SAFETY PRECAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:
HOT SURFACE. DO NOT TOUCH.
Hot surface mark

The top surface over the internal heat sink may become hot when operating this product continuously. Do not touch hot areas, especially around the “Hot surface mark” and the top panel.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings.
8. Install in accordance with the manufacturer’s instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
10. Do not use attachments/accessories specified by the manufacturer.
11. Do not use with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel.
14. Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION:
To completely disconnect this product from the mains, disconnect the plug from the wall socket outlet. The mains plug is used to completely interrupt the power supply to the unit and must be within easy access by the user.

• DECLARATION OF CONFORMITY
Our products following the provisions of EC/EU directives, that as follows;
LV: 2006/95/EC
EMC: 2004/108/EC
RoHS: 2011/65/EU
ErP: EC regulation 1275/2008 and its frame work directive 2009/125/EC

Denon EUROPE
Division of D&M Germany GmbH
An der Kleinbahn 18, Nettetal,
D-41334 Germany

A NOTE ABOUT RECYCLING:
This product’s packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations.

When discarding the unit, comply with local rules or regulations.
Batteries should never be thrown away or incinerated but disposed of in accordance with the local regulations concerning battery disposal.
This product and the supplied accessories, excluding the batteries, constitute the applicable product according to the WEEE directive.
WARNING

• Avoid high temperatures.
• Allow for sufficient heat dispersion when installed in a rack.
• Handle the power cord carefully.
  • Hold the plug when unplugging the cord.
• Keep the unit free from moisture, water, and dust.
• Unplug the power cord when not using the unit for long periods of time.
• Do not obstruct the ventilation holes.
• Do not let foreign objects into the unit.
• Do not let insecticides, benzene, and thinner come in contact with the unit.
• Never disassemble or modify the unit in any way.
• Ventilation should not be impeded by covering the ventilation openings
  with items, such as newspapers, tablecloths or curtains.
• Naked flame sources such as lighted candles should not be placed on
  the unit.
• Observe and follow local regulations regarding battery disposal.
• Do not expose the unit to dripping or splashing fluids.
• Do not place objects filled with liquids, such as vases, on the unit.
• Do not handle the mains cord with wet hands.
• When the switch is in the OFF [STANDBY] position, the equipment is not
  completely switched off from MAINS.
• The equipment shall be installed near the power supply so that the power
  supply is easily accessible.
• Do not keep the battery in a place exposed to direct sunlight or in places
  with extremely high temperatures, such as near a heater.

CAUTIONS ON INSTALLATION

• For proper heat dispersal, do not install this unit in a confined
  space, such as a bookcase or similar enclosure.
  • More than 0.3 m is recommended.
After reading this manual, be sure to keep it for future reference.

Thank you for purchasing this Denon product. To ensure proper operation, please read this owner’s manual carefully before using the product.

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Accessories
Check that the following parts are supplied with the product.

1. Getting Started ................................................. 1
2. CD-ROM (Owner’s Manual) 1
3. Safety Instructions ................................ 1
4. Power cord ................................................. 1
5. Remote control unit (RC-1180) ........................... 1
6. R03/AAA batteries ........................................... 2
7. AM loop antenna ............................................. 1
8. FM indoor antenna ......................................... 1
9. Cable label ................................................... 1
10. FM indoor antenna ....................................... 1

11. Accessory label ............................................. 1
12. FM indoor antenna ....................................... 1
13. Remote control unit (RC-1180) ......................... 1
14. R03/AAA batteries ........................................... 2
15. Power cord ................................................. 1
16. Getting Started ................................................. 1
17. CD-ROM (Owner’s Manual) 1
18. Safety Instructions ................................ 1
19. Accessory label ............................................. 1
20. FM indoor antenna ....................................... 1
21. Remote control unit (RC-1180) ......................... 1
22. R03/AAA batteries ........................................... 2
23. Power cord ................................................. 1
24. Getting Started ................................................. 1
25. CD-ROM (Owner’s Manual) 1
26. Safety Instructions ................................ 1
27. Accessory label ............................................. 1
28. FM indoor antenna ....................................... 1
29. Remote control unit (RC-1180) ......................... 1
30. R03/AAA batteries ........................................... 2
31. Power cord ................................................. 1
Features

With discrete circuit technology, the power amplifier provides identical quality for all 5 channels (110 Watts x 5 channels)

For optimum realism and stunning dynamic range, the power amplifier section features discrete power devices (not integrated circuitry).

By using high current, high power discrete power devices, the amplifier is able to easily drive high quality speakers.

HDMI connections enable quick connection to various digital AV devices (4 inputs, 1 output)  
(The unit is equipped with 4 HDMI input connectors for connecting devices with HDMI connectors, such as a Blu-ray Disc player, game console, HD digital camcorder, etc.

Supports HDMI (3D, Deep Color and “x.v.Color”)  
(Advanced HDMI features are supported, including 3D passthrough, Deep Color and “x.v.Color”.

High definition audio support

The unit is equipped with a decoder which supports high-quality digital audio format for Blu-ray Disc players such as Dolby TrueHD, DTS-HD Master Audio, etc.

Features an PORTABLE input jack on the front panel for connecting portable audio player (page 13)

Compressed Audio Restorer is Denon technology that restores compressed music sources to their original pre-compressed quality to give you a lively sonic ambience with greater detail and depth.

GUI overlay on HD source

You can easily make settings for your home theatre system while viewing menus on the TV screen. These menu displays can also be output to the monitor over HDMI.

Easy to use, screen display

Simple settings are enabled with the setting menus displayed on the TV screen. When you control the sound volume, the volume level is displayed on the screen, and when you switch the input source, the name of the input source is displayed.

Cautions on handling

• Before turning the power on
  Check once again that all connections are correct and that there are no problems with the connection cables.

• Power is supplied to some of the circuitry even when the unit is set to the standby mode. When going on vacation or leaving home for long periods of time, be sure to unplug the power cord from the power outlet.

• About condensation
  If there is a major difference in temperature between the inside of the unit and the surroundings, condensation (dew) may form on the operating parts inside the unit, causing the unit not to operate properly.

If this happens, let the unit sit for an hour or two with the power turned off and wait until there is little difference in temperature before using the unit.

• Cautions on using mobile phones
  Using a mobile phone near this unit may result in noise. If that occurs, move the mobile phone away from this unit when it is in use.

• Moving the unit
  Turn off the power and unplug the power cord from the power outlet. Next, disconnect the connection cables to other system units before moving the unit.

• About care
  • Wipe the cabinet and control panel clean with a soft cloth.
  • Follow the instructions when using a chemical cleaner.
  • Benzene, paint thinner or other organic solvents as well as insecticide may cause material changes and discoloration if brought into contact with the unit, and should therefore not be used.
Basic instructions

Here we explain the connections and basic operation methods for this unit.

- Connections  page 4
- Playback (Basic operation)  page 15
- Selecting a listening mode (Surround mode)  page 21

For speaker connections, see page 26.
Connections

Important information

Make connections before using this unit.
To create a home theater that can play back higher quality video and audio by fully utilizing
the capabilities of the unit and your video devices, connect the unit to each of your video devices with
HDMI cables.

- **HDMI devices**

  - TV  page 6
  - GAME  page 7
  - Blu-ray  page 7
  - AUX  page 7

If your video device does not support HDMI connections, use the following connection.

- **Other devices**

  - TV  page 10
  - BLU/SAT  page 11
  - DVD  page 12
  - PORTABLE  page 13
  - TUNER  page 13

This unit can change the source that is assigned to the DIGITAL AUDIO IN connectors.
You can change the source for connectors listed in Input connector setting within pages that
describe connections for devices.
For details on assigning a source to connectors, see “Changing the source assigned to connectors” ( page 9). For the setting method, see “Input Assign” ( page 34).

**NOTE**
- The menu screen is only displayed on TV connected to this unit via HDMI. If your TV is connected
to this unit via other video output connectors, perform menu operations while seeing the display
on this unit.
- When making connections, also refer to the operating instructions of the other devices being connected.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Do not bundle power cords together with connection cables. Doing so can result in noise.

Relationship between video signals and monitor output

This unit is equipped with two types of video input connectors (HDMI and composite video) and two types
of video output connectors (HDMI and composite video).

![Flow of video signals]

<table>
<thead>
<tr>
<th>Video device</th>
<th>This unit</th>
<th>HDMI-compatible TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input (IN)</td>
<td>HDMI connector</td>
<td>HDMI connector</td>
</tr>
<tr>
<td>Output (MONITOR OUT)</td>
<td>HDMI connector</td>
<td>HDMI connector</td>
</tr>
<tr>
<td>HDMI signal</td>
<td>HDMI signal</td>
<td>HDMI signal</td>
</tr>
<tr>
<td>Video signal</td>
<td>Video signal</td>
<td>Video signal</td>
</tr>
</tbody>
</table>

**NOTE**
- The menu screen is only displayed on TV connected to this unit via HDMI. If your TV is connected
to this unit via other video output connectors, perform menu operations while seeing the display
on this unit.
- HDMI signals cannot be converted into analog signals ( page 55).
- Analog signals cannot be converted into HDMI signals ( page 55).
You can connect up to five HDMI-compatible devices (4-inputs/1-output) to this unit. If the device connected to this unit is equipped with an HDMI connector, it is recommended to use HDMI connections. Connections with an HDMI cable offer the following benefits that can not be achieved with other connection methods.

- **High quality playback by transmitting audio and video via digital signals**
  HDMI connections can transmit high definition video and high quality audio formats adopted by Blu-ray disc players (Dolby Digital Plus, Dolby TrueHD, DTS-HD, DTS-HD Master Audio).
  HDMI connections also convey information required for playback between devices. This information is used for copyright protection and TV resolution recognition.

- **Transmission of audio and video signals with a single HDMI cable**
  Previous connections required multiple audio and video cables, but HDMI connections require only a single HDMI cable to transmit audio and video signals. This allows wires in a home theater system, which tend to be complicated, to be more easily organized.

- **Pass Through**
  Outputs signals received from the HDMI input connector to the TV connected to the HDMI output connector even when the unit is in standby mode.

- **This unit also supports 3D video playback and other functions related to video and audio**

There is more than one version of the HDMI standard. The supported functions and the performance vary according to the version. This unit complies with the HDMI standard that supports the 3D playback functions. To enjoy these functions, the HDMI device connected to this unit also needs to use the same version of the standard. For the version of the HDMI standard on the device connected to this unit, see the device’s manual.

Some TVs do not support audio input via HDMI connections. For details, see your TV’s manual.

When “Pass Through” is set to other than “Off”, more power is consumed than in normal standby mode.

---

### Examples of screen display

**Setup Menu screen**
- When the input source is switched.

**Status display**
- When the volume is adjusted.

Status display: The operating status appears briefly on the screen when the input source is switched or the volume is changed.

**NOTE**

- The menu screen is only displayed on TV connected to this unit via HDMI. If your TV is connected to this unit via other video output connectors, perform menu operations while seeing the display on this unit.
- If you operate the menu while playing back 3D video content or computer’s resolution (e.g., VGA), the playback video is replaced by the menu screen. The playback video is not displayed behind the menu screen.
- This unit does not show the status display while playing back 3D video content or computer’s resolution (e.g., VGA).

---

### Connecting this unit to a TV via HDMI connections

Connecting this unit to video devices via HDMI connections

HDMI function

Settings related to HDMI connections
Connecting this unit to a TV via HDMI connections

Cables used for connections

<table>
<thead>
<tr>
<th>Audio and video cable (sold separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI cable</td>
</tr>
</tbody>
</table>

• This interface allows transfer of digital video signals and digital audio signals over a single HDMI cable.

- Video signals are not output if the input video signals do not match the display’s resolution. In this case, switch the Blu-ray Disc/DVD player’s resolution to a resolution with which the display is compatible.
- When this unit and monitor are connected with an HDMI cable, if the display or monitor is not compatible with HDMI audio signal playback, only the video signals are sent to the display or monitor. Make audio connections (page 10 “Connecting a TV”).

**NOTE**
- The audio signal from the HDMI output connector (sampling frequency, number of channels, etc.) may be limited by the HDMI audio specifications of the connected device regarding permissible inputs.
- Only an HDMI signal is output from the HDMI MONITOR OUT connector.

Connecting to a device equipped with a DVI-D connector

The DVI-D (Digital Visual Interface) method is also used for video transmission via digital signals. This is developed mainly for computers, and some displays such as projectors are equipped with this interface. To output HDMI video signals to a DVI-D video input compatible device, use an HDMI/DVI conversion cable or adapter.

