input)</td>
<td>UHF/VHF 75 Ω DIN type</td>
<td></td>
</tr>
<tr>
<td>RS-232C</td>
<td>D-Sub 9 pin male connector</td>
<td></td>
</tr>
<tr>
<td>INPUT 1 (ARC) HDMI</td>
<td>HDMI (HDMI input), ARC</td>
<td></td>
</tr>
<tr>
<td>INPUT 2 (MHL) HDMI</td>
<td>HDMI (HDMI input), MHL</td>
<td></td>
</tr>
<tr>
<td>INPUT 3 HDMI</td>
<td>HDMI (HDMI input), AUDIO IN</td>
<td></td>
</tr>
<tr>
<td>INPUT 4 HDMI</td>
<td>HDMI (HDMI input)</td>
<td></td>
</tr>
<tr>
<td>INPUT 5</td>
<td>AUDIO in, VIDEO in, COMPONENT in</td>
<td></td>
</tr>
<tr>
<td>USB 1</td>
<td>USB</td>
<td></td>
</tr>
<tr>
<td>USB 2</td>
<td>USB</td>
<td></td>
</tr>
<tr>
<td>USB 3 (HDD)</td>
<td>USB</td>
<td></td>
</tr>
<tr>
<td>USB</td>
<td>USB connector type B (not for customers)</td>
<td></td>
</tr>
<tr>
<td>SD/SDHC</td>
<td>SD/SDHC memory card*1</td>
<td></td>
</tr>
<tr>
<td>ETHERNET (10/100 BASE-T)</td>
<td>Network connector</td>
<td></td>
</tr>
<tr>
<td>AUDIO IN (HDMI 3)</td>
<td>Ø 3.5 mm stereo jack (audio input)</td>
<td></td>
</tr>
<tr>
<td>DIGITAL AUDIO OUTPUT</td>
<td>Optical S/PDIF digital audio output</td>
<td></td>
</tr>
<tr>
<td>OUTPUT</td>
<td>Ø 3.5 mm stereo jack (audio output)</td>
<td></td>
</tr>
<tr>
<td>C.I. (Common Interface)</td>
<td>EN50221, R206001, CI specification</td>
<td></td>
</tr>
</tbody>
</table>

**OSD language**
- English (UK)/English (US)/Simplified Chinese/Arabic/French/Portuguese/Russian/Persian/Thai/Vietnamese/Indonesia

**Power Requirement**
- AC 110 — 240 V, 50/60 Hz
- 171W (0.5W Standby) 200W (0.5W Standby)

**Dimensions**
- without stand: 1123 (W) x 656 (H) x 82 (D) mm
- with stand: 1123(W) x 685 (H) x 305 (D) mm
- 1298 (W) x 763 (H) x 85 (D) mm
- 1298 (W) x 789 (H) x 305 (D) mm

**Weight**
- without stand: 22 kg (24 kg)
- with stand: 28 kg (30 kg)

**Operating temperature**
- 0°C to +40°C

---

**CAUTION**
- Installing the Liquid Crystal Television requires special skill that should only be performed by qualified service personnel. Customers should not attempt to do the work themselves. SHARP bears no responsibility for improper mounting or mounting that results in accident or injury.
- Carefully read the instructions that come with the bracket before beginning work.

EN 12-1
<table>
<thead>
<tr>
<th>Item</th>
<th>Model: LC-60UE630X</th>
<th>Model: LC-65UE630X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TV panel</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>TV Function</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV-standard</td>
<td>Analogue</td>
<td></td>
</tr>
<tr>
<td>Digital</td>
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</tr>
<tr>
<td>USB 1</td>
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<tr>
<td>Digital audio output</td>
<td>Optical S/PDIF digital audio output</td>
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<td><strong>OSD language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Requirement</td>
<td>English (UK)/English (US)/Simplified Chinese/Arabic/French/Portuguese/Russian/Persian/Thai/ Vietnamese/Indonesian</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>AC 110 — 240 V, 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>1355 (W) x 791 (H) x 86 (D) mm</td>
<td>1457 (W) x 847 (H) x 65 (D) mm</td>
</tr>
<tr>
<td>Weight without stand</td>
<td>25.5kg (28.5kg)</td>
<td>36.5kg (39.5kg)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* If you insert any card other than the SD/SDHC (class 6 or higher), it will not work.
* As a part of policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.
* Specification may differ depending on the selected country.

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## Wireless LAN

<table>
<thead>
<tr>
<th>Specification</th>
<th>IEEE 802.11a/b/g/n/ac</th>
</tr>
</thead>
</table>
| **Security**  | Static WEP (64/128 bit key index 1 only)  
WPA-PSK (TKIP)  
WPA2-PSK (AES) |
| **Modulation** | IEEE802.11b: DBPSK, DQPSK, CCK / DSSS HRDSSS  
IEEE802.11a: BPSK, QPSK, 16QAM, DBPSK, DQPSK, CCK / OFDM  
IEEE802.11g: BPSK, QPSK, 16QAM, DBPSK, DQPSK, CCK, PBCC / OFDM  
IEEE802.11n: BPSK, QPSK, 16QAM, 64QAM / OFDM  
IEEE802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM / OFDM |
| **Throughput** | IEEE802.11b: 1, 2, 5, 5, 11Mbps  
IEEE802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps  
IEEE802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps  
IEEE802.11n: ~300Mbps  
IEEE802.11ac: ~866.6Mbps |