

HT-R993

AV RECEIVER

Advanced Manual

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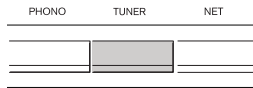
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AM/FM Radio Receiving Function

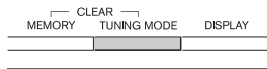
Tuning into a Radio Station

■ Tuning into stations automatically

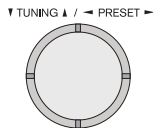
1. Press TUNER on the main unit several times to select either "AM" or "FM".



2. Press TUNING MODE so that the "AUTO" indicator on the display goes off.



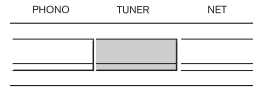
3. Press ▼TUNING▲ to start automatic tuning.
 - Searching automatically stops when a station is found. When tuned into a radio station, the "▶TUNED◀" indicator on the display lights. If FM stereo broadcasting is tuned, the "FM STEREO" indicator lights.
 - No sound is output while the "▶TUNED◀" indicator is off.



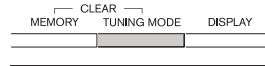
When the signal from an FM radio station is weak: Radio wave may be weak depending on the building structure and environmental conditions. In that case, manually tune into the radio station of your choice by referring to the next section.

■ Tuning into stations manually

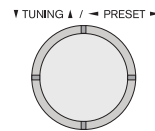
1. Press TUNER on the main unit several times to select either "AM" or "FM".



2. Press TUNING MODE so that the "AUTO" indicator on the display goes off.



3. Press ▼TUNING▲ to select the desired radio station.
 - The frequency changes by 1 step each time you press the button. The frequency changes continuously if the button is held down and stops when the button is released. Tune by looking at the display.

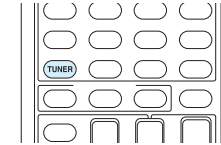


To return the display to "AUTO": Press TUNING MODE on the main unit again. A station is automatically tuned. Normally "AUTO" should be displayed.

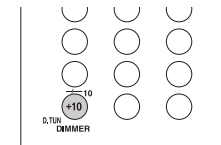
■ Tuning into stations by frequency

It allows you to directly enter the frequency of the radio station you want to listen to.

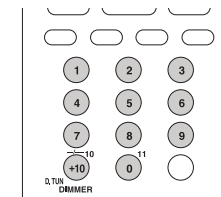
1. Press TUNER on the remote controller several times to select either "AM" or "FM".



2. Press D.TUN.



3. Using the number buttons, enter the frequency of the radio station within 8 seconds.
 - To enter 87.5 (FM), for example, press 8, 7, 5, or 8, 7, 5, 0. If you entered a wrong number, press D.TUN and enter a correct one.

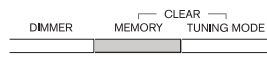


Presetting an AM/FM Radio Station

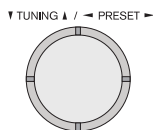
It allows you to register up to 40 of your favorite AM/FM radio stations. Registering radio stations in advance allows you to tune into your radio station of choice directly.

Registration Procedure

1. Tune into the AM/FM radio station you want to register.
2. Press MEMORY on the unit so that the preset number on the display flashes.



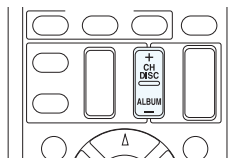
3. Repeatedly press ◀PRESET▶ to select a number between 1 and 40 while the preset number is flashing (about 8 seconds).



4. Press MEMORY again to register the station.
 - When the station is registered, the preset number stops flashing.
 - Repeat this procedure for all of your favorite AM/FM radio stations.

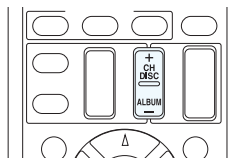
Selecting a Preset Radio Station

1. Press CH +/- on the remote controller to select a preset number.
 - Alternatively you can press ◀PRESET▶ on the main unit. You can also select by directly entering the preset number with the number buttons on the remote controller.

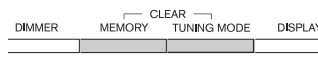


Deleting a Preset Radio Station

1. Press CH +/- on the remote controller to select the preset number to delete.



2. Press and hold MEMORY on the main unit and press TUNING MODE to delete the preset number.
 - When deleted, the number on the display goes off.



Using RDS (European model)

RDS stands for Radio Data System and is a method of transmitting data in FM radio signals.

- RDS works only in areas where RDS broadcasts are available.
- In some cases, the text information appeared on the display is not identical to the content transmitted by the RDS station. Furthermore, unexpected characters may be displayed when the unit receives unsupported characters. However, this is not a malfunction.
- If the signal from an RDS station is weak, the RDS data may be displayed continuously or not at all.

PS (Program Service): Tuning into a radio station distributing Program Service information displays the radio station name. Pressing DISPLAY displays the frequency for 3 seconds.

RT (Radio Text): Tuning into a radio station transmitting Radio Text information displays text on the display of the unit.

PTY (Program Type): Allows you to search for RDS stations by program type.

TP (Traffic Program): Allows you to search for radio stations transmitting traffic information.

Displaying Radio Text (RT)

1. Press RT/PTY/TP on the main unit once.
 - The Radio Text (RT) is displayed scrolling across the display. "No Text Data" is displayed when no text information is available.

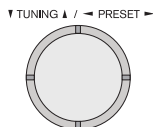


■ Searching by Type (PTY)

1. Press RT/PTY/TP on the main unit twice.
 - The current program type appears on the display.



2. Press ◀PRESET▶ to select the type of program to search for.

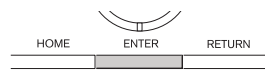


- The following RDS station types are displayed:

None
 News (News reports)
 Affairs (Current affairs)
 Info (Information)
 Sport
 Educate (Education)
 Drama
 Culture
 Science (Science and technology)
 Varied
 Pop M (Pop music)
 Rock M (Rock music)
 Easy M (Middle of the road music)
 Light M (Light classics)
 Classics (Serious classics)
 Other M (Other music)
 Weather
 Finance
 Children (Children's programmes)
 Social (Social affairs)
 Religion
 Phone In
 Travel
 Leisure
 Jazz (Jazz music)
 Country (Country music)
 Nation M (National music)
 Oldies (Oldies music)

Folk M (Folk music)
 Document (Documentary)

3. Press ENTER to search the radio stations of the selected type.



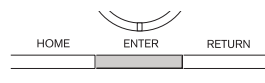
4. When such a radio station is found, the indication on the display flashes. Then, press ENTER again.
 - If no stations are found, the message "Not Found" is displayed.

■ Listening to Traffic Information (TP)

1. Press RT/PTY/TP on the main unit three times.
 - "[TP]" will be displayed if traffic information is transmitted by the radio station you are tuned in. "TP" only is displayed if no traffic information is available.



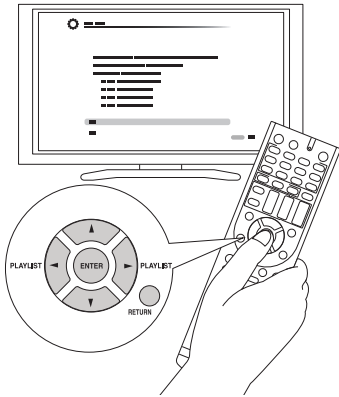
2. Press ENTER to search a radio station distributing traffic information.



3. When such a radio station is found, searching stops and playing traffic information starts.
 - "Not Found" is displayed if no radio station distributing traffic information is found.

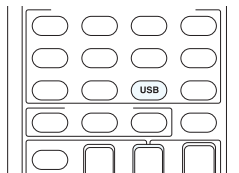
Playing Music Files on a USB Storage Device

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.

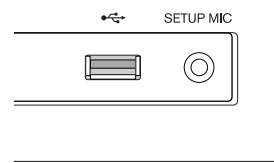


■ Playing Back

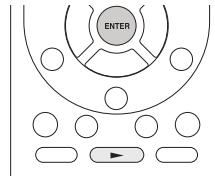
1. Press USB on the remote controller to select "USB".



2. Plug your USB storage device with the music files into the USB port of the unit so that "USB" lights on the display.
 - If the "USB" indicator flashes, check whether the USB storage device is plugged in properly.
 - Do not unplug the USB storage device while "Connecting..." is appeared on the display. This may cause data corruption or malfunction.



3. Press ENTER.
 - The list of folders and music files on the USB storage device are displayed. Select the folder with the cursors and press ENTER to confirm your selection.
4. With the cursors, select the music file to play, and then press ENTER or ► to start playback.



Listening to Internet Radio

About Internet Radio

Internet radio, also called net radio, web radio or streaming radio, is an audio service accessible at the websites of service providers who distribute music and audio programs in digital format. There are numerous websites all over the world, from terrestrial station, special station to personal website that provide such a service.

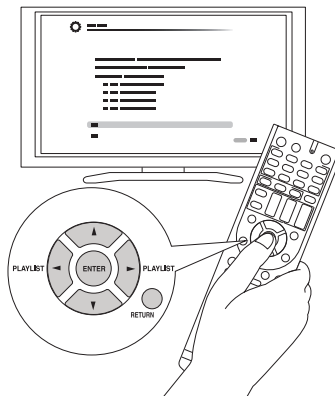
The unit comes preset with Internet radio stations (*) such as Tuneln for you to enjoy these services, just by connecting the unit to the Internet.

* Network services or contents may become unavailable if the service provider terminates its service.

Tuneln

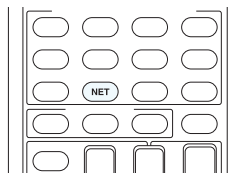
With more than 70,000 radio stations and 2 million on-demand programs registered, Tuneln is a service where you can enjoy music, sports and news from all over the world.

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



■ Playing Back

1. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit.
 - Alternatively you can select "Network Service" in the HOME menu.



2. Select "Tuneln" with the cursors and press ENTER to display the Tuneln top screen.
3. With the cursors, select a radio station or program and press ENTER to start playing.

■ Regarding the Tuneln Menu

To display the Tuneln menu, press MENU or ENTER while playing a radio station. Selecting the corresponding menu item with the cursors and pressing ENTER allows you to perform the following operations:

Add to My Presets: Registers radio stations and programs in your "My Presets" within Tuneln. This allows you to play registered radio stations and programs with a simple operation. ("My Presets" is not displayed if it is empty.)

Remove from My Presets: Deletes a radio station or program from your "My Presets" within Tuneln.

Report a problem: Reports a problem or interactively solves a problem related to Tuneln.

View Schedule: Displays the radio station or program schedule.

Clear recents: Clears all radio stations and programs from the "Recents" within Tuneln. (This menu is displayed only when a radio station or program inside the "Recents" is being played.)

Add to My Favorites: Registers radio stations and programs in "My Favorites" of "Network Service". This allows you to play registered radio stations and programs with a simple operation.

■ Regarding the TuneIn Account

Creating an account on the TuneIn website (tunein.com) and logging in from the unit allows you to automatically add radio stations and programs to your "My Presets" on the unit as you save them on the website.

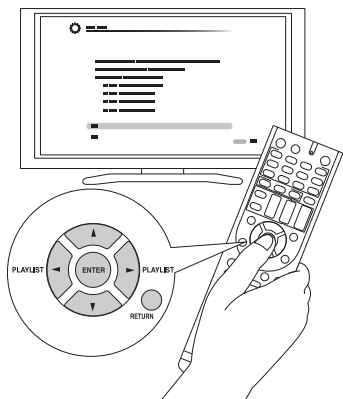
To display a radio station registered in "My Presets", you must log into TuneIn from the unit. To log in, select "Login" - "I have a TuneIn account" in the "TuneIn" top list on the unit, and then enter your user name and password.

- If you associate the device on My Page within the TuneIn website using the registration code obtained by selecting "Login" - "Login with a registration code" on the unit, you can log in without entering the user name and password.

Pandora®—Getting Started (U.S. only)

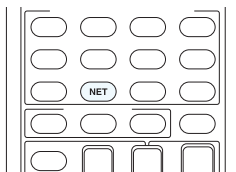
Pandora is a free, personalized Internet radio service that plays the music you know and helps you discover music you'll love.

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



■ Playing Back

1. Press NET on the remote controller to display NET TOP screen.
 - The "NET" indicator on the display stays lit. To display the NET TOP screen, you can alternatively press HOME, select "Network Service" on the displayed HOME menu, and then press ENTER.



2. With the cursors on the remote controller, select "Pandora", and then press ENTER.
3. Use ▲/▼ to select "I have a Pandora Account" or "I'm new to Pandora" and then press ENTER.

