Multi Channel AV Receiver

Operating Instructions
STR-DG820

©2008 Sony Corporation
Owner’s Record

The model and serial numbers are located on the rear of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.
Model No. ________________________________
Serial No. ________________________________

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To prevent fire, do not cover the ventilation of the apparatus with newspapers, table-cloths, curtains, etc. And don’t place lighted candles on the apparatus.

To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

Install this system so that the power cord can be unplugged from the wall socket immediately in the event of trouble.

Batteries or batteries installed apparatus shall not be exposed to excessive heat such as sunshine, fire or the like.

For customers in the United States

WARNING

This symbol 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.
This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

You are cautioned that any changes or modification not expressly approved in this manual could void your authority to operate this equipment.

Note to CATV system installer:

This reminder is provided to call CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.
About This Manual

• The instructions in this manual are for model STR-DG820. Check your model number by looking at the lower right corner of the front panel.
• The instructions in this manual describe the controls on the supplied remote. You can also use the controls on the receiver if they have the same or similar names as those on the remote.

About area codes
The area code of the receiver you purchased is shown on the lower right portion of the rear panel (see the illustration below).

Any differences in operation, according to the area code, are clearly indicated in the text, for example, “Models of area code AA only”.

This receiver incorporates Dolby* Digital and Pro Logic Surround and the DTS** Digital Surround System.

* Manufactured under license from Dolby Laboratories. Dolby, Pro Logic, Surround Ex, and the double-D symbol are trademarks of Dolby Laboratories.

** Manufactured under license under U.S. Patent #s: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,226,616; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS is a registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Master Audio are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.
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To remove the cover
Press PUSH.
When you remove the cover, keep it out of reach from children.

Status of the POWER button

Off
The receiver is turned off (initial setting).
The ON/STANDBY lamp lights off.
Press POWER to turn the receiver on.
You cannot turn the receiver on using the remote.

On/Standby
Press \(\text{I/\(\text{O}\)}\) on the remote to turn the receiver on or set it to the standby mode.
When you press POWER on the receiver, the receiver will be turned off.
The ON/STANDBY lamp lights up in green when the receiver is on.
The ON/STANDBY lamp lights up in red when the receiver is set to standby mode.
<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POWER</strong></td>
<td>Press to turn the receiver on or off (page 6, 29, 40, 41, 104).</td>
</tr>
<tr>
<td><strong>ON/STANDBY lamp</strong></td>
<td>Show the status of the receiver (page 6).</td>
</tr>
<tr>
<td><strong>TONE MODE</strong></td>
<td>Adjusts the tonal quality (bass/treble level) of the front speakers.</td>
</tr>
<tr>
<td><strong>TONE +/-</strong></td>
<td>Press TONE MODE repeatedly to select bass or treble level, then turn TONE +/- to adjust the level (page 29, 51).</td>
</tr>
<tr>
<td><strong>TUNING MODE</strong></td>
<td>Press to select the tuning mode (page 64, 67, 70, 71, 74, 104).</td>
</tr>
<tr>
<td><strong>TUNING +/-</strong></td>
<td>Turn to scan a station (page 64, 67, 70, 71, 73).</td>
</tr>
<tr>
<td><strong>Remote sensor</strong></td>
<td>Receives signals from remote commander.</td>
</tr>
<tr>
<td><strong>Display window</strong></td>
<td>The current status of the selected component or a list of selectable items appears here (page 8).</td>
</tr>
<tr>
<td><strong>DISPLAY</strong></td>
<td>Press repeatedly to select information displayed on the display (page 72, 88, 101).</td>
</tr>
<tr>
<td><strong>INPUT MODE</strong></td>
<td>Press to select the input mode when the same components are connected to both digital and analog jacks (page 82).</td>
</tr>
<tr>
<td><strong>MASTER VOLUME</strong></td>
<td>Turn to adjust the volume level of all speakers at the same time (page 37, 38, 40, 41).</td>
</tr>
<tr>
<td><strong>INPUT SELECTOR</strong></td>
<td>Turn to select the input source to playback (page 38, 64, 67, 71, 82, 87, 89).</td>
</tr>
<tr>
<td><strong>2CH/A.DIRECT</strong></td>
<td>Press to select a sound field (page 29, 56, 59, 62).</td>
</tr>
<tr>
<td><strong>A.F.D.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MOVIE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MUSIC</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DIMMER</strong></td>
<td>Press repeatedly to adjust the brightness of the display.</td>
</tr>
<tr>
<td><strong>MEMORY/ENTER</strong></td>
<td>Press to store a station or enter the selection when selecting the settings (page 65, 72).</td>
</tr>
<tr>
<td><strong>AUTO CAL MIC jack</strong></td>
<td>Connects to the supplied optimizer microphone for the Digital Cinema Auto Calibration function (page 32).</td>
</tr>
<tr>
<td><strong>VIDEO 2 IN/PORTABLE AV IN jacks</strong></td>
<td>Connects to a portable audio/video component such as a camcorder or video game (page 27, 38).</td>
</tr>
<tr>
<td><strong>SPEAKERS (OFF/A/B/A+B)</strong></td>
<td>Switch to OFF, A, B, A+B of the front speakers (page 30).</td>
</tr>
<tr>
<td><strong>PHONES jack</strong></td>
<td>Connects to headphones (page 99).</td>
</tr>
</tbody>
</table>
## About the indicators on the display

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SW</td>
<td>Lights up when the audio signal is output from the SUBWOOFER jacks.</td>
</tr>
<tr>
<td>2 LFE</td>
<td>Lights up when the disc being played back contains an LFE (Low Frequency Effect) channel and the LFE channel signal is actually being reproduced.</td>
</tr>
<tr>
<td>3 COAX</td>
<td>Lights up when INPUT MODE is set to “AUTO” and the source signal is a digital signal being input through the COAXIAL jack (page 82).</td>
</tr>
<tr>
<td>4 OPT</td>
<td>Lights up when INPUT MODE is set to “AUTO” and the source signal is a digital signal being input through the OPTICAL jack (page 82).</td>
</tr>
<tr>
<td>5 D/</td>
<td>“D” lights up when the receiver is decoding Dolby Digital signals.</td>
</tr>
<tr>
<td>6 Neural - THX</td>
<td>Lights up when the receiver applies Neural - THX processing to input signals.</td>
</tr>
<tr>
<td>7 DTS/ DTS-ES/ DTS 96/24</td>
<td>“DTS” lights up when the receiver is decoding DTS signals. “DTS-ES” lights up when the receiver is decoding DTS-ES signals. “DTS 96/24” lights up when the receiver is decoding DTS 96 kHz/24 bit signals. <strong>Note</strong> When playing a DTS format disc, be sure that you have made digital connections and that INPUT MODE is set to “AUTO” (page 82).</td>
</tr>
<tr>
<td>8 D. RANGE</td>
<td>Lights up when dynamic range compression is activated (page 47).</td>
</tr>
<tr>
<td>9 CAT</td>
<td>Lights up when category mode is set to “ONE CAT” during XM Radio operation (page 71).</td>
</tr>
<tr>
<td>10 SP A/SP B/ SP A+B</td>
<td>Lights up according to the speaker system used (page 30). However, these indicators do not light up if the speaker output is turned off or if headphones are connected.</td>
</tr>
<tr>
<td>11 SLEEP</td>
<td>Lights up when the sleep timer is activated (page 88).</td>
</tr>
<tr>
<td>12 Tuner indicators</td>
<td>Lights up when using the receiver to tune in radio stations (page 63), etc.</td>
</tr>
</tbody>
</table>

**Note**
When playing a Dolby Digital format disc, be sure that you have made digital connections and that INPUT MODE is set to “AUTO” (page 82).
<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.DIRECT</td>
<td>Lights up when the receiver is processing Analog Direct signals.</td>
</tr>
<tr>
<td>MEM</td>
<td>Lights up when a memory function, such as Preset Memory (page 65, 73) etc., is activated.</td>
</tr>
<tr>
<td>XM</td>
<td>Lights up when XM Mini Tuner and Home Dock are connected and “XM RADIO” is selected.</td>
</tr>
<tr>
<td>PL/PL II/PL IIx</td>
<td>“PL” lights up when the receiver applies Pro Logic processing to 2 channel signals in order to output the center and surround channel signals. “PL II” lights up when the Pro Logic II decoder is activated. “PL IIx” lights up when the Pro Logic IIx decoder is activated.</td>
</tr>
<tr>
<td>NEO:6</td>
<td>Lights up when DTS Neo:6 Cinema/Music decoder is activated (page 58).</td>
</tr>
<tr>
<td>EQ</td>
<td>Lights up when the equalizer is activated.</td>
</tr>
<tr>
<td>DTS-HD MSTR/DTS-HD HI RES</td>
<td>“DTS-HD MSTR” lights up when the receiver is decoding DTS-HD Master Audio signals. “DTS-HD HI RES” lights up when the receiver is decoding DTS-HD High Resolution signals.</td>
</tr>
<tr>
<td>LPCM</td>
<td>Lights up when Linear PCM signals are detected.</td>
</tr>
<tr>
<td>ANALOG</td>
<td>Lights up when INPUT MODE is set to “ANALOG” or no digital signals are detected when INPUT MODE is set to “AUTO” (page 82).</td>
</tr>
<tr>
<td>DMPORT</td>
<td>Lights up when DIGITAL MEDIA PORT adapter is connected and “DMPORT” is selected.</td>
</tr>
</tbody>
</table>

### Playback channel indicators

- **L:** Front Left
- **R:** Front Right
- **C:** Center (monaural)
- **SL:** Surround Left
- **SR:** Surround Right
- **S:** Surround (monaural or the surround components obtained by Pro Logic processing)
- **SBL:** Surround Back Left
- **SBR:** Surround Back Right
- **SB:** Surround Back (the surround back components obtained by 6.1 channel decoding)

**Example:**

Speaker pattern: 3/0.1
Recording format: 3/2.1
Sound Field: A.F.D. AUTO

![Speaker configuration example](example.png)
### Rear panel

1. **DIGITAL INPUT/OUTPUT section**
   - **OPTICAL IN jacks**: Connects to a DVD player, etc. The COAXIAL jack provides a better sound quality (page 19, 25, 26, 27).
   - **COAXIAL IN jack**: Connects to a DVD player, satellite tuner, or a Blu-ray disc player, etc. The image is output to a TV or a projector while the sound can be output from a TV or/and speakers connected to this receiver (page 23).
   - **HDMI IN/OUT* jacks**: Connects to a DVD player, satellite tuner, or a Blu-ray disc player, etc.

2. **ANTENNA section**
   - **FM ANTENNA jack**: Connects to the supplied FM wire antenna (page 28).
   - **AM ANTENNA terminals**: Connects to the supplied AM loop antenna (page 28).
   - **XM jack**: Connects to the XM Mini-Tuner and Home Dock (not supplied) (page 69).

3. **COMPONENT VIDEO INPUT/OUTPUT section**
   - **Green (Y)**, **Blue (Pb/Pr)**, **Red (Cb/Cr) IN/OUT* jacks**: Connects to a DVD player, TV, satellite tuner, etc. (page 19, 25, 26, 27).
**Remote commander**

You can use the supplied remote to operate the receiver and to control the Sony audio/video components that the remote is assigned to operate.

You can also program the remote to control non-Sony audio/video components. For details, see “Programming the remote” (page 90).

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**SPEAKERS section**

Connects to speakers (page 17).

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**AUDIO INPUT/OUTPUT section**

- **White (L)** AUDIO IN/OUT jacks: Connects to a Super Audio CD player, etc. (page 19, 21).
- **Red (R)** AUDIO OUT jack: Connects to a subwoofer (page 17).

---

**VIDEO/AUDIO INPUT/OUTPUT section**

- **White (L)** AUDIO IN/OUT jacks: Connects to a VCR, DVD player, etc. (page 25–27).
- **Red (R)** AUDIO IN/OUT jacks:
- **Yellow** VIDEO IN/OUT* jacks:

---

**DMPORT section**

- **DMPORT** jack: Connects to a DIGITAL MEDIA PORT adapter (page 86).

* You can watch the selected input image when you connect the HDMI OUT or MONITOR OUT jack to a TV (page 19, 23).
### Name | Function
--- | ---
1. **AV I/○ (on/standby)**  
Press to turn on or off the audio/video components that the remote is programmed to operate.  
To turn the TV on or off, press TV (3) and then press AV I/○.  
If you press I/○ (2) at the same time, it will turn off the receiver and other components (SYSTEM STANDBY).  
**Note**  
The function of the AV I/○ switch changes automatically each time you press the input buttons (24).

2. **I/○ (on/standby)**  
Press to turn the receiver on or set it to standby mode.  
To turn off all components, press I/○ and AV I/○ (1) at the same time (SYSTEM STANDBY).  
To save the power in standby mode, set “CTRL:HDMI” to “CTRL OFF” (page 45).

3. **TV**  
Press to light up the button. It changes the remote key function to activate the buttons with yellow printing. It also activate the + (9), / / / / (9), OPTIONS TOOLS (10), MENU/HOME (11), RETURN/EXIT (19), and DISPLAY (20) buttons to perform menu operations for Sony TVs only.

4. **AMP**  
Press to light up the button to activate the receiver operation (page 33).

5. **A.F.D.**  
Press to select a sound field (page 56, 59).

6. **MOVIE**

7. **MUSIC**

8. **NIGHT MODE**  
Press to activate the Night Mode function (page 61).

9. **SLEEP**  
Press to activate the Sleep Timer function and the duration which the receiver turns off automatically.

10. **AMP MENU**  
Press to display the menu to operate the receiver.

---

### Name | Function
--- | ---
9. **选项工具** (OPTIONS TOOLS)**
Press to display and select items from the options menus for DVD player or Blu-ray disc player.
To display the options of Sony TV, press TV (3) and then press OPTIONS TOOLS.

10. **MENU/HOME**  
Press to display the menus of the receiver, VCR, DVD player, satellite tuner, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO on the TV screen.  
Then, use / / / / and + to perform menu operations.  
To display the menus of Sony TV, press TV (3) and then press MENU.

12. **[ ] [ ]**  
Press to skip tracks of the VCR, CD player, VCD player, LD player, DVD player, MD deck, DAT deck, tape deck, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO.

**←/ →**  
Press to replay the previous scene or fast forward the current scene of the DVD player, Blu-ray disc recorder, DVD/VHS COMBO, or DVD/HDD COMBO.
<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
</table>
| LEFT/RIGHT \ a)  | Press to  
– search tracks in the forward/backward direction of the CD player, VCD player, DVD player, LD player, MD deck, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO.  
– fast forward/rewind of the VCR, DAT deck, or tape deck. |
| ▶ a)b)  | Press to start playback of the VCR, CD player, VCD player, LD player, DVD player, MD deck, DAT deck, tape deck, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO. |
| II a)  | Press to pause playback or recording of the VCR, CD player, VCD player, LD player, DVD player, MD deck, DAT deck, tape deck, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO. (Also starts recording with components in recording standby.) |
| ■ a)  | Press to stop playback of the VCR, CD player, VCD player, LD player, DVD player, MD deck, DAT deck, tape deck, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO. |
| CATEGORY +/-  | Press to select a category for XM Radio (page 71). |
| TUNING +/-  | Press to scan a station. |
| D.TUNING  | Press to enter direct tuning mode. |
| CATEGORY MODE | Press to select the category mode for XM Radio (page 71). |
| 13 TV CH +/− b)  | Press TV (3) and then press TV CH +/− to select preset TV channels. |
| PRESET +/− b)  | Press to  
– select preset stations.  
– select preset channels of the VCR, satellite tuner, Blu-ray disc recorder, DVD player, DVD/VHS COMBO, or DVD/HDD COMBO. |
| 14 F1, F2  | Press F1 or F2 to select a component.  
• DVD/HDD COMBO  
  F1: HDD mode  
  F2: DVD mode  
• DVD/VHS COMBO  
  F1: DVD mode  
  F2: VHS mode |
| 15 BD/DVD TOP MENU  | Press to display the menu or on-screen guide of the DVD or Blu-ray disc on the TV screen. Then, use ▲/▼/◄/► and ◀ to perform menu operations. |
| BD/DVD MENU  | Press to display the menu of the DVD or Blu-ray disc on the TV screen. Then, use ▲/▼/◄/► and ◀ to perform menu operations. |
| TV INPUT  | Press TV (3) and then press TV INPUT to select the input signal (TV input or video input). |
| WIDE  | Press TV (3) and then press WIDE to select the wide picture mode. |
| 16 TV VOL +/−  | Press TV (3) and then press TV VOL, +/- to adjust the TV volume level. |
| MASTER VOL +/-  | Press to adjust the volume level of all speakers at the same time. |
| 17 MUTING  | Press to turn off the sound temporarily. Press MUTING again to restore the sound.  
Press TV (3) and then press MUTING to activate the TV’s muting function. |
**Name** | **Function**
--- | ---
18 **DISC SKIP** | Press to skip disc of the CD player, VCD player, DVD player, or MD deck (multi-disc changer only).  
19 **RETURN/EXIT** | Press to  
– return to the previous menu.  
– exit the menu while the menu or on-screen guide of the VCD player, LD player, DVD player, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or satellite tuner is displayed on the TV screen.  
To return to the previous menu of Sony TV, press TV (3) and then press RETURN/EXIT.
20 **DISPLAY** | Press to select information displayed on the display window or TV screen of the VCR, VCD player, LD player, DVD player, CD player, MD deck, Blu-ray disc recorder, PSX, satellite tuner, DVD/ VHS COMBO, or DVD/HDD COMBO.  
To select information of Sony TV, press TV (3) and then press DISPLAY.
21 **INPUT MODE** | Press AMP (4), then press INPUT MODE to select the input mode when the same components are connected to both digital and analog jacks (page 82).
22 **AUTO CAL** | Press to activate the Digital Cinema Auto Calibration function.
23 **2CH/A.DIRECT** | Press to select sound field (page 62) or to switch the audio of the selected input to analog signal without any adjustment (page 62).

---

**Name** | **Function**
--- | ---
24 **Input buttons** | Press one of the buttons to select the component you want to use. When you press any of the input buttons, the receiver turns on. The buttons are factory assigned to control Sony components as follows.  
You can program the remote to control non-Sony components following the steps in “Programming the remote” on page 90.