The DVI-D connector can transmit high quality digital video signals, but copy guard and other issues may hinder normal operations for some device combinations.

**NOTE**
- No sound is output when connected to a device equipped with a DVI-D connector. Make audio connections as described in “Connecting a TV” (page 10).
- Signals cannot be output to DVI-D devices that do not support HDCP.
- Depending on the combination of devices, the video signals may not be output.
Connecting this unit to video devices via HDMI connections

Cables used for connections

<table>
<thead>
<tr>
<th>Audio and video cable (sold separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI cable</td>
</tr>
</tbody>
</table>

Connecting this unit to video devices via HDMI connections

- When this unit is connected to other devices with HDMI cables, connect this unit and TV also with an HDMI cable.
- When connecting a device that supports Deep Color, please use a “High Speed HDMI cable” or “High Speed HDMI cable with Ethernet”.

You can enjoy games by connecting a game machine via the AUX HDMI connector. In this case, select the input source to “AUX”.

When connecting HDMI devices

<table>
<thead>
<tr>
<th>Cables used for connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI cable</td>
</tr>
</tbody>
</table>

Connecting this unit to video devices via HDMI connections

- When this unit is connected to other devices with HDMI cables, connect this unit and TV also with an HDMI cable.
- When connecting a device that supports Deep Color, please use a “High Speed HDMI cable” or “High Speed HDMI cable with Ethernet”.

You can enjoy games by connecting a game machine via the AUX HDMI connector. In this case, select the input source to “AUX”.

When connecting HDMI devices

<table>
<thead>
<tr>
<th>Cables used for connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI cable</td>
</tr>
</tbody>
</table>
HDMI function

This unit supports the following HDMI functions:

- **About 3D function**
  This unit supports input and output of 3D (3 dimensional) video signals of HDMI. To play back 3D video, you need a TV and player that provide support for the HDMI 3D function and a pair of 3D glasses.

  **NOTE**
  - When playing back 3D video, refer to the instructions provided in the manual of your playback device together with this manual.
  - If you operate the menu while playing back 3D video content, the playback video is replaced by the menu screen. The playback video is not displayed behind the menu screen.
  - This unit does not show the status display while playing back 3D video content.
  - If 3D video with no 3D information is input, the menu screen and status display on this unit are displayed over the playback video.
  - If 2D video is converted to 3D video on the television, the menu screen and status display on this unit are not displayed correctly. To view the menu screen and status display on this unit correctly, turn the television setting that converts 2D video to 3D video off.

- **Deep Color (page 56)**
  When a device supporting Deep Color is connected (such as an HD camcorder), use a cable compatible with “High Speed HDMI cable” or “High Speed HDMI cable with Ethernet”.

- **“x.v.Color”, sYCC601 color, Adobe RGB color, Adobe YCC601 color (page 56, 57)**

- **High definition digital audio format**

Settings related to HDMI connections

Set as necessary. For details, see the respective reference pages.

- **HDMI (page 40)**
  Make settings for HDMI.
  - **HDMI Audio Out**
  - **Pass Through**
  - **Pass Source**

  **NOTE**
  The audio signal input from the HDMI input connector can be output as an output signal from the HDMI output connector by setting the HDMI audio output destination to TV. Audio signals input via the Analog/Optical input connectors cannot be output from the HDMI output connector.

Connecting HDMI devices

This unit supports the following HDMI functions:

- **About 3D function**
  This unit supports input and output of 3D (3 dimensional) video signals of HDMI.

- **Deep Color (page 56)**
  When a device supporting Deep Color is connected (such as an HD camcorder), use a cable compatible with “High Speed HDMI cable” or “High Speed HDMI cable with Ethernet”.

- **“x.v.Color”, sYCC601 color, Adobe RGB color, Adobe YCC601 color (page 56, 57)**

- **High definition digital audio format**

Copyright protection system

In order to play back digital video and audio such as BD-Video or DVD-Video via HDMI connection, both this unit and TV or the player need to support the copyright protection system known as HDCP (High-bandwidth Digital Content Protection System). HDCP is copyright protection technology comprised of data encryption and authentication of the connected AV devices. This unit supports HDCP.

- If a device that does not support HDCP is connected, video and audio are not output correctly. Read the owner’s manual of your television or player for more information.
Connecting other devices

For highest quality video and surround playback, it is recommended to use an HDMI cable to connect this unit to TV and other video devices (page 5 “Connecting HDMI devices”). This section describes alternate connection methods when your device does not support HDMI connections.

Connection methods for various devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>10</td>
</tr>
<tr>
<td>CBL/SAT</td>
<td>11</td>
</tr>
<tr>
<td>Blu-ray</td>
<td>12</td>
</tr>
<tr>
<td>DVD</td>
<td>12</td>
</tr>
<tr>
<td>PORTABLE</td>
<td>13</td>
</tr>
<tr>
<td>TUNER</td>
<td>13</td>
</tr>
</tbody>
</table>

Cables used for connections

<table>
<thead>
<tr>
<th>Cables used for connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video cable (sold separately)</td>
</tr>
<tr>
<td>Audio cable (sold separately)</td>
</tr>
<tr>
<td>Optical cable</td>
</tr>
<tr>
<td>Audio cable</td>
</tr>
<tr>
<td>Stereo mini plug cable</td>
</tr>
</tbody>
</table>

Changing the source assigned to connectors

This unit can change the source that is assigned to the DIGITAL AUDIO IN connectors.

Here, a connection to the DVD player is taken as an example for explanation. The rear panel digital audio input connectors do not have the input connector indication for DVD players (DVD). However, DIGITAL AUDIO IN connectors have the “ASSIGNABLE” indication, which means that you can change the source assigned to these connectors. You can assign DVD players to these connectors to use them for DVD players. If you select “DVD” when you switch the input source for this unit, you can play back the source connected to these connectors.

How to change the source assigned to connectors (page 34)
Connecting a TV

- This section describes how to connect when your TV does not support HDMI connections.
- For instructions on HDMI connections, see “Connecting HDMI devices” (page 5).
- To listen to TV audio through this unit, use the optical digital connection.

Audio connection

The following methods are available for connecting to this unit. Use either of the methods to make a connection.

The numbers prefixed with connectors indicate the recommendation order. The smaller the number is, the higher playback quality is achieved.

1 DIGITAL AUDIO OPTICAL 1 connector
2 DIGITAL AUDIO OPTICAL 2 connector

When a multichannel audio (digital bit stream audio) is input, this unit decodes the audio to play back surround sound.

* When making this type of connection, you must change the settings on this unit.

Video connection

The following methods are available for connecting to this unit.

1 VIDEO OUT (MONITOR) connector

This makes an analog video connection.

NOTE

- The menu screen is only displayed on TV connected to this unit via HDMI. If your TV is connected to this unit via other video output connectors, perform menu operations while seeing the display on this unit.
- If the VIDEO input connector is to be used, be sure to connect the MONITOR output connector of the unit and the VIDEO input connector of the TV, using a video cable.
Connecting a set-top box (Satellite tuner/Cable TV)

This section describes how to connect when your satellite tuner or cable TV does not support HDMI connections.

For instructions on HDMI connections, see “Connecting HDMI devices” (page 5).

Audio connection

The following methods are available for connecting to this unit. Use either of the methods to make a connection.

The numbers prefixed with connectors indicate the recommendation order. The smaller the number is, the higher playback quality is achieved.

1 DIGITAL AUDIO OPTICAL 1 connector

2 DIGITAL AUDIO OPTICAL 2 connector

When a multichannel audio (digital bit stream audio) is input, this unit decodes the audio to play back surround sound.

* When making this type of connection, you must change the settings on this unit.

Input connector setting

2 AUDIO IN (CBL/SAT) connector

This makes an analog audio connection. This type of connection converts digital audio to analog audio, so the output audio may be degraded compared to connections 1.

Video connection

The following methods are available for connecting to this unit.

1 VIDEO IN (CBL/SAT) connector

This makes an analog video connection.

Input connector setting

When making the following connection, you must change the input connector settings.

1 DIGITAL AUDIO OPTICAL 1 connector

Change the default “TV AUDIO” to “CBL/SAT”.

For how to change, see “Input Assign” (page 34).
Connecting a Blu-ray Disc player/DVD player

This section describes how to connect a Blu-ray Disc player and DVD player that does not support HDMI connections. For instructions on HDMI connections, see “Connecting HDMI devices” (page 5).

Audio connection

The following methods are available for connecting to this unit. Use either of the methods to make a connection.

The numbers prefixed with connectors indicate the recommendation order. The smaller the number is, the higher playback quality is achieved.

1 DIGITAL AUDIO OPTICAL 1 connector ★
   2 DIGITAL AUDIO OPTICAL 2 connector ★

When a multichannel audio (digital bit stream audio) is input, this unit decodes the audio to play back surround sound. However, digital bit stream audio signals for HD audiios from Blu-ray disc players (such as Dolby Digital Plus and DTS-HD) can not be transmitted.
★ When making this type of connection, you must change the settings on this unit.

2 AUDIO IN (DVD) connector

This makes an analog audio connection. This type of connection converts digital audio to analog audio, so the output audio may be degraded compared to connections 1.

Video connection

The following methods are available for connecting to this unit.

1 VIDEO IN (DVD) connector

This makes an analog video connection.

Input connector setting

When making the following connection, you must change the input connector settings.

1 DIGITAL AUDIO OPTICAL 1 connector
   Change the default “TV AUDIO” to “DVD”.
2 DIGITAL AUDIO OPTICAL 2 connector
   Change the default “CBL/SAT” to “DVD”.

For how to change, see “Input Assign” (page 34).

When you want to play back HD Audio (Dolby TrueHD, DTS-HD, Dolby Digital Plus, DTS Express) and Multi-channel PCM with this unit, use an HDMI connection (page 5 “Connecting HDMI devices”).
Connecting a portable player

If a portable player is connected via the PORTABLE input jack of the unit, music from the portable player can be played.

Connecting an FM/AM antenna

- Connect the FM antenna or AM loop antenna supplied with the unit to enjoy listening to radio broadcasts.
- After connecting the antenna and receiving a broadcast signal (page 17 “Listening to FM/AM broadcasts”), fix the antenna with tape in a position where the background noise level becomes minimal and the sound quality is most clear.

![antenna diagram]

- FM outdoor antenna
- FM indoor antenna
- AM outdoor antenna
- AM loop antenna assembly
- AM loop antenna lead terminals

**NOTE**

- Do not connect two FM antennas simultaneously.
- Even if an external AM antenna is used, do not disconnect the AM loop antenna.
- Make sure the AM loop antenna lead terminals do not touch metal parts of the panel.
- If the signal has noise interference, connect the ground terminal (GND) to reduce noise.
- If you are unable to receive a good broadcast signal, we recommend installing an outdoor antenna. For details, inquire at the retail store where you purchased the unit.

Using the AM loop antenna

**Suspending on a wall**

Suspension directly on a wall without assembling.

**Standing alone**

Use the procedure shown above to assemble.

![assembly diagram]
Connecting the power cord

After completing all the connections, insert the power plug into the power outlet.

![Diagram showing power connection to household outlet](image)

**NOTE**

Do not bundle power cords together with connection cables. Doing so can result in humming or noise.
Important information

Before starting playback, make the connections between the different devices and the settings on the unit.

NOTE

Also refer to the operating instructions of the connected devices when playing them.

Turning the power on

Press POWER \(\rightarrow\) to turn on power to this unit.

The power indicator flashes green and the power turns on.

You can also switch the power to standby by pressing \(\rightarrow\) on the main unit.

Selecting the input source

Press the input source select button (CBL/SAT, DVD, Blu-ray, GAME, AUX, PORTABLE, TV AUDIO or TUNER) to be played back. The desired input source can be selected directly.

You can also use the following operation to select an input source.

Select the input source using the main unit

Use SOURCE SELECT \(\leftarrow\rightarrow\).
- Use SOURCE SELECT \(\leftarrow\rightarrow\) switches the input source, as shown below.

Power indicator status in standby mode

- Normal standby : Off
- When “Pass Through” (page 40) is set to “On” : Red
Adjusting the master volume

Use VOLUME ▲▼ to adjust the volume.

When the “Scale” setting (page 39) is “0 – 98”
[Adjustable range] 0.0 – 98.0

When the “Scale” setting (page 39) is “–79.5dB – 18.0dB”
[Adjustable range] – – –.– –79.5dB – 18.0dB

• The variable range differs according to the input signal and channel level setting.

You can also operate via the main unit. In this case, perform the following operations.

Turn MASTER VOLUME to adjust the volume.

Switching the brightness of the display

Press DIMMER.
• The display brightness of this unit switches each time the button is pressed.