If you are new to Pandora select "I'm new to Pandora". You will see an activation code on your TV screen. Please write down this code. Go to an Internet connected computer and point your browser to www.pandora.com/onkyo. Enter your activation code and then follow the instructions to create your Pandora account and your personalized Pandora stations. You can create your stations by entering your favorite tracks and artists when prompted. After you have created your account and stations you can return to your Onkyo receiver and press ENTER to begin listening to your personalized Pandora.

If you have an existing Pandora account, you can add your Pandora account to your Onkyo receiver by selecting "I have a Pandora Account" and logging in with your email and password.

 - If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.
4. To play a station, use ▲/▼ to select the station from your station list, and then press ENTER. Playback starts and the playback screen appears.

■ Create a New Station

Enter the name of a track, artist, or genre and Pandora will create a unique radio station for you based on the musical qualities of that track, artist, or genre.

I like this track: Give a track "thumbs-up" and Pandora will play more music like it.

I don't like this track: Give a track "thumbs-down" and Pandora will ban that track from the current station.

Why is this track playing?: Discover some of the musical attributes that Pandora uses to create your personal radio stations.

I'm tired of this track: If you are tired of a track, you can put the track to sleep and Pandora will not play it for one month.

Create station from this artist: Creates a radio station from this artist.

Create station from this track: Creates a radio station from this track.

Delete this station: This will permanently delete a station from your Pandora account. All of your thumbs feedback will be lost should you choose to re-create the station with the same track or artist.

Rename this station: Lets you rename the current radio station.

Bookmark this artist: Pandora will bookmark your favorite artist for your profile on www.pandora.com.

Bookmark this track: Pandora will bookmark the current track and allow you to buy them all from Amazon or iTunes in one step!

Add to My Favorites: Adds a station to My Favorites list.

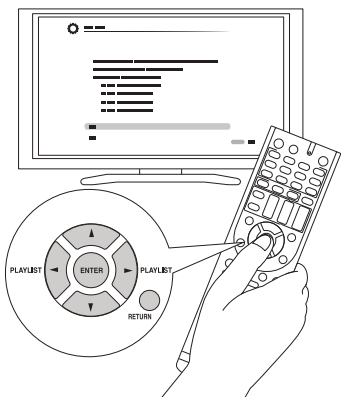
PANDORA

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SiriusXM Internet Radio (North American only)

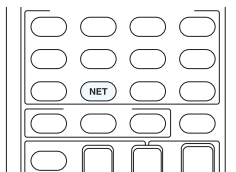
If you want to listen to the service, you must subscribe. To subscribe go to www.siriusxm.com/internetradio with your computer. When you subscribe, you will be provided with a username and password which has to be entered into the AV receiver. To use SiriusXM Internet Radio, you must have your AV receiver connected to the Internet. Using the remote control, follow these steps:

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



■ Playing Back

1. Press NET on the remote controller to display NET TOP screen.
 - The "NET" indicator on the display stays lit. To display the NET TOP screen, you can alternatively press HOME, select "Network Service" on the displayed HOME menu, and then press ENTER.



2. With the cursors on the remote controller, select "SiriusXM Internet Radio", and then press ENTER.
3. Select "Sign In", and then press ENTER. If you have an existing SIRIUS account, you can sign in by selecting "Sign In". Enter your user name and password in the next keyboard screen, or in Web Setup. If you don't know your username or password, call Sirius XM at (888) 539-7474 for assistance.
 - If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.

Using the keyboard screen

- ① Use ▲/▼/◀/▶ and ENTER to enter your user name and password.
- ② Select "OK".
- ③ Press ENTER. The "Confirm your entries" screen appears.
- ④ Press ENTER. "Please wait..." appears and then "SiriusXM Internet Radio" screen appears which displays the category available for selection.
4. Use ▲/▼ to select the category and then press ENTER. The channel list screen for the selected category appears.
5. Use ▲/▼ to select the desired channel and then press ENTER. The playback screen for the selected channel appears and you can listen to SiriusXM Internet Radio. You can control the tracks with the buttons on the remote control. Enabled buttons: ▶, ■, ◀◀, ▶▶

Add to My Favorites: Adds a channel to My Favorites list.

Add to Presets: Adds the currently playing station to presets list.

Delete from Presets: Deletes the currently playing station from presets list.

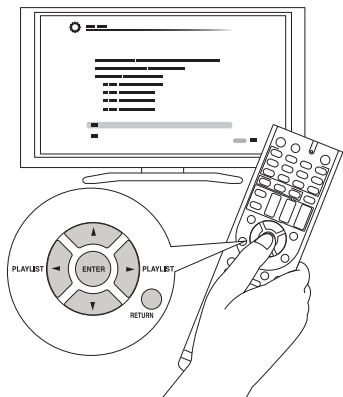


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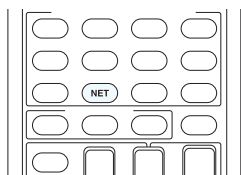
Slacker Personal Radio (North American only)

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



■ Playing Back

1. Press NET on the remote controller to display NET TOP screen.
 - The "NET" indicator on the display stays lit. To display the NET TOP screen, you can alternatively press HOME, select "Network Service" on the displayed HOME menu, and then press ENTER.



2. With the cursors on the remote controller, select "Slacker Personal Radio", and then press ENTER.
3. If you do not have an account, create one on the Slacker website (www.slacker.com) with your computer. If you

already have a Slacker account, select "Sign in to your account" and then press ENTER. The keyboard screen appears. You can enter information from the remote control or the keys on the main unit.

4. If there are no mistakes in the information you have entered, use ▲/▼/◀/▶ to select "OK" then press ENTER. An account information confirmation screen appears.
5. If you do not have an account, select "Access without Sign In" and press ENTER to use a restricted version of the service. Note that use will be restricted.
 - If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.
6. Use ▲/▼ to select a menu item and then press ENTER. To sign out, use ▲/▼ to select "Sign out" from this screen and then press ENTER.
7. Use ▲/▼ to select a station and then press ENTER or ▶ to start playback from the station. The playback screen appears.
8. You can control the tracks with the buttons on the remote control.
Enabled buttons: ▶, ||, ■, ▶▶

Rate Song as Favorite: Stores information to server, making it more likely that the song will be played again.

Ban Song: Stores information to server, making it less likely that the song will be played again.

Ban Artist: Stores information to server, making it less likely that the songs from this artist will be played again.

Mark Favorite: Adds the currently playing station to your favorites.

Unmark Favorite: Deletes the currently playing station from your favorites.

Add song to Library: Adds the currently playing track to your library.

Delete song from Library: Deletes the currently playing track from your library.

Add to My Favorites: Adds a station or song to My Favorites list.

Using Multiple Accounts: The AV receiver supports multiple user accounts, which means you can freely switch between several logins. After registering user accounts, login is performed from the "Users" screen.

Press MENU while the Users screen is displayed. "Add new user", "Remove this user" menu appear. You can either store a new user account, or delete an existing one.

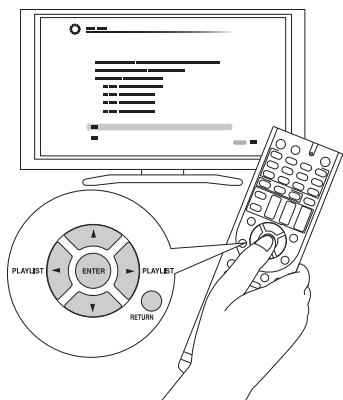
- Some of the services don't allow the use of multiple user accounts.
- You can store up to 10 user accounts.
- To switch between accounts you must first log out from the current account, and log in again on the "Users" screen.

Registering Other Internet Radios

To listen to other Internet radio program, register the program in the "My Favorites" list on the NET TOP screen as described below. The unit supports Internet radio stations stored in the following formats: PLS (URL ending in .pls), M3U (URL ending in .m3u) and RSS (URL ending in rss/rd/ xml).

- You can register up to 40 Internet radio stations.
- Depending on the data type and file format for playback, you may not be able to play an Internet radio station even when its format is PLS, M3U or Podcast (RSS).
- Available services may vary depending on your area of residence.

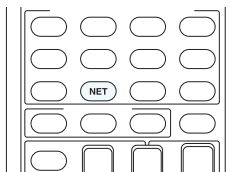
● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



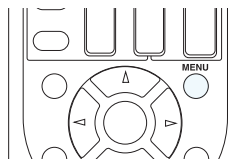
Registration Procedure

Before operation: The name and URL of the radio station that you want to add are required for registration. Make the following preparations.

1. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit.



2. Select "My Favorites" with the cursors and press ENTER to display the "My Favorites" list screen.
3. With the cursors, select a blank area of "My Favorites" and press MENU to display the menu screen.

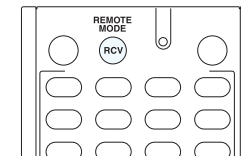


4. Select "Create new station" with the cursors and press ENTER to display the keyboard screen.
5. Enter the name and URL of the radio station to add.
 - Select "Shift" and press ENTER to toggle between upper and lower case. Select "←" or "→" and press ENTER to move the cursor to the selected direction. Select "Back Space" and press ENTER to delete the character at the left of the cursor position.

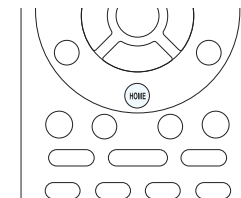
Registering a Station with PC

Before operation: The name and URL of the radio station that you want to add are required for registration. Make the following preparations.

1. Press RCV on the remote controller.
 - Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another component.



2. Press HOME to display the HOME menu.



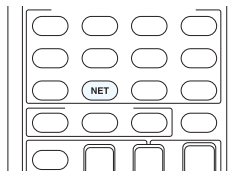
3. With the cursors, select "Setup", and then press ENTER.
4. With the cursors, select "7. Hardware Setup" - "Network" - "IP Address" to display the IP address.
 - Write down the IP address since you will need it later.
5. Open the Internet browser on your PC or smartphone and enter the IP address of the unit in the URL field.
 - When using Internet Explorer, you can alternatively select "Open" in the "File" menu to enter the IP address.
 - Information of the unit is displayed on the browser. ("WEB Setup")
6. Click "My Favorites" tab, then enter the name and URL of the Internet radio station.
7. Click "Save" to register the entered Internet radio station in "My Favorites".

To rename the registered radio station: When the radio station is selected from the "My Favorites" list, press MENU to display the menu screen. Select "Rename this station" with the cursors and press ENTER to display the keyboard screen. Rename the station as desired.

- Radio stations can be renamed also from "WEB Setup".

■ Playing a Registered Radio Station

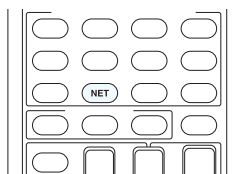
1. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit.



2. Select "My Favorites" with the cursors and press ENTER to display the registered Internet radio stations.
3. With the cursors, select a radio station and press ENTER to start playing.

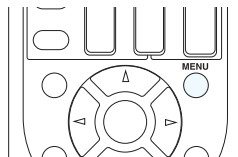
■ Deleting a Registered Radio Station

1. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit.



2. Select "My Favorites" with the cursors and press ENTER to display the registered Internet radio stations.

3. With the cursors, select the radio station to delete and press MENU to display the menu screen.

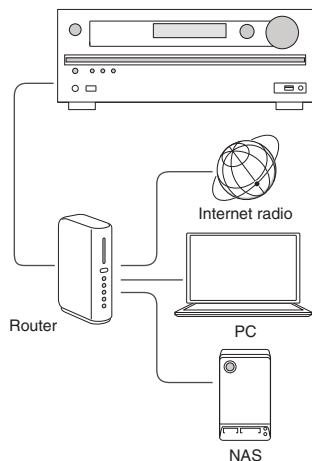


4. With the cursors, select "Delete from My Favorites", and then press ENTER. A confirmation screen will appear.
5. With the cursors, select "OK", and then press ENTER to delete the radio station.
 - Select "Back" if you return to the previous screen.
 - Radio stations can be deleted also from "WEB Setup".

DLNA Music Streaming

About DLNA

Digital Living Network Alliance (DLNA) can be referred to as a technology standard or the industry group to develop the technology standard to interconnect and use AV components, computers and other devices in a home network. This unit allows you to use DLNA to play music files stored on a computer or a hard disk connected to your home network (NAS device). Make sure this unit and a computer or NAS device are connected to the same router.



- To stream a music file, you need a NAS device with DLNA server functions or a PC where a player (e.g., Windows Media® Player 11 or 12) with DLNA server functions is installed. To enable streaming with Windows Media® Player 11 or 12, you must first configure the settings.