<table>
<thead>
<tr>
<th>Button</th>
<th>Assigned Sony component</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIDEO 1</td>
<td>VCR (VTR mode 3)</td>
</tr>
<tr>
<td>VIDEO 2</td>
<td>VCR (VTR mode 2)</td>
</tr>
<tr>
<td>BD</td>
<td>Blu-ray disc player</td>
</tr>
<tr>
<td>DVD</td>
<td>DVD player</td>
</tr>
<tr>
<td>SAT</td>
<td>Satellite tuner</td>
</tr>
<tr>
<td>TV</td>
<td>TV</td>
</tr>
<tr>
<td>SA-CD/CD</td>
<td>Super Audio CD/CD player</td>
</tr>
<tr>
<td>TUNER</td>
<td>Built-in tuner</td>
</tr>
<tr>
<td>DMPORT</td>
<td>DIGITAL MEDIA PORT adapter</td>
</tr>
<tr>
<td>XM</td>
<td>XM Mini-Tuner and Home Dock</td>
</tr>
</tbody>
</table>

**Numeric buttons (number 5b)** | Press SHIFT (25) and then press numeric buttons to  
– preset/tune to preset stations.  
– select track numbers of the CD player, VCD player, LD player, DVD player, MD deck, DAT deck, or tape deck. Press 0/10 to select track number 10.  
– select channel numbers of the VCR, satellite tuner, Blu-ray disc recorder, PSX, DVD/VHS COMBO, or DVD/HDD COMBO.  
Press TV (3) and then press the numeric buttons to select the TV channels.
### Getting Started

a) This button is also available for DIGITAL MEDIA PORT adapter operation. For details on the function of the button, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

b) The number 5/SAT, TV CH +/PRESET + and △/> CATEGORY MODE buttons have tactile dots. Use the tactile dots as references when operating the receiver.

#### Notes

- Some functions explained in this section may not work depending on the model.
- The above explanation is intended to serve as an example only. Therefore, depending on the component, the above operation may not be possible or may operate differently than described.

#### Name | Function
--- | ---
ENT/MEM | Press SHIFT (25) and then press ENT/MEM to enter the value after selecting a channel, disc or track using the numeric buttons of the VCR, CD player, VCD player, LD player, MD deck, DAT deck, tape deck, satellite tuner, Blu-ray disc recorder, or PSX.

To enter the value of Sony TV, press TV (3) and then press ENT/MEM.

Press SHIFT (25) and then press ENT/MEM to store a station during tuner operation.

CLEAR/>10 | Press SHIFT (25) and then press CLEAR/>10 to clear a mistake when you press the incorrect numeric button of the DVD player, Blu-ray disc recorder, PSX, satellite tuner, DVD/VHS COMBO, or DVD/HDD COMBO.

Press SHIFT (25) and then press CLEAR/>10 to select track numbers over 10 of the CD player, VCD player, LD player, MD deck, tape deck, TV, VCR, or satellite tuner.

-/-- | Press SHIFT (25) and then press -/-- to select the channel entry mode, either one or two digit of the VCR or satellite tuner.

To select the channel entry mode of the TV, press TV (3) and then press -/--.

25 SHIFT | Press to light up the buttons. It changes the remote button function to activate the buttons with pink printing.

26 THEATER | Press to enjoy optimal image suited for movies and to output the sound from the speakers connected to this receiver automatically.

**Note**

This button will only function if your TV is compatible with Theater Mode. Refer to the operating instructions supplied with the TV for details.

27 RM SET UP | Press to set up the remote.

---

**Name** | **Function**
--- | ---

1: Installing the speakers

This receiver allows you to use a 7.1 channel system (7 speakers and one subwoofer).

**Enjoying a 5.1/7.1 channel system**

To fully enjoy theater-like multi channel surround sound requires five speakers (two front speakers, a center speaker, and two surround speakers) and a subwoofer (5.1 channel).

**Example of a 5.1 channel speaker system configuration**

You can enjoy high fidelity reproduction of DVD software recorded sound in the Surround EX format if you connect one additional surround back speaker (6.1 channel) or two surround back speakers (7.1 channel).

**Example of a 7.1 channel speaker system configuration**

**Tips**
- When you connect a 6.1 channel speaker system, place the surround back speaker behind the listening position (page 49).
- Since the subwoofer does not emit highly directional signals, you can place it wherever you want.

A Front speaker (Left)  
B Front speaker (Right)  
C Center speaker  
D Surround speaker (Left)  
E Surround speaker (Right)  
F Surround back speaker (Left)  
G Surround back speaker (Right)  
H Subwoofer
2: Connecting the speakers

Before connecting the cords, be sure to disconnect the AC power cord (mains lead).

A Monaural audio cord (not supplied)
B Speaker cord (not supplied)

A Front speaker A (Left)
B Front speaker A (Right)
C Center speaker
D Surround speaker (Left)
E Surround speaker (Right)
F Surround back speaker (Left)
G Surround back speaker (Right)
H Subwoofer

continued
If you have an additional front speaker system, connect them to the SPEAKERS FRONT B terminals. You can select the front speakers you want to use with the SPEAKERS (OFF/A/B/A+B) button on the receiver (page 30).

If you connect only one surround back speaker, connect it to the SPEAKERS SURROUND BACK L terminals.

When you connect a subwoofer with an auto standby function, turn off the function when watching movies. If the auto standby function is set to on, it turns to standby mode automatically based on the level of the input signal to a subwoofer, then sound may not be output.

**Note**
Before connecting the AC power cord (mains lead), make sure that metallic wires of the speaker cords are not touching each other between the SPEAKERS terminals.

**Selecting a speaker pattern**

After you have install and connect your speaker, be sure to select the speaker pattern from SPEAKER menu (page 44).
Select the speaker pattern according to your speaker setting. For details of each parameter, see the table as follows.

<table>
<thead>
<tr>
<th>Speaker pattern</th>
<th>Front left/right</th>
<th>Center</th>
<th>Surround left/right</th>
<th>Surround back left</th>
<th>Surround back right</th>
<th>Subwoofer</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4.1</td>
<td>○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/3.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/3</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/4.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/4</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/2.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/2</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/3.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/3</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/2.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/2</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/0.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/0</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/0.1</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/0</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
<td>○</td>
<td>○ ● ○ ○ ○ ○ ○ ○ ○</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3: Connecting the TV

You can watch the selected input image when you connect the HDMI OUT or MONITOR OUT jack to a TV. It is not necessary to connect all the cords. Connect audio and video cords according to the jacks of your components. Before connecting cords, be sure to disconnect the AC power cord.

![Diagram of connections]

- **A** Optical digital cord (not supplied)
- **B** Audio cord (not supplied)
- **C** HDMI cable (not supplied)
  
  We recommend that you use a Sony HDMI cable.
- **D** Component video cord (not supplied)
- **E** Video cord (not supplied)
Notes
• Be sure to turn on the receiver when the video and audio signals of a playback component are being output to a TV via the receiver. Unless the power is turned on, neither video nor audio signals will be transmitted.
• Connect image display components such as a TV monitor or a projector to the HDMI OUT or MONITOR OUT jack on the receiver. You may not be able to record, even if you connect recording components.
• Depending on the status of the connection between the TV and the antenna (aerial), the image on the TV screen may be distorted. In this case, place the antenna (aerial) farther away from the receiver.
• When connecting optical digital cords, insert the plugs straight in until they click into place.
• Do not bend or tie optical digital cords.

Tips
• To output the sound of the TV from the speakers connected to the receiver, be sure to
  – connect the audio output jacks of the TV to the TV IN jacks of the receiver.
  – turn off the TV’s volume or activate the TV’s muting function.
• All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.
4a: Connecting the audio components

Connecting a Super Audio CD/CD player or CD recorder

The following illustration shows how to connect a Super Audio CD player, CD player or CD recorder. Before connecting cords, be sure to disconnect the AC power cord. After connecting your audio component, proceed to “4b: Connecting the video components” (page 22).

A Audio cord (not supplied)
4b: Connecting the video components

How to connect your components

This section describes how to connect your video components to this receiver. Before you begin, see “Component to be connected” below for the pages which describe how to connect each component. After connecting all your components, proceed to “5: Connecting the antennas (aerials)” (page 28).

Component to be connected

<table>
<thead>
<tr>
<th>Component</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>19</td>
</tr>
<tr>
<td>With HDMI jack</td>
<td>23</td>
</tr>
<tr>
<td>DVD player</td>
<td>25</td>
</tr>
<tr>
<td>Satellite tuner/Set-top box</td>
<td>26</td>
</tr>
<tr>
<td>VCR, DVD recorder</td>
<td>27</td>
</tr>
<tr>
<td>Camcorder, video game, etc.</td>
<td>27</td>
</tr>
</tbody>
</table>

If you want to connect several digital components, but cannot find an unused input

See “Listening to digital sound from other inputs (DIGITAL ASSIGN)” (page 83).

Video input/output jack to be connected

The image quality depends on the connecting jack. See the illustration that follows. Select the connection according to the jacks on your components.

Notes

- Before connecting cords, be sure to disconnect the AC power cord.
- Be sure to turn on the receiver when the video and audio signals of a playback component are being output to a TV via the receiver. Unless the power is turned on, neither video nor audio signals will be transmitted.
Connecting components with HDMI jacks

HDMI is the abbreviated name for High-Definition Multimedia Interface. It is an interface which transmits video and audio signals in digital format.

HDMI features
- A digital audio signals transmitted by HDMI can be output from the speakers connected to the receiver. This signal supports Dolby Digital, DTS, and Linear PCM.
- This receiver can receive multi channel Linear PCM (up to 8 channels) with a sampling frequency of 192 kHz or less with an HDMI connection.
- This receiver supports High Bit rate Audio (DTS-HD Master Audio, Dolby TrueHD) and HDMI (Deep Color, x.v.Color).
- This receiver supports the Control for HDMI function. For details, see “Control for HDMI” (page 77).

A HDMI cable (not supplied)
Notes on connecting cables
- We recommend that you use a Sony HDMI cable.
- We recommend that you use an HDMI cable with the HDMI logo (made by Sony) for the HDMI jack corresponding to high speed (an HDMI version1.3, category 2 cable) when you view images or listen to sound during a Deep Color transmission or when you watch a video image of 1080p or higher.
- We do not recommend using an HDMI-DVI conversion cable. When you connect an HDMI-DVI conversion cable to a DVI-D component, the sound and/or the image may not be output. Connect other audio cords or digital connecting cords, then set “Digital Assign” when the sound is not output correctly.

Notes on HDMI connections
- An audio signal input to the HDMI IN jack is output from the SPEAKERS jacks and HDMI OUT jack. It is not output from any other audio jacks.
- Video signals input to the HDMI IN jack can only be output from the HDMI OUT jack. The video input signals cannot be output from the VIDEO OUT jacks or MONITOR OUT jacks.
- When you want to listen to the sound from the TV speaker, set “AUDIO OUT” to “TV+AMP” in the HDMI menu (page 53). If you cannot play back multi channel software, set to “AMP”. However, the sound will not output from the TV speaker.
- DSD signals of Super Audio CD are not input and output.
- The multi/stereo area audio signals of a Super Audio CD are not output.
- Audio signals (sampling frequency, bit length, etc.) transmitted from an HDMI jack may be suppressed by the connected component. Check the setup of the connected component if the image is poor or the sound does not come out of a component connected via the HDMI cable.
- Sound may be interrupted when the sampling frequency or the number of channels of audio output signals from the playback component is switched.
- When the connected component is not compatible with copyright protection technology (HDCP), the image and/or the sound from the HDMI OUT jack may be distorted or may not be output. In this case, check the specification of the connected component.
- You can enjoy High Bitrate Audio (DTS-HD Master Audio, Dolby TrueHD), multi-channel Linear PCM only with an HDMI connection.
- Set the image resolution of the player to more than 720p/1080i to enjoy High Bitrate Audio (DTS-HD Master Audio, Dolby TrueHD).
- The image resolution of player may need certain settings be made before you can enjoy multi channel Linear PCM. Refer to the operating instructions of the player.
- Not every HDMI component supports all functions that are defined by the specified HDMI version. For example, components that support HDMI, version 1.3, may not support Deep Color.
- Refer to the operating instructions of each connected component for details.
**Connecting a DVD player**

The following illustration shows how to connect a DVD player. It is not necessary to connect all the cords. Connect audio and video cords according to the jacks of your components.

**Note**
To input multi channel digital audio from the DVD player, set the digital audio output setting on the DVD player. Refer to the operating instructions supplied with the DVD player.

**Tip**
All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.

---

**Coaxial digital cord (not supplied)**
**Audio cord (not supplied)**
**Video cord (not supplied)**
**Component video cord (not supplied)**
The following illustration shows how to connect a satellite tuner or set-top box. It is not necessary to connect all the cords. Connect audio and video cords according to the jacks of your components.

Notes
- When connecting optical digital cords, insert the plugs straight in until they click into place.
- Do not bend or tie optical digital cords.

Tip
All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.

A Audio cord (not supplied)
B Optical digital cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)
Connecting components with analog video and audio jack

The following illustration shows how to connect a component which has analog jacks such as a VCR, DVD recorder, etc. It is not necessary to connect all the cords. Connect audio and video cords according to the jacks of your components.

Notes
- Be sure to change the factory setting of the VIDEO 1 input button on the remote so that you can use the button to control your DVD recorder. For details, see “Programming the remote” (page 90).
- You can also rename the VIDEO 1 input so that it can be displayed on the receiver’s display. For details, see “Naming inputs” (page 87).
- When connecting optical digital cords, insert the plugs straight in until they click into place.
- Do not bend or tie optical digital cords.

A Optical digital cord (not supplied)
B Audio cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)
E Audio/video cord (not supplied)
5: Connecting the antennas (aerials)

Connect the supplied AM loop antenna (aerial) and FM wire antenna (aerial). Before connecting antennas (aerials), be sure to disconnect the power cord.

Notes

• To prevent noise pickup, keep the AM loop antenna (aerial) away from the receiver and other components.
• Be sure to fully extend the FM wire antenna (aerial).
• After connecting the FM wire antenna (aerial), keep it as horizontal as possible.
6: Preparing the receiver and the remote

Connecting the AC power cord (mains lead)

Connect the AC power cord (mains lead) to a wall outlet.

Performing initial setup operations

Before using the receiver for the first time, initialize the receiver by performing the following procedure. This procedure can also be used to return settings you have made to their factory defaults. Be sure to use the buttons on the receiver for this operation.

1. Press POWER to turn off the receiver.

2. Hold down TONE MODE and 2CH/A.DIRECT and then press POWER to turn on the receiver.

3. Release the TONE MODE and 2CH/A.DIRECT after a few seconds.

After “CLEARING” appears on the display for a while, “CLEARED” appears.

All the settings you have changed or adjusted are reset to the initial settings.
Inserting batteries into the remote

Insert two R6 (size-AA) batteries in the RM-AAP021 Remote Commander. Observe the correct polarity when installing batteries.

Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not use a new battery with old ones.
- Do not mix manganese batteries and other kinds of batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you do not intend to use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.
- When you replace the batteries, the programmed remote codes may be cleared. If this happens, program the remote codes again (page 90).

Tip

Under normal conditions, the batteries should last for about 3 months. When the remote no longer operates the receiver, replace all the batteries with new ones.

7: Selecting the speaker system

You can select the front speakers you want to drive.

Be sure to use the buttons on the receiver for this operation.

SPEAKERS (OFF/A/B/A+B)

Press SPEAKERS (OFF/A/B/A+B) repeatedly to select the front speaker system you want to drive.

<table>
<thead>
<tr>
<th>To select</th>
<th>Light up</th>
</tr>
</thead>
<tbody>
<tr>
<td>The speakers connected to the SPEAKERS FRONT A terminals</td>
<td>SP A</td>
</tr>
<tr>
<td>The speakers connected to the SPEAKERS FRONT B terminals</td>
<td>SP B</td>
</tr>
<tr>
<td>The speakers connected to both the SPEAKERS FRONT A and B terminals (parallel connection)</td>
<td>SP A + B</td>
</tr>
</tbody>
</table>

To turn off the speaker output

Press SPEAKERS (OFF/A/B/A+B) repeatedly until the “SP A”, “SP B” and “SP A+B” indicators on the display do not light up.

“ALL OFF” appears on the display for a while.

Note

You cannot switch the front speaker system by pressing SPEAKERS (OFF/A/B/A+B) when the headphones are connected.
8: Calibrating the appropriate settings automatically (AUTO CALIBRATION)

This receiver is equipped with DCAC (Digital Cinema Auto Calibration) Technology which allows you to perform automatic calibration as follows:

- Check the connection between each speaker and the receiver.\(^a\)
- Adjust the speaker level.
- Measure the distance of each speaker from your listening position.\(^a\)
- Measure the speaker size.\(^a\)
- Measure the speaker polarity.
- Measure the frequency characteristics.\(^a\)\(^b\)

\(^a\)The measurement result is not utilized in the following cases.
- ANALOG DIRECT is selected.
\(^b\)The measurement result is not utilized in the following cases.
- Dolby TrueHD signals with a sampling frequency of more than 96 kHz are being received.
- PCM signals with a sampling frequency of more than 96 kHz are being received.

The DCAC is designed to obtain proper sound balance in your room. However, you can adjust the speaker levels and balance manually according to your preference. For details, see “9: Adjusting the speaker levels and balance (TEST TONE)” (page 37).

Before you perform Auto Calibration

Before you perform the Auto Calibration, set up and connect the speakers (page 16, 17).
- The AUTO CAL MIC jack is used for the supplied optimizer microphone only. Do not connect other microphones to this jack. Doing so may damage the receiver and the microphone.
- During the calibration, the sound that comes out of the speakers is very loud. The volume of the sound cannot be adjusted. Pay attention to the presence of children or to the effect on your neighborhood.
- Perform the Auto Calibration in a quiet environment to avoid the effect of noise and get a more accurate measurement.
- If there are any obstacles in the path between the optimizer microphone and the speakers, the calibration cannot be performed correctly. Remove any obstacles from the measurement area to avoid measurement error.

Notes

- The Auto Calibration function does not work in the following cases.
  - SPEAKERS (OFF/A/B/A+B) is set to off.
  - Headphones are connected.
- If you activate the muting function during Auto Calibration, the muting function will automatically be set to off.
1 Connect the supplied optimizer microphone to the AUTO CAL MIC jack.

2 Set up the optimizer microphone.
   Place the optimizer microphone at your listening position. Use a stool or tripod so that the optimizer microphone remains at the same height as your ears.

On setting up the active subwoofer
- When a subwoofer is connected, turn on the subwoofer and turn up the volume beforehand. Turn the MASTER VOLUME knob to just before the mid-point.
- If you connect a subwoofer with a crossover frequency function, set the value to the maximum.
- If you connect a subwoofer with an auto standby function, set this function to off (deactivated).

Note
Depending on the characteristics of the subwoofer you are using, the setup distance value may be further away from the actual position.
Press AUTO CAL.
Measurement starts in 5 seconds. A countdown is displayed. The measurement process will take approximately 30 seconds to complete. The table below shows the display when measurements start.

<table>
<thead>
<tr>
<th>Measurement for</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker existence</td>
<td>TONE</td>
</tr>
<tr>
<td>Speaker gain, distance, frequency response</td>
<td>T.S.P.</td>
</tr>
<tr>
<td>Subwoofer gain and distance</td>
<td>WOOFER</td>
</tr>
</tbody>
</table>

Tips
• Operations other than turning the receiver on or off are deactivated during the measurement.
• The measurements may not be performed correctly or Auto Calibration cannot be performed when special speakers, such as dipole speakers are used.