<table>
<thead>
<tr>
<th>Bright</th>
<th>Dim</th>
<th>Off</th>
<th>Dark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal display brightness.</td>
<td>Reduced display brightness.</td>
<td>Turns the display off.</td>
<td></td>
</tr>
<tr>
<td>Very low display brightness.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE
When the brightness of the display is set to “Off”, the display turns off and appears as if there is no electricity.

Playing a Blu-ray Disc player/DVD player

The following describes the procedure for playing Blu-ray Disc player/DVD player.

1 Prepare for playback.
   ① Turn on the power of the TV, subwoofer and player.
   ② Change the TV input to the input of this unit.
   ③ Load the disc in the player.

2 Press POWER □ to turn on power to the unit.

3 Press Blu-ray or DVD to switch an input source for a player used for playback.

4 Play the Blu-ray Disc player or DVD player.
   • Make the necessary settings on the player (language setting, subtitles setting, etc.) beforehand.

Playing a portable player

The following describes the procedure for playing portable player.

1 Connect the portable player to this unit (page 13 “Connecting a portable player”).

2 Press POWER □ to turn on power to the unit.

3 Press PORTABLE to switch the input source to “PORTABLE”.

4 Play the portable player.

Turning off the sound temporarily

Press MUTE ◊. 
• “MUTE” indicator on the display flashes. 
• ◊ appears on the TV screen.

• The sound is reduced to the level set at “Mute Level” (page 39).
• To cancel, press MUTE ◊ again. Muting can also be cancelled by adjusting the master volume.

• “MUTE” indicator on the display flashes.
• ◊ appears on the TV screen.

• “MUTE” indicator on the display flashes.
• ◊ appears on the TV screen.
Tuning in to radio stations

For antenna connections, see “Connecting an FM/AM antenna” (page 13).

How to tune in

The modes for receiving FM/AM broadcasts consist of “AUTO” mode that automatically searches available broadcast stations and “MANUAL” mode that lets you tune in using buttons to change the frequency. The default setting is “AUTO”.

In “AUTO” mode, you cannot tune in to radio stations if the reception is not good. If this is the case, then use the “MANUAL” to tune in.

Listening to FM/AM broadcasts

1. Press TUNER to switch the input source to “TUNER”.
2. Press BAND to select “FM” or “AM”.
   - FM: When listening to an FM broadcast.
   - AM: When listening to an AM broadcast.

3. Tune in the desired broadcast station.
   - **AUTO**: Automatically tune to the station.
     1. Press MODE to select “AUTO”.
     2. Press TUNE + or TUNE – to select the station you want to hear.

   - **MANUAL**: Manually tune to the station.
     1. Press MODE to select “MANUAL”.
     2. Press TUNE + or TUNE – to select the station you want to hear.

   • The frequency changes in steps each time the button is pressed.

When tuning in stations manually, press and hold TUNE + or TUNE – to change frequencies continuously.

Presetting radio stations (Manual preset)

Your favorite broadcast stations can be preset so that you can tune them in easily. Up to 56 stations can be preset.

- Stations can be preset automatically at “Auto Preset” (page 34). If “Auto Preset” is performed after performing “Manual preset”, the “Manual preset” settings will be overwritten.

1. Tune in the broadcast station you want to preset.
2. Press MEMORY.

   ![Display of this unit]

3. Press CHANNEL + or CHANNEL – to select the preset number.
   - Press SHIFT, and then the block (A – G) can be selected.

4. Press MEMORY again to complete the setting.
   - To preset other stations, repeat steps 1 to 4.
Default settings

<table>
<thead>
<tr>
<th>Block (A – G) and Channel (1 – 8)</th>
<th>Default Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 – A8</td>
<td>87.50 / 89.10 / 90.10 / 108.00 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>B1 – B8</td>
<td>522 / 603 / 999 / 1404 / 1611 kHz, 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>C1 – C8</td>
<td>90.10 / 90.10 / 90.10 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>D1 – D8</td>
<td>90.10 / 90.10 / 90.10 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>E1 – E8</td>
<td>90.10 / 90.10 / 90.10 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>F1 – F8</td>
<td>90.10 / 90.10 / 90.10 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
<tr>
<td>G1 – G8</td>
<td>90.10 / 90.10 / 90.10 / 90.10 / 90.10 / 90.10 MHz</td>
</tr>
</tbody>
</table>

Listening to preset stations

1. Press SHIFT to select the memory block (A to G).

2. Press CHANNEL + or CHANNEL – to select the desired preset channel.

You can also operate via the main unit. In this case, perform the following operations.
Press TUNER PRESET CH + or TUNER PRESET CH – to select a preset radio station.

RDS (Radio Data System)

Note that the RDS function only works when receiving RDS compatible stations.
RDS (works only on the FM band) is a broadcasting service which allows a station to send additional information along with the regular radio program signal.

**NOTE**
The operations described as follows using SEARCH will not function in areas in which there are no RDS broadcasts.
Tuning in radio stations

RDS search
Use this function to automatically tune to FM stations that provide the RDS service.

1. Press TUNER to switch the input source to “TUNER”.
2. Press SEARCH to select “RDS”.

[Display of this unit]

3. Press CHANNEL + or CHANNEL –.
The search for RDS stations begins automatically.

• If no RDS stations are found with the above operation, all the reception bands are searched.
• When a broadcast station is found, that station’s name appears on the display.
• If no RDS station is found when all the frequencies have been searched, “NO RDS” is displayed.

PTY (Program Type)

PTY identifies the type of RDS program. The program types and their displays are as follows:

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEWS</td>
<td>News</td>
</tr>
<tr>
<td>AFFAIRS</td>
<td>Current Affairs</td>
</tr>
<tr>
<td>INFO</td>
<td>Information</td>
</tr>
<tr>
<td>SPORT</td>
<td>Sports</td>
</tr>
<tr>
<td>EDUCATE</td>
<td>Education</td>
</tr>
<tr>
<td>DRAMA</td>
<td>Drama</td>
</tr>
<tr>
<td>CULTURE</td>
<td>Culture</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>Science</td>
</tr>
<tr>
<td>VARIED</td>
<td>Varied</td>
</tr>
<tr>
<td>POP M</td>
<td>Pop Music</td>
</tr>
<tr>
<td>ROCK M</td>
<td>Rock Music</td>
</tr>
<tr>
<td>EASY M</td>
<td>Easy Listening Music</td>
</tr>
<tr>
<td>LIGHT M</td>
<td>Light Classical</td>
</tr>
<tr>
<td>CLASSICS</td>
<td>Serious Classical</td>
</tr>
<tr>
<td>OTHER M</td>
<td>Other Music</td>
</tr>
<tr>
<td>WEATHER</td>
<td>Weather</td>
</tr>
<tr>
<td>FINANCE</td>
<td>Finance</td>
</tr>
<tr>
<td>CHILDREN</td>
<td>Children’s program</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>Social Affairs</td>
</tr>
<tr>
<td>RELIGION</td>
<td>Religion</td>
</tr>
<tr>
<td>PHONE IN</td>
<td>Phone In</td>
</tr>
<tr>
<td>TRAVEL</td>
<td>Travel</td>
</tr>
<tr>
<td>LEISURE</td>
<td>Leisure</td>
</tr>
<tr>
<td>JAZZ</td>
<td>Jazz Music</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>Country Music</td>
</tr>
<tr>
<td>NATION M</td>
<td>National Music</td>
</tr>
<tr>
<td>OLDIES</td>
<td>Oldies Music</td>
</tr>
<tr>
<td>FOLK M</td>
<td>Folk Music</td>
</tr>
<tr>
<td>DOCUMENT</td>
<td>Documentary</td>
</tr>
</tbody>
</table>

PTY search
Use this function to find RDS stations broadcasting a designated program type (PTY).

1. Press TUNER to switch the input source to “TUNER”.
2. Press SEARCH to select “PTY”.

[Display of this unit]

3. Watching the display, press △▽ to call out the desired program type.
4. Press CHANNEL + or CHANNEL –.
   PTY search begins automatically.

• If there is no station broadcasting the designated program type with the above operation, all the reception bands are searched.
• The station name is displayed on the display after searching stops.
• If no station broadcasting the designated program type is found when all the frequencies have been searched, “NO PROGRAMME” is displayed.
TP (Traffic Program)

TP identifies programs that carry traffic announcements. This allows you to easily find out the latest traffic conditions in your area before leaving home.

**TP search**

Use this function to find RDS stations broadcasting traffic programs (TP stations).

1. Press TUNER to switch the input source to “TUNER”.
2. Press SEARCH to select “TP”.

   ![TV Screen]

   **[Display of this unit]**

3. Press CHANNEL + or CHANNEL –.
   - TP search begins automatically.
   - If no TP station is found with the above operation, all the reception bands are searched.
   - The station name is displayed on the display after searching stops.
   - If no other TP station is found when all the frequencies have been searched, “NO PROGRAMME” is displayed.

   ![Display of this unit]

   **[Display of this unit]**

   **RT (Radio Text)**

   RT allows RDS stations to send text messages that appear on the display. “RT” appears on the display when radio text data is received.

1. Press TUNER to switch the input source to “TUNER”.
2. Press SEARCH to select “RT”.

   ![TV Screen]

   **[TV Screen]**

3. Press CHANNEL + or CHANNEL –.
   - While receiving an RDS broadcast station, the text data broadcast from the station is displayed.
   - To turn the display off, press <.d.
   - If no text data is being broadcast, “NO TEXT DATA” is displayed.

   ![Display of this unit]

   **[Display of this unit]**
Selecting a listening mode (Surround mode)

This unit can play input audio signals in multi-channel surround mode or in stereo mode. You can set various surround modes based on the audio input signal from the playback source. Try out different surround modes based on the content you play back and find your favorite surround mode.

### Listening mode

<table>
<thead>
<tr>
<th>Input audio signal</th>
<th>Playback</th>
<th>Listening mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-channel</td>
<td>Surround</td>
<td>“Standard playback” [page 22]</td>
</tr>
<tr>
<td>Multi-channel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>For 2-channel signal input:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Surround-channel signals are created and played with surround playback.</td>
</tr>
<tr>
<td>2-channel</td>
<td>Surround</td>
<td>“Multi-channel stereo playback” [page 23]</td>
</tr>
<tr>
<td>Multi-channel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This mode is for enjoying stereo sound from all speakers.</td>
</tr>
<tr>
<td>2-channel</td>
<td>Surround</td>
<td>“Virtual playback” [page 23]</td>
</tr>
<tr>
<td>Multi-channel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This mode is for enjoying surround effects using only the front speakers or headphones.</td>
</tr>
<tr>
<td>2-channel</td>
<td>Stereo</td>
<td>“Stereo playback” [page 23]</td>
</tr>
<tr>
<td>Multi-channel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- If multichannel signals are input, they are mixed down to 2-channel audio and are played.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Subwoofer signals are also output.</td>
</tr>
<tr>
<td>2-channel</td>
<td>Stereo</td>
<td>“Direct playback” [page 23]</td>
</tr>
<tr>
<td>Multi-channel</td>
<td>Surround</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sound recorded in source is played as is.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- In this mode, the following items cannot be adjusted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Tone [page 43]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- RESTORER [page 44]</td>
</tr>
</tbody>
</table>

- Some listening modes cannot be selected, depending on the audio format or number of channels of the input signal. For details, see “Types of input signals, and corresponding surround modes” [page 54].
- Adjust the sound field effect with the menu “Audio Adjust” [page 41] to enjoy your favorite sound mode.
- Buttons on the remote control unit can be used for operations. Press SURROUND ◀ or SURROUND ▶ and the modes are switched as shown below.

![Display options]

- DIRECT ← STEREO ← PLII * ← VIRTUAL * ← MULTI CH STEREO * ← DTS NEO:6 *

* The display varies depending on the audio format or the number of channels of input signals.
Standard playback

**Surround playback of 2-channel sources**

1. Play the selected device ([page 16, 17]).
2. Press SURROUND ◀ or SURROUND ▶ to select the surround decoder to play back multi-channel sound.
   - Select the surround mode while viewing the display on the TV screen.
   - Which decoder can be selected depends on the settings of “Speaker Config.” ([page 37]).

   - **DOLBY PLII**: This mode can be selected when a Dolby Pro Logic II decoder is used to play back 2-channel source in 5.1-channel surround sound with a natural, realistic feel.
   - “PLII Cinema”, “PLII Music”, “PLII Game” or “Pro Logic” is displayed.

   - **DTS NEO:6**: This mode can be selected when a DTS NEO:6 decoder is used to play back 2-channel source in 5.1-channel surround sound.
   - “DTS NEO:6 Cinema” or “DTS NEO:6 Music” is displayed.