Configuring the Windows Media® Player

■ Windows Media® Player 11

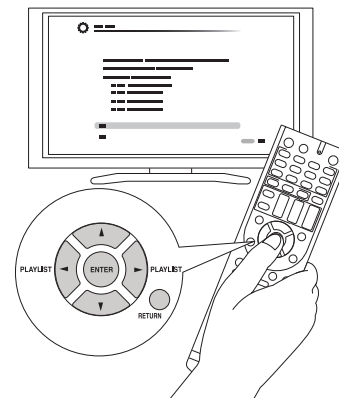
1. Turn on your PC and start Windows Media® Player 11.
2. In the "Library" menu, select "Media Sharing" to display a dialog box.
3. Select the "Share my media" check box, and then click "OK" to display the compatible devices.
4. Select this unit, and then click "Allow".
 - When it is clicked, the corresponding icon is checked.
5. Click "OK" to close the dialog.

■ Windows Media® Player 12

1. Turn on your PC and start Windows Media® Player 12.
2. In the "Stream" menu, select "Turn on media streaming" to display a dialog box.
 - If media streaming is already turned on, select "More streaming options..." in the "Stream" menu to list players in the network, and then go to step 4.
3. Click "Turn on media streaming" to list players in the network.
4. Select this unit in "Media streaming options" and check that it is set to "Allow".
5. Click "OK" to close the dialog.

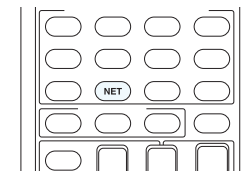
DLNA Playback

- **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.

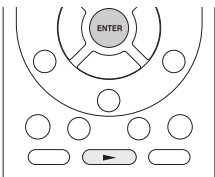


■ Playing Back

1. Start the server (Windows Media® Player 11, Windows Media® Player 12, or NAS device) containing the music files to play.
2. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit. If the "NET" indicator flashes, the unit is not properly connected to the network. When using a wired LAN connection, check the Ethernet cable connection, and when using a wireless LAN connection, check whether the "Wi-Fi" indicator on the left side of the unit is lit.



3. Select "DLNA" with the cursors and press ENTER.
4. Select the target server with the cursors and press ENTER to display the items list screen.
 - Searching does not work in servers that do not support search functions.
 - The unit cannot access pictures and videos stored on servers.
 - Contents stored on the server may not be displayed depending on the server sharing settings.
5. With the cursors, select the music file to play, and then press ENTER or ► to start playback.
 - If "No Item" is displayed, check whether the network is properly connected.



Controlling Remote Playback from a PC

You can use this unit to play music files stored on your PC by operating the PC inside your home network. The unit supports remote playback with Windows Media® Player 12. To use the remote playback function with Windows Media® Player 12, Windows Media® Player 12 must be configured in advance.

- Using a DLNA-compatible controller (such as an Android application), you can select a music file stored on Windows Media® Player 12 and stream to this unit by operating the controller. For information on how to remotely play using the controller, refer to the controller's instruction manual.

■ Setting PC

1. Turn on your PC and start Windows Media® Player 12.
2. In the "Stream" menu, select "Turn on media streaming" to display a dialog box.
 - If media streaming is already turned on, select "More streaming options..." in the "Stream" menu to list players in the network, and then go to step 4.

3. Click "Turn on media streaming" to list players in the network.
4. Select this unit in "Media streaming options" and check that it is set to "Allow".
5. Click "OK" to close the dialog box.
6. Open the "Stream" menu and check that "Allow remote control of my Player..." is checked.

■ Remote playback

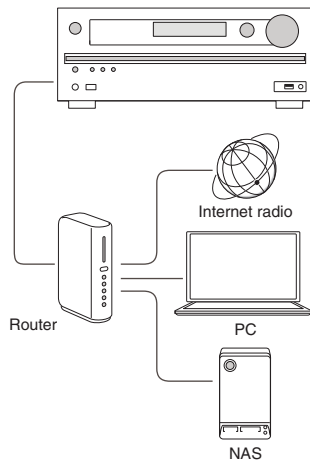
1. Turn on the power of the unit.
2. Turn on your PC and start Windows Media® Player 12.
3. Select and right-click the music file to play with Windows Media® Player 12.
 - To remotely play a music file on another server, open the target server from "Other Libraries" and select the music file to play.
4. Select this unit in "Play to" to open the "Play to" window of Windows Media® Player 12 and start playback on the unit.
 - Operations during remote playback are possible from the "Play to" window on the PC. The playback screen is displayed on the TV connected to the HDMI output of the unit. If your PC is running on Windows® 8, click "Play to", and then select this unit.
5. Adjust the volume using the volume bar on the "Play to" window.
 - Sometimes, the volume displayed on the remote playback window may differ from that appeared on the display of the unit.
 - When the volume is adjusted from the unit, the value is not reflected in the "Play to" window.
 - This unit cannot play music files remotely in the following conditions.
 - It is using a network service.
 - It is playing a music file on a USB storage device.
 - "Agree" was not selected in the DISCLAIMER screen that was displayed when the NET input was selected on the unit for the first time.

Music Streaming from a Shared Folder

About Shared Folder

A shared folder is configured in a network device such as a PC or NAS (hard disk connected to your home network) for access from other users.

You can play music files in a shared folder on your PC or NAS connected to the same home network as that of the unit. To play music files in a shared folder, you must first configure Windows® 8 or Windows® 7. Make sure the unit and PC or NAS device are connected to the same router.



- The sharing options must be configured and a shared folder created on the PC in advance.
- For information on how to configure the NAS device and create a shared folder, refer to the NAS device's instruction manual.

Setting PC

■ Configuring the Sharing Options

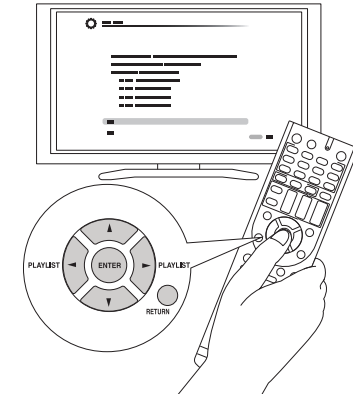
1. Select "Choose home group and sharing options" on the "Control Panel".
 - If the menu is not displayed, check whether "View by" is set to "Category".
2. Select "Change advanced sharing settings".
3. Check whether the following radio buttons are selected in "Home or Work":
 - "Enable network discovery"
 - "Turn on file and printer sharing"
 - "Turn on sharing so anyone with network access can open files"
 - "Turn off password protected sharing"
4. Select "Save Changes" and click "OK" on the dialog box.

■ Creating a Shared Folder

1. Select and right-click the folder to share.
2. Select "Properties".
3. Select "Advanced Sharing" on the "Sharing" tab.
4. Select the "Share this folder" check box and click "OK".
5. Select "Share" for "Network File and Folder Sharing".
6. Select "Everyone" from the pull-down menu. Click "Add", and then "Share".
 - To set user name and password to a shared folder, set "Permissions" in "Advanced Sharing" on the "Sharing" tab.
 - Check whether a workgroup is set.

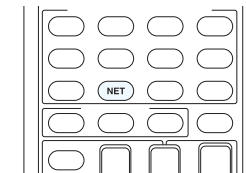
Playing from a Shared Folder

- **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.

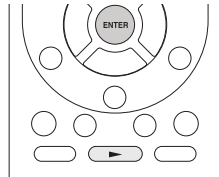


■ Playing Back

1. Press NET on the remote controller to display the NET TOP screen.
 - The "NET" indicator on the display stays lit. If the "NET" indicator flashes, the unit is not properly connected to the network. When using a wired LAN connection, check the Ethernet cable connection, and when using a wireless LAN connection, check whether the "Wi-Fi" indicator on the left side of the unit is lit.



2. With the cursors, select "Home Media", and then press ENTER.
3. With the cursors, select the target server, and then press ENTER.
 - You can check the server name of your PC from the PC properties.
4. With the cursors, select the target shared folder, and then press ENTER.
5. If a username and password is required, enter the necessary login information.
 - The login information is the account information set at the time of creating the shared folder.
 - Once entered, the login information will be remembered from the next time onward.
6. With the cursors, select the music file to play, and then press ENTER or ► to start playback.



Using Remote Controller for Playing Music Files

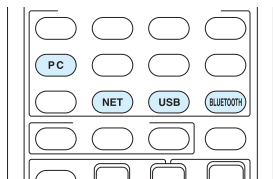
About the Remote Controller

The remote controller of this unit allows you to play music files stored on USB storage devices, Internet radio, PCs and NAS devices on your home network, as well as on Bluetooth-enabled devices. It also allows you to view information of the music file being played and perform various other operations.

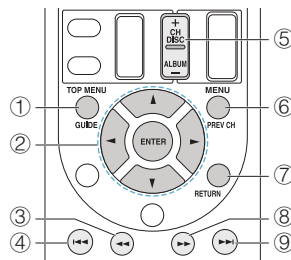
- Available buttons may vary depending on the service and device to play.
- Some buttons cannot be used with Bluetooth-enabled devices. Furthermore, the Bluetooth-enabled devices must support the AVRCP profile. Some devices may not be operated, even when they support AVRCP profile.

Remote Controller Buttons

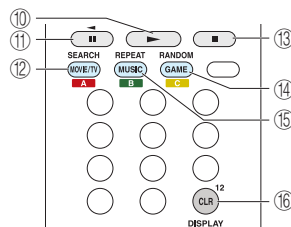
1. Press INPUT SELECTOR (PC, NET, USB or BLUETOOTH) appropriate for the input source on the remote controller.



2. Operate the remote controller by referring to the name and function of each of the buttons.



- 1 **TOP MENU**: This button displays the top menu for each media or server.
- 2 **▲/▼, ENTER**: These buttons navigate through items and activate the selected item.
◀/▶: These buttons allow you to navigate to another page when the list is broken across several pages.
- 3 **◀◀/▶▶**: This button fast-reverses the current track. This button is not operable from 10 seconds before the playback ends.
- 4 **◀◀◀/▶▶▶**: This button plays the current track from the beginning. Pressing this button twice plays the previous track.
- 5 **+/-**: Moves the cursor on the Internet radio stations list in "My Favorites".
- 6 **MENU**: This button displays the menu of each Internet radio service.
- 7 **RETURN**: This button returns to the previous screen.
- 8 **▶▶▶**: This button fast-forwards the current track. This button is not operable from 10 seconds before the playback ends.
- 9 **▶▶▶▶**: This button plays the next track.



- 10 **▶**: This button starts the playback.
- 11 **||**: This button pauses the playback.

Using Remote Controller for Playing Music Files

- 12 **SEARCH**: This button toggles between the playback screen and list screen during playback.
- 13 **■**: This button stops the playback.
- 14 **RANDOM**: This button performs random playback.
- 15 **REPEAT**: This button replays the track(or tracks). Pressing this button repeatedly cycles through the repeat modes.
- 16 **DISPLAY**: This button changes the displayed track information during playback. Pressing this button when the list screen is displayed toggles the screen to playback.

- Bluetooth-enabled devices: Usable buttons are **▶**, **◀◀◀**, **◀◀**, **||**, **▶▶**, **▶▶▶**, and **■**.

Icons Displayed during Playback

Icons are displayed on the display during music file playback. The meaning of each icon is as follows:

Folder

Track

Play

Pause

Fast-forward

Fast-reverse

Artist

Album

Repeat One Track

Repeat within a folder

Repeat

Shuffle

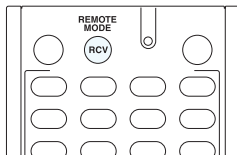
Using the Listening Modes

Selecting Listening Mode

The listening modes allow you to select the best sound effect for your input source.

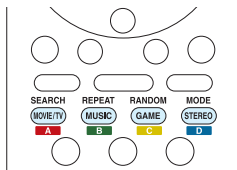
1. Press RCV on the remote controller.

- Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another component.



2. Select the desired mode from the four listening modes and press the corresponding button.

- The listening mode you selected will be enabled when you press the button. Set the listening mode of your choice by listening to the actual sound.



For details on the types and difference of listening modes, see "Effects of Listening Modes".

■ MOVIE/TV button

You can select a mode suitable for movies and TV programs.

- Selectable listening modes:
 - All Ch Stereo
 - Direct
 - Dolby Atmos
 - Dolby D (Dolby Digital)
 - Dolby D+ (Dolby Digital Plus)
 - Dolby Surround
 - Dolby TrueHD
 - DSD
 - DTS
 - DTS 96/24
 - DTS Express
 - DTS-HD HR (DTS-HD High Resolution Audio)
 - DTS-HD MSTR (DTS-HD Master Audio)
 - DTS Neo:6 Cinema + THX Cinema
 - DTS Neo:6 + THX Cinema
 - ES Discrete (DTS-ES Discrete)
 - ES Matrix (DTS-ES Matrix)
 - Full Mono
 - Mono
 - Multichannel
 - Neo:6
 - Neo:6 Cinema
 - T-D (Theater-Dimensional)
 - THX Cinema
 - THX I/S Cinema
 - THX Surr EX (THX Surround EX)
 - TV Logic

■ MUSIC button

You can select a mode suitable for music.