To cancel Auto Calibration
The Auto Calibration function will be canceled when you do the following during the measurement process:
– Press I(○) or POWER on the receiver.
– Press the input buttons or turn the INPUT SELECTOR on the receiver.
– Change the volume level.
– Press MUTING.
– Change the setting of the SPEAKERS (OFF/A/B/A+B).
– Connect headphones.
– Press AUTO CAL again.

1 Confirm the measurement result.
When the measurement ends, a beep sounds and the measurement result appears on the display.

<table>
<thead>
<tr>
<th>Measurement result</th>
<th>Display</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the measurement process completes properly</td>
<td>SAVE EXIT</td>
<td>Proceed to step 2.</td>
</tr>
</tbody>
</table>

When the measurement process fails
E - ■■■■ : See “Message list after Auto Calibration measurement” (page 35).

2 Press AMP and then press ↑/↓ repeatedly to select the item. Then, press +.

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT</td>
<td>Exits the setting process without saving the measurement results.</td>
</tr>
<tr>
<td>LEVEL INFO.</td>
<td>Displays the measurement result for speaker level.</td>
</tr>
<tr>
<td>DIST. INFO.</td>
<td>Displays the measurement result for speaker distance.</td>
</tr>
<tr>
<td>PHASE INFO.</td>
<td>Displays the phase of each speaker (in phase/out of phase). See “When you select “PHASE INFO.”” (page 34).</td>
</tr>
<tr>
<td>WARN CHECK</td>
<td>Displays warning concerning the measurement results. See “When you select “WARN CHECK”” (page 36).</td>
</tr>
<tr>
<td>SAVE EXIT</td>
<td>Saves the measurement results and exits the setting process.</td>
</tr>
<tr>
<td>RETRY</td>
<td>Performs the Auto Calibration again.</td>
</tr>
</tbody>
</table>
3 Save the measurement result.

Select “SAVE EXIT” in step 2. The measurement results are saved and you can select the calibration type in the AUTO CAL menu. For details on calibration type, see page 36.

When measurement ends, “COMPLETE” appears on the display and the settings are registered as selected position number.

Note
You can select the position number to save the Auto Calibration result. Select a position number before you perform Auto Calibration. For details, see page 36.

If you do not select the position number, the Auto Calibration result will automatically save as POS. 1 (initial setting).

Tip
The size of a speaker (LARGE/SMALL) is determined by the low frequency characteristics. The measurement results may vary, depending on the position of the optimizer microphone and speakers, and the shape of the room. It is recommended that you follow the measurement results. However, you can change those settings in the SPEAKER menu (page 47). Save the measurement results first, then try to change the settings if you want.

Press ↑/↓ repeatedly to select a speaker, then press + to return to step 2 in “Confirming/saving the measurement results”.

<table>
<thead>
<tr>
<th>Display</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>■■■■ “ - IN</td>
<td>The speaker is in phase.</td>
</tr>
<tr>
<td>■■■■ “ - OUT</td>
<td>The speaker is out of phase. The “+” and “−” terminals of the speaker may be connected the other way around. However, depending on the speakers, “■■■■ - OUT” appears on the display even though the speakers are connected properly. This is because of the speakers’ specifications. In this case, you can continue to use the receiver.</td>
</tr>
</tbody>
</table>

* ■■■■ represent a speaker channel.
F Front
FL Front left
FR Front right
CNT Center
S Surround
SL Surround left
SR Surround right
SB Surround back
SBL Surround back left
SBR Surround back right
SW Subwoofer

Tip
Depending on the position of the subwoofer, the measurement results for polarity may vary. However, there will be no problems even if you continue to use the receiver with that value.

After you have finished
Disconnect the optimizer microphone from the receiver.

Note
If you have reposition your speaker, we recommend that you perform Auto Calibration again to enjoy the surround sound.
<table>
<thead>
<tr>
<th>Display</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E - ■■■* : 31</td>
<td>SPEAKERS (OFF/A/B/A+B) is set to OFF. Set it to others and perform the measurement again.</td>
</tr>
<tr>
<td>E - ■■■* : 32</td>
<td>None of the speakers were detected. Make sure that the optimizer microphone is connected properly and perform the measurement again. If the optimizer microphone is connected properly but the error code appears, the optimizer microphone cable may be damaged or improperly connected.</td>
</tr>
</tbody>
</table>
| E - ■■■* : 33 | - None of the front speakers are connected or only one front speaker is connected.  
- The optimizer microphone is not connected.  
- Either the left or right surround speakers is not connected.  
- Surround back speakers are connected even though surround speakers are not connected. Connect the surround speaker(s) to the SURROUND terminals.  
- The surround back speaker is connected only to the SPEAKERS SURROUND BACK R terminals. When you connect only one surround back speaker, connect it to the SPEAKERS SURROUND BACK L terminals. |
| W - ■■■* : 40 | The measurement has completed. However, the noise level is high. You may be able to perform the measurement properly if you try it again, even though the measurement cannot be performed in all environments. Try to perform the measurement in a quiet environment. |
| W - ■■■* : 41 | The sound input from the optimizer microphone is outside the acceptable range. It is louder than the loudest sound that can be measured. Try to perform the measurement when the environment is quiet enough to allow proper measurement. |
| W - ■■■* : 42 | The volume of the receiver is out of the acceptable range. Try to perform the measurement when the environment is quiet enough to allow proper measurement. |
| W - ■■■* : 43 | The distance and position of a subwoofer cannot be detected. This may be caused by noise. Try to perform the measurement in a quiet environment. |
| NO WARNING | There is no warning information. |

* ■■■ represent a speaker channel (F, FL, FR, CNT, S, SL, SR, SB, SBL, SBR, SW).
• **Code 31**
  1. Press \(\oplus\), then follow the instructions from step 1 of “Performing Auto Calibration”.

• **Code 32, 33**
  1. When you press \(\oplus\), “RETRY? YES” appears.
  2. Press \(\uparrow/\downarrow\) to select “RETRY? YES”, then press \(\oplus\).
  3. Follow the instructions from step 2 of “Performing Auto Calibration”.

When you select “WARN CHECK”
If a warning on the measurement result is present, detailed information is displayed.

Press \(\oplus\) to return to step 1 of “Confirming/saving the measurement results” (page 33).

---

**AUTO CAL menu parameters**

You can use the AUTO CAL menu to make various adjustments for Auto Calibration settings and to name inputs.
Select “AUTO CAL” in the amplifier menus.
For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

- **A.CAL START (Auto Calibration)**

- **CAL TYPE (Calibration type)**
  - FULL FLAT
    Makes the measurement of frequency from each speaker flat.
  - ENGINEER
    Sets the frequency characteristics to a set that matches that of the Sony listening room standard.
  - FRONT REF
    Adjusts the characteristics of all speakers to match the characteristics of the front speaker.
  - OFF
    Sets the Auto Calibration equalizer level to off.

* You can select this parameter only when you have performed the Auto Calibration and saved the settings.

- **POSITION (Position)**
  You can register 3 patterns as position 1, 2 and 3 (POS. 1, POS. 2 and POS. 3), depending on the seating position, listening environment and measurement conditions. You can also load the registered setting.

- **NAME IN (Naming inputs)**
  You can rename the position name. For details, see “Naming inputs” (page 87).
Getting Started

9: Adjusting the speaker levels and balance (TEST TONE)

You can adjust the speaker levels and balance while listening to the test tone from your listening position.

1 Press AMP MENU.

2 Press ▲/▼ repeatedly to select “LEVEL”, then press ▼ or ▲.

3 Press ▲/▼ repeatedly to select “TEST TONE” then press ▼.

4 Press ▲/▼ to select the test tone type and the speaker you want to adjust.

You can select “FIX” or “AUTO”. For details, see “TEST TONE (Test tone)” (page 46).

Tips
- To adjust the level of all speakers at the same time, press MASTER VOL +/–. You can also use MASTER VOLUME on the receiver.
- The adjusted value are shown on the display during adjustment.

5 Repeat steps 1 to 4 to select “OFF”.

You can also press any input buttons. The test tone turns off.

When a test tone is not output from the speakers
- The speaker cords may not be connected securely.
- The speaker cords may have the short-circuit problem.

When a test tone is output from a different speaker than the speaker indicator showed in the front panel display.

The speaker pattern to the connected speaker is not set up correctly. Make sure the speaker connection and the speaker pattern match.
Selecting a component

1 Press one of the input buttons to select the component you want.
   You can also use INPUT SELECTOR on the receiver.
   The selected input appears on the display.

<table>
<thead>
<tr>
<th>Selected input [Display]</th>
<th>Components that can be played back</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIDEO 1 [VIDEO 1]</td>
<td>VCR, etc., connected to the VIDEO 1 jack</td>
</tr>
<tr>
<td>VIDEO 2 [VIDEO 2]</td>
<td>Camcorder, video game, etc., connected to the VIDEO 2/PORTABLE AV IN jack</td>
</tr>
<tr>
<td>BD [BD]</td>
<td>Blu-ray disc player, etc., connected to the BD jack</td>
</tr>
<tr>
<td>DVD [DVD]</td>
<td>DVD player, etc., connected to DVD jack</td>
</tr>
<tr>
<td>SAT [SAT]</td>
<td>Satellite tuner, set-top box, etc., connected to SAT jack</td>
</tr>
<tr>
<td>TV [TV]</td>
<td>TV, etc., connected to TV jack</td>
</tr>
<tr>
<td>SA-CD/CD [SA-CD/CD/CD-R]*</td>
<td>Super Audio CD player, CD player, etc., connected to the SA-CD/CD/CD-R jack</td>
</tr>
<tr>
<td>TUNER [FM TUNER/AM TUNER]</td>
<td>Built-in radio tuner</td>
</tr>
<tr>
<td>DMPORT [DMPORT]</td>
<td>DIGITAL MEDIA PORT adapter connected to DMPORT jack</td>
</tr>
<tr>
<td>XM [XM RADIO]</td>
<td>For details, see page 68</td>
</tr>
</tbody>
</table>

* “SA-CD/CD/CD-R” scroll across the display, then “SA-CD/CD” appears.

2 Turn on the component and start playback.

3 Press MASTER VOL +/- to adjust the volume.
   You can also use MASTER VOLUME on the receiver.
To activate the muting function
Press MUTING on the remote.
The muting function will be canceled when you do the following.
• Press MUTING again.
• Increase the volume.
• Turn off the receiver.

To avoid damaging your speakers
Before you turn off the receiver, be sure to turn down the volume level.
Listening/Watching a component

Listening to a Super Audio CD/CD

Notes
- The operation is described for a Sony Super Audio CD player.
- Refer to the operating instructions supplied with the Super Audio CD player or CD player.

Tips
- You can select the sound field to suit the music. See page 60 for details.
- Recommended sound fields:
  - Classical: HALL
  - Jazz: JAZZ
  - Live concert: CONCERT
- You can listen to the sound that was recorded in the 2 channel format from all speakers (multi channel). See page 55 for details.

1. Turn on the Super Audio CD player or CD player, then place the disc on the tray.
2. Turn on the receiver.
3. Press SA-CD/CD.
   - You can also use INPUT SELECTOR on the receiver to select “SA-CD/CD/CD-R”.
4. Play back the disc.
5. Adjust to a suitable volume.
6. After you have finished listening to the Super Audio CD/CD, eject the disc and turn off the receiver and Super Audio CD player or CD player.
Watching a DVD/Blu-ray Disc

Notes
- Refer to the operating instructions supplied with the TV and DVD player/Blu-ray disc player.
- Check the following if you cannot listen to multi channel sound.
  - Be sure this receiver is connected to the DVD player/Blu-ray disc player via a digital connection.
  - Be sure the digital audio output of the DVD player/Blu-ray disc player is set up properly.

Tips
- Select the audio format of the disc to be played back, if necessary.
- You can select the sound field to suit the movie or music. See page 55 for details.
  Recommended sound fields:
  Movie: C.ST.EX
  Music: CONCERT

1 Turn on the TV and DVD player/Blu-ray disc player.
2 Turn on the receiver.
3 Press DVD to watch a DVD or press BD to watch a Blu-ray disc.
   You can also use INPUT SELECTOR on the receiver to select “DVD” or “BD”.
4 Switch the input of the TV so that an image of the DVD/Blu-ray disc is displayed.
5 Play back the disc.
6 Adjust to a suitable volume.
7 After you have finished watching the DVD/Blu-ray disc, eject the disc and turn off the receiver, TV and DVD player/Blu-ray disc player.
Navigating through menus

By using the amplifier menus, you can make various adjustments to customize the receiver.

1 Press AMP MENU.
2 Press ↑/↓ repeatedly to select the menu you want.
3 Press ↔ or ← to enter the menu.
4 Press ↑/↓ repeatedly to select the parameter you want to adjust.
5 Press ↔ or ← to enter the parameter.
6 Press ↑/↓ repeatedly to select the setting you want.
   The setting is entered automatically.

To return to the previous display
Press ↩ or RETURN/EXIT ↩.

To exit the menu
Press MENU/HOME or AMP MENU.

Note
Some parameters and settings may appear dimmed on the display. This means that they are either unavailable or fixed and unchangeable.
### Overview of the menus

The following options are available in each menu. For details on navigating through menus, see page 42.

<table>
<thead>
<tr>
<th>Menu [Display]</th>
<th>Parameters [Display]</th>
<th>Settings</th>
<th>Initial setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO CAL [AUTO CAL] (page 36)</td>
<td>Auto calibration [A.CAL START]</td>
<td>Calibration type(^a) [CAL TYPE]</td>
<td>FULL FLAT, ENGINEER, FRONT REF, OFF</td>
</tr>
<tr>
<td></td>
<td>Position(^a) [POSITION]</td>
<td>Position</td>
<td>POS. 1, POS. 2, POS. 3</td>
</tr>
<tr>
<td></td>
<td>Naming inputs(^a) [NAME IN]</td>
<td>Naming inputs</td>
<td>For details, see “Naming inputs” (page 87).</td>
</tr>
<tr>
<td>LEVEL [LEVEL] (page 46)</td>
<td>Test tone(^a)(^c) [TEST TONE]</td>
<td>Test tone</td>
<td>OFF, FIX ■■■(^b), AUTO ■■■(^b)</td>
</tr>
<tr>
<td></td>
<td>Front left speaker level(^c) [FL LEVEL]</td>
<td>Front left speaker level</td>
<td>FL -10 dB to FL +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Front right speaker level(^c) [FR LEVEL]</td>
<td>Front right speaker level</td>
<td>FR -10 dB to FR +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Center speaker level(^c) [CNT LEVEL]</td>
<td>Center speaker level</td>
<td>CNT -20 dB to CNT +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Surround left speaker level(^c) [SL LEVEL]</td>
<td>Surround left speaker level</td>
<td>SL -20 dB to SL +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Surround right speaker level(^c) [SR LEVEL]</td>
<td>Surround right speaker level</td>
<td>SR -20 dB to SR +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Surround back speaker level(^c) [SB LEVEL]</td>
<td>Surround back speaker level</td>
<td>SB -20 dB to SB +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Surround back left speaker level(^c) [SBL LEVEL]</td>
<td>Surround back left speaker level</td>
<td>SBL -20 dB to SBL +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Surround back right speaker level(^c) [SBR LEVEL]</td>
<td>Surround back right speaker level</td>
<td>SBR -20 dB to SBR +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Subwoofer level(^c) [SW LEVEL]</td>
<td>Subwoofer level</td>
<td>SW -20 dB to SW +10 dB (0.5 dB per step)</td>
</tr>
<tr>
<td></td>
<td>Dynamic range compressor(^a) [D. RANGE]</td>
<td>Dynamic range compressor</td>
<td>COMP. MAX, COMP. STD, COMP. AUTO, COMP. OFF</td>
</tr>
</tbody>
</table>
### Menu [Display] Parameters [Display] Settings Initial setting

**SPEAKER [SPEAKER]** (page 47)

<table>
<thead>
<tr>
<th>Speaker pattern[a) [SP PATTERN]</th>
<th>3/4.1, 3/4, 3/3.1, 3/3, 2/4.1, 2/4, 3/2.1, 3/2, 2/3.1, 2/3, 2/2.1, 2/2, 3/0.1, 3/0, 2/0.1, 2/0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front speakers[a) [FRT SP]</td>
<td>LARGE, SMALL</td>
</tr>
<tr>
<td>Center speaker[a) [CNT SP]</td>
<td>LARGE, SMALL</td>
</tr>
<tr>
<td>Surround speakers[a) [SUR SP]</td>
<td>LARGE, SMALL</td>
</tr>
<tr>
<td>Front left speaker distance[a)c) [FL DIST.]</td>
<td>FL 3’3” to FL 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Front right speaker distance[a)c) [FR DIST.]</td>
<td>FR 3’3” to FR 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Center speaker distance[a)c) [CNT DIST.]</td>
<td>CNT 3’3” to CNT 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Surround left speaker distance[a)c) [SL DIST.]</td>
<td>SL 3’3” to SL 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Surround right speaker distance[a)c) [SR DIST.]</td>
<td>SR 3’3” to SR 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Surround back speaker distance[a)c) [SB DIST.]</td>
<td>SB 3’3” to SB 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Surround back left speaker distance[a)c) [SBL DIST.]</td>
<td>SBL 3’3” to SBL 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Surround back right speaker distance[a)c) [SBR DIST.]</td>
<td>SBR 3’3” to SBR 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Subwoofer distance[a)c) [SW DIST.]</td>
<td>SW 3’3” to SW 32’9” (1 inch step)</td>
</tr>
<tr>
<td>Distance unit[a) [DIST. UNIT]</td>
<td>FEET, METER</td>
</tr>
<tr>
<td>Front speaker crossover frequency[a) [FRT CROSS]</td>
<td>CROSS 40 Hz to CROSS 200 Hz (10 Hz step)</td>
</tr>
<tr>
<td>Center speaker crossover frequency[a) [CNT CROSS]</td>
<td>CROSS 40 Hz to CROSS 200 Hz (10 Hz step)</td>
</tr>
<tr>
<td>Surround speaker crossover frequency[a) [SUR CROSS]</td>
<td>CROSS 40 Hz to CROSS 200 Hz (10 Hz step)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu [Display] Parameters [Display]</th>
<th>Settings</th>
<th>Initial setting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display</strong> Parameters <strong>Display</strong></td>
<td><strong>Display</strong> Parameters <strong>Display</strong></td>
<td><strong>Display</strong> Parameters <strong>Display</strong></td>
</tr>
</tbody>
</table>

---

*a) Setting range is based on the capacity of the speaker. Setting your speakers outside this range may result in damage to the drivers.*