3. Press AUDIO and then press ENTER.
4. Use ◀ ▶ to select the mode according to the content to be played and then press ENTER.

   - **Cinema**: This mode is suited for movie sources.
   - **Music**: This mode is suited for music sources. More sound is sent to the front speakers than in “Cinema” mode.
   - **Game**: This mode is suited for games.
   - **Pro Logic**: This mode is suitable for playback of 2-channel sources recorded with Dolby Pro Logic.

5. Press AUDIO.
   - The menu display disappears.

**Surround playback of multi-channel sources (Dolby Digital, DTS etc.)**

1. Play the selected device ([page 16, 17]).
2. Press SURROUND ◀ or SURROUND ▶ to select the surround decoder to play back multi-channel sound.
   - Select the surround mode while viewing the display on the TV screen.
   - Which decoder can be selected depends on the input signal, the settings of “Speaker Config.” ([page 37]).

**Displaying the currently playing surround mode**

<table>
<thead>
<tr>
<th>Input audio signal</th>
<th>Surround mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOLBY DIGITAL</td>
<td>DOLBY DIGITAL</td>
</tr>
<tr>
<td>(other than 2-channel)</td>
<td>DOLBY DIGITAL Plus</td>
</tr>
<tr>
<td>DOLBY DIGITAL Plus</td>
<td>DOLBY TrueHD</td>
</tr>
<tr>
<td>DOLBY TrueHD</td>
<td>DTS SURROUND</td>
</tr>
<tr>
<td>DTS (5.1-channel)</td>
<td>DTS 96/24</td>
</tr>
<tr>
<td>DTS 96/24</td>
<td>DTS HD Hi RES</td>
</tr>
<tr>
<td>DTS-HD</td>
<td>DTS-HD MSTR</td>
</tr>
<tr>
<td>DTS-HD MSTR</td>
<td>DTS Express</td>
</tr>
<tr>
<td>PCM (multi-channel)</td>
<td>MULTI CH IN</td>
</tr>
</tbody>
</table>

* This is displayed when the input signal is “DTS 96/24”.

**Views on the display**

1. Shows a decoder to be used.
   - A DOLBY DIGITAL decoder is displayed as “DOLBY D”.
   - A DOLBY DIGITAL Plus decoder is displayed as “DOLBY D Plus”.
2. Shows the name of the input source being played back.

For an input signal that can be reproduced in each surround mode, see “Surround modes and surround parameters” ([page 53]).
**Multi-channel stereo playback**

This mode is for enjoying stereo sound from all speakers.

1. **Play the selected device** ([page 16, 17]).
2. **Press SURROUND ◄ or SURROUND ►** to select “MULTI CH STEREO”. Multi-channel stereo playback begins.

**NOTE**

When the input signal is Dolby TrueHD, Dolby Digital Plus, DTS-HD or DTS Express, you cannot select multi-channel stereo mode.

**Stereo playback**

This is the mode for playing in stereo. The tone can be adjusted.
- Sound is output from the front left and right speakers and subwoofer.
- If multi-channel signals are input, they are mixed down to 2-channel audio and are played.

1. **Play the selected device** ([page 16, 17]).
2. **Press SURROUND ◄ or SURROUND ►** to select “STEREO”. Stereo playback begins.

**Virtual playback**

This mode is for enjoying surround effects using only the front speakers or headphones.

1. **Play the selected device** ([page 16, 17]).
2. **Press SURROUND ◄ or SURROUND ►** to select “VIRTUAL”. Virtual playback begins.

**NOTE**

When the input signal is Dolby TrueHD, Dolby Digital Plus, DTS-HD or DTS Express, you cannot select virtual mode.

**Direct playback**

Sound recorded in source is played as is.
- In this mode, the following items cannot be adjusted.
  - Tone ([page 43])
  - RESTORER ([page 44])

1. **Play the selected device** ([page 16, 17]).
2. **Press SURROUND ◄ or SURROUND ►** to select “DIRECT”. Direct playback begins.

**NOTE**

When the input signal is Dolby TrueHD, Dolby Digital Plus, DTS-HD or DTS Express, you cannot select virtual mode.
Advanced instructions

Here we explain functions and operations in more detail so that you can maximize your enjoyment with this unit.

- Installation/connection/setup of speakers (Advanced)  page 25
- Playback (Advanced operation)  page 29
- How to make detailed settings  page 31
- Other settings  page 45
Installation/connection/setup of speakers (Advanced)

Procedure for speaker settings
- Speaker installation
- Speaker connection (→ page 26)

Speaker installation
- Determine the speaker system depending on the number of speakers you are using and install each speaker and subwoofer in the room. Here, we explain how to install the speakers using a typical example.
- The speaker impedance should be from 6 to 16 Ω/ohms.

Use the illustration below as a guide for how high each speaker should be installed. The height does not need to be exactly the same.

When 2.1 ch speakers are installed

When 5.1 ch speakers are installed

Speaker abbreviations:
- FL: Front speaker (L)
- FR: Front speaker (R)
- SW: Subwoofer
- SL: Surround speaker (L)
- SR: Surround speaker (R)
- C: Center speaker

*1 22˚ – 30˚  *2 120˚
### Speaker connection

Here we connect the speakers in the room to this unit.

This section explains how to connect them using typical examples.

- For TV connections, see “Connecting this unit to a TV via HDMI connections” (page 6) or “Connecting a TV” (page 10).

- **Connecting 5.1-channel speakers** (page 28)
- **Connecting 2.1-channel speakers** (page 28)

### NOTE

- Disconnect this unit’s power plug from the power outlet before connecting the speakers. Also, turn off the subwoofer.
- Connect so that the speaker cable core wires do not protrude from the speaker terminal. The protection circuit may be activated if the core wires touch the rear panel or if the + and – sides touch each other (page 56 “Protection circuit”).
- Never touch the speaker terminals while the power cord supply is connected. Doing so could result in electric shock.
- Use speakers with the speaker impedances shown below.

<table>
<thead>
<tr>
<th>Speaker terminals</th>
<th>Speaker impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRONT</td>
<td>6 – 16 Ω/ohms</td>
</tr>
<tr>
<td>CENTER</td>
<td></td>
</tr>
<tr>
<td>SURROUND</td>
<td></td>
</tr>
</tbody>
</table>
About the speaker cable label (supplied) for channel identification

The channel display section for speaker terminals on the rear panel is color-coded for each channel to be identifiable.

<table>
<thead>
<tr>
<th>Speaker terminals</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRONT L</td>
<td>White</td>
</tr>
<tr>
<td>FRONT R</td>
<td>Red</td>
</tr>
<tr>
<td>CENTER</td>
<td>Green</td>
</tr>
<tr>
<td>SURROUND L</td>
<td>Light blue</td>
</tr>
<tr>
<td>SURROUND R</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Attach the speaker cable label for each channel to its speaker cable as shown in the diagram. Then, make connection so that the color of the speaker terminal matches that of the speaker cable label.

[How to attach the speaker cable label]

1. Insert the speaker cable into the speaker terminal.
2. Peel off the adhesive side of the label and attach it to the speaker cable.
3. Connect the speaker cable and label to the receiver.
Connecting 5.1-channel speakers

Connecting 2.1-channel speakers

2-channel connection
For 2-channel playback, disconnect the subwoofers.

NOTE
• For speaker cable connections, see page 28.
• For speaker impedance, see page 26.
Adjusting the volume of the speakers

You can adjust the channel level either according to the playback sources or to suit your taste, as described below.

1. Press CH LEVEL.

2. Use \( \uparrow \downarrow \) to select the speaker. The speaker that can be set switches each time one of the buttons is pressed.

3. Use \( \left< \right> \) to adjust the volume.

   • In the case of a subwoofer, pressing \( \left< \right> \) when it is at “–12 dB” will change the setting to “Off”.

   • If you do not press any button for approximately 5 seconds, the menu screen light turns off.

   • When a headphone jack is inserted, the headphone channel level can be adjusted.

Adjusting the volume of groups of speakers (Fader function)

This function lets you adjust (fade) the sound all at once from the front (front speaker / center speaker) or rear (surround speaker).

1. Press CH LEVEL.

2. Press \( \left< \right> \) to select “Fader”, then select the item to be adjusting using \( \left< \right> \rightarrow \).

3. Use \( \left< \right> \) to adjust the volume of the speakers.

   \( \left< \right> \): front, \( \left< \rightarrow \right> \): rear

   • If you do not press any button for approximately 5 seconds, the menu screen light turns off.

   • The fader function does not affect the subwoofer.

   • The fader can be adjusted until the volume of the speaker is adjusted to the lowest value of –12 dB.
Sleep timer function
You can have the power automatically switched to standby once a set time has elapsed. This is convenient for viewing and listening while going to sleep.

Press SLEEP and display the time you want to set.
The SLEEP indicator on the display lights.
- The time switches as shown below each time SLEEP is pressed.

<table>
<thead>
<tr>
<th>Off</th>
<th>10 min</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>110</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
</tr>
</tbody>
</table>

To cancel the sleep timer
Press SLEEP to set “Off”.
The SLEEP indicator on the display turns off.

- If you do not press any button for approximately 5 seconds, the menu screen light turns off.
- The sleep timer setting is cancelled if this unit’s power is set to standby or turned off.

NOTE
The sleep timer function cannot turn off the power of devices connected to this unit. To turn off the power of those connected devices, set up sleep timers on the connected devices themselves.

Quick select function
You can save settings such as the input source selection, volume level, and sound mode at the QUICK SELECT 1 – 4 buttons.
You can simply press one of the set QUICK SELECT buttons for subsequent playback to switch to various saved settings all at once.
- By saving frequently used settings at the QUICK SELECT 1 – 4 buttons, you will always be able to easily call up the same playback environment.

Press QUICK SELECT.
The Quick Select settings for the button you pressed are called up.

- The default settings of each Quick Select function are as shown below.

<table>
<thead>
<tr>
<th>Button</th>
<th>Input source</th>
<th>Volume</th>
<th>Sound Mode</th>
<th>Video Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUICK SELECT 1</td>
<td>CBL/SAT</td>
<td>40</td>
<td>MULTI CH STEREO</td>
<td>SOURCE</td>
</tr>
<tr>
<td>QUICK SELECT 2</td>
<td>Blu-ray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUICK SELECT 3</td>
<td>GAME</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUICK SELECT 4</td>
<td>AUX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Changing the settings

1. Set the items below to the settings you want to save.
   ① Input source [page 15]
   ② Volume [page 16]
   ③ Surround mode [page 21]
   ④ Video Source [page 39]

2. Press and hold the desired QUICK SELECT until “Quick Memory” appears on the display.
The current settings will be memorized.

NOTE
If QUICK SELECT on the main unit is pressed, the same function as with the remote control unit can be obtained.

Various memory functions

Personal memory plus function
This function sets the settings (input mode, surround mode, HDMI output mode, audio delay etc.) last selected for the individual input sources.

The surround parameters, tone control settings and the volumes of the different speakers are stored for the individual surround modes.

Last function memory
This function stores the settings which were made before going into the standby mode.
When the power is turned back on, the settings are restored.
## How to make detailed settings

### Menu map

For menu operation, connect a TV to this unit and display the menu on the TV screen. For menu operations, see the following page. By default, this unit has recommended settings defined. You can customize this unit based on your existing system and your preferences. The menu displayed depends on the input source and usage.

### Setup Menu

- **Inputs**
- **Speakers**
- **General**

**Items that only need to be set once**

Set these for example upon purchase. Once these items are set, there is no need to set them again unless the speaker layout or the connected speakers have been changed.