- Selectable listening modes:
 - All Ch Stereo
 - Direct
 - Dolby Atmos
 - Dolby D (Dolby Digital)
 - Dolby D+ (Dolby Digital Plus)
 - Dolby Surround
 - Dolby TrueHD
 - DSD
 - DTS
 - DTS 96/24
 - DTS Express
 - DTS-HD HR (DTS-HD High Resolution Audio)
 - DTS-HD MSTR (DTS-HD Master Audio)
 - DTS Neo:6 + THX Games
 - ES Discrete (DTS-ES Discrete)
 - ES Matrix (DTS-ES Matrix)
 - Full Mono
 - Game-Action
 - Game-Rock
 - Game-RPG
 - Game-Sports

- DTS 96/24
- DTS Express
- DTS-HD HR (DTS-HD High Resolution Audio)
- DTS-HD MSTR (DTS-HD Master Audio)
- DTS Neo:6 Music + THX Music
- DTS Neo:6 + THX Music
- ES Discrete (DTS-ES Discrete)
- ES Matrix (DTS-ES Matrix)
- Full Mono
- Multichannel
- Neo:6
- Neo:6 Music
- Orchestra
- Pure Audio
- Stereo
- Studio-Mix
- THX I/S Music
- THX Music
- Unplugged

■ GAME button

You can select a mode suitable for games.

- Selectable listening modes:
 - All Ch Stereo
 - Direct
 - Dolby Atmos
 - Dolby D (Dolby Digital)
 - Dolby D+ (Dolby Digital Plus)
 - Dolby Surround
 - Dolby TrueHD
 - DSD
 - DTS
 - DTS 96/24
 - DTS Express
 - DTS-HD HR (DTS-HD High Resolution Audio)
 - DTS-HD MSTR (DTS-HD Master Audio)
 - DTS Neo:6 + THX Games
 - ES Discrete (DTS-ES Discrete)
 - ES Matrix (DTS-ES Matrix)
 - Full Mono
 - Game-Action
 - Game-Rock
 - Game-RPG
 - Game-Sports

Multichannel
Neo:6
T-D (Theater-Dimensional)
THX Games
THX I/S Games

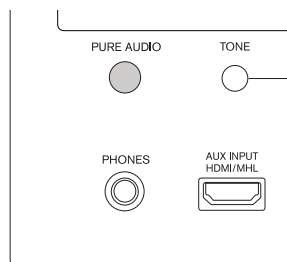
■ STEREO button

You can select a listening mode for stereo and all channel stereo sources.

- Selectable listening modes:
All Ch Stereo
Stereo

■ PURE AUDIO button (on the main unit only) (European models)

The power of the display and analog video circuit is cut off to switch the unit to Pure Audio mode and provide purer sound. Selecting this mode lights the PURE AUDIO indicator on the unit. Pressing the button again reselects the previous listening mode.



- Selecting Pure Audio for listening mode turns off the power to the display and analog video circuitry, but the video signals input through HDMI input are output from HDMI output.

Effects of Listening Modes

Selectable listening modes will differ depending on the number of input source channels and the actual speaker configuration. Listening modes available when headphones are connected are: Pure Audio (European models), Mono, Direct, and Stereo.

Lists in alphabetic order (A-Z)

■ All Ch Stereo

Ideal for background music, this mode fills the entire listening area with stereo sound from the front, surround, and surround back speakers.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch

■ Direct

In this mode, audio from the input source is output as-is. For example, if a 2 ch source from a music CD is input, the output will be stereo, or if Dolby Digital signal is input, the sound field will be controlled in accordance with the number of channels present.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch

■ Dolby Atmos

Introduced first in the cinema, Dolby Atmos brings a revolutionary sense of dimension and immersion to the Home Theater experience. Dolby Atmos is an adaptable and scalable object based format that reproduces audio as independent sounds (or objects) that can be accurately positioned and move dynamically throughout the 3 dimensional listening space during playback. A key ingredient of Dolby Atmos is the introduction of a height plane of sound above the listener.

- Surround back speakers or height speakers need to be installed.
- This listening mode can be selected only if the input signal is Dolby Atmos.

■ Dolby D

This mode is for use with Dolby Digital sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ Dolby D+

This mode is for use with Dolby Digital Plus sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.
- When playing back 3.1 ch or 5.1 ch sources from Blu-ray Discs, Dolby Digital is automatically applied.

■ Dolby Surround

Dolby surround is a next generation surround technology that intelligently up mixes stereo; 5.1 and 7.1 content for playback through your surround speaker system. Dolby surround is compatible with traditional speaker layouts, as well as Dolby Atmos enabled playback systems that employ in-ceiling speakers or products with Dolby speaker technology.

- Input source: STEREO, 5.1 ch or 7.1 ch

■ Dolby TrueHD

This mode is for use with Dolby TrueHD sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DSD

This mode is for use with DSD sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- This unit supports DSD signals input through HDMI IN. However, depending on the connected player, better sound is possible when output from the PCM output of the player. In that case, configure the player for PCM output.
- This listening mode can be selected only if your Blu-ray Disc/DVD player's output setting is DSD.

■ DTS

This mode is for use with DTS sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DTS 96/24

This mode is for use with DTS 96/24 sources. The audio from the input source is output as-is, without surround sound processing. With 96 kHz sampling rate and 24-bit resolution, it provides superior fidelity.

- Input source: 5.1 ch
- Depending on the settings, this listening mode becomes DTS.
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DTS Express

This mode is for use with DTS Express sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DTS-HD HR

This mode is for use with DTS-HD High Resolution Audio sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DTS-HD MSTR

This mode is for use with DTS-HD Master Audio sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

■ DTS Neo:6

This mode expands any 2 ch source for 5.1 ch multichannel surround playback. It offers full-bandwidth on all channels, with great independence between the channels. There are two variants for this mode: one ideal for movies and another ideal for music.

- **Neo:6 Cinema:** Use this mode with any 2 ch movie.
 - Input source: STEREO
- **Neo:6 Music:** Use this mode with any 2 ch music source.
 - Input source: STEREO
- **Neo:6:** Use this mode to expand any 5.1 ch music source for 6.1 ch or 7.1 ch playback using Neo:6.
 - Input source: 5.1 ch
 - Surround back speakers need to be installed.

■ ES Discrete

This mode is for use with DTS-ES Discrete sources and enables 6.1 ch or 7.1 ch playback using surround back channel. Completely discrete seven channels will improve spatial imaging and enable 360-degree sound localization producing a sound crossing between the surround channels.

- Input source: 6.1 ch
- Surround back speakers need to be installed.
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.
- Use on the DVD with DTS ES logo, particularly on the software containing DTS-ES Matrix soundtrack.
- Playback becomes DTS if no surround back speaker is connected.

■ ES Matrix

This mode is for use with DTS-ES Matrix soundtrack and enables 6.1 ch or 7.1 ch playback using matrix-encoded back channel.

- Input source: 6.1 ch
- Surround back speakers need to be installed.
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.
- Use on the CD, DVD or LD with DTS ES logo, particularly on the software containing DTS-ES Matrix soundtrack.
- Playback becomes DTS if no surround back speaker is connected.

■ Full Mono

In this mode, all speakers output the same sound in mono, so the sound you hear is the same regardless of where you are within the listening room.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch

■ Game-Action

In this mode, sound localization is distinct with emphasis on bass.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Game-Rock

In this mode, sound pressure is emphasized to heighten live feel.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Game-RPG

In this mode, the sound has a dramatic feel with a similar atmosphere to Orchestra mode.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Game-Sports

Suitable for audio source with much reverberation.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Mono

Use this mode when watching an old movie with a mono soundtrack, or use it to separately reproduce soundtracks in two different languages recorded in the left and right channels of some movies. It is also suitable for DVDs or other sources containing multiplexed audio.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch

■ Multichannel

This mode is for use with PCM multichannel sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch

■ Orchestra

Suitable for classical or operatic music, This mode emphasizes the surround channels in order to widen the stereo image, and simulates the natural reverberation of a large hall.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Pure Audio (European models)

This mode reproduces the original sound accurately. Since the audio from the input source is output without surround sound processing and the display and video circuitry are turned off, possible noise sources are minimized for a realistic audio reproduction.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- This mode cannot be selected when Zone 2 is active. Activating Zone 2 when this mode is selected, automatically switches the listening mode to Direct.

■ Stereo

In this mode, sound is output from the front left and right speakers and subwoofer.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch

■ Studio-Mix

Suitable for rock or pop music, Listening to music in this mode creates a lively sound field with a powerful acoustic image, like being at a club or rock concert.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ T-D

In this mode, you can enjoy a virtual playback of multichannel surround sound even with only two or three speakers. This works by controlling how sounds reach the listener's left and right ears.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Good results may not be possible if there is too much reverb, so we recommend that you use this mode in an environment with little or no natural reverb.

■ THX

THX is a sound quality standard for movie theaters developed by Lucasfilm Limited. The standard sets up a strict quality criteria defining the level, noise, reverberation, audio equipment specifications, speaker installation positions and more details in order to enable high-fidelity audio reproduction as close as possible to the intentions of the filmmaker. There are more than 5,000 THX-certified theaters in the world and THX is considered synonymous with high acoustic quality theater.

- The THX mode can finely adjust the acoustic and spatial characteristics of the soundtrack for the best reproduction of home theater sound. It will work on 2 ch source and multichannel source. Surround back sound will differ depending on the source and selected listening mode.
- **DTS Neo:6 Cinema + THX Cinema:** The combination mode of DTS Neo:6 Cinema and THX Cinema mode can be used. "Neo:6" and "THX" light on the unit's display.
 - Input source: STEREO
 - Surround speakers need to be installed.
- **DTS Neo:6 Music + THX Music:** The combination mode of DTS Neo:6 Music and THX Music mode can be used. "Neo:6" and "THX" light on the unit's display.
 - Input source: STEREO
 - Surround speakers need to be installed.
- **DTS Neo:6 + THX Cinema:** The combination mode of DTS Neo:6 and THX Cinema mode can be used.

"Neo:6" and "THX" light on the unit's display.

- Input source: 5.1 ch
- Surround back speakers need to be installed.

- **DTS Neo:6 + THX Music:** The combination mode of DTS Neo:6 and THX Music mode can be used. "Neo:6" and "THX" light on the unit's display.
 - Input source: 5.1 ch
 - Surround back speakers need to be installed.
- **DTS Neo:6 + THX Games:** The combination mode of DTS Neo:6 and THX Games can be used. "Neo:6" and "THX" light on the unit's display.
 - Input source: 5.1 ch
 - Surround back speakers need to be installed.
- **THX Cinema :** Use the mode in home theater environment for playing a movie soundtrack recorded/mixed to be played in a theater or such a large space. In this mode, THX Loudness is set to the theater level and Re-EQ, Timbre Matching, and Adaptive Decorrelation become active.
 - Input source: 5.1 ch, 7.1 ch
 - Surround speakers need to be installed.
- **THX Games :** Use the mode for high-fidelity spatial reproduction of game sound. Normally the same mixing as that for movie will be made but this mode is intended for a smaller environment. THX Loudness Plus is set to be suitable for the game sound level and Timbre Matching becomes active.
 - Input source: 5.1 ch, 7.1 ch
 - Surround speakers need to be installed.
- **THX Music :** The mode is adjusted mainly for music source mastered to be much higher quality than movie. THX Loudness Plus is set for music playback and Timbre Matching only becomes active.
 - Input source: 5.1 ch, 7.1 ch
 - Surround speakers need to be installed.
- **THX I/S Cinema :** This mode expands 5.1-channel sources for 7.1- channel playback. It does this by analyzing the composition of the surround source, optimizing the ambient and directional sounds to produce the surround back channel output.
 - Input source: 5.1 ch

- Surround back speakers need to be installed.
- **THX I/S Games** : This mode is designed for use with video games. It can expand 5.1-channel sources for 6.1/7.1-channel playback.
- Input source: 5.1 ch
 - Surround back speakers need to be installed.
- **THX I/S Music** : This mode is designed for use with music. It expands 5.1-channel sources for 7.1-channel playback.
- Input source: 5.1 ch
 - Surround back speakers need to be installed.
- **THX Surr EX** : The format for home theaters was co-developed by Dolby Laboratories and THX Limited. The Dolby Digital EX technology produces 7.1 channels in total by creating a new sound field behind the listener in addition to the conventional channels of front L/R, center, surround L/R and subwoofer.
- Input source: 5.1 ch
 - Surround back speakers need to be installed.