*a) The optimum crossover frequency range is 60 Hz to 200 Hz.*

*a) The optimum crossover frequency range is 60 Hz to 200 Hz.*
<table>
<thead>
<tr>
<th>Menu [Display]</th>
<th>Parameters [Display]</th>
<th>Settings</th>
<th>Initial setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURROUND [SURROUND] (page 50)</td>
<td>Sound field selection [S.F. SELECT]</td>
<td>For details, see “Enjoying Surround Sound” (page 55).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enhanced surround mode [E.SUR MODE]</td>
<td>PLII(^d), PLIIx(^d), NEO6 CIN, NEO6 MUS, NEURAL-THX</td>
<td>PLIIx</td>
</tr>
<tr>
<td></td>
<td>Effect level(^b) [EFFECT]</td>
<td>EFCT. 50%, EFCT. 80%, EFCT. 100%, EFCT. 150%</td>
<td>EFCT. 100%</td>
</tr>
<tr>
<td></td>
<td>Front speakers bass level [BASS]</td>
<td>BASS -10 dB to BASS +10 dB (1dB per step)</td>
<td>BASS 0 dB</td>
</tr>
<tr>
<td></td>
<td>Front speakers treble level [TREBLE]</td>
<td>TREBLE -10 dB to TREBLE +10 dB (1dB per step)</td>
<td>TREBLE 0 dB</td>
</tr>
<tr>
<td>TUNER [TUNER] (page 51)</td>
<td>FM station receiving mode(^a) [FM MODE]</td>
<td>STEREO, MONO</td>
<td>STEREO</td>
</tr>
<tr>
<td></td>
<td>Naming preset stations(^a) [NAME IN]</td>
<td>For details, see “Naming preset stations” (page 67).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XM antenna aiming mode(^e) [XM ANT AIM]</td>
<td>For details, see “Aiming the XM antenna (aerial)” (page 69).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XM Radio ID(^e) [XM ID]</td>
<td>For details, see “Checking the XM Radio ID” (page 69).</td>
<td></td>
</tr>
<tr>
<td>AUDIO [AUDIO] (page 52)</td>
<td>Synchronizes audio with video output(^a) [A/V SYNC]</td>
<td>0 ms to 300 ms (10 ms per step)</td>
<td>0 ms</td>
</tr>
<tr>
<td></td>
<td>Digital broadcast language selection(^b) [DUAL MONO]</td>
<td>MAIN/SUB, MAIN, SUB</td>
<td>MAIN</td>
</tr>
<tr>
<td></td>
<td>Digital audio input decoding priority(^a) [DEC. PRIO.]</td>
<td>DEC. AUTO, DEC. PCM</td>
<td>DEC. AUTO</td>
</tr>
<tr>
<td></td>
<td>Digital audio input assignment(^a) [D. ASSIGN]</td>
<td>For details, see “Listening to digital sound from other inputs (DIGITAL ASSIGN)” (page 83).</td>
<td></td>
</tr>
<tr>
<td>HDMI [HDMI] (page 53)</td>
<td>Control for HDMI(^a) [CTRL:HDMI]</td>
<td>CTRL ON, CTRL OFF</td>
<td>CTRL OFF</td>
</tr>
<tr>
<td></td>
<td>Setting HDMI audio input(^a) [AUDIO OUT]</td>
<td>AMP, TV+AMP</td>
<td>AMP</td>
</tr>
<tr>
<td></td>
<td>Subwoofer level for HDMI(^a) [SW LEVEL]</td>
<td>SW AUTO, SW 0 dB, SW +10 dB</td>
<td>SW AUTO</td>
</tr>
<tr>
<td>SYSTEM [SYSTEM] (page 54)</td>
<td>Naming inputs [NAME IN]</td>
<td>For details, see “Naming inputs” (page 87).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brightness of the display(^a) [DIMMER]</td>
<td>100% DOWN, 60% DOWN, 0% DOWN</td>
<td>0% DOWN</td>
</tr>
</tbody>
</table>

\(^a\) For details, see the page in the parentheses.
\(^b\) ■■■■ represent a speaker channel (FL, FR, CNT, SL, SR, SB, SBL, SBR, SW).
\(^c\) Depends on the speaker pattern setting, some parameters may not be available.
\(^d\) Depends on the speaker pattern setting, some settings may not be available.
\(^e\) This parameter is only available if the XM Mini-Tuner and Home Dock is connected to the XM jack on the receiver.
\(^f\) This parameter is only available when HDMI input signals is detected.
Adjusting the level
(LEVEL menu)

You can use the LEVEL menu to adjust the balance and level of each speaker. These settings are applied to all sound fields. Select “LEVEL” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

LEVEL menu parameters

■ TEST TONE (Test tone)
  Lets you adjust the speaker levels and balance while listening to the test tone from your listening position.
  - OFF
    The test tone is turned off.
  - FIX  ■■■■*
    The test tone is output from the speaker you have selected.
  - AUTO  ■■■■*
    The test tone is output from each speaker in sequence.
* ■■■■ represent a speaker channel.

■ P. NOISE (Phase noise)
  - OFF
    The phase noise is turned off.
    Lets you output the test tone sequentially from adjacent speakers.
    Some items may not be displayed, depending on the setting of the speaker pattern.

■ P. AUDIO (Phase Audio)
  - OFF
    Lets you output front 2 channel source sound (instead of the test tone) sequentially from adjacent speakers.
    Some items may not be displayed, depending on the setting of the speaker pattern.

■ FL LEVEL (Front left speaker level)

■ FR LEVEL (Front right speaker level)

■ CNT LEVEL (Center speaker level)

■ SL LEVEL (Surround left speaker level)

■ SR LEVEL (Surround right speaker level)

■ SB LEVEL (Surround back speaker level)

■ SBL LEVEL (Surround back left speaker level)

■ SBR LEVEL (Surround back right speaker level)

■ SW LEVEL (Subwoofer level)

Note
Depends on the speaker pattern setting, some parameters may not be available.
D. RANGE (Dynamic range compressor)

Lets you compress the dynamic range of the sound track. This may be useful when you want to watch movies at low volumes late at night. Dynamic range compression is possible with Dolby Digital sources only.

- COMP. MAX
  The dynamic range is compressed dramatically.

- COMP. STD
  The dynamic range is compressed as intended by the recording engineer.

- COMP. AUTO
  The dynamic range is compressed automatically.

- COMP. OFF
  The dynamic range is not compressed.

Tip

Dynamic range compressor lets you compress the dynamic range of the soundtrack based on the dynamic range information included in the Dolby Digital signal.

“COMP. STD” is the standard setting, but it only enacts light compression. Therefore, we recommend using the “COMP. MAX” setting. This greatly compresses the dynamic range and lets you view movies late at night at low volumes. Unlike analog limiters, the levels are predetermined and provide a very natural compression.

Settings for the speakers

(SPEAKER menu)

You can use the SPEAKER menu to set the size and distance of the speakers connected to this receiver. Select “SPEAKER” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

SPEAKER menu parameters

- SP PATTERN (Speaker pattern)
  Lets you set the number of the speakers connected to this receiver. It should be synchronize with the subwoofer, front speakers, center speaker, surround speakers and surround back speakers settings. For details, see “Selecting a speaker pattern” (page 18).

- FRT SP (Front speakers)
  - LARGE
    If you connect large speakers that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if you have selected a speaker pattern without subwoofer, the front speakers are automatically set to “LARGE”.
  - SMALL
    If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the front channel bass frequencies from the subwoofer. When the front speakers are set to “SMALL”, the center and surround speakers are also automatically set to “SMALL”.

continued
**CNT SP (Center speaker)**

- **LARGE**
  If you connect a large speaker that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if the front speakers are set to “SMALL”, you cannot set the center speaker to “LARGE”.
- **SMALL**
  If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the center channel bass frequencies from the front speakers (if set to “LARGE”) or subwoofer.

**SUR SP (Surround speakers)**
The surround back speakers will be set to the same setting.

- **LARGE**
  If you connect large speakers that will effectively reproduce bass frequencies, select “LARGE”. Normally, select “LARGE”. However, if the front speakers are set to “SMALL”, you cannot set the surround speakers to “LARGE”.
- **SMALL**
  If the sound is distorted, or you feel a lack of surround effects when using multi channel surround sound, select “SMALL” to activate the bass redirection circuitry and output the surround channel bass frequencies from the subwoofer or other speaker that is set to “LARGE”.

**Tip**
The “LARGE” and “SMALL” settings for each speaker determine whether the internal sound processor will cut the bass signal from that channel. When the bass is cut from a channel, the bass redirection circuitry sends the corresponding bass frequencies to the subwoofer or other “LARGE” speakers.

However, since bass sounds have a certain amount of directionality, it is best not to cut them, if possible. Therefore, even when using small speakers, you can set them to “LARGE” if you want to output the bass frequencies from that speaker. On the other hand, if you are using a large speaker, but prefer not to have bass frequencies output from that speaker, set it to “SMALL”.

If the overall sound level is lower than you prefer, set all speakers to “LARGE”. If there is not enough bass, you can use the equalizer to boost the bass levels. For details, see page 51.

**FL DIST. (Front left speaker distance)**

**FR DIST. (Front right speaker distance)**
Let you set the distance from your listening position to the front speakers (A).

If both front speakers are not placed an equal distance from your listening position, set the distance to the closest speaker.
With only one surround back speaker

With two surround back speakers (The angle B should be the same)

**CNT DIST. (Center speaker distance)**
Lets you set the distance from your listening position to the center speaker.

**SL DIST. (Surround left speaker distance)**

**SR DIST. (Surround right speaker distance)**
Lets you set the distance from your listening position to the surround speakers.

**SB DIST. (Surround back speaker distance)**

**SBL DIST. (Surround back left speaker distance)**

**SBR DIST. (Surround back right speaker distance)**
Lets you set the distance from your listening position to the surround back speakers.

**SW DIST. (Subwoofer distance)**
Lets you set the distance from your listening position to the subwoofer.

**Note**
Depends on the speaker pattern setting, some parameters may not be available.

**Tip**
The distance between the center speaker and the listening position B cannot be more than 5 feet closer than the one between the listening position and the front speaker A. Place the speakers so that the difference in the length of B in the following diagram is no more than 5 feet closer than the length of A.
Example: Adjust the distance B to 15 feet or more when the distance A is 20 feet.
Also, the distance between the surround speakers/surround back speakers and the listening position C cannot be more than 15 feet closer than the distance between the listening position and the front speakers A. Place the speakers so that the difference in the length of C in the following diagram is no more than 15 feet closer than the length of A.
Example: Adjust the distance C to 5 feet or more when the distance A is 20 feet.
This is important because incorrect speaker placement is not conductive to the enjoyment of surround sound. Please note that placing the speakers closer than the required will cause a delay in the output of the sound from that speaker. In other words, the speaker will sound like it is farther away. Adjusting these parameter while listening to the sound often results in much better surround sound. Give it a try!
**DIST. UNIT (Distance unit)**
Lets you select the unit of measure for setting distances.
- FEET
  The distance is displayed in feet.
- METER
  The distance is displayed in meters.

**FRT CROSS (Front speaker crossover frequency)**
Lets you set the bass crossover frequency of the front speakers that have been set to “SMALL” in the SPEAKER menu.

**CNT CROSS (Center speaker crossover frequency)**
Lets you set the bass crossover frequency of the center speaker that have been set to “SMALL” in the SPEAKER menu.

**SUR CROSS (Surround speaker crossover frequency)**
Lets you set the bass crossover frequency of the surround speakers that have been set to “SMALL” in the SPEAKER menu.

---

**Settings for the surround sound**

**(SURROUND menu)**

You can use the SURROUND menu to select the sound field you want for your listening pleasure.
Select “SURROUND” in the amplifier menus.
For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

**SUR menu parameters**

**S.F. SELECT (Sound field selection)**
Lets you select the sound field you want. For details, see “Enjoying Surround Sound” (page 55).

**Note**
The receiver lets you apply the last selected sound field to an input whenever it is selected (Sound Field Link). For example, if you select “HALL” for the DVD input, then change to a different input and then return to DVD, “HALL” will automatically be applied again.

**E.SUR MODE (Enhanced surround mode)**
Lets you select the surround mode you want.
For details, see “Selecting enhanced surround mode” (page 57).

**EFFECT (Effect level)**
Let you adjust the “presence” of the surround effect for the Cinema Studio EX A/B/C sound fields.
Adjusting the equalizer
(EQ menu)

You can use the EQ menu to adjust the tonal quality (bass/treble level) of the front speakers. Select “EQ” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

EQ menu parameters

- **BASS (Front speakers bass level)**
- **TREBLE (Front speakers treble level)**

* You can also adjust the front speaker bass and treble level with TONE MODE and TONE +/- on the receiver (page 7).

Note

This function does not work in the following cases.
- Dolby TrueHD signals with a sampling frequency of more than 96 kHz are being received.
- PCM signals with a sampling frequency of more than 96 kHz are being received.

Settings for the tuner
(TUNER menu)

You can use the TUNER menu to set the FM station receiving mode, name preset stations and check XM Radio status. Select “TUNER” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

TUNER menu parameters

- **FM MODE (FM station receiving mode)**
  - **STEREO**
    This receiver will decode the signal as stereo signal when the radio station is broadcast in stereo.
  - **MONO**
    This receiver will decode the signal as mono signal regardless of the broadcast signal.

- **NAME IN (Naming preset stations)**
  Lets you set the name of preset stations. For details, see “Naming preset stations” (page 67).

- **XM ANT AIM (XM antenna aiming mode)**
  This parameter helps you to aim the XM antenna for optimal signal reception. For details, see “Aiming the XM antenna (aerial)” (page 69).

- **XM ID (XM Radio ID)**
  Lets you check the XM Radio ID number. For details, see “Checking the XM Radio ID” (page 69).
Settings for the audio
(AUDIO menu)

You can use the AUDIO menu to make settings for the audio to suit your preference. Select “AUDIO” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

AUDIO menu parameters

■ A/V SYNC (Synchronizes audio with video output)
Lets you delay the output of audio to minimize the time gap between audio output and visual display. You can adjust from 0 ms to 300 ms in 10 ms steps.

Notes
• This parameter is useful when you use a large LCD or plasma monitor or a projector.
• This parameter is not valid when ANALOG DIRECT is selected.

■ DUAL MONO (Digital broadcast language selection)
Lets you select the language you want to listen to during digital broadcast. This feature only functions for Dolby Digital sources.
• MAIN/SUB
  Sound of the main language will be output through the front left speaker and sound of the sub language will be output through the front right speaker simultaneously.
• MAIN
  Sound of the main language will be output.
• SUB
  Sound of the sub language will be output.

■ DEC. PRIO. (Digital audio input decoding priority)
Lets you specify the input mode for the digital signal input to the HDMI IN jacks.
• DEC. AUTO
  Automatically switches the input mode between DTS, Dolby Digital, or PCM.
• DEC. PCM
  PCM signals are output from the connected player. To prevent interruption when playback starts, set to “DEC. PCM”. When signals other than PCM signals are received, set this item to “DEC. AUTO”.

■ D. ASSIGN (Digital audio input assignment)
Lets you assign the digital audio input to other input source. For details, see “Listening to digital sound from other inputs (DIGITAL ASSIGN)” (page 83).
Settings for the HDMI  
(HDMI menu)

You can use the HDMI menu to make various adjustments for HDMI settings. Select “HDMI” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

HDMI menu parameters

CTRL:HDMI (Control for HDMI)
Lets you turn the Control for HDMI function on or off. For details, see “Control for HDMI” (page 77).

AUDIO OUT (Setting HDMI audio input)
Lets you set the HDMI audio output from the playback component connected to the receiver via an HDMI connection.
- AMP
  The HDMI audio signals from the playback component are only output to the speakers connected to the receiver. Multi channel sound can be played back as it is.

  Note
  Audio signals are not output from the TV’s speakers when “AUDIO OUT” is set to “AMP”.

- TV+AMP
  The sound is output from TV’s speaker and the speakers connected to the receiver.

Notes
- The sound quality of the playback component depends on the TV’s sound quality, such as the number of channels, and the sampling frequency, etc. When the TV has stereo speakers, the sound output from the receiver is also stereo as that of the TV, even if you play back multi channel software.
- When you connect the receiver to an image display component (projector, etc.), sound may not be output from the receiver. In this case, select “AMP”.

SW LEVEL (Subwoofer level for HDMI)

Let's you set the level of the subwoofer to 0 dB or +10 dB when PCM signals are input via an HDMI connection. You can set the level for each HDMI input independently.
- SW AUTO
  Automatically sets the level to 0 dB or +10 dB depending on the frequency.
- SW 0 dB
- SW +10 dB

Note
This parameter is only available when HDMI input signals are detected.
Settings for the system
(SYSTEM menu)

You can use the SYSTEM menu to name inputs and change the brightness of the display. Select “SYSTEM” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 42) and “Overview of the menus” (page 43).

SYSTEM menu parameters

- **NAME IN (Naming inputs)**
  Lets you set the name of inputs. For details, see “Naming inputs” (page 87).

- **DIMMER (Brightness of the display)**
  Lets you adjust the brightness in 3 steps.
Enjoying Surround Sound

Enjoying a pre-programmed sound field

When connecting Blu-ray disc players and other next generation HD players

This receiver supports the following audio formats.

<table>
<thead>
<tr>
<th>Audio format</th>
<th>Maximum number of channels</th>
<th>Connection of the playback component and the receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>COAXIAL/OPTICAL</td>
</tr>
<tr>
<td>Dolby Digital</td>
<td>5.1ch</td>
<td>○</td>
</tr>
<tr>
<td>Dolby Digital EX</td>
<td>6.1ch</td>
<td>○</td>
</tr>
<tr>
<td>Dolby Digital Plus a)</td>
<td>7.1ch</td>
<td>×</td>
</tr>
<tr>
<td>Dolby TrueHD a)</td>
<td>7.1ch</td>
<td>×</td>
</tr>
<tr>
<td>DTS</td>
<td>5.1ch</td>
<td>○</td>
</tr>
<tr>
<td>DTS-ES</td>
<td>6.1ch</td>
<td>○</td>
</tr>
<tr>
<td>DTS 96/24</td>
<td>5.1ch</td>
<td>○</td>
</tr>
<tr>
<td>DTS-HD High Resolution Audio a)</td>
<td>7.1ch</td>
<td>×</td>
</tr>
<tr>
<td>DTS-HD Master Audio a) b)</td>
<td>7.1ch</td>
<td>×</td>
</tr>
<tr>
<td>Multi channel Linear PCM a)</td>
<td>7.1ch</td>
<td>×</td>
</tr>
</tbody>
</table>

a) Audio signals are output in another format if the playback component does not correspond to the format. For details, refer to the operating instructions of the playback component.
b) Signals with a sampling frequency of more than 96 kHz are played back at 96 kHz or 88.2 kHz.
Selecting Auto Format Direct (A.F.D.) mode

The Auto Format Direct (A.F.D.) mode allows you to listen to higher fidelity sound and select the decoding mode for listening to a 2 channel stereo sound as multi channel sound.