---

#### Setting items

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Detailed items</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td>Input Assign</td>
<td>Changes input connector assignment.</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Auto Preset</td>
<td>Uses the auto preset function to program radio stations.</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Preset Skip</td>
<td>Sets the preset memories that you do not want to display when tuning.</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Source Level</td>
<td>Adjusts the playback level of the audio input.</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Input Select</td>
<td>Sets the audio input mode and decode mode.</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Video Source</td>
<td>Video of another input source is played back combined with the playing audio.</td>
<td>35</td>
</tr>
<tr>
<td><strong>Speakers</strong></td>
<td>Speaker Config.</td>
<td>Selects speaker configuration and size (bass reproduction capability).</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Distances</td>
<td>Sets distance from listening position to speakers.</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Levels</td>
<td>Sets the volume of the test tone to be the same when it is output from each speaker.</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Crossovers</td>
<td>Sets the maximum frequency of the bass signal output from each channel to the subwoofer.</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Bass</td>
<td>Sets subwoofer and LFE signal range playback.</td>
<td>38</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td>Volume</td>
<td>Sets the volume setting.</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>HDMI</td>
<td>Makes settings for HDMI.</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Makes various other settings.</td>
<td>40</td>
</tr>
<tr>
<td><strong>Audio Adjust</strong></td>
<td>Audio Adjust</td>
<td>Adjusts surround sound parameters.</td>
<td>41</td>
</tr>
<tr>
<td><strong>Tone</strong></td>
<td>Adjusts the tonal quality of the sound.</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td><strong>NIGHT MODE</strong></td>
<td>Optimized setting for late-night listening.</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compress dynamic range (difference between loud and soft sounds).</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td><strong>RESTORER</strong></td>
<td>Expands the lower and higher regions of compressed audio to enable richer audio playback.</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Delay</strong></td>
<td>Compensates for incorrect timing between video and audio.</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>
**Examples of menu and front display**

Below we describe typical examples of displays on the TV screen and on the set's display window.

### Top menu display

<table>
<thead>
<tr>
<th>Menu display</th>
<th>Front display</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Top menu display** | ![Display](image) | 1. Press SETUP to display the menu screen.  
2. TV screen: Displays the selected line.  
Display: Displays the selected item.  
- Use ▲▼ to move to the item you want to set.  
3. The number of the current selected setting menu is displayed. |
| ![Setup Menu](image) | ![Display](image) | 1. Press SETUP to display the menu screen.  
2. TV screen: Displays the selected line.  
Display: Displays the selected item.  
- Use ▲▼ to move to the item you want to set.  
3. The number of the current selected setting menu is displayed. |

### Display when changing settings

| 1. Press ENTER. | ![Display](image) | 1. The number of the current selected setting menu is displayed.  
2. TV screen: Displays the selected line.  
Display: Displays the selected item.  
- Use ▲▼ to move to the item you want to set.  
3. ▲▼ is displayed at the sides of items whose setting can be changed. Use ◀► to change to the desired setting.  
4. Press ENTER to set to the mode in which the setting can be made.  
5. Press BACK to return to the previous menu. |

### Display when resetting

| 1. Press ENTER. | ![Display](image) | 1. Press ▼ to select “Set Defaults”, then press ENTER.  
2. The number of the current selected setting menu is displayed.  
3. Press ◀ to select “Yes”, then press ENTER. |
Inputs

Perform settings related to input source playback.

• You do not have to change the settings to use the unit. Make settings when needed.

Menu operation

1 Press SETUP. The menu is displayed on the TV screen.

2 Use △▽ to select “Inputs”, and then press ENTER.

3 Use △▽ to select the menu to be set or operated.

4 Press ENTER to enter the setting.

• To return to the previous item, press BACK.
• Exiting the Menu, press SETUP while the menu is displayed. The menu display disappears.

Important information

About the display of input sources

In this section, the configurable input sources for each item are shown as follows.

- Blu-ray
- DVD
- TV AUDIO
- CBL/SAT
- GAME
- AUX
- PORTABLE
- TUNER

Items that can be set with the “Inputs” procedure

- Input Assign (page 34)
- Auto Preset (page 34)
- Preset Skip (page 35)
- Source Level (page 35)
- Input Select (page 35)
- Video Source (page 35)
Input Assign

This unit has certain input sources such as “CBL/SAT” assigned to audio and video connectors by default. By making the default connections, you can simply press an input source select button to play back audio or video from the connected device with ease. When making connections other than the default settings, you must change settings in this section.

Examples of “Input Assign” menu screen displays

This screen appears when the “Inputs” – “Input Assign” menu is selected. Use the “Input Assign” menu to change the digital input connectors that are assigned to the input sources in default settings.

Input assignments menu operations

1. Use ▲▼ to select “Input Assign”, and then press ENTER.
2. Use ▲▼◄► to select the input connector to be assigned.
3. Press ENTER to enter the setting.

NOTE

• If all “OPTICAL 1” and “OPTICAL 2” assignment of the TV source are set to “Off”, TV source cannot be selected with the input source selection.
• The unit supports 3 types of digital audio connection (HDMI, OPTICAL 1, and OPTICAL 2). Do not make multiple digital audio connections with a single device. However, you can make both analog and digital connections with the same source. In this case, priority is given to the HDMI input signal when making both analog and HDMI connections. Priority is also given to the digital input signal (OPTICAL 1/OPTICAL 2) when making both analog and digital connections (OPTICAL 1/OPTICAL 2).
### Preset Skip

Default settings are underlined.

Set the preset memory block (from A to G) you do not want to display.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block A – Block G</td>
<td>On: Display the selected preset memory block. SKIP: Do not display the selected preset memory block.</td>
</tr>
</tbody>
</table>

### Source Level

Default settings are underlined.

This function corrects the playback level of the selected input source’s audio input. Make this setting if there are differences in the input volume levels between the different sources.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Level</td>
<td>–12dB – +12dB (0dB)</td>
</tr>
</tbody>
</table>

### Input Select

Default settings are underlined.

Set the audio input mode and decode mode of each input source. The input modes available for selection may vary depending on the input source.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Mode</td>
<td>Auto: Automatically detect input signal and perform playback. HDMI: Play only signals from HDMI input. Digital: Play only signals from digital input (OPTICAL 1 / OPTICAL 2). Analog: Play only signals from analog input.</td>
</tr>
<tr>
<td></td>
<td>CBL/SAT / DVD: Select video input source to view. The video of the selected input source is played along with the audio currently being played. This can be set for individual input sources.</td>
</tr>
</tbody>
</table>

### Decode Mode

Set the audio decode mode for input source.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBL/SAT</td>
<td>Auto: Detect type of digital input signal and decode and play automatically. PCM: Decode and play only PCM input signals. DTS: Decode and play only DTS input signals.</td>
</tr>
<tr>
<td>Digital</td>
<td>This item can be set for input sources for which “OPTICAL 1” or “OPTICAL 2” is assigned at “Input Assign” (page 34).</td>
</tr>
<tr>
<td>Analog</td>
<td>This item can be set for HDMI input sources (CBL/SAT, Blu-ray, GAME or AUX). Normally set this mode to “Auto”. Set “PCM” and “DTS” when inputting the corresponding input signal.</td>
</tr>
</tbody>
</table>

### Video Source

Default settings are underlined.

Video of another input source is played back combined with the playing audio.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Select</td>
<td>Default: Play the picture and sound of the input source. CBL/SAT / DVD: Select video input source to view. The video of the selected input source is played along with the audio currently being played. This can be set for individual input sources.</td>
</tr>
<tr>
<td></td>
<td>NOTE: It is not possible to select HDMI input signals.</td>
</tr>
</tbody>
</table>
Speakers
For optimum surround playback, adjustment of the distance of speakers and sound level of each channel, using the test tone, are required, depending on the environment for speakers to be used.

Menu operation

1. Press SETUP. The menu is displayed on the TV screen.
2. Use ▲▼ to select “Speakers”, and then press ENTER.
3. Use ▲▼<▲ to select the menu to be set or operated.
4. Press ENTER or ▶ to enter the setting.

- To return to the previous item, press ◀ or BACK.
- Exiting the Menu, press SETUP while the menu is displayed. The menu display disappears.

Items that can be set with the “Speakers” procedure

<table>
<thead>
<tr>
<th>Item</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker Config.</td>
<td>37</td>
</tr>
<tr>
<td>Distances</td>
<td>37</td>
</tr>
<tr>
<td>Levels</td>
<td>37</td>
</tr>
<tr>
<td>Crossovers</td>
<td>38</td>
</tr>
<tr>
<td>Bass</td>
<td>38</td>
</tr>
</tbody>
</table>
### Speaker Config.

Indicate speaker presence and select speaker size categories based on bass reproduction capability.

**NOTE**

Do not use the outward shape of the speaker to determine selection of a “Large” or “Small” speaker. Instead, use the frequencies set in “Crossovers” (page 38) as the standard for determining bass reproduction capability.

<table>
<thead>
<tr>
<th>Setting Items</th>
<th>Setting details</th>
</tr>
</thead>
</table>
| Front         | **Large**: Use a large speaker that can adequately play back very low bass frequencies. **Small**: Use a small speaker that has inadequate playback capacity for very low bass frequencies. Note that for most multi-channel speakers, this is the best choice.  
  - When “Subwoofer” is set to “No”, “Front” is automatically set to “Large”.  
  - When “Front” is set to “Small”, “Center” and “Surround” can not be set to “Large”. |
| Center        | **Large**: Use a large speaker that can adequately play back very low bass frequencies. **Small**: Use a small speaker that has inadequate playback capacity for very low bass frequencies. Note that for most multi-channel speakers, this is the best choice.  
  - **None**: Select when a center speaker is not connected.  
  - “Large” is not displayed when “Front” is set to “Small”. |
| Surround      | **Large**: Use a large speaker that can adequately play back very low bass frequencies. **Small**: Use a small speaker that has inadequate playback capacity for very low bass frequencies. Note that this is almost always the best choice.  
  - **None**: Select when the surround speakers are not connected. |
| Subwoofer     | **Yes**: Use a subwoofer.  
  - **No**: Select when a subwoofer is not connected.  
  - When “Front” is set to “Small”, “Subwoofer” is automatically set to “Yes”. |

### Distances

Set distance from listening position to speakers. Measure beforehand the distance from the listening position to each speaker.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
</table>
| Step          | **0.1m** : For changing in 0.1 meters steps.  
  - **0.01m** : For changing in 0.01 meters steps. |

#### Front L / Front R / Center / Subwoofer / Surround L / Surround R

Select speaker for distance setting.

- The speakers that can be selected differ depending on the “Speaker Config.” settings.

**Default settings**:

- **Front L / Front R / Center** : 3.60 m
- **Surround L / Surround R** : 3.00 m

Set the difference in the distance between the speakers to less than 6.00 m.

**NOTE**

Speakers set to “None” in “Speaker Config.” (page 37) are not displayed.

### Levels

Set the volume of the test tone to be the same when it is output from each speaker.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
</table>
| Test Tone Start | **Front L / Center / Front R / Surround R / Surround L / Subwoofer**: A test tone is output from the selected speaker. While listening to the test tone, adjust the volume output from the selected speaker.  
  - **–12.0dB – +12.0dB (0.0dB)** : Adjust the volume.  
  - When –12 dB is pressed while the subwoofer volume is set to “–12 dB”, the “Subwoofer” setting switches to “Off”.  
  - When “Levels” is adjusted, the adjusted values are set for all the surround modes.  
  - **NOTE**  
    - Speakers set to “None” in the “Speaker Config.” settings are not displayed.  
    - When a headphones jack is inserted in the PHONES jack of this unit, the “Levels” is not displayed.
Crossovers

Set the maximum frequency of the bass signal output from each channel to the subwoofer.

Set the Crossover Frequency to suit the bass reproduction capability of the speaker being used.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front / Center / Surround</td>
<td>Select speaker for setting of crossover frequency.</td>
</tr>
<tr>
<td>40Hz / 60Hz / 80Hz / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz</td>
<td>Set the crossover frequency.</td>
</tr>
</tbody>
</table>

- “Crossovers” can be set when the “Bass” – “SW Mode” (page 38) setting is “LFE+Main”, or when you have a speaker that is set to “Small”.
- The default crossover frequency is “80Hz”, which will work best with the widest variety of speakers. When using very small speakers, however, you can choose a higher setting based on the specified frequency response of the speakers. If the speaker has a specified frequency response of 120 Hz – 20 kHz (as an example), then choose the 120 Hz crossover frequency.
- For speakers set to “Small”, low frequency content below the crossover frequency is attenuated to the speakers and the low bass content is then re-delivered to the subwoofer(s), or the front (L/R) speakers if they have been set to Large.

Bass

Set subwoofer and LFE signal range playback.

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPF for LFE</td>
<td>Set LFE signal playback range. Set this when you want to change the playback frequency (low pass filter point) of the subwoofer.</td>
</tr>
<tr>
<td>80Hz / 90Hz / 100Hz / 110Hz / 120Hz / 150Hz / 200Hz / 250Hz</td>
<td>Set LFE signal range playback.</td>
</tr>
<tr>
<td>LFE</td>
<td>The low range signal of the channel set to “Small” speaker size is added to the LFE signal output from the subwoofer.</td>
</tr>
<tr>
<td>LFE+Main</td>
<td>The low range signal of all channels is added to the LFE signal output from the subwoofer. This is usually the best setting for most systems.</td>
</tr>
</tbody>
</table>

- “SW Mode” can be set when “Speaker Config.” – “Subwoofer” (page 37) is set to other than “No”.
- Play music or a movie source and select the mode offering the strongest bass.
- Select “LFE+Main” if you want the bass signals to always be produced from the subwoofer.