■ TV Logic

Suitable for TV shows produced in a TV studio, This mode enhances the surround effects to the entire sound to give clarity to voices and create a realistic acoustic image.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Unplugged

Suitable for acoustic instruments, vocals and jazz, This mode emphasizes the front stereo image, giving the impression of being right in front of the stage.

- Input source: MONO, STEREO, 5.1 ch, 7.1 ch
- Surround speakers need to be installed.

■ Information

Dialog Normalization

Dialog Normalization (DialogNorm) is one of the Dolby Digital features that can stabilize the average volume level between the Dolby Digital, Dolby Digital Plus and Dolby TrueHD sources, eliminating the need to adjust the volume for each user or source. "DialogNorm: X dB" ("X" is a numerical value) may appear on the unit display

when a Dolby Digital, Dolby Digital Plus or Dolby TrueHD source is played. It indicates the relation between the source's volume level and the THX standard level. If you want to play the recorded source in theater level, adjust the volume. For example, if "DialogNorm: +4 dB" appears on the display, the source being played is recorded with 4 dB plus the THX standard level. If you play it in the THX standard level, lower the volume by 4dB. However, not as in the theater where the playback volume is prefixed, the unit allows you to adjust the volume to your favorite level.

THX Cinema Processing

THX is a sound quality standard for movie theaters developed by Lucasfilm Limited with the aim of reproducing high-fidelity audio as close as possible to the intentions of the filmmaker. A movie soundtrack is mixed in special theater called dubbing stage on the assumption that the soundtrack is played in such theaters with similar equipment and conditions. The movie soundtrack is also recorded on a Blu-ray disc and DVD, but not optimized for home theater environment. THX engineers developed the technology, now patent-protected, to reproduce the theater sound in home theater environment by minimizing acoustic and spatial deviation that occurs in home theater environment. On this unit, the THX functions are automatically added to the Cinema mode when THX is on. (Example: THX Cinema, THX Surround EX)

Timbre Matching

The human ears perception differs depending on the sound coming direction. Although movie theaters have many surround speakers to surround the room with sound, home theaters have only two surround speakers. The Timbre Matching function filters the signals sent to the surround speakers and adjusts the tonal characteristics of front speakers and surround speakers to create smooth sound movement from front speakers to surround speakers.

Adaptive Decorrelation

Although movie theaters have many surround speakers to surround the room with sound, home theaters normally have only two surround speakers. Such two surround speakers give a headphone-like sound, not

a broad and embracing surround sound. If the listener moves away from the middle of the surround speakers, sound from the surround speakers mixes with that from the near speakers and cannot be distinguished any more. Adaptive Decorrelation slightly changes the time axis and phase between the surround channels. In this way, the listener can stay in a wider listening position and enjoy theater-like sound with two surround speakers.

ASA (Advanced Speaker Array)

ASA is a technology patented by THX to provide a broad surround sound experience by processing the side and back surround speaker sounds respectively. When making home theater setting with eight speakers (front L, center, front R, surround R, surround R back, surround L back, surround L, and subwoofer), be sure to select the distance between the relative surround back speakers in the THX audio setting screen. This procedure optimizes again the surround sound environment. ASA is used in three modes: THX I/S Cinema, THX I/S Music and THX I/S Games.

Checking the Input Format

You can check the audio format of the input signals. While audio from the player is being input, press DISPLAY on the remote controller several times to switch the information shown on the main unit display. If "Dolby D 5.1" is displayed in Signal format, the Dolby Digital 5.1 ch signals are being input.

- The number of channels is not displayed when the input format is "Dolby Atmos".

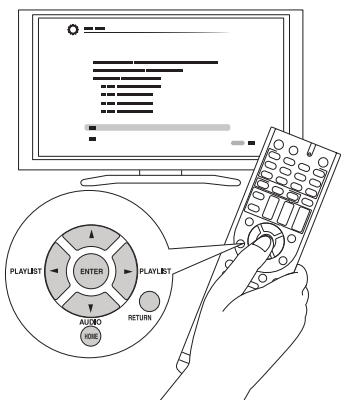
Dolby D 5.1

Advanced Settings

How to Set

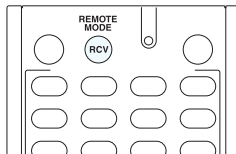
The unit allows you to configure advanced settings, such as to remap the input and input selector, or configure various speaker settings in order to provide even better experience. Make the settings in "Setup" of the HOME menu.

● **Operation:** You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN. To return to the HOME menu, press HOME.

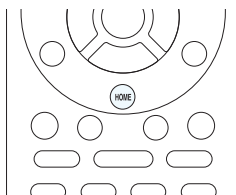


■ Operation

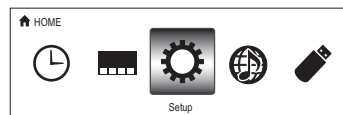
1. Press RCV on the remote controller.
 - Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another component.



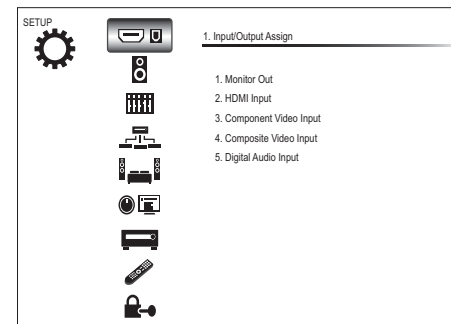
2. Press HOME to display the HOME menu.



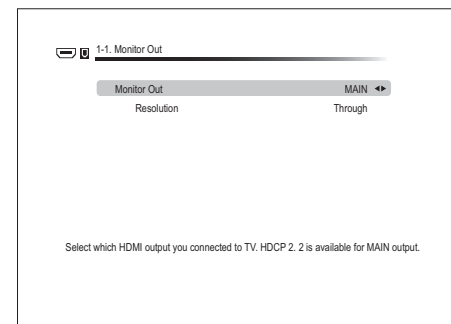
3. Select "Setup" with the cursors ◀▶ and press ENTER.



4. Press ▲▼ to select the desired menu, and then press ENTER.



5. With the ▲▼/◀▶ cursors, select the desired item to configure the settings.
 - When "ENTER" is displayed on the setting item, press ENTER.



To save the changes and exit the setup menu, press HOME.

1. Input/Output Assign

Monitor Out

The video input signals input to the unit will be converted when they are output from the HDMI OUT jack to the TV so that their resolution can match that of the TV used.

Setting Item	Default Value	Setting Details
Monitor Out	MAIN	<p>Select the HDMI jack to be connected with the TV.</p> <p>"MAIN": When connecting the TV to the HDMI OUT MAIN jack</p> <p>"SUB": When connecting the TV to the HDMI OUT SUB jack</p> <ul style="list-style-type: none"> The resolution of the input signal does not change when output through HDMI OUT SUB jack. <p>"MAIN+SUB": When connecting to both the MAIN and SUB jacks</p> <ul style="list-style-type: none"> Video signals input to the composite video input jack or the COMPONENT VIDEO input jacks will be upconverted to HDMI signals and then output from the HDMI output jack. If "MAIN+SUB" is selected <ul style="list-style-type: none"> Only "Through" or "Auto" can be selected in "Resolution". The resolution of the input signal does not change when output through HDMI OUT SUB jack. The HDMI jack of this unit is compliant with HDCP2.2 (HDMI OUT MAIN and HDMI IN3 jacks only).

Setting Item	Default Value	Setting Details
Resolution	Through	<p>Specify the output resolution of the HDMI OUT jacks. The image resolution of the unit will be converted so that it can match the resolution supported by the TV used.</p> <p>"Through": The output resolution is not converted and will be the same as that of the input signals.</p> <p>"Auto": The resolution will automatically be converted according to the resolution supported by the TV.</p> <p>"480p (480p/576p)", "720p", "1680×720p", "1080i", "1080p" or "2560×1080p": Select the desired resolution.</p> <p>"4K": About four times as high resolution as 1080p (3840×2160 or 4096×2160 pixels depending on the resolution supported by the connected TV)</p> <ul style="list-style-type: none"> If "1080p" is selected, 1080p/24 input signals will be output with an unchanged resolution. If the monitor does not support the selected resolution, the image will be displayed with the same resolution as that of the input signal. If "4K" is selected, video signals may not be output to some types of TV. For details, see "Resolution supported by HDMI OUT MAIN/SUB jack" in "Reference Information". If "Monitor Out" is set to "SUB", this setting will be set to "Through". You can check the video on the TV while making this setting. Select the value with the cursors and press ENTER. Press RETURN if no video is displayed. (except when "NET", "USB" or "BLUETOOTH" is selected)

HDMI Input

You can change input assignment between the input selectors and HDMI IN jacks.

Setting Item	Default Value	Setting Details
BD/DVD	HDMI 1	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the BD/DVD button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
CBL/SAT	HDMI 2	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the CBL/SAT button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
STB/DVR	HDMI 3 (HDCP 2.2)	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the STB/DVR button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
GAME	HDMI 4	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the GAME button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
PC	HDMI 5	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the PC button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
AUX	Front/MHL	The setting cannot be changed.
TV/CD	-----	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the TV/CD button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.
PHONO	-----	"HDMI 1" to "HDMI 6": Assign a desired HDMI IN jack to the PHONO button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.

Component Video Input

The CBL/SAT button is preset to play the player connected to the COMPONENT VIDEO IN jacks. This assignment can be changed if necessary. If you do not assign a jack, select "-----".

Setting Item	Default Value	Setting Details
BD/DVD	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the BD/DVD button.
CBL/SAT	COMPONENT	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the CBL/SAT button.
STB/DVR	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the STB/DVR button.
GAME	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the GAME button.
PC	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the PC button.
AUX	-----	The setting cannot be changed.
TV/CD	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the TV/CD button.
PHONO	-----	"COMPONENT": Assign the COMPONENT VIDEO IN jacks to the PHONO button.

- When you convert video signals input to the COMPONENT VIDEO IN jacks and output them from the HDMI OUT jack, set the output resolution of the player to 480i. If the input has 480p or higher resolution, an error message will appear.
- When "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "SUB", the 480i/576i component signals only will be output with an unchanged resolution. Video will not be displayed if the TV does not support the resolution.
- When "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "MAIN" or "MAIN+SUB" and "Resolution" is set to "Through", the 480i/576i component signals will be output with an unchanged resolution. Video will not be displayed if the TV does not support the resolution.

Composite Video Input

You can change input assignment between the input selectors and COMPOSITE VIDEO IN V1 to 3 jacks.

Setting Item	Default Value	Setting Details
BD/DVD	-----	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the BD/DVD button. If you do not assign a jack, select "-----".
CBL/SAT	VIDEO 1	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the CBL/SAT button. If you do not assign a jack, select "-----".
STB/DVR	VIDEO 2	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the STB/DVR button. If you do not assign a jack, select "-----".
GAME	VIDEO 3	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the GAME button. If you do not assign a jack, select "-----".
PC	-----	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the PC button. If you do not assign a jack, select "-----".
AUX	-----	The setting cannot be changed.
TV/CD	-----	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the TV/CD button. If you do not assign a jack, select "-----".
PHONO	-----	"VIDEO1 1" to "VIDEO 3": Assign a desired COMPOSITE VIDEO IN V jack to the PHONO button. If you do not assign a jack, select "-----".

- When "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "SUB", the 480i/576i component signals only will be output with an unchanged resolution. Video will not be displayed if the TV does not support the resolution.
- When "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "MAIN" or "MAIN+SUB" and "Resolution" is set to "Through", the 480i/576i composite signals will be output with their resolution unchanged. Video will not be displayed if the TV does not support the resolution.

Digital Audio Input

You can change input assignment between the input selectors and DIGITAL IN COAXIAL 1 to 2/OPTICAL jacks.

Setting Item	Default Value	Setting Details
BD/DVD	COAXIAL 1	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the BD/DVD button. If you do not assign a jack, select "-----".
CBL/SAT	COAXIAL 2	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the CBL/SAT button. If you do not assign a jack, select "-----".
STB/DVR	-----	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the STB/DVR button. If you do not assign a jack, select "-----".
GAME	-----	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the GAME button. If you do not assign a jack, select "-----".
PC	-----	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the PC button. If you do not assign a jack, select "-----".
AUX	-----	The setting cannot be changed.
TV/CD	OPTICAL	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the TV/CD button. If you do not assign a jack, select "-----".
PHONO	-----	"COAXIAL 1", "COAXIAL 2", "OPTICAL": Assign a desired DIGITAL IN jack to the PHONO button. If you do not assign a jack, select "-----".