Press A.F.D. repeatedly to select the sound field you want.

For details, see “Types of A.F.D. mode” (page 56).

Types of A.F.D. mode

<table>
<thead>
<tr>
<th>A.F.D. mode [Display]</th>
<th>Multi channel audio after decoding</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.F.D. Auto [A.F.D. AUTO]</td>
<td>(Detecting automatically)</td>
<td>Presents the sound as it was recorded/encoded without adding any surround effects. However, this receiver will generate a low frequency signal for output to the subwoofer when there is no LFE signals.</td>
</tr>
<tr>
<td>Enhanced surround mode [E. SURROUND]</td>
<td>(Depends on selected enhanced surround mode)</td>
<td>For details, see “Selecting enhanced surround mode” (page 57).</td>
</tr>
<tr>
<td>Multi Stereo [MULTI ST.]</td>
<td>(Multi Stereo)</td>
<td>Outputs 2 channel left/right signals from all speakers. However, sound may not be output from certain speakers depending on the speaker settings.</td>
</tr>
</tbody>
</table>
Selecting enhanced surround mode

The enhanced surround mode allows you to listen to higher fidelity sound and select the decoding mode for listening to a 2 channel stereo sound as multi channel sound.

1. Press AMP MENU.
2. Press ↑/↓ repeatedly to select “SURROUND”, then press ← or →.
3. Press ↑/↓ repeatedly to select “E.SUR MODE” then press ← or →.
4. Press ↑/↓ repeatedly to select the enhanced surround mode you want, then press ← or →.
5. Press MENU/HOME or AMP MENU to exit the menu.
6. Press A.F.D. repeatedly to select “E. SURROUND”.

The enhanced surround mode you have selected in “E.SUR MODE” menu will be applied.
## Types of enhanced surround mode

<table>
<thead>
<tr>
<th>Enhanced surround mode [Display]</th>
<th>Multi channel audio after decoding</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro Logic II* [PLII]</td>
<td>5 channel</td>
<td>Performs Dolby Pro Logic II decoding.</td>
</tr>
<tr>
<td>Pro Logic IIx* [PLIIx]</td>
<td>7 channel</td>
<td>Performs Dolby Pro Logic IIx decoding.</td>
</tr>
<tr>
<td>Neo:6 Music [NEO6 MUS]</td>
<td>7 channel</td>
<td>Performs DTS Neo:6 Music mode decoding. This setting is ideal for normal stereo sources such as CDs.</td>
</tr>
<tr>
<td>Neural-THX [NEURAL-THX]</td>
<td>7 channel</td>
<td>Next generation of Neural-THX® Surround. In addition to stereo enhancement processing and pure discrete 5.1 surround sound, now capable of full 360° 7.1 surround sound playback from Neural-THX® surround encoded content.</td>
</tr>
</tbody>
</table>

* Depends on the speaker pattern setting, some enhanced surround mode may not be available.
If you connect a subwoofer
This receiver will generate a low frequency signal for output to the subwoofer when there is no LFE signal, which is a low-pass sound effect output from a subwoofer to a 2 channel signal. However, the low frequency signal is not generated for “NEO6 CIN” or “NEO6 MUS” when all speakers are set to “LARGE”. In order to take full advantage of the Dolby Digital bass redirection circuitry, we recommend setting the subwoofer’s cut off frequency as high as possible.

Notes
• This function does not work in the following cases.
  – PCM signals with a sampling frequency of more than 96 kHz are being received.
  – DTS 96/24 signals are being received.
  – DTS-HD signals with a sampling frequency of more than 48 kHz are being received.
  – Dolby TrueHD signals with a sampling frequency of more than 48 kHz are being received.
• The beginning of the sound stream may be dropped out when Neural-THX processing is turned on or off.

Tips
• You can identify the encoding format of DVD software, etc., by looking at the logo on the package.
• Dolby Pro Logic IIx decoding is effective, when a multi-channel signal is input.

Selecting movie/music mode
You can take advantage of surround sound simply by selecting one of the receiver’s pre-programmed sound fields. They bring the exciting and powerful sound of movie theaters and concert halls into your home.

Press MOVIE repeatedly to select a sound field for movies or press MUSIC repeatedly to select a sound field for music.
For details, see “Types of movie/music mode” (page 60).
## Types of movie/music mode

<table>
<thead>
<tr>
<th>Sound field for</th>
<th>Sound field [Display]</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Movie</strong></td>
<td><strong>Cinema Studio EX A</strong>  [C.ST.EX A]</td>
<td>Reproduces the sound characteristics of the Sony Pictures Entertainment “Cary Grant Theater” cinema production studio. This is a standard mode, great for watching almost any type of movie.</td>
</tr>
<tr>
<td></td>
<td><strong>Cinema Studio EX B</strong>  [C.ST.EX B]</td>
<td>Reproduces the sound characteristics of the Sony Pictures Entertainment “Kim Novak Theater” cinema production studio. This mode is ideal for watching science-fiction or action movies with lots of sound effects.</td>
</tr>
<tr>
<td></td>
<td><strong>Cinema Studio EX C</strong>  [C.ST.EX C]</td>
<td>Reproduces the sound characteristics of the Sony Pictures Entertainment scoring stage. This mode is ideal for watching musicals or films where orchestra music is featured in the soundtrack.</td>
</tr>
<tr>
<td></td>
<td><strong>V.Multi Dimension</strong>  [V.MULTI DIM.]</td>
<td>Creates many virtual speakers from a single pair of actual surround speakers.</td>
</tr>
<tr>
<td><strong>Music</strong></td>
<td><strong>Hall</strong>  [HALL]</td>
<td>Reproduces the acoustics of a classical concert hall.</td>
</tr>
<tr>
<td></td>
<td><strong>Jazz Club</strong>  [JAZZ]</td>
<td>Reproduces the acoustics of a jazz club.</td>
</tr>
<tr>
<td></td>
<td><strong>Live concert</strong>  [CONCERT]</td>
<td>Reproduces the acoustics of a 300-seat live house.</td>
</tr>
<tr>
<td></td>
<td><strong>Stadium</strong>  [STADIUM]</td>
<td>Reproduces the feeling of a large open-air stadium.</td>
</tr>
<tr>
<td></td>
<td><strong>Sports</strong>  [SPORTS]</td>
<td>Reproduces the feeling of sports broadcasting.</td>
</tr>
<tr>
<td></td>
<td><strong>Portable Audio Enhancer</strong>  [PORTABLE]</td>
<td>Reproduces a clear enhanced sound image from your portable audio device. This mode is ideal for MP3 and other compressed music.</td>
</tr>
<tr>
<td><strong>Headphone</strong>*</td>
<td><strong>Headphone 2CH</strong>  [HP 2CH]</td>
<td>This mode is selected automatically if you use headphones when 2CH STEREO mode (page 62)/A.F.D. mode (page 56) is selected. Standard 2 channel stereo sources completely bypass the sound field processing and multi channel surround formats are downmixed to 2 channels except LFE signals.</td>
</tr>
<tr>
<td></td>
<td><strong>Headphone Theater</strong>  [HP THEA]</td>
<td>This mode is selected automatically if you use headphones when sound field for movie/music is selected. It allows you to experience a theater-like environment while listening through a pair of headphones.</td>
</tr>
<tr>
<td></td>
<td><strong>Headphone Direct</strong>  [HP DIR]</td>
<td>Outputs the analog signals without processing by the equalizer, sound field, etc.</td>
</tr>
</tbody>
</table>

* You can only select this sound field if the headphones are connected to the receiver.
Notes

- The sound fields for music and movies do not work in the following cases.
  - PCM signals with a sampling frequency of more than 48 kHz are being received.
  - DTS 96/24 signals are being received.
  - DTS-HD signals with a sampling frequency of more than 48 kHz are being received.
  - Dolby TrueHD signals with a sampling frequency of more than 48 kHz are being received.
- The effects provided by the virtual speakers may cause increased noise in the playback signal.
- When listening with sound fields that employ the virtual speakers, you will not be able to hear any sound coming directly from the surround speakers.
- When one of the sound fields for music is selected, no sound is output from the subwoofer if all the speakers are set to “LARGE” in the SPEAKER menu. However, the sound will be output from the subwoofer if the digital input signal contains LFE signals, or if the front or surround speakers are set to “SMALL,” the sound field for movie is selected, or “PORTABLE” is selected.

Tip

Sound fields with DCS marks use DCS technology. For details on Digital Cinema Sound (DCS), see “Glossary” (page 95).

Enjoying the surround effect at low volume levels
(NIGHT MODE)

This function allows you to retain a theater like environment at low volume levels. This function can be used with other sound fields. When watching a movie late at night, you will be able to hear the dialog clearly even at a low volume level.

Press NIGHT MODE.
The NIGHT MODE function is activated. The NIGHT MODE is set to on and off as you press NIGHT MODE.

Note

This function does not work in the following cases.
- Dolby TrueHD signals with a sampling frequency of more than 96 kHz are being received.
- PCM signals with a sampling frequency of more than 96 kHz are being received.

To turn off the surround effect for movie/music mode

Press 2CH/A.DIRECT to select “2CH ST.” or press A.F.D. repeatedly to select “A.F.D. AUTO”.

Using only the front speakers
(2CH STEREO)

In this mode, the receiver outputs the sound from the front left/right speakers only. There is no sound from the subwoofer. Standard 2 channel stereo sources completely bypass the sound field processing and multi channel surround formats are downmixed to 2 channel except LFE signals.

Press 2CH/A.DIRECT repeatedly to select “2CH ST.”.

Note
No sound is output from the subwoofer in the 2CH STEREO mode. To listen to 2 channel stereo sources using the front left/right speakers and a subwoofer, select “A.F.D. AUTO” (page 56).

Listening to the sound without any adjustment
(ANALOG DIRECT)

You can switch the audio of the selected input to 2 channel analog input. This function enables you to enjoy high quality analog sources. When using this function, only the volume and front speaker balance can be adjusted.

1 Press one of the input buttons to select the input you want to listen to in analog audio.
You can also use the INPUT SELECTOR on the receiver.

2 Press 2CH/A.DIRECT repeatedly to select “A.DIRECT”.
The analog audio is output.

To cancel ANALOG DIRECT
Press 2CH/A.DIRECT again.
You can also press any sound field buttons.

Notes
• When headphones are connected, “HP DIRECT” appears on the display.
• You cannot select ANALOG DIRECT when you select BD, DMPORT and XM RADIO as input.
Resetting sound fields to the initial settings

Be sure to use the buttons on the receiver for this operation.

1, 2

1 Press \( \text{I} / \text{O} \) to turn off the receiver.

2 While holding down MUSIC, press \( \text{I} / \text{O} \).
   “S.F. CLEAR” appears on the display and all sound fields are reset to their initial setting.

Listening to FM/AM radio

You can listen to FM and AM broadcasts through the built-in tuner. Before operation, make sure you have connected the FM and AM antennas to the receiver (page 28).

Tip
The tuning scale is:
FM : 100 kHz
AM : 10 kHz*
* The AM tuning scale can be changed (page 104).

Automatic tuning

1 Press TUNER repeatedly to select the FM or AM band.

2 Press TUNING + or TUNING –.
   Press TUNING + to scan from low to high; press TUNING – to scan from high to low.
   The receiver stops scanning whenever a station is received.

continued
Using the controls on the receiver

1 Turn INPUT SELECTOR to select the FM or AM band.
2 Press TUNING MODE repeatedly to select “AUTO”.
3 Turn TUNING +/-.

In case of poor FM stereo reception

If the FM stereo reception is poor and “ST” flashes on the display, select monaural audio so that the sound will be less distorted.
- To select monaural audio, set “FM MODE” in TUNER menu to “MONO” (page 51).
- To return to stereo mode, set “FM MODE” in TUNER menu to “ST” (page 51).

Direct tuning

You can enter the frequency of a station directly by using the numeric buttons.

1 Press TUNER repeatedly to select the FM or AM band.
   You can also use INPUT SELECTOR on the receiver.
2 Press D.TUNING.
3 Press SHIFT.
4 Press the numeric buttons to enter the frequency.
   Example 1: FM 102.50 MHz
   Select 1 0 2 5
   Example 2: AM 1,350 kHz
   Select 1 3 5 0
**Presetting radio stations**

You can preset up to 30 FM stations and 30 AM stations. Then you can easily tune in the stations you often listen to.

**If you cannot tune in a station**
Make sure you have entered the right frequency. If not, repeat steps 2 to 5. If you still cannot tune in a station, the frequency is not used in your area.

---

**Presetting radio stations**

1. Press TUNER repeatedly to select the FM or AM band.
   You can also use INPUT SELECTOR on the receiver.

---

5. Press ENT/MEM.
   You can also use MEMORY/ENTER on the receiver.

**Tip**
If you have tuned in an AM station, adjust the direction of the AM loop antenna for optimum reception.
2 Tune in the station that you want to preset using Automatic Tuning (page 63) or Direct Tuning (page 64).
   Switch the FM reception mode, if necessary (page 64).

3 Press SHIFT.

4 Press ENT/MEM.
   You can also use MEMORY/ENTER on the receiver.
   “MEM” lights up for a few seconds.
   Perform steps 5 and 6 before “MEM” goes out.

5 Press the numeric buttons to select a preset number.
   You can also press PRESET + or PRESET – to select a preset number.
   If “MEM” goes out before you select the preset number, start again from step 3.

6 Press ENT/MEM.
   You can also use MEMORY/ENTER on the receiver.
   “MEM” lights off.
   The station is stored as the selected preset number.

7 Repeat steps 1 to 6 to preset another station.

---

Tuning to preset stations

1 Press TUNER repeatedly to select the FM or AM band.

2 Press PRESET + or PRESET – repeatedly to select the preset station you want.
   Each time you press the button, you can select a preset station as follows:

   01 ↔ 02 ↔ 03 ↔ 04 ↔ 05 ↔ ... ↔ 27
   30 ↔ 29 ↔ 28

   You can also press SHIFT and then press the numeric buttons to select the preset station you want. Then, press ENT/MEM to enter the selection.
Using the controls on the receiver
1 Turn INPUT SELECTOR to select the FM or AM band.
2 Press TUNING MODE repeatedly to select “PRESET”.
3 Turn TUNING +/- to select the preset station you want.

6 Press ↑/↓ repeatedly to select “NAME IN”.

7 Press + or ↑ to enter the parameter.

The cursor flashes and you can select a character. Follow the procedure given in “To create an index name” below.

To create an index name
1 Use ↑/↓/←/→ to create an index name.
   Press ↑/↓ to select a character, then press ←/→ to move the cursor to the next position.

If you made a mistake
Press ←/→ until the character you want to change flashes, then press ↑/↓ to select the correct character.

Tips
• You can select the character type as follows by pressing ↑/↓.
  Alphabet (upper case) → Numbers → Symbols
• To enter a blank space, you can press ↑ without selecting a character.

2 Press + to enter the name.
   The entered name is registered.

1 Press TUNER repeatedly to select the FM or AM band.
   You can also use INPUT SELECTOR on the receiver.

2 Tune in the preset station you want to create an index name for (page 66).

3 Press AMP MENU.

4 Press ↑/↓ repeatedly to select “TUNER”.

5 Press + or ↑ to enter the menu.
Listening to the XM Radio

About XM Radio
XM is North America’s number one satellite radio company, offering an extraordinary variety of commercial-free music, plus the best in premier sports, news, talk radio, comedy, children’s and entertainment programming, broadcast in superior digital audio quality coast to coast. For more information, or to subscribe, U.S. customers visit xmradio.com or call XM Listener Care at 1-800-XMRADIO (1-800-967-2346); Canadian customers visit xmradio.ca or call XM Listener Care at 1-877-GETXMSR (1-877-438-9677).

XM Ready® Legal
XM monthly service subscription sold separately. XM Mini-Tuner and Home Dock required (each sold separately) to receive XM service. It is prohibited to copy, decompile, disassemble, reverse engineer, hack, manipulate or otherwise make available any technology or software incorporated in receivers compatible with the XM satellite Radio System. Installation costs and other fees and taxes, including a one-time activation fee may apply. All fees and programming subject to change. Channels with frequent explicit language are indicated with an XL. Channel blocking is available for XM radio receivers by calling 1-800-XMRADIO (U.S. residents) and 1-877-GETXMSR (Canadian residents). Only available in the 48 contiguous United States and Canada. ©2008 XM Satellite Radio Inc. All rights reserved.

XM Ready® Subscriptions
Once you have installed the XM Mini-Tuner and Home Dock, inserted the XM Mini-Tuner, connected the XM Mini-Tuner and Home Dock to your XM Ready® audio system, and installed the antenna, you are ready to subscribe and begin receiving XM programming. There are three places to find your eight character XM Radio ID: On the XM Mini-Tuner, on the XM Mini-Tuner package, and on XM Channel 0. Record the Radio ID below for reference.

Note
The XM Radio ID does not use the letters “I”, “O”, “S” or “F”. Activate your XM Satellite Radio service in the U.S. online at http://activate.xmradio.com or call 1-800-XMRADIO (1-800-967-2346). Activate your XM Satellite Radio service in Canada online at https://activate.xmradio.ca or call 1-877-GET-XMSR (1-877-438-9677).
You will need a major credit card. XM will send a signal from the satellites to activate the full channel lineup. Activation normally takes 10 to 15 minutes, but during peak busy periods you may need to keep your XM Ready audio system on for up to an hour. When you can access the full lineup on your XM Ready audio system you are done.
Checking the XM Radio ID

Before operating the receiver, connect the XM Mini-Tuner and Home Dock to the XM jack.

Note
To ensure optimal reception of XM’s satellite signal, move your antenna to various window locations around your home to see where the best reception will be received. Most XM customers place the antenna in a south-facing window with a clear view to the sky.

Aiming the XM antenna (aerial)

You can use “XM ANT AIM” in the TUNER menu to help you aim the antenna for optimal signal reception.

1. Press XM.
   You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2. Press AMP MENU.

3. Press ↑/↓ repeatedly to select “TUNER”.

4. Press ◀ or ▶ to enter the menu.

5. Press ↑/↓ repeatedly to select “XM ANT AIM”.

6. Press ◀ or ▶ to enter the parameter.

7. While checking the parameter, aim your antenna to where the best reception will be received.

   For details on the parameter, “Signal strength” (page 70).
Signal strength

<table>
<thead>
<tr>
<th>Signal strength</th>
<th>Signal type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Satellite</td>
</tr>
<tr>
<td>Good</td>
<td>S:3</td>
</tr>
<tr>
<td>Marginal</td>
<td>S:2</td>
</tr>
<tr>
<td>Weak</td>
<td>S:1</td>
</tr>
<tr>
<td>None</td>
<td>S:0</td>
</tr>
</tbody>
</table>

When you have finished
Press AMP MENU.