NOTE

If “Front” and “Center” for “Speaker Config.” are set to “Large”, and “SW Mode” is set to “LPF for LFE”, no sound may be output from the subwoofers, depending on the input signal or selected surround mode.
Make various option settings.

**Menu operation**

1. Press SETUP.
   The menu is displayed on the TV screen.

2. Use \( \Delta \), \( \nabla \) to select “General”, and then press ENTER.

3. Use \( \Delta \), \( \nabla \) to select the menu to be set or operated.

4. Press ENTER to enter the setting.
   - To return to the previous item, press BACK.
   - Exiting the Menu, press SETUP while the menu is displayed. The menu display disappears.

**Items that can be set with the “General” procedure**

- **Volume** *(page 39)*
- **HDMI** *(page 40)*
- **Other** *(page 40)*

---

**Volume**
Sets the volume setting.

- **Default settings are underlined.**

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scale</strong></td>
<td>0 – 98 : Display in the range 0.0 (Min) to 98. –79.5dB – 18.0dB : Display –dB (Min), in the range –79.5 dB to 18 dB.</td>
</tr>
<tr>
<td><strong>Limit</strong></td>
<td>60 (–20dB) / 70 (–10dB) / 80 (0dB)</td>
</tr>
<tr>
<td><strong>Power On Level</strong></td>
<td>Last : Use the memorized setting from the last session. Mute : Always use the muting on condition when power is turned on. 1 – 98 (–79dB – 18dB) : The volume is adjusted to the set level.</td>
</tr>
<tr>
<td><strong>Mute Level</strong></td>
<td>Full : The sound is muted entirely. –40dB : The sound is attenuated by 40 dB down. –20dB : The sound is attenuated by 20 dB down.</td>
</tr>
</tbody>
</table>
## HDMI

Makes settings for HDMI.

<table>
<thead>
<tr>
<th>Setting Items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI Audio Out</td>
<td><strong>AVR:</strong> Play back through speakers connected to the unit.</td>
</tr>
<tr>
<td></td>
<td><strong>TV:</strong> Play back through TV connected to the unit.</td>
</tr>
<tr>
<td></td>
<td>If “TV” is selected, only an HDMI audio signal is output from the TV.</td>
</tr>
<tr>
<td>Pass Through</td>
<td><strong>On:</strong> Passes the selected HDMI input through the AV receiver’s HDMI output when the AV receiver is in standby power mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Off:</strong> No HDMI signals are passed through the AV receiver’s HDMI output in standby power mode.</td>
</tr>
<tr>
<td></td>
<td>When this setting is enabled, the “Sleep timer function” (page 30) is turned “Off” and the “Auto Standby” (page 40) setting is disabled.</td>
</tr>
<tr>
<td>Pass Source</td>
<td><strong>Last:</strong> Choose this option to “pass through” the last used HDMI input video source.</td>
</tr>
<tr>
<td></td>
<td><strong>CBL/SAT / Blu-ray / GAME / AUX:</strong> Choose one of these HDMI sources to be passed through when the AV receiver is in standby.</td>
</tr>
</tbody>
</table>

## Other

Make various other settings.

<table>
<thead>
<tr>
<th>Setting Items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Standby</td>
<td><strong>2Hours:</strong> The unit goes into standby after 2 hours.</td>
</tr>
<tr>
<td></td>
<td><strong>4Hours:</strong> The unit goes into standby after 4 hours.</td>
</tr>
<tr>
<td></td>
<td><strong>8Hours:</strong> The unit goes into standby after 8 hours.</td>
</tr>
<tr>
<td></td>
<td><strong>Off:</strong> The unit does not go into standby automatically.</td>
</tr>
<tr>
<td>Setup Lock</td>
<td><strong>On:</strong> Turn protection on.</td>
</tr>
<tr>
<td></td>
<td><strong>Off:</strong> Turn protection off.</td>
</tr>
<tr>
<td></td>
<td>To turn “Off” the “Setup Lock”, follow the procedure below.</td>
</tr>
<tr>
<td></td>
<td>1. Press and hold SETUP for at least 3 seconds.</td>
</tr>
<tr>
<td></td>
<td>2. “Setup Lock:On” appears on the display.</td>
</tr>
<tr>
<td></td>
<td>3. Use &lt; b &gt; to select “Off”, and then press ENTER.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong></td>
</tr>
<tr>
<td></td>
<td>When “Setup Lock” is set to “On”, the settings listed below can no longer be changed. Also, “Setup Lock!” is displayed if you attempt to operate related settings.</td>
</tr>
</tbody>
</table>

### Default settings are underlined.

### NOTE

- Setup menu operations
- Levels
- RESTORER
- Audio Adjust
- etc.
Adjusting the sound field effects

The sound being played in the surround mode can be adjusted to your liking. The items (parameters) that can be adjusted depend on the signal being input and the currently set surround mode. For details on the adjustable parameters, see “Surround modes and surround parameters” (page 53).

**NOTE**

Some setting items cannot be set while playback is stopped. Make the settings during playback.

Items that can be set with the audio adjust procedure

- Audio Adjust (page 41)
- Tone (page 43)
- NIGHT MODE (page 43)
- RESTORER (page 44)
- Audio Delay (page 44)

---

Audio Adjust

Adjust surround sound parameters. It may not be possible to set this item depending on the input signal.

**Menu operations**

1. Press AUDIO and then press ENTER. The menu is displayed on the TV screen.

2. Use △▽ to select the menu to be set or operated.

3. Use ◄► to enter the setting.

- To return to the previous item, press BACK.
- Exiting the Menu, press AUDIO while the menu is displayed. The menu display disappears.

**Setting items**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the PLII mode</td>
<td>Cinema: Surround sound mode optimized for movie sources. Music: Surround sound mode optimized for music sources. Game: Surround sound mode optimized for games. Pro Logic: Dolby Pro Logic playback mode.</td>
</tr>
<tr>
<td>In the DTS NEO:6 mode</td>
<td>Cinema: Surround sound mode optimized for movie sources. Music: Surround sound mode optimized for music sources. The &quot;Music&quot; mode is also effective for movie sources including a lot of stereo music.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D.Comp</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compress dynamic range (difference between loud and soft sounds).</td>
<td></td>
</tr>
<tr>
<td>Low / Mid / High: These set the compression level. Off: Dynamic range compression is always off.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DRC</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td>This can be set in the Dolby TrueHD mode. Compress dynamic range (difference between loud and soft sounds).</td>
<td></td>
</tr>
<tr>
<td>Auto: Automatic dynamic range compression on/off control according to source. Low / Mid / High: These set the compression level. Off: Dynamic range compression is always off.</td>
<td></td>
</tr>
</tbody>
</table>
### Adjusting the sound field effects

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LFE</strong></td>
<td>Adjust the low-frequency effects level (LFE).&lt;br&gt;For proper playback of the different sources, we recommend setting to the values below:&lt;br&gt;• Dolby Digital sources : 0dB&lt;br&gt;• DTS movie sources : 0dB&lt;br&gt;• DTS music sources : −10dB</td>
</tr>
<tr>
<td><strong>Center Image</strong></td>
<td>Distributes the dialogue output from the center channel to the front left and right channels and widens the sound image in the front. You can set this when the surround mode is set to DTS NEO:6 in the “Music” mode.&lt;br&gt;The smaller the value, the more dialogue is concentrated on the center channel. The larger the value, the more dialogue is distributed to front left and right channels, and the more the sound image widens in the front.</td>
</tr>
<tr>
<td><strong>Panorama</strong></td>
<td>Assign front L/R signal to also go to the surround channels for wider sound. You can set this when the surround mode is Dolby PLII in the “Music” mode. On : Set.&lt;br&gt;Off : Do not set.</td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
<td>Shift sound image center to front or rear to adjust playback balance. You can set this when the surround mode is set to Dolby PLII in the “Music” mode. As you set a smaller number, the surround sound field shifts backward; as you set a larger number, the surround sound field shifts forward.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Setting items</th>
<th>Setting details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Center Width</strong></td>
<td>Distributes the dialogue output from the center channel to left and right channels and widens the sound image in the front. You can set this when the surround mode is set to Dolby PLII in the “Music” mode. The smaller the value, the more dialogue is concentrated on the center channel. The larger the value, the more dialogue is distributed to front left and right channels, and the more the sound image widens in the front.</td>
</tr>
<tr>
<td><strong>Subwoofer</strong></td>
<td>Turn subwoofer output on and off.&lt;br&gt;On : The subwoofer is used.&lt;br&gt;Off : The subwoofer is not used. &lt;br&gt;&lt;br&gt;<strong>NOTE</strong>&lt;br&gt;This can be set when the surround mode is “DIRECT” (page 23) and the “SW Mode” (page 38) is “LFE+Main”.</td>
</tr>
<tr>
<td><strong>Default</strong></td>
<td>The “Audio Adjust” settings are returned to the default settings. Yes : Reset to the defaults.&lt;br&gt;No : Do not reset to the defaults.</td>
</tr>
</tbody>
</table>
**Tone**

Adjust the tonal quality of the sound.

1. Press TONE.

2. Use ▲▼ to select “On”.
   - **On**: Allow tone adjustment (bass, treble).
   - **Off**: Playback without tone adjustment.

   **NOTE**
   The tone cannot be adjusted in the DIRECT mode.

3. Press △▼ to select an item to be set, and use ▲▼ to select a setting value.
   - **Bass**: Adjust bass.
     - –6dB – +6dB (0dB)
   - **Treble**: Adjust treble.
     - –6dB – +6dB (0dB)

   "Bass" or "Treble" can be set when the menu “Tone Control” setting is “On”.

**NIGHT MODE**

Optimized setting for late-night listening.

- If you do not press any button for approximately 5 seconds, the menu screen light turns off.

Press NIGHT to select your desired mode.

- **Low**: Set the adjusted value to “Low”.
- **Mid**: Set the adjusted value to “Middle”.
- **High**: Set the adjusted value to “High”.
- **Off**: Not set.

**D.Comp**

When a Dolby TrueHD signal is output, “DRC” is displayed on the TV screen.
The setting mode is also changed as shown below.

- **Low**: Set the adjusted value to “Low”.
- **Mid**: Set the adjusted value to “Middle”.
- **High**: Set the adjusted value to “High”.
- **Auto**: Automatic dynamic range compression on/off control according to the source.
- **Off**: Not set.
Compressed audio formats such as MP3, WMA (Windows Media Audio) and MPEG-4 AAC reduce the amount of data by eliminating signal components that are hard for the human ear to hear. The RESTORER function generates the signals eliminated upon compression, restoring the sound to conditions near those of the original sound before compression. It also restores the original bass characteristics for a rich and expanded tonal range.

- If you do not press any button for approximately 5 seconds, the menu screen light turns off.

Press RESTORER to select “On” or “Off”.

- Use RESTORER function.
- Do not use RESTORER function.

Audio Delay

While viewing video, manually adjust the time to delay audio output so that the video and audio are synchronized.

- If you do not press any button for approximately 5 seconds, the menu screen light turns off.

Use AUDIO DELAY +, – to select the value to be set.

Audio Delay: 0ms

- Store “Audio Delay” for each input source.

- This item can be set with analog signals or PCM signal (Sample Rate = 44.1/48 kHz) is input.
- This cannot be set when the surround mode is set to “DIRECT”.
Information

Information on the main unit’s various settings (Status) and on input signals (Audio Input Signal) is shown on the display.

The information displayed changes each time you press STATUS on the main unit.

The information is displayed for several seconds before the display returns to its original condition.

[Items to be checked]
- Input source
- Surround mode
- Input digital terminal
- etc.

Press INFO to display current source name, volume, surround mode name, and other information at the bottom of the screen.

NOTE
The information displayed differs according to the input source.

Dialogue normalization function

This function is automatically activated when playing Dolby Digital sources. It automatically corrects the standard signal level for individual program sources. The correction value can be checked using STATUS on the main unit.

Offset: -4dB

The figure is the corrected value. This cannot be changed.

Other settings

Switching between PAL and NTSC signal formats

Set the video signal format to be output for the TV you are using.
- The factory setting is “PAL”.

1. Press and hold STATUS and SOURCE SELECT for at least 3 seconds. “V.Format:<PAL>” appears on the display.
2. Press SOURCE SELECT and set the video signal format.
3. Press STATUS to complete the setting.

NOTE
When a format other than the video format of the connected TV is set, the picture will not be displayed properly.
Information

Here we list other information related to this unit. Please refer to this information as needed.