- Supported sampling rates for PCM signals (stereo, mono) from a digital input are 32 kHz/44.1 kHz/48 kHz/88.2 kHz/96 kHz/16 bit, 20 bit, 24 bit.

2. Speaker Setup

Allows you to change the speaker configuration such as presence or not of subwoofer, distance of speakers and so on. Settings are automatically configured if you use the Automatic Speaker Setup.

This setting cannot be selected if headphones are connected or audio is output from the speakers of the TV.

Speaker Settings

Change the impedance of the connected speakers, the type of front speaker connection, and height speaker type.

Setting Item	Default Value	Setting Details
Speaker Impedance (European model)	6ohms	Set the impedance of the connected speakers. "4ohms": When any of the connected speakers have 4 Ω or more to less than 6 Ω impedance "6ohms": When the connected speakers all have 6 Ω or more impedance
Front Speakers Type	Normal	The type of front speaker connection is fixed to "Normal". The setting cannot be changed.
Height Speakers Type	Not Use	Set the speaker type if height speakers are connected to the SPEAKERS BACK or HEIGHT terminals. Select from the following options according to the type and layout of the connected speakers: "Not Use", "Front High", "Top Front", "Top Middle", "Dolby Enabled Speaker (Front)" or "Dolby Enabled Speaker (Surround)". <ul style="list-style-type: none"> "Dolby Enabled Speaker (Surround)" cannot be selected if "Speaker Configuration" - "Surround" is set to "None".
Powered Zone 2	No	Set the connection of speakers to Zone 2 speaker terminals. "Yes": When speakers are connected to Zone 2 speaker terminals "No": When speakers are not connected to Zone 2 speaker terminals

- For impedance, check the indications on the back of the speakers or their instruction manual.

Speaker Configuration

Allows you to change the speaker configuration such as presence or not of each speaker and so on. Settings are automatically configured if you use the Automatic Speaker Setup. Audio will not be output while you are making this setting.

Setting Item	Default Value	Setting Details
Subwoofer	Yes	Set whether a subwoofer is connected or not. "Yes": When subwoofer is connected "No": When subwoofer is not connected
Front	Yes	The front speaker setting is fixed to "Yes". The setting cannot be changed. <ul style="list-style-type: none"> If "Subwoofer" is set to "No", the bass frequencies of the other channels will be output from the front speakers.
Center	Yes	Set whether the center speaker is connected or not. "Yes": When the center speaker is connected "No": When the center speaker is not connected
Surround	Yes	Set whether the surround speaker is connected or not. "Yes": When the surround speaker is connected "No": When the surround speaker is not connected
Back	Yes	Set whether the surround back speaker is connected or not. "Yes": When the surround back speaker is connected "No": When the surround back speaker is not connected <ul style="list-style-type: none"> In any of the following cases, the setting will be set to "No". <ul style="list-style-type: none"> "Surround" is set to "No". Any type is selected in "Speaker Settings" - "Height Speakers Type". "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Back ch	2ch	Select the number of channels of the connected surround back speaker. "1ch": When one speaker is connected (Connect to the BACK or HEIGHT L terminal) "2ch": When two speakers are connected <ul style="list-style-type: none"> The setting cannot be changed if "Back" is set to "No".

Setting Item	Default Value	Setting Details
Height	No	<ul style="list-style-type: none"> If "Speaker Settings" - "Height Speakers Type" is set to "Not Use", this setting will be set to "No". If any type is selected in "Speaker Settings" - "Height Speakers Type", this setting will be set to "Yes". If "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on, this setting will be set to "No".

Speaker Distance

Set the distance from each speaker to the listening position. Settings are automatically configured if you use the automatic speaker setup.

Setting Item	Default Value	Setting Details
Unit	feet/meters	Specify the unit of distance for configuring settings. "feet": When setting in feet (0.1ft to 30.0ft, in increments of 0.1ft) "meters": When setting in meters (0.03m to 9.00m, in increments of 0.03m)
Front Left	12.0ft/3.60m	Specify the distance between each speaker and the listening position.
Center	12.0ft/3.60m	Specify the distance between each speaker and the listening position.
Front Right	12.0ft/3.60m	Specify the distance between each speaker and the listening position.
Surround Right	7.0ft/2.10m	Specify the distance between each speaker and the listening position.
Back Right	7.0ft/2.10m	Specify the distance between each speaker and the listening position. <ul style="list-style-type: none"> The setting is not displayed if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

Setting Item	Default Value	Setting Details
Back Left	7.0ft/2.10m	Specify the distance between each speaker and the listening position. <ul style="list-style-type: none"> The setting is not displayed if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Back	7.0ft/2.10m	Specify the distance between each speaker and the listening position. <ul style="list-style-type: none"> The setting is displayed only if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Surround Left	7.0ft/2.10m	Specify the distance between each speaker and the listening position.
Subwoofer	12.0ft/3.60m	Specify the distance between each speaker and the listening position.
Height Left	9.0ft/2.70m	Specify the distance between each speaker and the listening position. <ul style="list-style-type: none"> This setting cannot be changed in any of the following cases. <ul style="list-style-type: none"> "Speaker Settings" - "Height Speakers Type" is set to "Not Use". "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Height Right	9.0ft/2.70m	Specify the distance between each speaker and the listening position. <ul style="list-style-type: none"> This setting cannot be changed in any of the following cases. <ul style="list-style-type: none"> "Speaker Settings" - "Height Speakers Type" is set to "Not Use". "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

- When the speaker is set to "No" in "Speaker Configuration", the settings for "Speaker Distance" cannot be changed.
- Default values vary depending on the regions.

Level Calibration

Adjust the level of each speaker with the built-in test tone. Settings are automatically configured if you use the Automatic Speaker Setup.

Setting Item	Default Value	Setting Details
Front Left	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Center	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Front Right	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Surround Right	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Back Right	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level. <ul style="list-style-type: none"> • The setting is not displayed if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". • The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". • The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

Setting Item	Default Value	Setting Details
Back Left	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level. <ul style="list-style-type: none"> • The setting is not displayed if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". • The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". • The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Back	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level. <ul style="list-style-type: none"> • The setting is displayed only if "Speaker Configuration" - "Back" is set to "Yes" and also "Back ch" is set to "1ch". • The setting cannot be changed if any type is selected in "Speaker Settings" - "Height Speakers Type". • The setting cannot be changed if "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.
Surround Left	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Subwoofer	0dB	Select a value between "-15dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level.
Height Left	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level. <ul style="list-style-type: none"> • This setting cannot be changed in any of the following cases. <ul style="list-style-type: none"> – "Speaker Settings" - "Height Speakers Type" is set to "Not Use". – "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

Setting Item	Default Value	Setting Details
Height Right	0dB	Select a value between "-12dB" to "+12dB". A test tone will be output each time you change the value. Select the desired level. <ul style="list-style-type: none"> This setting cannot be changed in any of the following cases. <ul style="list-style-type: none"> "Speaker Settings" - "Height Speakers Type" is set to "Not Use". "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

- In the following cases, the settings for "Level Calibration" cannot be changed:
 - The speaker is set to "No" in "Speaker Configuration".
 - Mute (MUTING) is set.
- The test tone is output at the standard level for THX, which is 0 dB (absolute volume setting 82). Note that the volume may suddenly become large if your normal volume setting is small.
- If you're using a handheld sound level meter, adjust the level of each speaker so that it reads 75 dB SPL at the listening position, measured with C-weighting and slow reading.

THX Audio Setup

Setting Item	Default Value	Setting Details
Surr Back Speaker Spacing	>4ft/>1.2m	Select the distance between the surround back speakers from the following values. When "Unit" is set to "feet" in "Speaker Distance": Select a value from "<1ft", "1ft-4ft", and ">4ft". When "Unit" is set to "meters" in "Speaker Distance": Select a value from "<0.3m", "0.3m-1.2m", and ">1.2m". <ul style="list-style-type: none"> This setting cannot be changed in any of the following cases. <ul style="list-style-type: none"> "Speaker Configuration" - "Back" is set to "No". "Speaker Configuration" - "Back ch" is set to "1ch". "Speaker Settings" - "Powered Zone 2" is set to "Yes" and also Zone2 is set to on.

Setting Item	Default Value	Setting Details
BGC (Boundary Gain Compensation)	Off	Correct a too strong bass sound when listening to music close to the wall or in the end of the room due to layout limitation of the listening room. "On": Use this function "Off": Do not use this function <ul style="list-style-type: none"> When "Speaker Configuration" - "Subwoofer" is set to "No", the setting is fixed to "Off".
Loudness Plus	On	When the setting is set to "On", it is possible to enjoy even subtle nuances of audio expression at low volume. The setting can be enabled when a THX listening mode is selected. "On": Use this function "Off": Do not use this function THX Loudness Plus THX Loudness Plus is a new volume control technology featured in THX Ultra2 Plus™, THX Select2 Plus™ and THX I/S Plus™ certified receivers. With THX Loudness Plus, home theater audiences can experience the rich details of surround sound at any volume level. If the volume is turned down below the reference level, elements of sound in a certain range are lost or the sound is perceived differently by audience. THX Loudness Plus compensates for the tonal and spatial shifts that occur when the volume level is reduced, by intelligently adjusting the levels of the surround channels and their frequency response in the environment. Thus audiences can experience the true impact of soundtracks regardless of the volume setting. THX Loudness Plus automatically turns on in any THX listening mode. In the newly developed THX Cinema, THX Music and THX Games modes, an optimum THX Loudness Plus setting will be obtained according to the type of content.

3. Audio Adjust

Configure various settings related to sound, such as settings for listening to multiplex audio or multilingual TV broadcasts and sound field settings for listening modes.

Multiplex/Mono

Setting Item	Default Value	Setting Details
Multiplex Input Channel	Main	Set the audio channel or language to be output when playing multiplex audio or multilingual TV broadcasts etc. "Main": Main channel only "Sub": Sub channel only "Main/Sub": Main and sub channels will be output at the same time. <ul style="list-style-type: none"> If multiplex audio is being played, "1+1" will be displayed when DISPLAY is pressed.
Mono Input Channel	Left+Right	Set the input channel to use for playing any 2 ch digital source such as Dolby Digital, or 2-ch analog/PCM source in the Mono listening mode. "Left": Left channel only "Right": Right channel only "Left+Right": Left and right channels
Mono Output Speaker	Center	Select the speaker to output monaural audio in the Mono listening mode. "Center": Audio is output from the center speaker. "Left/Right": Audio is output from the front L/R speakers. <ul style="list-style-type: none"> The setting will be fixed to "Left/Right" if "Speaker Configuration" - "Center" is set to "None."

Dolby

Make the settings for Dolby listening mode.

Setting Item	Default Value	Setting Details
Loudness Management	On	Enable the Late Night function that allows you to enjoy surround sound of Dolby TrueHD playback even in low volume. "On": Use this function "Off": Do not use this function
Center Spread	Off	Adjust the width of the front sound field created during Dolby Surround listening mode playback. "On": The sound field is spread to left and right. "Off": The sound field is centralized. <ul style="list-style-type: none"> The setting will be fixed to "Off" if "Speaker Configuration" - "Center" is set to "No".

DTS

Make the settings for DTS Neo:6 Music listening mode.

Setting Item	Default Value	Setting Details
Neo:6 Music Center Image	2	Adjust the width of the sound field of the front channel when playing in the DTS Neo:6 Music listening mode. "0" to "5": Selecting a smaller value brings the sound field of the front channel to the center while selecting a larger value spreads the sound field of the front channel to left and right.

Theater-Dimensional

Make the settings for Theater-Dimensional mode.

Setting Item	Default Value	Setting Details
Listening Angle	Wide	Set the angle of the front left and right speakers relative to the listening position when playing in the Theater-Dimensional listening mode. "Narrow": Less than 30° "Wide": Greater than 30°

- Values recommended for "Listening Angle" are: 20° when "Narrow" is selected and 40° when "Wide" is selected.

LFE Level

Set the low-frequency effect (LFE) level of the Dolby Digital, DTS, Multichannel PCM, Dolby TrueHD, DTS-HD Master Audio and DSD signals.

Setting Item	Default Value	Setting Details
Dolby Digital	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB". <ul style="list-style-type: none"> This setting works on LFE channel volume of Dolby Digital and Dolby Digital Plus sources.
DTS	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB". <ul style="list-style-type: none"> This setting works on LFE channel volume of DTS and DTS-HD High Resolution sources.
Multichannel PCM	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB".
Dolby TrueHD	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB".
DTS-HD Master Audio	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB".
DSD	0dB	Select the low-frequency effect (LFE) level of each type of signal from "0dB" to "-∞dB". If the low-frequency effect sound is too strong, select "-20dB" or "-∞dB". <ul style="list-style-type: none"> This setting works on LFE channel volume of DSD (Super Audio CD) sources.