4 Check the XM Radio ID on the display and write it in the space provided here.
ID: ___________________________
You can also check the XM Radio ID using the display on the receiver.

Receiving XM Radio broadcasts

1 Press XM.
You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2 Press TUNING + or TUNING – to select a channel.
You can also press TUNING MODE on the receiver to select “AUTO”, and then turn TUNING +/- to select a channel.

Checking the XM Radio ID

1 Press AMP MENU.
2 Press †/‡ repeatedly to select “TUNER”, then press ⊕ or †.
3 Press †/‡ repeatedly to select “XM ID”, then press ⊕ or †.

1, 2, 3
Selecting channels from a category (CATEGORY TUNING)

You can select a channel from one category or all the categories by changing the category mode.

1 Press XM.
   You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2 Press CATEGORY MODE repeatedly to select the “ONE CAT”.
   - ALL CAT: You can select a channel from all the categories. The initial setting is “ALL CAT”.
   - ONE CAT: You can select a channel from one category. “CAT” lights up on the display when you set to “ONE CAT” mode.

3 Press CATEGORY + or CATEGORY – to select the category you want.
   The category is selected and the channel with the lowest number in the specified category is selected.

4 Press TUNING + or TUNING – to select the channel.
   You can also press TUNING MODE on the receiver to select “AUTO”, and then turn TUNING +/- to select the channel.

Notes
   • When you select a channel in the “ONE CAT” mode, the channel you selected may not be the one in the category you want. This is because one channel may belong to more than one category.
   • If you press CATEGORY + or CATEGORY – in the “ALL CAT” mode, the first channel of the next or previous category is selected (CATEGORY SKIP).
Selecting channels by inputting the channel number directly (DIRECT TUNING)

1. Press XM.
   You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2. Press D.TUNING.

3. Press SHIFT.

4. Press the numeric buttons to enter the channel number.

5. Press ENT/MEM.
   You can also use MEMORY/ENTER on the receiver.
   The selected channel is tune in.

Displaying the XM Radio information on the front panel display

Press DISPLAY on the receiver repeatedly.
Each time you press DISPLAY while tuning in the channel, the display changes cyclically as follows:
Channel name → Channel number → Category name → Artist name/Feature → Song/Program title → Signal strength → Sound field type → Volume level

Tip
The preset number is always displayed at the right end of the display.
Presetting XM Radio channels

You can select the channels you want directly by presetting them using the preset numbers. You can preset up to 30 XM Radio channels.

Presetting channels using the preset numbers

1 Press XM. You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2 Tune in the channel you want to preset.
For details on selecting channels, see “Listening to the XM Radio” (page 68).

3 Press SHIFT.

4 Press ENT/MEM.
You can also press MEMORY/ENTER on the receiver.

5 Press the numeric buttons to select a preset number.
You can also select the number by pressing PRESET + or PRESET –.
You can also turn TUNING +/- on the receiver.
Preset number from 1 to 30 are available and channel 1 is preset for all the preset numbers when you purchase the receiver.

6 Press ENT/MEM.
You can also press MEMORY/ENTER on the receiver.
“MEM” lights off.

7 Repeat steps 2 to 6 to preset another channel.
Selecting the channel by using the preset numbers

1. Press XM.
   You can also use INPUT SELECTOR on the receiver to select “XM RADIO”.

2. Press PRESET + or PRESET – repeatedly to select the preset channel you want.
   You can also press SHIFT and then press the numeric buttons to select the preset channel you want. Then press ENT/MEM to enter the selection.
   You can also press TUNING MODE on the receiver to select “PRESET” and then turn TUNING +/-.
   You can select preset channels from 1 to 30.

Note
The preset channel information will be updated depending on the service provided by XM Satellite Radio Inc. that you have subscribed to.
### XM Radio messages list

<table>
<thead>
<tr>
<th>Message appears</th>
<th>Explanation</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTEENA</td>
<td>The XM antenna is not connected to the XM Mini-Tuner and Home Dock or the XM antenna cable is damaged.</td>
<td>Check that the XM antenna is connected to the XM Mini-Tuner and Home Dock securely and check the antenna cable for damage. Replace the XM antenna if the cable is damaged.</td>
</tr>
<tr>
<td>UNAUTH</td>
<td>You have selected an XM channel that is blocked or cannot be received with your XM subscription package.</td>
<td>Consult the latest channel guide at <a href="http://www.xmradio.com">www.xmradio.com</a> (US residents) or <a href="http://www.xmradio.ca">www.xmradio.ca</a> (Canadian residents) for the current list of channels. For information on receiving this channel, visit <a href="http://www.xmradio.com">www.xmradio.com</a> (US residents) or <a href="http://www.xmradio.ca">www.xmradio.ca</a> (Canadian residents). You can also contact XM Satellite Radio at 1-800-967-2346 (US residents) or 1-877-438-9677 (Canadian residents).</td>
</tr>
<tr>
<td>NO SIGNAL</td>
<td>The XM Mini-Tuner is not receiving the XM satellite signal. The XM antenna’s view of the satellites may be blocked or the antenna is not properly aimed.</td>
<td>Check the antenna for obstructions and reposition the XM antenna to get a better signal reception. To optimize the antenna position, see “Aiming the XM antenna (aerial)” (page 69). Refer to the operating instructions supplied with the XM Mini-Tuner and Home Dock for antenna installation information.</td>
</tr>
<tr>
<td>LOADING</td>
<td>The XM Mini-Tuner is acquiring audio or program information from the XM satellite signal. This message can also appear if the signal is too weak.</td>
<td>This message should disappear when the signal is strong. If you often see this message, reposition the XM antenna for better signal reception. To optimize the antenna position, see “Aiming the XM antenna (aerial)” (page 69).</td>
</tr>
<tr>
<td>OFF AIR</td>
<td>You have selected an XM channel that is not currently broadcasting.</td>
<td>Check this XM channel later. In the meantime, select another channel.</td>
</tr>
<tr>
<td>– – – – –</td>
<td>No artist name or song title is available for this selection.</td>
<td>—</td>
</tr>
<tr>
<td>CH UNAVL</td>
<td>The selected channel is not available. The channel may have been reassigned to a different channel number. This message may occur initially with a new radio or a radio that has not received XM’s signal for an extended period.</td>
<td>Consult the latest channel guide at <a href="http://www.xmradio.com">www.xmradio.com</a> (US residents) or <a href="http://www.xmradio.ca">www.xmradio.ca</a> (Canadian residents) for the current channel list. For a new radio or a radio that has not received XM’s signal for an extended period, allow the radio to receive the XM satellite signal for at least 5 minutes and then select the channel again.</td>
</tr>
<tr>
<td>XM TUNER</td>
<td>The XM Mini-Tuner is not installed or not fully seated in the XM Mini-Tuner and Home Dock or the XM Mini-Tuner and Home Dock is not connected to the receiver.</td>
<td>Confirm the XM Mini-Tuner is fully seated in the dock and check the XM Mini-Tuner and Home Dock cable is connected to the receiver.</td>
</tr>
<tr>
<td>Message appears</td>
<td>Explanation</td>
<td>Remedies</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>XM --</td>
<td>The preset number entered is an invalid number.</td>
<td>Enter a number from 1 to 30.</td>
</tr>
<tr>
<td>SIG:GOOD</td>
<td>The signal strength is good.</td>
<td>Adjust the antenna so that the signal is as strong as possible. For details, see “Aiming the XM antenna (aerial)” (page 69).</td>
</tr>
<tr>
<td>SIG:MARG</td>
<td>The signal strength is marginal.</td>
<td></td>
</tr>
<tr>
<td>SIG:WEAK</td>
<td>The signal strength is weak.</td>
<td></td>
</tr>
<tr>
<td>SIG:NONE</td>
<td>There is no signal.</td>
<td></td>
</tr>
</tbody>
</table>
Using the Control for HDMI function for “BRAVIA” Sync

To use “BRAVIA” Sync, set the Control for HDMI function as explained below.

By connecting Sony components that are compatible with the Control for HDMI function with an HDMI cable (not supplied), operation is simplified as follows:

- **One-Touch Play:** When you play back a component such as a DVD/Blu-ray disc player, the receiver and the TV are turned on automatically and switched to the appropriate HDMI input.
- **System Audio Control:** While watching TV, you can select to output the sound from the TV speaker or the speakers connected to the receiver.
- **System Power Off:** When you turn off the TV, the receiver and connected components are also turned off simultaneously.

Control for HDMI is a mutual control function standard used by HDMI CEC (Consumer Electronics Control) for HDMI (High-Definition Multimedia Interface).

**The Control for HDMI function does not work in the following cases:**

- When you connect the receiver to a component which does not correspond with Sony Control for HDMI function.
- When you connect the receiver and components using other than HDMI connection.

We recommend that you connect the receiver to products featuring “BRAVIA” Sync.

**Note**
Depending on the connected component, the Control for HDMI function may not work. Refer to the operating instructions of the component.
Connecting a TV and other components

Before connecting cords, be sure to disconnect the AC power cord.

To enjoy TV multi channel surround sound broadcasting
You can listen to TV multi channel surround sound broadcasting from the speakers connected to the receiver.
Connect the OPTICAL output jack of the TV to the OPTICAL IN jack of the receiver.

A HDMI cable (not supplied)
We recommend that you use a Sony HDMI cable.
B Optical digital cord (not supplied)a)
C Audio cord (not supplied)a)

a)Connect at least one of the audio cords (B or C).
Preparing Control for HDMI function

This receiver supports the Control for HDMI-Easy Setting function. This function is only available for certain types of TV. When you perform the Control for HDMI-Easy Setting from the TV, the Control for HDMI setting on this receiver will automatically change accordingly. During the Control for HDMI-Easy Setting operation, “SCANNING” flashes in the display. This receiver will automatically change the input to HDMI input. When the setting is completed, “COMPLETE” appears on the display. For details, refer to the operating instructions of the TV.

If your TV does not support the Control for HDMI-Easy Setting function, do the following procedures. For details on setting the TV and connected components, refer to the operating instructions of the respective components.

1. Make sure that the receiver is connected to the TV and components (compatible with Control for HDMI function) via HDMI connection.
2. Turn on the receiver, TV and connected components.
3. Set the respective Control for HDMI function for the receiver and TV to on. See “To set Control for HDMI” (page 80). For details on setting the TV, refer to the operating instructions of the TV.
4. Select the HDMI input of the receiver and TV to match the HDMI input of the connected component, so that the image from the connected component is displayed.
5. Set the Control for HDMI function for the connected component to on. If the Control for HDMI function for the connected component is already set to on, you do not need to change the setting.
6. Repeat steps 4 and 5 for other components that you want to use the Control for HDMI function.

Notes
- If you unplug and reconnect the HDMI cable, be sure to repeat steps 1 to 6 above.
- You cannot perform One-Touch Play and System Audio Control during the Control for HDMI-Easy Setting operation.
- Before you do the Control for HDMI-Easy Setting from the TV, be sure to turn on the TV, connected components and receiver.
- If the playback components cannot function after you have made the settings for Control for HDMI-Easy Setting, check the Control for HDMI setting on your TV.
- If the connected components do not support Control for HDMI-Easy Setting, you need to set the Control for HDMI function for the connected components to on before you perform the Control for HDMI-Easy Setting from the TV.
To set Control for HDMI

1 Press AMP MENU.
2 Press †/‹ repeatedly to select “HDMI”.
3 Press ‡ or › to enter the menu.
4 Press †/‹ repeatedly to select “CTRL:HDMI”.
5 Press ‡ or › to enter the parameter.
6 Press †/‹ repeatedly to select “CTRL ON”.
   Control for HDMI function is activated.

Watching a DVD
(One-Touch Play)

You can enjoy sound and image from the components connected to the receiver via HDMI connections by a simple operation.

Play back a connected component.
The receiver and the TV are turned on automatically and switched to the appropriate HDMI input.

Watching a DVD by simple operation
You can also select a connected component, such as a DVD/Blu-ray disc player using the TV menu. In this case, the receiver and the TV switch to the appropriate HDMI input.

Note
Depending on the TV, the start of the content may not be output.
Enjoying the TV sound from the speakers connected to the receiver (System Audio Control)

You can enjoy the TV sound from the speakers connected to the receiver by a simple operation. You can operate System Audio Control function using the TV menu. For details, refer to the operating instructions of the TV. When System Audio Control function is turned on, the receiver will turn on and switches to the appropriate input automatically.

TV sound is output from the speakers connected to the receiver, and the volume of the TV is minimized simultaneously. You can also use the System Audio Control function as follows.

- If you turn on the receiver while the TV is turned on, the System Audio Control function will automatically be set to on and the TV sound will output from the speakers connected to the receiver. However, if you turn off the receiver, the sound will output from the TV speakers.
- You can adjust the receiver’s volume when you adjust the TV volume.

Notes

- If System Audio Control does not function according to your TV setting, refer to the operating instructions of the TV.
- When “CTRL:HDMI” is set to “CTRL ON”, the “AUDIO OUT” settings in the HDMI menu will set automatically depending on the System Audio Control settings.
- When you connect a TV that does not have System Audio Control function, the System Audio Control function does not work.
- If the TV is turned on before turning on the receiver, the TV sound will not be output for a moment.
- When you switch to an input other than HDMI or TV, the System Audio Control function will automatically be set to off.
- If you switch from other input to HDMI or TV input, the System Audio Control function will automatically be set to on.
Turning off the receiver with the TV  
(System Power Off)

When you turn the TV off by using the POWER button on the TV’s remote, the receiver and the connected components turn off automatically.

You can also use the receiver’s remote to turn off the TV.

Press TV, then press AV I/¹. The TV, receiver and the components connected via HDMI are turned off.

Notes

• Set the TV Standby Synchro to “ON” before using the System Power Off function. For details, refer to the operating instructions of the TV.

• Depending on the status, the connected components may not be turned off. For details, refer to the operating instructions of the connected components.

Switching between digital and analog audio  
(INPUT MODE)

When you connect components to both digital and analog input jacks on the receiver, you can fix the audio input mode to either of them, or switch from one to the other, depending on the type of material you intend to watch.

1 Turn INPUT SELECTOR on the receiver to select the input.

You can also use the input buttons on the remote.

2 Press INPUT MODE repeatedly on the receiver to select the audio input mode.

The selected audio input mode appears on the display.

Audio input modes

AUTO

Gives priority to digital audio signals when there are both digital and analog connections. If there are more than one digital connection, HDMI audio signals have priority over COAXIAL and OPTICAL audio signals.

If there are no digital audio signals, analog audio signals are selected.

ANALOG

Specifies the analog audio signals input to the AUDIO IN (L/R) jacks.
Notes
- Some audio input modes may not be set up depending on the input.
- When the ANALOG DIRECT function is selected, audio input is set to “ANALOG” automatically and you cannot select other modes.
- When either XM Radio or DIGITAL MEDIA PORT adapter is selected, “------” appears on the display, and you cannot select other modes. Select an input mode other than the satellite tuner and DIGITAL MEDIA PORT adapter then set the audio input mode.

Listening to digital sound from other inputs
(DIGITAL ASSIGN)

You can reassign digital audio input that has OPTICAL or COAXIAL (VIDEO 1 IN, SAT IN, DVD IN) signals to another input when they are not currently being used.

For example, to output the sound source for DVD player using the OPTICAL IN jack on the receiver, then:
- Connect the optical output jack of the DVD player to the OPTICAL VIDEO 1 IN jack of the receiver.
- Assign “VD1 OPT” to “DVD” in the D. ASSIGN setting.

1. Press AMP MENU.
2. Press ↑/↓ repeatedly to select “AUDIO”.
3. Press ◀ or ▶ to enter the menu.
4. Press ↑/↓ repeatedly to select “D. ASSIGN”.
5. Press ◀ or ▶ to enter the parameter.
6. Press ↑/↓ repeatedly to select a vacant digital audio input (for example, “VD1 OPT”).
7. Press ◀ or ▶ to enter your selection.
8 Press ‡/⅛ repeatedly to select the input ("VD1 → DVD" in the example) you want to assign to the digital audio input jack selected in step 6.

When DVD input is selected, the sound of the DVD player will also become a digital sound through the OPTICAL VIDEO 1 jack.

The input you can reassign to varies for each digital audio input. For details, see “Assignable inputs for digital audio input” (page 84).

To return to the previous display
Press ◄.

Assignable inputs for digital audio input
The initial setting is marked with an underscore.

<table>
<thead>
<tr>
<th>Digital audio input [Display]</th>
<th>Assignable inputs</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTICAL VIDEO 1 IN [VD1 OPT]</td>
<td>VIDEO1</td>
<td>VD1→[VD1]</td>
</tr>
<tr>
<td></td>
<td>VIDEO2</td>
<td>VD1→[VD2]</td>
</tr>
<tr>
<td></td>
<td>BD</td>
<td>VD1→[BD]</td>
</tr>
<tr>
<td></td>
<td>DVD</td>
<td>VD1→[DVD]</td>
</tr>
<tr>
<td></td>
<td>SA-CD/CD</td>
<td>VD1→[CD]</td>
</tr>
<tr>
<td>COAXIAL DVD IN [DVD COAX]</td>
<td>VIDEO1</td>
<td>DVD→[VD1]</td>
</tr>
<tr>
<td></td>
<td>VIDEO2</td>
<td>DVD→[VD2]</td>
</tr>
<tr>
<td></td>
<td>BD</td>
<td>DVD→[BD]</td>
</tr>
<tr>
<td></td>
<td>DVD</td>
<td>DVD→[DVD]</td>
</tr>
<tr>
<td></td>
<td>SAT</td>
<td>DVD→[SAT]</td>
</tr>
<tr>
<td></td>
<td>SA-CD/CD</td>
<td>DVD→[CD]</td>
</tr>
<tr>
<td>OPTICAL SAT IN [SAT OPT]</td>
<td>VIDEO2</td>
<td>SAT→[VD2]</td>
</tr>
<tr>
<td></td>
<td>BD</td>
<td>SAT→[BD]</td>
</tr>
<tr>
<td></td>
<td>DVD</td>
<td>SAT→[DVD]</td>
</tr>
<tr>
<td></td>
<td>SAT</td>
<td>SAT→[SAT]</td>
</tr>
</tbody>
</table>

Notes
- You cannot reassign more than one digital audio input to the same input.
- You cannot use the digital audio input for the original input when it is reassigned to another input.
- When you assign the digital audio input, the INPUT MODE setting may change automatically (page 82).
Enjoying the DIGITAL MEDIA PORT (DMPORT)

The DIGITAL MEDIA PORT (DMPORT) allows you to enjoy sound from a network system such as a portable audio source or computer. By connecting a DIGITAL MEDIA PORT adapter (not supplied), you can enjoy sound from the connected component on the receiver. For details, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

Notes

- Do not connect an adapter other than the DIGITAL MEDIA PORT adapter.
- Do not connect or disconnect the DIGITAL MEDIA PORT adapter while the receiver is turned on.
- Depending on the DIGITAL MEDIA PORT adapter, video output may not be possible.
- The DIGITAL MEDIA PORT adapters are available for purchase depending on the area.
**Connecting the DIGITAL MEDIA PORT adapter**

You can listen to the sound and view the images from the component connected through the DIGITAL MEDIA PORT adapter to the DMPORT jack on the receiver.