- Part names and functions  page 47
- Other information  page 52
- Troubleshooting  page 58
- Specifications  page 60
- Index  page 61
Part names and functions

Front panel
For buttons not explained here, see the page indicated in parentheses ( ).

1 Power operation button ( )
   Turns power to this unit on and off (standby).

2 Power indicator
   [Power indicator status]
   • Power on : Green
   • Normal standby : Off
   • Standby when “Pass Through” (page 40) is not set to “Off” : Red

3 Headphones jack (PHONES)
   When the headphones are plugged into this jack, audio will no longer be output from the connected speakers.

   NOTE
   To prevent hearing loss, do not raise the volume level excessively when using headphones.

4 AUX HDMI connector

5 PORTABLE input jack

6 MASTER VOLUME control knob

7 Display

8 Remote control sensor

9 SOURCE SELECT buttons ( )

10 Tuner preset channel buttons (TUNER PRESET CH +, –)

11 DIMMER button

12 STATUS button

13 QUICK SELECT buttons
Display

1. Information display
   The input source name, surround mode, setting values and other information are displayed here.

2. Input signal indicators

3. MUTE indicator
   This lights when the audio mute mode is selected (page 16).

4. Master volume indicator

5. Sleep timer indicator
   This lights when the sleep mode is selected (page 30).

6. Tuner reception mode indicators
   These light according to the reception conditions when the input source is set to “TUNER”.
   - TUNED: Lights up when the broadcast is properly tuned in.
   - STEREO: In the FM mode, this lights up when receiving stereo broadcasts.
   - RDS: Lights up when receiving RDS broadcasts.

7. Decoder indicators
   These light when Dolby or DTS signals are input or when the Dolby or DTS decoder is running.

8. Input mode indicators
   Set the audio input modes for the different input sources (page 35).
Rear panel
See the page indicated in parentheses ( ).

1 FM/AM antenna terminals (ANTENNA) ........................................ (13)
2 Analog audio connectors (AUDIO) ........................................... (11, 12)
3 Speaker terminals (SPEAKERS) ................................................ (28)
4 HDMI connectors ........................................................................... (6, 7)
5 VIDEO connectors ........................................................................... (10, 11, 12)
6 AC inlet (AC IN) .............................................................................. (14)
7 PRE OUT connector ........................................................................... (28)
8 Digital audio connectors (DIGITAL AUDIO) ................................. (10, 11, 12)

NOTE
Do not touch the inner pins of the connectors on the rear panel. Electrostatic discharge may cause permanent damage to the unit.
Remote control unit

For buttons not explained here, see the page indicated in parentheses ( ).

1. POWER button (Ø) ........................................ 15
2. QUICK SELECT buttons (1 – 4) .............. 20
3. Input source select buttons ................... 15
4. Channel level button (CH LEVEL) ........ 29
5. SLEEP button ........................................... 30
6. Information button (INFO) ................... 45
7. Cursor buttons (△▼◄►) ......................... 32, 33
8. ENTER button .......................................... 32, 33
9. BACK button .......................................... 32, 33
10. RESTORER button ................................. 14
11. NIGHT button .......................................... 43
12. SURROUND buttons ...................... (◄►) ...................... 21, 22, 23
13. Remote control signal transmitter ........ 51
14. BAND button .......................................... 17
15. MEMORY button .................................... 17
16. MODE button .......................................... 17
17. SHIFT button .......................................... 17
18. Tuning buttons (TUNE +, –) ............ (17)
19. CHANNEL buttons (+, –) .................. (17, 18)
20. SETUP button .......................................... 32, 33
21. VOLUME buttons (▲▼) ...................... 16
22. AUDIO button .......................................... 22, 41
23. DIMMER button ...................................... 16
24. TONE button .......................................... 43
25. MUTE button (■×) ................................. (16
26. AUDIO DELAY buttons (+, –) .......... (44)
Inserting the batteries

1. Remove the rear lid in the direction of the arrow and remove it.
2. Load the two batteries properly as indicated by the marks in the battery compartment.
3. Put the rear cover back on.

NOTE
- Insert the specified batteries in the remote control unit.
- Replace the batteries with new ones if the set does not operate even when the remote control unit is operated close to the unit. (The supplied batteries are only for verifying operation.)
- When inserting the batteries, be sure to do so in the proper direction, following the and marks in the battery compartment.
- To prevent damage or leakage of battery fluid:
  - Do not use a new battery together with an old one.
  - Do not use two different types of batteries.
  - Do not attempt to charge dry batteries.
  - Do not short-circuit, disassemble, heat or dispose of batteries in flames.
  - Do not keep the battery in a place exposed to direct sunlight or in places with extremely high temperatures, such as near a heater.
- If the battery fluid should leak, carefully wipe the fluid off the inside of the battery compartment and insert new batteries.
- Remove the batteries from the remote control unit if it will not be in use for long periods.
- Used batteries should be disposed of in accordance with the local regulations regarding battery disposal.
- The remote control unit may function improperly if rechargeable batteries are used.

Operating range of the remote control unit

Point the remote control unit at the remote sensor when operating it.

NOTE
- The set may function improperly or the remote control unit may not operate if the remote control sensor is exposed to direct sunlight, strong artificial light from an inverter type fluorescent lamp or infrared light.
- When using 3D video devices that transmit infrared communication signals (such as infrared signals etc) between the various units (such as the monitor, 3D glasses, 3D transmitter unit etc), the remote control unit may not operate due to interference from those communication signals. If this occurs, adjust the direction and distance of the 3D communication for each unit, and check that the remote control unit operation is not affected by these signals.
## Other information

- Trademark information (page 52)
- Surround (page 53)
- Relationship between video signals and monitor output (page 55)
- Explanation of terms (page 56)

### Trademark information

<table>
<thead>
<tr>
<th>Trademark</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOLBY TRUE HD</strong></td>
<td>Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic” and the double-D symbol are trademarks of Dolby Laboratories.</td>
</tr>
<tr>
<td><strong>dts-HD</strong></td>
<td>Manufactured under license under U.S. Patent Nos: 5,966,674; 5,974,380; 6,226,616; 6,487,538; 7,212,872; 7,333,929; 7,392,195; 7,272,567 &amp; other U.S. and worldwide patents issued &amp; pending. DTS-HD, the Symbol, &amp; DTS-HD and the Symbol together are registered trademarks of DTS, Inc. Product includes software. © DTS, Inc. All Rights Reserved.</td>
</tr>
<tr>
<td><strong>HDMI</strong></td>
<td>The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.</td>
</tr>
<tr>
<td><strong>Adobe Reader</strong></td>
<td>Adobe, the Adobe logo and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.</td>
</tr>
</tbody>
</table>
**Surround**

This unit is equipped with a sophisticated digital signal processing circuit that lets you play your favorite movie and music sources and listen to them with a wide range of surround sound mode choices.

**Surround modes and surround parameters**

This table shows the speakers that can be used in each surround mode and the surround parameters adjustable in each surround mode.

### Symbols in the table

- ○ This indicates the audio output channels or surround parameters that can be set.
- □ This indicates the audio output channels. The output channels depend on the settings of “Speaker Config.” (page 37).

<table>
<thead>
<tr>
<th>Surroun mode (page 21)</th>
<th>Channel output</th>
<th>Audio Adjust (page 41)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front L/R</td>
<td>Center</td>
</tr>
<tr>
<td></td>
<td>Surround L/R</td>
<td>Subwoofer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mode (page 41)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LFE #2 (page 42)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Comp #3 (page 41)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DRC #4 (page 41)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subwoofer (page 42)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRD LOGIC II Music mode only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NEO:6 Music mode only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tone (page 43)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RESTORER #5 (page 44)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Audio Adjust (page 41)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct (2-channel)</td>
<td>○</td>
</tr>
<tr>
<td>Direct (Multi-channel)</td>
<td>○</td>
</tr>
<tr>
<td>STEREO</td>
<td>○</td>
</tr>
<tr>
<td>Multi CH IN</td>
<td>○</td>
</tr>
<tr>
<td>Dolby Pro Logic II</td>
<td>○</td>
</tr>
<tr>
<td>Dolby Digital</td>
<td>○</td>
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<tr>
<td>Dolby Digital Plus</td>
<td>○</td>
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<tr>
<td>Dolby TrueHD</td>
<td>○</td>
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<tr>
<td>DTS SURROUND</td>
<td>○</td>
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<tr>
<td>DTS 96/24</td>
<td>○</td>
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<tr>
<td>DTS-HD</td>
<td>○</td>
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<tr>
<td>DTS Express</td>
<td>○</td>
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<tr>
<td>Multi CH STEREO</td>
<td>○</td>
</tr>
<tr>
<td>Virtual</td>
<td>○</td>
</tr>
</tbody>
</table>

- *1 Only when “SW Mode” is set to “LFE+Main” (page 38), sound is output from the subwoofer.
- *2 This item can be selected when a Dolby Digital or DTS signal is played.
- *3 This item can be selected when a Dolby Digital or DTS signal is played.
- *4 This item can be selected when a Dolby TrueHD signal is played.
- *5 This item can be set when the input signal is analog, PCM 48 kHz or 44.1 kHz.
This table shows the input signal that can be played in each surround mode. Check the audio signal of the input source then select the surround mode.

### Symbols in the table
- ● This indicates the default surround mode.
- ○ This indicates the selectable surround mode.

### Input signal types and formats

<table>
<thead>
<tr>
<th>Surround mode (page 21)</th>
<th>ANALOG</th>
<th>PCM (Multi-channel)</th>
<th>PCM (2-channel)</th>
<th>DTS-HD Master Audio</th>
<th>DTS-HD High Resolution Audio</th>
<th>DTS EXPRESS</th>
<th>DTS 96/24</th>
<th>DOLBY TrueHD</th>
<th>DOLBY DIGITAL Plus</th>
<th>DOLBY DIGITAL (5.1-channel)</th>
<th>DOLBY DIGITAL (2-channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTS SURROUND</td>
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<td>DTS-HD MSTR</td>
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<td>DTS-HD HI RES</td>
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<td>DTS SURROUND</td>
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<td>DTS 96/24</td>
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<tr>
<td>DTS EXPRESS</td>
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<tr>
<td>DTS NEO:6 CINEMA</td>
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<td>DTS NEO:6 MUSIC</td>
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<td>DOLBY SURROUND</td>
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<tr>
<td>DOLBY TrueHD</td>
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<td>DOLBY DIGITAL+</td>
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<td>DOLBY DIGITAL</td>
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<tr>
<td>DOLBY PRO LOGIC II CINEMA</td>
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<tr>
<td>DOLBY PRO LOGIC II MUSIC</td>
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<tr>
<td>DOLBY PRO LOGIC II GAME</td>
<td>○</td>
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<td>DOLBY PRO LOGIC</td>
<td>○</td>
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<td>MULTICH IN</td>
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<tr>
<td>MULTI CH IN</td>
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<td>DIRECT</td>
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<tr>
<td>DSP SIMULATION</td>
<td></td>
<td>○</td>
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<td>○</td>
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<tr>
<td>MULTI CH STEREO</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>VIRTUAL</td>
<td>○</td>
<td>○</td>
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<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>STEREO</td>
<td>●</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
## Relationship between video signals and monitor output

<table>
<thead>
<tr>
<th>Input connector</th>
<th>Output connector</th>
<th>HDMI</th>
<th>Video</th>
<th>Menu</th>
<th>Video</th>
<th>Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td></td>
<td>×</td>
<td>Only the menu is displayed</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>×</td>
<td>○</td>
<td></td>
<td>×</td>
<td>Only the menu is displayed</td>
<td>○ (VIDEO)</td>
<td>× (VIDEO)</td>
</tr>
<tr>
<td>○</td>
<td>×</td>
<td>○ &lt;HDMI&gt;</td>
<td>× &lt;HDMI&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>○</td>
<td>○</td>
<td>○ &lt;HDMI&gt;</td>
<td>× &lt;HDMI&gt;</td>
<td>○ (VIDEO)</td>
<td>× (VIDEO)</td>
<td></td>
</tr>
<tr>
<td>○</td>
<td>×</td>
<td>○ &lt;HDMI&gt;</td>
<td>× &lt;HDMI&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

- ○: Video signal input present
- ○ < >: The input signal between the < > marks is output.
- ○ (): Superimposed on the picture indicated in ().
- ×: Video signal input present
- × < >: No video signal output
- × (): Only the picture in () is output.