4. Source Setup

Adjust the volume level difference between the devices connected to the unit, change the names of inputs, or adjust the image quality. The setting can be separately set to each input selector button. When you select a desired input to check the video or audio, start playback of the connected device.

IntelliVolume

Setting Item	Default Value	Setting Details
IntelliVolume	0dB	Adjust the volume level difference between the devices connected to the unit. Select a value between "-12dB" to "+12dB". Set a negative value if the volume of the target device is larger than the others and a positive value if smaller. <ul style="list-style-type: none"> This function is not effective in Zone 2.

Name Edit


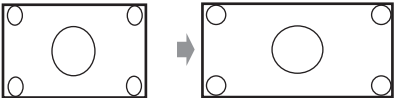
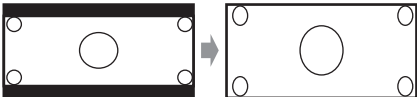
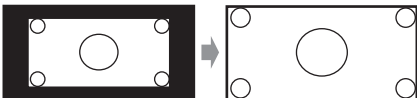
Set an easy name to each input. The set name will be shown on the main unit display.

Setting Item	Default Value	Setting Details
Name	Input name	<ol style="list-style-type: none"> Select a character or symbol with the cursors and press ENTER. Repeat it to input 10 or less characters. <ul style="list-style-type: none"> "Shift": Switches between upper and lower cases. (Pressing +10 on the remote controller also toggles between upper and lower cases.) "←" "→": Moves the cursor to the arrow direction. "Back Space": Removes a character on the left of the cursor. "Space": Puts a space. <ul style="list-style-type: none"> Pressing CLR on the remote controller will remove all the input characters. After inputting, select "OK" with the cursors and press ENTER. The input name will be saved.

- To name a preset radio station, press TUNER on the remote controller, select AM/FM and select the preset number.
- It cannot be set if the "NET", "USB" or "BLUETOOTH" input is selected.

Picture Adjust

Adjust the image quality. (possible only when the video player is connected to the HDMI OUT MAIN jack) If you adjust it by checking the video, press ENTER. Press RETURN to return the screen to the previous status.

Setting Item	Default Value	Setting Details
Wide Mode	Auto	<p>Set the aspect ratio.</p> <p>"Auto": The aspect ratio will automatically be set according to the input signals and the monitor video output setting.</p> <p>"4:3":</p>  <p>"Full":</p>  <p>"Zoom":</p>  <p>"Wide Zoom":</p>  <ul style="list-style-type: none"> The setting will be fixed to "Full" while 3D or 4K video is being input. Also with some resolutions, the setting may be ignored and automatically set to "Full".

Setting Item	Default Value	Setting Details
Picture Mode	Custom	<p>An appropriate image quality setting for cinema or game can be selected. You can also adjust each item to obtain your favorite image quality.</p> <p>"Custom": The items from "Game Mode" to "Color Temperature" below can be adjusted as desired.</p> <p>"Cinema": When the video source is cinema</p> <p>"Game": When the video source is game</p> <p>"Standard": The resolution will be changed but the image quality will not be adjusted.</p> <p>"Bypass": Both the resolution and image quality will not be adjusted.</p> <ul style="list-style-type: none"> If you select "Bypass", the on-screen display function will be disabled.
Game Mode	Off	<p>Change to the setting suitable for game. Also correct the delay of video signals of the game console if any.</p> <p>"On": Use this function</p> <p>"Off": Do not use this function</p> <ul style="list-style-type: none"> If you select "On", the delay will be corrected but the image quality will be lower. The setting will be fixed to "Off" if "1. Input/ Output Assign" - "Monitor Out" - "Resolution" is set to "4K".
Film Mode	Auto	<p>Change to the setting suitable for film.</p> <p>"Auto": Image processing suitable for film will be executed.</p> <p>"Video": "Film Mode" will not be applied and the input signals will be processed as video source.</p>
Edge Enhancement	Off	<p>Adjust the sharpness of the outline of image. Select from "Off", "Low", "Mid" (Middle), and "High".</p> <ul style="list-style-type: none"> The setting will be fixed to "Off" if "Game Mode" is set to "On". The setting will be set to "Off" if the output video has 2,000 or more lines horizontal resolution.
Noise Reduction	Off	<p>Reduces the noise of the screen. Select from "Off", "Low", "Mid" (Middle), and "High".</p> <ul style="list-style-type: none"> The setting will be fixed to "Off" if "Game Mode" is set to "On".

Setting Item	Default Value	Setting Details
Brightness	0	Adjust brightness of the screen. Select a value between "-50" to "+50".
Contrast	0	Adjust contrast of the screen. Select a value between "-50" to "+50".
Hue	0	Correct hue of the screen. Select a value between "-50" to "+50".
Saturation	0	Adjust saturation of the screen. Select a value between "-50" to "+50".
Color Temperature	Normal	Set color temperature of the screen. Select from "Warm", "Normal" and "Cool".

- In the following cases, the settings for "Picture Adjust" cannot be changed:
 - "NET", "USB" or "BLUETOOTH" is selected.
 - "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "SUB".
- Press CLR on the remote controller if you return all the settings from "Game Mode" through "Color Temperature" to their default value.

Audio Selector

Make the audio input setting. The setting can be separately set to each input selector button. Select the input selector to configure.

Setting Item	Default Value	Setting Details
Audio Selector	–	<p>Allows you to select prior input source.</p> <p>"ARC": When giving priority to input signal from ARC compatible TV.</p> <ul style="list-style-type: none"> • The setting can be selected only when "7. Hardware Setup" - "HDMI" - "Audio Return Channel" is set to "Auto" and also the "TV/CD" input is selected. <p>"HDMI": When giving priority to input signal from HDMI jacks</p> <ul style="list-style-type: none"> • The setting can be selected only when the input is assigned to the HDMI IN jack in the "HDMI Input" setting. <p>"COAXIAL" (Coaxial input): When giving priority to input signal from DIGITAL IN COAXIAL jacks.</p> <ul style="list-style-type: none"> • The setting can be selected only when the input is assigned to the COAXIAL jack in the "Digital Audio Input" setting. <p>"OPTICAL" (Optical input): When giving priority to input signal from DIGITAL IN OPTICAL jacks.</p> <ul style="list-style-type: none"> • The setting can be selected only when the input is assigned to the OPTICAL jack in the "Digital Audio Input" setting. <p>"Analog": To always output analog audio independently of the input signal</p>
Fixed Mode	Off	<p>Specify an input signal when "HDMI", "COAXIAL" or "OPTICAL" is selected for "Audio Selector". Set this item if noise is produced, or truncation occurs at the beginning of a track that follows a gap when playing PCM or DTS sources.</p> <p>"Off": To play an analog signal when there is no digital signal.</p> <p>"PCM": To fix the input source to PCM (except for multichannel PCM)</p> <p>"DTS": To fix the input source to DTS (except for DTS-HD)</p> <ul style="list-style-type: none"> • Changing "Audio Selector" changes the setting to "Off".

- The setting cannot be changed when "PHONO", "TUNER", "NET", "USB" or "BLUETOOTH" input is selected.

5. Listening Mode Preset

You can preset your favorite listening mode to each input. (For example, you can always apply straight decode to the Dolby TrueHD source of Blu-ray Disc to play it in unchanged sound field.)

When the list of input sources is displayed, set the signal type and listening mode.

Although it is possible to select the listening mode during playback, the selected mode will be reset when the unit enters standby mode.

Setting Item	Default Value	Setting Details
Analog/PCM	Last Valid	Set the listening mode for playing PCM signals of CD and analog signals of record and cassette tape.
Mono/Multiplex Source	Last Valid	Set the listening mode for playing Dolby Digital and other digital signals recorded in monaural or multiplex audio.
2 ch Source	Last Valid	Set the listening mode for playing Dolby Digital and other digital signals recorded in 2 channels.
Dolby D/Dolby D Plus/TrueHD	Last Valid	Set the listening mode for playing Dolby Digital, Dolby Digital Plus and Dolby TrueHD signals.
DTS/DTS-ES/DTS-HD	Last Valid	Set the listening mode for playing digital audio signals in DTS and DTS-HD High Resolution formats. Select the listening mode specified for Blu-ray or such other DTS-HD Master Audio source.
Other Multich Source	Last Valid	Set the listening mode for playing DSD signals of Super Audio CD etc. that are input from HDMI IN jack.

- Available listening modes vary depending on the input signal.
- Setting "Last Valid" will always select the last selected mode.
- Only "Analog" can be set to the "TUNER" input.
- "Digital" and "TrueHD" can be set to the "NET" and "USB" inputs.
- Only "Digital" can be set to the "BLUETOOTH" input.

6. Miscellaneous

Volume Setup

Make the detailed volume setting of the unit.

Setting Item	Default Value	Setting Details
Volume Display	Absolute	Switch the volume display between the absolute value and relative value. The absolute value 82 is equivalent to the relative value 0 dB. "Absolute": Absolute value such as "1" to "99" "Relative (THX)": Relative value such as "-81dB" and "+18dB" <ul style="list-style-type: none"> • If you set the volume of absolute value to "82", "82Ref" appears and "THX" flashes on the display.
Muting Level	-∞dB	Set the volume lowered from the listening volume when muting is on. Select a value from "-∞dB", "-50dB" to "-10dB". (in 10dB increments)
Maximum Volume	Off	Set the maximum value to avoid too high volume. Select a value from "Off", "50" to "99".
Power On Volume	Last	Set the volume level of when the power is turned on. Select a value from "Last" (Volume level before entering standby mode), "Min", "1" to "99" and "Max". <ul style="list-style-type: none"> • You cannot set a higher value than that of "Maximum Volume".
Headphone Level	0dB	Adjust the volume level difference between speakers and headphones. Select a value between "-12dB" to "+12dB".

OSD Setup

Make the setting of on-screen display function that can be displayed on the TV when you use the setting menu or control the volume.

Setting Item	Default Value	Setting Details
On Screen Display	On	Set whether or not to display the operation screen on the TV. "On": The operation screen will be displayed on the TV. "Off": The operation screen will not be displayed on the TV. <ul style="list-style-type: none"> The operation screen may not be displayed depending on the input signal even if "On" is selected. If the operation screen is not displayed, change the resolution of the connected device.
Language	English	Select the on-screen display language.
Screen Saver	3min	Set the time to start the screen saver. Select a value from "3min", "5min", "10min" and "Off".

7. Hardware Setup

Tuner

Setting Item	Default Value	Setting Details
AM/FM Frequency Step (North American models)	10kHz/200kHz	Select a frequency step depending on your area of residence. Select "10kHz/200kHz" or "9kHz/50kHz". <ul style="list-style-type: none"> When this setting is changed, all radio presets are deleted. Default values vary depending on the regions.
AM Frequency Step (European models)	9kHz	Select a frequency step depending on your area of residence. Select "10kHz" or "9kHz". <ul style="list-style-type: none"> When this setting is changed, all radio presets are deleted. Default values vary depending on the regions.

HDMI

Setting Item	Default Value	Setting Details
HDMI CEC (RIHD)	Off	Setting to "On" enables the input selection link and other link functions with HDMI connected CEC compliant device. "On": Use this function "Off": Do not use this function <ul style="list-style-type: none"> Depending on the TV set, a link may need to be configured on the TV. This function is effective only when the device is connected to the HDMI OUT MAIN terminal. Setting to "On" and closing the on-screen menu displays the name of the CEC-compatible components and "RIHD On" on the display. Power consumption in standby mode may increase if "On" is set. (Depending on the TV status, the unit will enter the normal standby mode.) If you operate the MASTER VOLUME control on the main unit when this setting is "On" and audio is output from the TV speakers, audio will be output also from the speakers connected to the unit. If you want to output from only either of them, change the unit or TV settings, or reduce the volume of the unit. If abnormal operation occurs when you set the setting to "On", set it to "Off". When connecting a non-CEC compatible component, or when you are not sure whether it is compatible, set the setting to "Off". When changing this setting, turn off and then on again the power of all connected components.