**Notes**
- When connecting the DIGITAL MEDIA PORT adapter, be sure the connector is inserted with the arrow mark facing towards the arrow mark on the DMPORT jack.
- Be sure to make DMPORT connections firmly, insert the connector straight in.
- As the connector of the DIGITAL MEDIA PORT adapter is fragile, be sure to handle with care when placing or moving the receiver.

**To detach the DIGITAL MEDIA PORT adapter from DMPORT jack**

Press and hold both sides of the connector and then pull out the connector.

A Video cord (not supplied)
Listening/watching a connected component through DMPORT connection

1 Press DMPORT.
   You can also use the INPUT SELECTOR on the receiver to select “DMPORT”.

2 Start playback of the connected component.
   The sound is played back on the receiver and the image appears on the TV.
   For details, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

Notes
• Depending on the type of DIGITAL MEDIA PORT adapter, you can operate the connected component by using the remote. For details on remote button operation, see page 11.
• Be sure you have connected the MONITOR OUT or HDMI OUT jack of the receiver to the TV (page 86).

Tip
When listening to MP3 or other compressed music using a portable audio source, you can enhance the sound. Press MUSIC repeatedly to select “PORTABLE” (page 60).

Naming inputs

You can enter a name of up to 8 characters for inputs and display it on the receiver’s display. This is convenient for labeling the jacks with the names of the connected components.

1 Press one of the input buttons to select the input you want to create an index name for.
   You can also use INPUT SELECTOR on the receiver.

2 Press AMP MENU.

3 Press †/‹ repeatedly to select “SYSTEM”.

4 Press ⊕ or ▽ to enter the menu.

5 Press †/‹ to select “NAME IN”.

6 Press ⊕ or ▽ to enter the parameter.
   The cursor flashes and you can select a character. Follow the procedure given in “To create an index name” (page 67).
Changing the display

You can check the sound field, etc., by changing the information on the display. Be sure to use the buttons on the receiver for this operation.

Press DISPLAY repeatedly.
Each time you press the button, the display changes cyclically as follows:

**All inputs except the FM and AM band**
Index name of the input* → Selected input → Sound field currently applied → Volume level → Stream info

**FM and AM band**
Preset station name* → Frequency → Sound field currently applied → Volume level

**XM Radio**
Channel name → Channel number → Category name → Artist name/Feature → Song/program title → Signal strength → Sound field currently applied → Volume level

* Index name appears only when you have assigned one to the input or preset station (page 67, 87). Index name does not appear when only blank spaces have been entered, or it is the same as the input name.

**Note**
Character or marks may not be displayed for some languages.

Using the Sleep Timer

You can set the receiver to turn off automatically at a specified time.

Press SLEEP repeatedly while the power is on.
“SLEEP” lights up in the display. Each time you press the button, the display changes cyclically as follows:

OFF → 0:30:00 → 1:00:00 → 1:30:00 → 2:00:00

**Tip**
To check the remaining time before the receiver turns off, press SLEEP. The remaining time appears on the display. If you press SLEEP again, the sleep timer will be canceled.
Recording using the receiver

You can record from a video/audio component using the receiver. Refer to the operating instructions supplied with your recording component.

Recording onto a CD-R

You can record onto a CD-R using the receiver. See the operating instructions supplied with your CD recorder.

1. **Press one of the input buttons to select the playback component.**
   You can also use INPUT SELECTOR on the receiver.

2. **Prepare the playback component for playing.**
   For example, tune to the radio station you want to record (page 63).

3. **Prepare the recording component.**
   Insert a blank CD-R into the CD recorder and adjust the recording level.

4. **Start recording on the recording component, then start playback on the playback component.**

   **Note**
   Sound adjustments do not affect the signal output from the SA-CD/CD/CD-R OUT jacks.

Recording onto a recording media

1. **Press one of the input buttons to select the playback component.**
   You can also use INPUT SELECTOR on the receiver.

2. **Prepare the playback component for playing.**
   For example, insert the video tape you want to copy into the VCR.

3. **Prepare the recording component.**
   Insert a blank video tape, etc. into the recording component (VIDEO 1) for recording.

4. **Start recording on the recording component, then start playback on the playback component.**

   **Note**
   Some sources contain copy guards to prevent recording. In this case, you may not be able to record from the source.
Programming the remote

You can program the remote to control non-Sony components by changing the code. Once the control signals have been memorized, you can use those components as part of your system. Furthermore, you can also program the remote for Sony components that the remote is unable to control. Note that the remote can only control components that accept infrared wireless control signals.

1 Press AV I/تشغيل while pressing RM SET UP.
   The RM SET UP button slowly flashes.

2 Press the input button for the component you want to control.
   For example, if you are going to control a CD player, press SA-CD/CD.
   The RM SET UP and the SHIFT button indicator light up.

3 Press the numeric buttons to enter the numeric code (or one of the codes if more than one code exists) corresponding to the component and the maker of the component you want to control (except TV).
   See the tables on page 91–94 for information on the numeric code(s) corresponding to the component and the maker of the component (the first digit and the last two digits of the numeric code correspond to the category and the maker’s code respectively).

4 Press ENT/MEM.
   Once the numeric code has been verified, the RM SET UP indicator slowly flashes twice and the remote automatically exits the programming mode.

5 Repeat steps 1 to 4 to control other components.

Notes

- The indicator turns off while a valid button is pressed.
- In step 2, if you want to change to other input, press SHIFT and then press the new input buttons you want.
- In step 2, if you press TUNER, you can only program the button to control a tuner (page 94).
- For the numeric codes, only the last three numbers entered are valid.

To program the remote to control a TV

1 Press AV I/تشغيل while pressing RM SET UP.
   The RM SET UP indicator slowly flashes.

2 Press TV.
   The RM SET UP and the SHIFT button indicator light up.

3 Press the numeric buttons to enter the numeric code (or one of the codes if more than one code exists) for TV. For details, see page 93.

4 Press ENT/MEM.
   Once the numeric code has been verified, the RM SET UP indicator slowly flashes twice and the remote automatically exits the programming mode.

To cancel programming

Press RM SET UP during any step. The RM SET UP indicator flashes 5 times in quick succession. The remote automatically exits the programming mode.

To activate the input after programming

Press the programmed button to activate the input you want.
If programming is unsuccessful, check the following:

- If the indicator does not light up in step 1, the batteries are weak. Replace both batteries.
- If the indicator flashes 5 times in quick succession while entering the numeric code, an error has occurred. Start again from step 1.

To clear the memory of the remote
To clear all programmes, do the following to reset the remote to factory settings.

While holding down MASTER VOL –, press and hold I/ and then press AV I/. The indicator flashes 3 times, then goes off.

The numeric codes corresponding to the component and the maker of the component
Use the numeric codes in the tables below to control non-Sony components and also Sony components that the remote is normally unable to control. Since the remote signal that a component accepts differs depending on the model and year of the component, more than one numeric code may be assigned to a component. If you fail to program your remote using one of the codes, try using other codes.

Notes
- The numeric codes are based on the latest information available for each brand. There is a chance, however, that your component will not respond to some or all of the codes.
- All of the input buttons on this remote may not be available when used with your particular component.

<table>
<thead>
<tr>
<th>To control a CD player</th>
<th>Maker</th>
<th>Code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SONY</td>
<td>101, 102, 103</td>
<td></td>
</tr>
<tr>
<td>DENON</td>
<td>104, 123</td>
<td></td>
</tr>
<tr>
<td>JVC</td>
<td>105, 106, 107</td>
<td></td>
</tr>
<tr>
<td>KENWOOD</td>
<td>108, 109, 110</td>
<td></td>
</tr>
<tr>
<td>MAGNAVOX</td>
<td>111, 116</td>
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<tr>
<td>MARANTZ</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>ONKYO</td>
<td>112, 113, 114</td>
<td></td>
</tr>
<tr>
<td>PANASONIC</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>PHILIPS</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>PIONEER</td>
<td>117</td>
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<tr>
<td>TECHNICS</td>
<td>115, 118, 119</td>
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<tr>
<td>YAMAHA</td>
<td>120, 121, 122</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>To control a DAT deck</th>
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</thead>
<tbody>
<tr>
<td>Maker</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>SONY</td>
</tr>
<tr>
<td>PIONEER</td>
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</table>

<table>
<thead>
<tr>
<th>To control an MD deck</th>
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</thead>
<tbody>
<tr>
<td>Maker</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>SONY</td>
</tr>
<tr>
<td>DENON</td>
</tr>
<tr>
<td>JVC</td>
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<tr>
<td>KENWOOD</td>
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</table>

<table>
<thead>
<tr>
<th>To control a tape deck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>SONY</td>
</tr>
<tr>
<td>DENON</td>
</tr>
<tr>
<td>KENWOOD</td>
</tr>
<tr>
<td>NAKAMICHI</td>
</tr>
<tr>
<td>PANASONIC</td>
</tr>
<tr>
<td>PHILIPS</td>
</tr>
<tr>
<td>PIONEER</td>
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<tr>
<td>TECHNICS</td>
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<td>YAMAHA</td>
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</tbody>
</table>

continued
## To control an LD player

<table>
<thead>
<tr>
<th>Maker</th>
<th>Code(s)</th>
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<tbody>
<tr>
<td>SONY</td>
<td>601, 602, 603</td>
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<tr>
<td>PIONEER</td>
<td>606</td>
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</table>

## To control a video CD player

<table>
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<tr>
<th>Maker</th>
<th>Code(s)</th>
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</thead>
<tbody>
<tr>
<td>SONY</td>
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</table>

## To control a VCR

<table>
<thead>
<tr>
<th>Maker</th>
<th>Code(s)</th>
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<td>SONY</td>
<td>701, 702, 703, 704, 705, 706</td>
</tr>
<tr>
<td>AIWA*</td>
<td>710, 750, 757, 758</td>
</tr>
<tr>
<td>AKAI</td>
<td>707, 708, 709, 759</td>
</tr>
<tr>
<td>BLAUPUNKT</td>
<td>740</td>
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<tr>
<td>EMERSON</td>
<td>711, 712, 713, 714, 715, 716, 750</td>
</tr>
<tr>
<td>FISHER</td>
<td>717, 718, 719, 720</td>
</tr>
<tr>
<td>GENERAL ELECTRIC (GE)</td>
<td>721, 722, 730</td>
</tr>
<tr>
<td>GOLDSTAR/LG</td>
<td>723, 753</td>
</tr>
<tr>
<td>GRUNDIG</td>
<td>724</td>
</tr>
<tr>
<td>HITACHI</td>
<td>722, 725, 729, 741</td>
</tr>
<tr>
<td>ITT/NOKIA</td>
<td>717</td>
</tr>
<tr>
<td>JVC</td>
<td>726, 727, 728, 736</td>
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<tr>
<td>MAGNAVOX</td>
<td>730, 731, 738</td>
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<tr>
<td>MITSUBISHI/MGA</td>
<td>732, 733, 734, 735</td>
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<tr>
<td>NEC</td>
<td>736</td>
</tr>
<tr>
<td>PANASONIC</td>
<td>729, 730, 737, 738, 739, 740</td>
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<tr>
<td>PHILIPS</td>
<td>729, 730, 731</td>
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<tr>
<td>PIONEER</td>
<td>729</td>
</tr>
<tr>
<td>RCA/PROSCAN</td>
<td>722, 729, 730, 731, 741, 747</td>
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<tr>
<td>SAMSUNG</td>
<td>742, 743, 744, 745</td>
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<tr>
<td>SANYO</td>
<td>717, 720, 746</td>
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<td>SHARP</td>
<td>748, 749</td>
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<tr>
<td>TELEFUNKEN</td>
<td>751, 752</td>
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<tr>
<td>TOSHIBA</td>
<td>747, 756</td>
</tr>
<tr>
<td>ZENITH</td>
<td>754</td>
</tr>
</tbody>
</table>

* If an AIWA VCR does not work even though you enter the code for AIWA, enter the code for Sony instead.

## To control a DVD player

<table>
<thead>
<tr>
<th>Maker</th>
<th>Code(s)</th>
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<tbody>
<tr>
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<td>BROKSONIC</td>
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<td>DENON</td>
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<td>HITACHI</td>
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<td>JVC</td>
<td>415, 423</td>
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<td>MITSUBISHI</td>
<td>419</td>
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<td>ORITRON</td>
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<td>PANASONIC</td>
<td>406, 408, 425</td>
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<td>407</td>
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<td>PIONEER</td>
<td>409, 410</td>
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<td>RCA</td>
<td>414</td>
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<tr>
<td>SAMSUNG</td>
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<td>TOSHIBA</td>
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<td>ZENITH</td>
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## To control a DVD recorder

<table>
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<table>
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<th>Code(s)</th>
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<td>AIWA</td>
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<td>AKAI</td>
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<td>AOC</td>
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<td>CENTURION</td>
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<tr>
<td>CORONADO</td>
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<td>CURTIS-MATHES</td>
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<td>DAYTRON</td>
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<tr>
<td>DAEWOO</td>
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<td>FISHER</td>
<td>508, 545</td>
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<td>FUNAI</td>
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<td>FUJITSU</td>
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<tr>
<td>GOLDSTAR/LG</td>
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<tr>
<td>GRUNDIG</td>
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<td>HITACHI</td>
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<td>J.C.PENNY</td>
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<td>JVC</td>
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<td>KMC</td>
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<td>MAGNAVOX</td>
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<td>MARANTZ</td>
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<td>MITSUBISHI/MGA</td>
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<td>NOKIA</td>
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<td>PHILCO</td>
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<td>PIONEER</td>
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<td>PORTLAND</td>
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<td>QUASAR</td>
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continued
### To control a satellite tuner

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<th>Maker</th>
<th>Code(s)</th>
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<tbody>
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<td>SONY</td>
<td>801, 802, 803, 804, 824, 825, 865</td>
</tr>
<tr>
<td>AMSTRAD</td>
<td>845, 846</td>
</tr>
<tr>
<td>BskyB</td>
<td>862</td>
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<td>GENERAL ELECTRIC (GE)</td>
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<td>GRUNDIG</td>
<td>859, 860</td>
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<tr>
<td>HUMAX</td>
<td>846, 847</td>
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<tr>
<td>THOMSON</td>
<td>857, 861, 864, 876</td>
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<td>PACE</td>
<td>848, 849, 850, 852, 862, 863, 864</td>
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<tr>
<td>JVC/Echostar/Dish Network</td>
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<tr>
<td>MITSUBISHI</td>
<td>872</td>
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<tr>
<td>SAMSUNG</td>
<td>875</td>
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<tr>
<td>TOSHIBA</td>
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</table>

### To control a cable box

<table>
<thead>
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</tr>
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<tbody>
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</tr>
<tr>
<td>HAMLIN/REGAL</td>
<td>836, 837, 838, 839, 840</td>
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<tr>
<td>JERROLD/G.I./MOTOROLA</td>
<td>806, 807, 808, 809, 810, 811, 812, 813, 814, 819</td>
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<tr>
<td>JERROLD</td>
<td>830, 831</td>
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<tr>
<td>OAK</td>
<td>841, 842, 843</td>
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<td>PANASONIC</td>
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<tr>
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<td>PIONEER</td>
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<td>TOCOM/PHILIPS</td>
<td>830, 831</td>
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<td>ZENITH</td>
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### To control a Blu-ray disc recorder

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<tbody>
<tr>
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### To control a PSX

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### To control a DVD/VHS COMBO

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### To control a DVD/HDD COMBO

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</tr>
</thead>
<tbody>
<tr>
<td>SONY</td>
<td>401, 402, 403</td>
</tr>
</tbody>
</table>
Glossary

■ **Cinema Studio EX**
A surround sound mode that can be regarded as the compilation of Digital Cinema Sound technology, delivers the sound of a dubbing theater using three technologies: “Virtual Multi Dimensions,” “Screen Depth Matching,” and “Cinema Studio Reverberation.” “Virtual Multi Dimensions,” the virtual speaker technology, creates a virtual multi-surround environment with actual speakers up to 7.1 channels, and brings the surround sound experience of a theater with the latest facilities into your home. “Screen Depth Matching” reproduces treble attenuation, fullness, and depth of sound usually created in a theater using sound emission from behind the screen. This is then added to the front and center channels. “Cinema Studio Reverberation” reproduces the sound characteristics of state-of-the-art dubbing theaters and recording studios, including Sony Pictures Entertainment’s dubbing studios. There are three modes, A/B/C, available according to the studio type.

■ **Component video**
A format for transmitting video signal information consisting of three separate signals: luminance Y, chrominance Pb, and chrominance Pr. High quality pictures, such as DVD video or HDTV pictures, are transmitted more faithfully. The three jacks are color-coded green, blue and red.

■ **Composite video**
A standard format for transmitting video signal information. The luminance signal Y and chrominance signal C are combined and transmitted together.

■ **Deep Color**
Video signals for which the color depth of signals passing through an HDMI jack have been raised. The number of colors that could be expressed by 1 pixel was 24 bits (16,777,216 colors) with the current HDMI jack. However, the number of colors which can be expressed by 1 pixel will be 36 bits, etc., when the receiver corresponds to Deep Color. Since the gradation of the depth of a color can be expressed more finely with more bits, continuous color changes can be more smoothly expressed.

■ **Digital Cinema Sound (DCS)**
A unique sound reproduction technology for home theater developed by Sony, in cooperation with Sony Pictures Entertainment, for enjoying the exciting and powerful sound of movie theaters at home. With this “Digital Cinema Sound” developed by integrating a DSP (Digital Signal Processor) and measured data, the ideal sound field intended by filmmakers can be experienced at home.

■ **Dolby Digital**
Digital audio encoding/decoding technology developed by Dolby Laboratories, Inc. It consists of front (left/right), center, surround (left/right) and subwoofer channels. It is a designated audio standard for DVD video and also known as 5.1 channel surround. Since surround information is recorded and reproduced in stereo, more realistic sound with fuller presence is delivered than with Dolby surround.