**NOTE**

- If you operate the menu while playing back 3D video content or computer’s resolution (e.g. VGA), the playback video is replaced by the menu screen. The playback video is not displayed behind the menu screen.
- This unit does not show the status display while playing back 3D video content or computer’s resolution (e.g. VGA).
Dolby TrueHD

Dolby TrueHD is a high-definition audio technology developed by Dolby Laboratories using lossless coding technology to faithfully reproduce the sound of the studio master. This format provides the facility to support up to 8 audio channels with a sampling frequency of 96kHz/24bit resolution and up to 8 audio channels with a sampling frequency of 192kHz/24bit resolution. Dolby TrueHD is adopted for applications that put very high importance on sound quality.

Downmix

This function converts the number of channels of surround audio to a lower number of channels and plays back according to the system’s configuration.

DTS 96/24

DTS 96/24 is a digital audio format enabling high sound quality playback in 5.1 channels with a sampling frequency of 96 kHz and 24 bit quantization on DVD-Video.

Dolby Digital Plus

Dolby Digital Plus is an improved Dolby Digital signal format that is compatible with up to 7.1 channels of discrete digital sound and also improves sound quality thanks to extra data bit rate performance. It is upwardly compatible with conventional Dolby Digital, so it offers greater flexibility in response to the source signal and the conditions of the playback device.

Dolby Pro Logic II

Dolby Pro Logic II is a matrix decoding technology developed by Dolby Laboratories.

Speaker impedance

The color space defined by Adobe Systems Inc. Because it is a wider color space than RGB, it can produce more vivid and natural images.

MP3 (MPEG Audio Layer-3)

This is an internationally standardized audio data compression scheme, using the “MPEG-1” video compression standard. It compresses the data volume to about one eleventh its original size while maintaining sound quality equivalent to a music CD.

Deep Color

An image technology supported by HDMI. Unlike RGB, which uses 8 bits (256 shades) per color, it can use 10 bits (1024 shades), 12 bits (4096 shades), or 16 bits (65536 shades) to produce colors in higher definition.

Both devices linked via HDMI must support Deep Color.

Dolby Digital

Dolby Digital is a multi-channel digital signal format developed by Dolby Laboratories. A total of 5.1 channels are played: 3 front channels ("FL", “FR” and “C”), 2 surround channels ("SL" and "SR") and the “LFE” channel for low frequencies.

Because of this, there is no crosstalk between channels and a realistic sound field with a “threedimensional” feeling (sense of distance, movement and positioning) is achieved. This delivers a thrilling surround sound experience in the home.

Dolby Digital Plus

Dolby Digital Plus is an improved Dolby Digital signal format that is compatible with up to 7.1 channels of discrete digital sound and also improves sound quality thanks to extra data bit rate performance. It is upwardly compatible with conventional Dolby Digital, so it offers greater flexibility in response to the source signal and the conditions of the playback device.

Dolby Pro Logic II

Dolby Pro Logic II is a matrix decoding technology developed by Dolby Laboratories.

Speaker impedance
**sYCC601 color**
Like “x.v.Color”, each of these color spaces defines a palette of available colors that is larger than the traditional RGB color model.

**W**

**WMA (Windows Media Audio)**
This is audio compression technology developed by Microsoft Corporation. WMA data can be encoded using Windows Media® Player Ver.7, 7.1, Windows Media® Player for Windows® XP and Windows Media® Player 9 Series. To encode WMA files, only use applications authorized by Microsoft Corporation. If you use an unauthorized application, the file may not work properly.

**X**

**x.v.Color**
This function lets HDTVs display colors more accurately. It enables display with natural, vivid colors. “x.v.Color” is a Sony registered trademark.
Troubleshooting

If a problem should arise, first check the following:
1. Are the connections correct?
2. Is the set being operated as described in the owner’s manual?
3. Are the other devices operating properly?

If this unit does not operate properly, check the items listed in the table below. Should the problem persist, there may be a malfunction.

In this case, disconnect the power immediately and contact your store of purchase.

### General

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power does not turn on.</td>
<td>• Check whether the power plug is correctly inserted into the power outlet.</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>• The protection circuit is active. Disconnect the power plug from the electric outlet, wait 5 to 10 seconds and then insert it back into the outlet.</td>
<td></td>
</tr>
<tr>
<td>Power automatically switches to standby mode.</td>
<td>• The sleep timer is set. Turn on the power again, or change the sleep timer settings.   &quot;Auto Standby&quot; is triggered when there is no operation for a set amount of time. To disable “Auto Standby”, set “Auto Standby” on the menu to “Off”.</td>
<td>30</td>
</tr>
<tr>
<td>Display is off.</td>
<td>• Press DIMMER and apply any setting except “Off”.</td>
<td>16</td>
</tr>
<tr>
<td>The power indicator is blinking red.</td>
<td>• The temperature inside the unit has risen. Please turn off power once, and re-apply the power after the temperature has fallen sufficiently.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>• Please re-install this unit in a place having good ventilation.</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>• Please use speakers which have the specified impedance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The speaker cable has shorted (is touching). Firmly twist the core wire in the speaker cable, and then re-connect it to the speaker terminal.</td>
<td>28</td>
</tr>
<tr>
<td>After turning on the power, the power indicator is blinking red.</td>
<td>• This unit’s amplifier circuit has failed. Turn off the power and please contact the Denon service adviser.</td>
<td>-</td>
</tr>
<tr>
<td>Set does not operate properly.</td>
<td>• Reset the microprocessor. Note that re-setting the microprocessor restores all pre-configured settings to the factory defaults.</td>
<td>60</td>
</tr>
</tbody>
</table>

### [HDMI]

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No audio is output with HDMI connection.</td>
<td>• Check the connection of the HDMI connectors.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• When outputting HDMI audio from the speakers, set “HDMI Audio Out” on the menu to “Amp”.</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>• When outputting HDMI audio from a TV, set “HDMI Audio Out” on the menu to “TV”.</td>
<td>40</td>
</tr>
<tr>
<td>No video is output when “Pass Through” is set.</td>
<td>• Check the connection of the HDMI connectors.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• Set the input source to match the connected HDMI connector.</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>• Check whether the TV is compatible with copyright protection (HDCP). If connected to a device not compatible with HDCP, video will not be output correctly.</td>
<td>6</td>
</tr>
<tr>
<td>No audio is output when “Pass Through” is set.</td>
<td>• Check the TV settings. Refer to the owner’s manual for your TV for more details.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• Set the speaker to the TV speakers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Set HDMI control to “Off”.</td>
<td></td>
</tr>
</tbody>
</table>

### Video

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No picture appears.</td>
<td>• Check the TV connection.</td>
<td>6, 10</td>
</tr>
<tr>
<td></td>
<td>• Set the TV input correctly.</td>
<td></td>
</tr>
</tbody>
</table>

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### Audio

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio is not output.</td>
<td>• Check the connections for all devices.</td>
<td>6, 7, 10, 11, 12, 13</td>
</tr>
<tr>
<td></td>
<td>• Check the speaker connections and configurations.</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>• Check whether the audio device power is turned on.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>• Adjust the master volume.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• Cancel the mute mode.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• Select a suitable input source.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• Select a suitable input mode.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• Disconnect the headphones. No sound is output from the speakers when</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>headphones are connected.</td>
<td></td>
</tr>
<tr>
<td>The volume does not increase.</td>
<td>• The maximum volume is set too low. Set the maximum volume using “Limit” on</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>the menu.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Power for external devices connected to the output connectors of the unit</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>may not be turned on. Check the power of connected external devices.</td>
<td></td>
</tr>
<tr>
<td>No sound is produced from surround speakers.</td>
<td>• Check if the surround speakers are connected to the SURROUND terminals.</td>
<td>–</td>
</tr>
<tr>
<td>No sound is produced from subwoofer.</td>
<td>• Check the subwoofer connections.</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>• Turn on the subwoofer’s power.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>• Set “Speaker Config.” = “Subwoofer” on the menu to “Yes”.</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>• If “Front” and “Center” for “Speaker Config.” are set to “Large”, and “SW</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Mode” is set to “LFE”, no sound may be output from the subwoofers,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>depending on the input signal or selected surround mode.</td>
<td></td>
</tr>
<tr>
<td>DTS sound is not output.</td>
<td>• Set “Decode Mode” on the menu to “Auto” or “DTS”.</td>
<td>25</td>
</tr>
<tr>
<td>Dolby TrueHD, DTS-HD, Dolby Digital Plus audio is not output.</td>
<td>• Make HDMI connections.</td>
<td>6</td>
</tr>
<tr>
<td>Dolby PLII mode or DTS NEO:6 mode cannot be selected.</td>
<td>• Check that “Speaker Config.” = “Center” or “Surround” is set to other than</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>“None”. If the speaker system is 2.0/2.1ch, this surround mode cannot be</td>
<td></td>
</tr>
<tr>
<td></td>
<td>selected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• When headphones are used, Dolby PLII or DTS NEO:6 cannot be selected.</td>
<td>–</td>
</tr>
<tr>
<td>RESTORER cannot be selected.</td>
<td>• Check that an analog signal or PCM signal (fs=44.1/48 kHz) is input. For</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>playback of multi-channel signals such as Dolby Digital or DTS surround,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RESTORER cannot be used.</td>
<td></td>
</tr>
</tbody>
</table>

### Radio

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception fails, or there is a lot of noise or distortion.</td>
<td>• Change the antenna orientation or position.</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>• Separate the AM loop antenna from the unit.</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>• Use an FM outdoor antenna.</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>• Separate the antenna from other connection cables.</td>
<td>13</td>
</tr>
<tr>
<td>The set cannot be operated with the remote control unit.</td>
<td>• Batteries are worn out. Replace with new batteries.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• Operate the remote control unit within a distance of about 7 m from this</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>unit and at an angle of within 30°.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Remove any obstacle between this unit and the remote control unit.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• Insert the batteries in the proper direction, checking the @ and ¥ marks.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• The set’s remote control sensor is exposed to strong light (direct sunlight,</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>inverter type fluorescent bulb light, etc.). Move the set to a place in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>which the remote control sensor will not be exposed to strong light.</td>
<td></td>
</tr>
</tbody>
</table>

### Remote Control Unit

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The set cannot be operated with the remote control unit.</td>
<td>• Batteries are worn out. Replace with new batteries.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• Operate the remote control unit within a distance of about 7 m from this</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>unit and at an angle of within 30°.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Remove any obstacle between this unit and the remote control unit.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• Insert the batteries in the proper direction, checking the @ and ¥ marks.</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>• The set’s remote control sensor is exposed to strong light (direct sunlight,</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>inverter type fluorescent bulb light, etc.). Move the set to a place in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>which the remote control sensor will not be exposed to strong light.</td>
<td></td>
</tr>
</tbody>
</table>
Resetting the microprocessor
Perform this procedure if the display is abnormal or if operations cannot be performed.
Note that when the microprocessor is reset, all the settings are reset to their default values.

1. Turn off the power using the power switch.
2. Press and while simultaneously pressing SOURCE SELECT and SOURCE SELECT.
3. Once the display starts flashing at intervals of about 1 second, release the two buttons.

If in step 3 the display does not flash at intervals of about 1 second, start over from step 1.

Specifications

Audio section
- Power amplifier
  - Rated output:
    - Front: 75 W + 75 W (8 Ω/ohms, 20 Hz – 20 kHz with 0.08 % T.H.D.)
    - Center: 75 W + 110 W (6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
    - Surrounded: 110 W + 110 W (6 Ω/ohms, 1 kHz with 0.7 % T.H.D.)
  - Output connectors:
    - Analog
      - Input sensitivity/Input impedance: 200 mV/47 kΩ
      - Frequency response: 10 Hz – 100 kHz — +1, –3 dB (DIRECT mode)
      - S/N: 98 dB (IHF–A weighted, DIRECT mode)

Video section
- Standard video connectors
  - Input/output level and impedance: 1 Vp-p, 75 Ω/ohms
  - Frequency response: 5 Hz – 10 MHz — 0, –3 dB

Tuner section
- [FM] [AM]
  - Receiving Range: 87.50 MHz – 108.00 MHz
  - Usable Sensitivity: 1.2 µV (12.8 dBf)
  - 50 dB Quieting Sensitivity: MONO 2.8 µV (20.2 dBf)
  - Total harmonic Distortion (at 1 kHz): MONO 0.7 % (1 kHz)
  - MONO 2.8 µV (20.2 dBf)
  - STEREO 67 dB (IHF–A weighted, DIRECT mode)

General
- Power supply: AC 230 V, 50/60 Hz
- Power consumption: 330 W
- Power consumption in standby mode: 0.3 W (HDMI Pass Through: Off)

For purposes of improvement, specifications and design are subject to change without notice.
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Dimensions

Unit: mm

Weight: 7.9 kg