■ **Dolby Digital Plus**
Dolby Digital Plus provides the flexibility and efficiency to deliver more channels of compelling surround sound for high-definition video media. Its superior coding efficiencies enable up to 7.1ch of high-quality multichannel audio without negatively impacting bit budgets allocated for video performance or additional feature sets.

continued
- **Dolby Digital Surround EX**
  Acoustic technology developed by Dolby Laboratories, Inc. Surround back information is matrixed into regular left and right surround channels so that the sound can be reproduced in 6.1 channel. Active scenes, especially, are recreated with a more dynamic and realistic sound field.

- **Dolby Pro Logic II**
  This technology converts 2 channel stereo recorded audio into 5.1 channel for playback. There is a MOVIE mode for movies and MUSIC mode for stereo sources such as music. Old movies encoded in the traditional stereo format can be enhanced with 5.1 channel surround sound. The GAME mode is suitable for video games.

- **Dolby Pro Logic IIx**
  Technology for 7.1 channel (or 6.1 channel) playback. Along with audio encoded in Dolby Digital Surround EX, 5.1 channel Dolby Digital encoded audio can be reproduced in 7.1 channel (or 6.1 channel). Furthermore, existing stereo recorded content can also be reproduced in 7.1 channel (or 6.1 channel).

- **Dolby Surround (Dolby Pro Logic)**
  Audio processing technology developed by Dolby Laboratories, Inc. Center and mono surround information is matrixed into two stereo channels. When reproduced, audio is decoded and output in 4 channel surround sound. This is the most common audio processing method for DVD video.

- **Dolby TrueHD**
  Dolby TrueHD is Dolby’s lossless audio technology developed for high-definition optical discs. Dolby TrueHD audio is bit-for-bit identical to the original studio masters and provides supreme-quality audio up to 8 channel at 96 kHz/24 bit and up to 6ch at 192 kHz/24 bit. Together with high-definition video, it offers an unprecedented home theater experience.

- **DTS 96/24**
  A high sound quality digital signal format. It records audio at a sampling frequency and bit rate of 96 kHz/24bit which is the highest possible for DVD video. The number of playback channels varies depending on the software.

- **DTS Digital Surround**
  Digital audio encoding/decoding technology for theaters developed by DTS, Inc. It compresses audio less than Dolby Digital, delivering a higher quality sound reproduction.

- **DTS-ES**
  Format for 6.1 channel playback with surround back information. There are two modes, “Discrete 6.1” which records all channels independently, and “Matrix 6.1” which matrixes surround back channel into surround left and surround right channels. It is ideal for playback of motion picture soundtracks.

- **DTS-HD**
  Audio format which extends the conventional DTS Digital Surround format. This format consists of a core and an extension, and the core part has DTS Digital Surround compatibility. There are two kinds of DTS-HD, DTS-HD High Resolution Audio and DTS-HD Master Audio. DTS-HD High Resolution Audio has a maximum transmission rate of 6 Mbps, with lossy compression (Lossy), and DTS-HD High Resolution Audio corresponds to a maximum sampling frequency of 96 kHz, and a maximum of 7.1 channel. DTS-HD Master Audio has a maximum transmission rate of 24.5 Mbps, and uses lossless compression (Lossless), and DTS-HD Master Audio corresponds to a maximum sampling frequency of 192 kHz, and a maximum of 7.1 channel.
DTS Neo:6
This technology converts 2 channel stereo recorded audio for 6.1 channel playback. There are two modes to select according to the playback source or your preference, CINEMA for movies, and MUSIC for stereo sources such as music.

HDMI (High-Definition Multimedia Interface)
HDMI (High-Definition Multimedia Interface) is an interface that supports both video and audio on a single digital connection, allowing you to enjoy high quality digital picture and sound. The HDMI specification supports HDCP (High-bandwidth Digital Contents Protection), a copy protection technology that incorporates coding technology for digital video signals.

Neutral THX
Neutral-THX Surround is taking surround sound to the next level. This revolutionary new technology delivers the rich envelopment and discrete image detail of surround sound in a format that is fully compatible with stereo. Neutral-THX Surround reduces the bandwidth needed for broadcasters to deliver true, multi-channel surround presentations, and enables 7.1-channel support for gaming and movies. By unmasking the audio details, typically lost by other playback systems, audiences will experience the deep ambience and subtle details of movies, music and games. And with this technology being used by sound designers during content creation, as well as embedded into playback devices, Neural-THX Surround promises a listening experience that is true to the original mix. Neutral-THX Surround has been chosen as the official surround sound broadcast format for XM Satellite Radio’s “XM HD Surround”, as well as other leading FM/HD radio stations worldwide.

Sampling frequency
To convert analog audio to digital, analog data should be quantified. This process is called sampling, and the number of times per second the analog data is quantified is called the sampling frequency. A standard music CD stores data quantified at 44,100 times per second, which is expressed as a sampling frequency of 44.1 kHz. Generally speaking, a higher sampling frequency means better sound quality.

x.v.Color
x.v.Color is a more familiar term for the xvYCC standard proposed by Sony, and is a trademark of Sony. xvYCC is an international standard for color space in video. This standard can express a wider color range than the currently used broadcast standard.
Precautions

On safety
Should any solid object or liquid fall into the cabinet, unplug the receiver and have it checked by qualified personnel before operating it any further.

On power sources
• Before operating the receiver, check that the operating voltage is identical with your local power supply. The operating voltage is indicated on the nameplate on the back of the receiver.
• The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
• If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.
• One blade of the plug is wider than the other for the purpose of safety and will fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
• The AC power cord (mains lead) must be changed only at a qualified service shop.

On heat buildup
Although the receiver heats up during operation, this is not a malfunction. If you continuously use this receiver at a large volume, the cabinet temperature of the top, side and bottom rises considerably. To avoid burning yourself, do not touch the cabinet.

On placement
• Place the receiver in a location with adequate ventilation to prevent heat buildup and prolong the life of the receiver.
• Do not place the receiver near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
• Do not place anything on top of the cabinet that might block the ventilation holes and cause malfunctions.
• Do not place the receiver near equipment such as a TV, VCR, or tape deck. (If the receiver is being used in combination with a TV, VCR, or tape deck, and is placed too close to that equipment, noise may result, and picture quality may suffer. This is especially likely when using an indoor antenna (aerial). Therefore, we recommend using an outdoor antenna (aerial).)
• Use caution when placing the receiver on surfaces that have been specially treated (with wax, oil, polish, etc.) as staining or discoloration of the surface may result.

On operation
Before connecting other components, be sure to turn off and unplug the receiver.

On cleaning
Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent, such as alcohol or benzine.

If you have any questions or problems concerning your receiver, please consult your nearest Sony dealer.
Troubleshooting

If you experience any of the following difficulties while using the receiver, use this troubleshooting guide to help you remedy the problem.

Audio

There is no sound, no matter which component is selected, or only a very low-level sound is heard.

• Check that the speakers and components are connected correctly and securely.
• Check that all speaker cords are connected correctly.
• Check that both the receiver and all components are turned on.
• Check that MASTER VOLUME is not set to “VOL MIN”.
• Check that the SPEAKERS (OFF/A/B/A+B) is not set to off (page 30).
• Check that headphones are not connected.
• Press MUTING on the remote to cancel the muting function.
• Check that you have selected the correct component with the input buttons (page 38).
• When only a very low-level sound is heard, check to see if NIGHT MODE is activated (page 61).
• The protective device on the receiver has been activated. Turn off the receiver, eliminate the short-circuit problem, and turn on the power again.

There is no sound from one of the front speakers.

• Connect a pair of headphones to the PHONES jack to verify that sound is output from the headphones. If only one channel is output from the headphones, the component may not be connected to the receiver correctly. Check that all the cords are fully inserted into the jacks on both the receiver and the component. If both channels are output from the headphones, the front speaker may not be connected to the receiver correctly. Check the connection of the front speaker which is not outputting any sound.
• Make sure you have connected to both the L and R jacks of an analog component, and not only to either the L or R jack. Use an audio cord (not supplied).

There is no sound from analog 2 channel sources.

• Check that the INPUT MODE is not set to “AUTO” (page 82) and the DIGITAL and HDMI connection is not made for the selected input.
• Check that the DIGITAL ASSIGN function is not used to reassign the audio input of another source to the selected input (page 83).

There is no sound from digital sources (from COAXIAL or OPTICAL input jack).

• Check that the INPUT MODE is not set to “ANALOG” (page 82).
• Check that the ANALOG DIRECT function is not selected.
• Check that the DIGITAL ASSIGN function is not used to reassign the audio input of another source to the selected input (page 83).

There is pop noise from a specific component connected to this receiver when you turn on the component.

• Check that the INPUT MODE is not set to “AUTO” for the selected input (page 82).

continued
### The left and right sounds are unbalanced or reversed.
- Check that the speakers and components are connected correctly and securely.
- Adjust the balance parameters using the LEVEL menu.

### There is severe hum or noise.
- Check that the speakers and components are connected securely.
- Check that the connecting cords are away from a transformer or motor, and at least 10 feet (3 meters) away from a TV set or fluorescent light.
- Move your audio components away from the TV.
- The plugs and jacks are dirty. Wipe them with a cloth slightly moistened with alcohol.

### There is no sound, or only a very low-level sound is heard from the center/surround/surround back speakers.
- Select a CINEMA STUDIO EX mode (page 60).
- Adjust the speaker level (page 37).
- Make sure the center/surround speakers are set to either “SMALL” or “LARGE” (page 48).
- Check “SP PATTERN” setting (page 47).

### There is no sound from the subwoofer.
- Check that the subwoofer is connected correctly and securely.
- Make sure you have turned on your subwoofer.
- Depending on the selected sound field, no sound output from the subwoofer.
- When all speakers are set to “LARGE” and “NEO6 CIN” or “NEO6 MUS” is selected, there is no sound from the subwoofer.
- Check “SP PATTERN” setting (page 47).

### The surround effect cannot be obtained.
- Make sure the sound field function is on (press MOVIE or MUSIC).
- Sound fields do not function for signals with a sampling frequency of more than 48 kHz.

### Dolby Digital or DTS multi channel sound is not reproduced.
- Check that the DVD, etc. you are playing is recorded in Dolby Digital or DTS format.
- When connecting the DVD player, etc., to the digital input jacks of this receiver, check the audio setting (the settings for the audio output) of the connected component.

### Recording cannot be carried out.
- Check that the components are connected correctly.
- Select the source component using the input buttons (page 38).

### There is no sound from the component connected to the DIGITAL MEDIA PORT adapter.
- Adjust the volume of this receiver.
- The DIGITAL MEDIA PORT adapter and/or component is not connected correctly. Turn off the receiver, then reconnect the DIGITAL MEDIA PORT adapter and/or component.
- Check the DIGITAL MEDIA PORT adapter and/or component device to make sure it supports this receiver.
Video

There is no picture or an unclear picture appears on the TV screen or monitor.

- Select the appropriate input using the input buttons.
- Set your TV to the appropriate input mode.
- Move your audio components away from the TV.
- Depending on the DIGITAL MEDIA PORT adapter, video output may not be possible.

The image of the COMPONENT VIDEO OUT is corrupted.

- Video input signals other than 480p component are not received when signals are output from the VIDEO jack. Input 480i component video signals.

Recording cannot be carried out.

- Check that the components are connected correctly.
- Select the source component using the input buttons (page 38).

Tuner

The FM reception is poor.

- Use a 75-ohm coaxial cable (not supplied) to connect the receiver to an outdoor FM antenna (aerial) as shown below. If you connect the receiver to an outdoor antenna (aerial), ground it against lightning. To prevent a gas explosion, do not connect the ground (earth) wire to a gas pipe.

Outdoor FM antenna (aerial)

Radio stations cannot be tuned in.

- Check that the antennas (aerials) are connected securely. Adjust the antennas (aerials) and connect an external antenna (aerial), if necessary.
- The signal strength of the stations is too weak (when tuning in with automatic tuning). Use direct tuning.
- Make sure you set the tuning interval correctly (when tuning in AM stations with direct tuning).
- No stations have been preset or the preset stations have been cleared (when tuning by scanning preset stations). Preset the stations (page 65).
- Press DISPLAY repeatedly on the receiver so that the frequency appears on the display.
- Keep the satellite radio antenna (aerial) away from the speaker cords and the power cord to avoid picking up noise.
HDMI

The source sound input to the HDMI jack is not output from the receiver or the TV speaker.

• Check the HDMI connection (page 78).
• You cannot listen to the Super Audio CD by connecting HDMI.
• Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with each component.
• Be sure to use a connecting cable for the HDMI jack corresponding to high speed (an HDMI version 1.3, category 2 cable) when you view images or listen to sound during a Deep Color transmission.

The source image input to the HDMI jack is not output from the TV.

• Check the HDMI connection (page 78).
• Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with each component.
• Be sure to use a connecting cable for the HDMI jack corresponding to high speed (an HDMI version 1.3, category 2 cable) when you view images or listen to sound during a Deep Color transmission.

The Control for HDMI function does not work.

• Check the HDMI connection (page 78).
• Make sure “CTRL:HDMI” is set to “CTRL ON” in the HDMI menu.
• Make sure the connected component is compatible with the Control for HDMI function.
• Check the Control for HDMI settings on the connected component. Refer to the operating instructions of the connected component.
• Repeat the procedures of “Preparing Control for HDMI function” if you change the HDMI connection, connect/disconnect the AC power cord, or when there is a power failure (page 79).

No sound is output from the receiver and TV speaker while using the System Audio Control function.

• Make sure the TV is compatible with the System Audio Control function.
• If the TV does not have System Audio Control function, set the “AUDIO OUT” settings in HDMI menu to
  – “TV+AMP” if you want to listen to the sound from the TV speaker and receiver.
  – “AMP” if you want to listen to the sound from the receiver.
• If you cannot listen to the sound of a component connected to the receiver
  – Change the input of the receiver to HDMI when you want to watch a program on a component connected via HDMI connection to the receiver.
  – Change the TV channel when you want to watch a TV broadcast.
  – Select the component or input you want to watch when you watch a program on the component connected to the TV. Refer to the operating instructions of the TV on this operation.
Remote commander

The remote does not function.
- Point the remote at the remote sensor on the receiver.
- Remove any obstacles in the path between the remote and the receiver.
- Replace all the batteries in the remote with new ones, if they are weak.
- Make sure you select the correct input on the remote.
- When you operate a programmed non-Sony component, the remote may not function properly depending on the model and the maker of the component.

Error messages

If there is a malfunction, the display shows a message. You can check the condition of the system by the message. See the following table to solve the problem. If any problem persists, consult your nearest Sony dealer.

PROTECTOR
- Irregular current is output from the speakers. The receiver will automatically turn off after a few seconds. Check the speaker connection and turn on the power again.

For other messages, see “Message list after Auto Calibration measurement” (page 35) and “XM Radio messages list” (page 75).

If you are unable to remedy the problem using the troubleshooting guide

Clearing the receiver’s memory may remedy the problem (page 29). However, note that all memorized settings will be reset to their factory settings and you will have to readjust all settings on the receiver.

If the problem persist

Consult your nearest Sony dealer. Note that if service personnel changes some parts during repair, these parts may be retained.

Reference sections for clearing the receiver’s memory

<table>
<thead>
<tr>
<th>To clear</th>
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Specifications

**AUDIO POWER SPECIFICATIONS**

**POWER OUTPUT AND TOTAL HARMONIC DISTORTION:**
With 8 ohm loads, both channels driven, from 20 Hz – 20,000 Hz; rated 100 watts per channel minimum RMS power, with no more than 0.09% total harmonic distortion from 250 milliwatts to rated output.

**Amplifier section**

Power Output¹)
Minimum RMS Output Power
(8 ohms, 20 Hz – 20 kHz, THD 0.09%)  
100 W + 100 W
Stereo Mode Output Power
(8 ohms, 1 kHz, THD 0.7%)  
110 W + 110 W
Surround Mode Output Power²)
(8 ohms, 1 kHz, THD 10%)  
150 W per channel

¹) Measured under the following conditions: 120 V AC, 60 Hz
²) Reference power output for front, center, surround and surround back speakers. Depending on the sound field settings and the source, there may be no sound output.

Frequency response
Analog 10 Hz – 70 kHz, +0.5/–2 dB (with sound field and equalizer bypassed)

Input
Analog Sensitivity: 500 mV/50 kohms
S/N³): 96 dB
(A, 500 mV⁴))
Digital (Coaxial) Impedance: 75 ohms
S/N 100 dB
(A, 20 kHz LPF)
Digital (Optical) S/N 100 dB
(A, 20 kHz LPF)

Output (analog)
AUDIO OUT Voltage: 500 mV/10 kohms
SUBWOOFER Voltage: 2 V/1 kohm
Equalizer
Gain levels ±10 dB, 1 dB step

³) INPUT SHORT (with sound field and equalizer bypassed).
⁴) Weighted network, input level.

**FM tuner section**

Tuning range 87.5 MHz – 108.0 MHz
Antenna (aerial) FM wire antenna (aerial)
Antenna (aerial) terminals 75 ohms, unbalanced
Intermediate frequency 10.7 MHz

**AM tuner section**

Tuning range
With 10-kHz tuning scale:
530 kHz – 1,710 kHz⁵)
With 9-kHz tuning scale:
531 kHz – 1,710 kHz⁵)
Antenna (aerial) Loop antenna
Intermediate frequency 450 kHz

⁵) You can change the AM tuning scale to 9 kHz or 10 kHz. After tuning in any AM station, turn off the receiver. While holding down TUNING MODE, press POWER on the receiver. All preset stations will be erased when you change the tuning scale. To reset the scale to 10 kHz (or 9 kHz), repeat the procedure.

**Video section**

Inputs/Outputs
Video: 1 Vp-p, 75 ohms
COMPONENT VIDEO:
Y: 1 Vp-p, 75 ohms
Pr/Cr: 0.7 Vp-p, 75 ohms
Ps/Cb: 0.7 Vp-p, 75 ohms
80 MHz HD Pass Through
General
Power requirements  120 V AC, 60 Hz
Power output (DIGITAL MEDIA PORT)
  DC OUT:  5V, 0.7 A MAX

Power consumption

<table>
<thead>
<tr>
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<th>Power consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>250 W</td>
</tr>
<tr>
<td>CA</td>
<td>320 VA</td>
</tr>
</tbody>
</table>

Power consumption (during standby mode)
  0.7 W
  (When “CTRL:HDMI” in HDMI menu is set to “CTRL OFF”)

Dimensions (width/height/depth) (Approx.)
  17 × 6 1/4 × 12 5/8 inches
  (430 × 157.5 × 318 mm)
  including projecting parts and controls

Mass (Approx.)  18 lb 12 oz (8.5 kg)

Supplied accessories
Operating instructions (this manual)
Quick Setup Guide (1)
FM wire antenna (aerial) (1)
AM loop antenna (aerial) (1)
Remote commander (RM-AAP021) (1)
R6 (size-AA) batteries (2)
Optimizer microphone (ECM-AC2) (1)

For details on the area code of the component you are using, see page 3.

Design and specifications are subject to change without notice.
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