Setting Item	Default Value	Setting Details
HDMI Through	Off	<p>You can display the video of an HDMI connected player on the TV even if the unit is in standby mode. This setting is effective only for an input selector to which an HDMI jack is assigned in "HDMI Input". It cannot be set to any other input selector unless an HDMI jack is assigned to it.</p> <p>"Off": The setting is disabled. Video of device connected to any jack will not be displayed.</p> <p>"BD/DVD", "CBL/SAT", "STB/DVR", "GAME", "PC", "AUX", "TV/CD", "PHONO": Video of the device connected to the HDMI IN jack assigned to each input will be displayed on the TV.</p> <p>"Last": Video of the device connected to the HDMI IN jack assigned to the input selector that was selected immediately before the unit enters standby mode will be displayed on the TV.</p> <p>"Auto": Video of all the devices connected to the HDMI IN jacks will be output to the TV.</p> <p>"Auto (Eco)": Video of all the devices connected to the HDMI IN jacks will be output to the TV.</p> <p>If you select this setting when using a CEC-compatible TV, you can reduce the power consumption in standby mode.</p> <ul style="list-style-type: none"> When "HDMI Through" is enabled, the power consumption increases even when the unit is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating. "Auto" and "Auto (Eco)" cannot be selected if "HDMI CEC (RIHD)" is set to "Off". When changing the setting, turn off and then on again the power of all connected components.

Setting Item	Default Value	Setting Details
Audio TV Out (MAIN)	Off	<p>You can enjoy audio through the speakers of the HDMI connected TV while this unit is on.</p> <p>"On": Use this function</p> <p>"Off": Do not use this function</p> <ul style="list-style-type: none"> If you select "On", set "HDMI CEC (RIHD)" to "Off." The setting is fixed to "Auto" if "HDMI CEC (RIHD)" is set to "On". The setting is fixed to "Off" if "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "SUB". Listening mode cannot be changed if "Audio TV Out (MAIN)" is set to "On" and audio is being output through the speakers of the TV. Depending on your TV set or input signal of the component, audio may not output through the speakers of the TV even if this setting is set to "On". In such case, audio is output from the speakers of the unit. If you operate the MASTER VOLUME control on the main unit when "Audio TV Out (MAIN)" or "HDMI CEC (RIHD)" is "On" and audio is output from the TV speakers, audio will be output from the unit. If you do not want to output audio from the unit, change the unit or TV settings, or reduce the volume of the unit.

Setting Item	Default Value	Setting Details
Audio TV Out (SUB)	Off	<p>You can enjoy audio through the speakers of the HDMI connected TV while this unit is on.</p> <p>"On": Use this function "Off": Do not use this function</p> <ul style="list-style-type: none"> The setting is fixed to "Off" if "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "MAIN". Listening mode cannot be changed while "Audio TV Out (SUB)" is set to "On" and audio is being output through the speakers of the TV. Depending on your TV set or input signal of the component, audio may not output through the speakers of the TV even if this setting is set to "On". In such case, audio is output from the speakers of the unit. If you operate the MASTER VOLUME control on the main unit when "Audio TV Out (SUB)" or "HDMI CEC (RIHD)" is "On" and audio is output from the TV speakers, audio will be output from the unit. If you do not want to output audio from the unit, change the unit or TV settings, or reduce the volume of the unit.
Audio Return Channel	-	<p>You can enjoy sound of the HDMI connected ARC compatible TV through the speakers connected to the unit. To use this function, set "HDMI CEC (RIHD)" to "On" in advance.</p> <p>"Auto": When enjoying the TV sound through the speakers connected to the unit "Off": When not using the ARC function</p>
Lip Sync	On	<p>This setting automatically corrects any desynchronization between the video and audio signals based on data from the HDMI LipSync compatible TV.</p> <p>"On": Automatic correction will be enabled. "Off": Automatic correction will be disabled.</p>

Setting Item	Default Value	Setting Details
InstaPrevue Sub Window	Multi	<p>Change the preview display of the video input through HDMI, which will be displayed using "InstaPrevue" in the HOME menu.</p> <p>Set how to display preview thumbnails.</p> <p>"Multi": Displays all the thumbnails of HDMI IN1, 2, 3, 4 and Front at once. "Single": Displays each thumbnail individually.</p> <ul style="list-style-type: none"> Depending on the video source, the preview thumbnails configured in "InstaPrevue" may not be displayed properly.
InstaPrevue Position	Bottom/Lower Right	<p>Change the preview display of the video input through HDMI, which will be displayed using "InstaPrevue" in the HOME menu.</p> <p>Set the position to display preview thumbnails.</p> <p>When "Multi" is selected for "Sub Window": Select from "Top", "Bottom", "Left" and "Right". When "Single" is selected for "Sub Window": Select from "Upper Left", "Upper Right", "Lower Left" and "Lower Right".</p> <ul style="list-style-type: none"> Depending on the video source, the preview thumbnails configured in "InstaPrevue" may not be displayed properly.

Auto Standby

Setting Item	Default Value	Setting Details
Auto Standby	On/Off	<p>This setting places the unit on standby automatically after 20 minutes of inactivity without any video or audio input.</p> <p>"On": The unit will automatically enter standby mode ("ASb" will stay lit). "Off": The unit will not automatically enter standby mode.</p> <ul style="list-style-type: none"> "Auto Standby" is appeared on the display and menu screen 30 seconds before the Auto Standby comes on. "Auto Standby" does not work when Zone 2 is active. Default values vary depending on the regions.

Setting Item	Default Value	Setting Details
HDMI Through	Off	Enable or disable "Auto Standby" while "HDMI Through" is on. "On": The setting will be enabled. "Off": The setting will be disabled. <ul style="list-style-type: none"> The setting cannot be set to "On" if "Auto Standby" is set to "Off".

- When "HDMI Through" is used, the power consumption increases even when the unit is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating.

Network

Make the network setting.

- When LAN is configured with a DHCP, set "DHCP" to "Enable" to configure the setting automatically. ("Enable" is set by default) To assign fixed IP addresses to each component, you must set "DHCP" to "Disable" and assign an address to this unit in "IP Address" as well as set information related to your LAN, such as Subnet Mask and Gateway.

Setting Item	Default Value	Setting Details
Network Standby	Off	You can turn on the power of the unit via network using an application such as Onkyo Remote. "On": Use this function "Off": Do not use this function <ul style="list-style-type: none"> When "Network Standby" is used, the power consumption increases even when the unit is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating.
Wi-Fi	Off(Wired)	Connect the unit to network via wireless LAN router. "On": Wireless LAN connection "Off(Wired)": Wired LAN connection
Wi-Fi Setup	–	You can configure wireless LAN settings by pressing ENTER when "Start" is displayed.

Setting Item	Default Value	Setting Details
Wi-Fi Status	–	The information of the connected access point will be displayed. "SSID": SSID of the connected access point. "Security": Security method of the connected access point. "Signal": Signal strength of the connected access point. "Status": Status of the connected access point.
MAC Address	–	This is the MAC address of the AV receiver. This value is specific to the component and cannot be changed.
DHCP	Enable	"Enable": Auto configuration by DHCP "Disable": Manual configuration without DHCP <ul style="list-style-type: none"> If selecting "Disable", you must set "IP Address", "Subnet Mask", "Gateway", and "DNS Server" manually.
IP Address	–	Displays/Sets the IP address.
Subnet Mask	–	Displays/Sets the subnet mask.
Gateway	–	Displays/Sets the gateway.
DNS Server	–	Displays/Sets the primary DNS server.
Proxy URL	–	Displays/Sets the proxy server URL.
Proxy Port	–	Displays/Sets the proxy server port number when you enter "Proxy URL".
Network Check	–	You can check the network connection. Press ENTER when "Start" is displayed.

- Wait for a while if "Network" cannot be selected. It will appear when the network function is started up.

Bluetooth

Setting Item	Default Value	Setting Details
Bluetooth	On	Select whether or not to use the Bluetooth function. "On": Enables connection with a Bluetooth-enabled device by using the Bluetooth function. Select "On" also when making various Bluetooth settings. "Off": When not using the Bluetooth function

Setting Item	Default Value	Setting Details
Direct Change	On	<p>The input of the unit will automatically be switched to "BLUETOOTH" when connection is made from a Bluetooth-enabled device to the unit.</p> <p>"On": The input will automatically become "BLUETOOTH" when a Bluetooth-enabled device is connected.</p> <p>"Off": The function is disabled.</p> <ul style="list-style-type: none"> If the input is not switched automatically, set to "Off" and change the input manually.
Auto Reconnect	On	<p>This function automatically reconnects to the Bluetooth-enabled device connected last when you change the input selector to "BLUETOOTH".</p> <p>"On": Use this function</p> <p>"Off": Do not use this function</p> <ul style="list-style-type: none"> This function may not work depending on your Bluetooth-enabled device.
Wakeup via Bluetooth	Off	<p>This function wakes up the unit on standby by connecting a Bluetooth-enabled device.</p> <p>"On": Use this function</p> <p>"Off": Do not use this function</p> <ul style="list-style-type: none"> Setting to "On" increases the power consumption even when the unit is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating. The setting is fixed to "Off" if "Direct Change" is set to "Off".

Setting Item	Default Value	Setting Details
Pairing Information	-	<p>When pairing is performed, the information of the previous pairing stored in this unit will be initialized.</p> <p>Pressing ENTER when "Clear" is displayed initializes the pairing information stored in this unit.</p> <ul style="list-style-type: none"> This function does not initialize the pairing information on the Bluetooth-enabled device. When pairing the unit again with the device, be sure to clear the pairing information on the Bluetooth-enabled device in advance. For information on how to clear the pairing information, refer to the Bluetooth-enabled device's instruction manual.
Device	-	<p>Displays the name of the Bluetooth-enabled device connected to the unit.</p> <ul style="list-style-type: none"> The name is not displayed when "Status" is "Ready" and "Now Pairing...".
Status	-	<p>Displays the status of the Bluetooth-enabled device connected to the unit.</p> <p>"Ready": Not paired "Now Pairing...": Paired "Connected": Successfully connected</p>

- Wait for a while if "Bluetooth" cannot be selected. It will appear when the network function is started up.

Firmware Update

Setting Item	Default Value	Setting Details
Update Notice	Enable	Availability of a firmware update will be notified via network. "Enable": Notify updates "Disable": Do not notify updates
Version	–	The current firmware version will be displayed.
Update via NET	–	Press ENTER to select when you want to update the firmware via network. <ul style="list-style-type: none"> You will not be able to select this setting if you do not have Internet access or there is nothing to update.
Update via USB	–	Press ENTER to select when you want to update the firmware via USB. <ul style="list-style-type: none"> You will not be able to select this setting if a USB storage device is not connected or there is nothing to update in the USB storage device.

- Wait for a while if "Firmware Update" cannot be selected. It will appear when the network function is started up.

Initial Setup

You can make the initial setup from the setup menu.

- Setting is not possible if "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "SUB".
- Wait for a while if "Initial Setup" cannot be selected. It will appear when the network function is started up.

8. Remote Controller Setup

Setting Item	Default Value	Setting Details
Remote ID	1	Select an ID for the unit's remote controller from "1", "2", and "3" to prevent interference between the unit and other Onkyo components that are installed in the same room. After changing the ID on the main unit, change the ID on the remote controller accordingly with the following procedure. <ol style="list-style-type: none"> 1. While holding down RCV, press Q SETUP for about 3 seconds until the remote indicator lights. 2. With the number buttons, press one of 1, 2, and 3. The remote indicator flashes twice.
Remote Mode Setup	–	Input and register the remote controller code of other devices. <ul style="list-style-type: none"> • For registration of the remote control code, refer to "Operating Other Components with the Remote Controller".

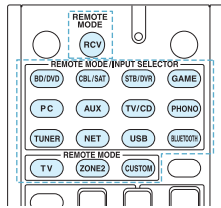
9. Lock Setup

Setting Item	Default Value	Setting Details
Setup	Unlocked	The Setup menu will be locked to protect the settings. "Locked": The menu is locked. "Unlocked": The menu is unlocked.

Operating Other Components with the Remote Controller

Functions of REMOTE MODE Buttons

You can control any other device than this unit by programming a specified remote control code to a REMOTE MODE button of the remote controller. Register a remote control code to a desired REMOTE MODE button and press it to enter the remote mode that allows you to operate the corresponding device.



* The RCV and ZONE2 buttons cannot be programmed.

Programming Remote Control Codes

For information on the configuration and operation of Onkyo components with RI jack, refer to "Connecting and Operating Onkyo RI Components". Furthermore, the following REMOTE MODE buttons are preprogrammed with remote control codes.

BD/DVD: Onkyo Blu-ray Disc/DVD player

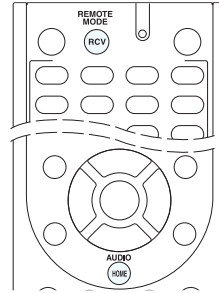
TV/CD: Onkyo CD player

STB/DVR: Apple TV

■ Searching in the Setup Menu

You can search a remote control code and register it to a desired REMOTE MODE button in the unit's Setup menu.

1. After pressing RCV, press HOME on the remote controller.



2. Select "Setup" with the cursors and press ENTER.
3. With the cursors, select "8. Remote Controller Setup" - "Remote Mode Setup" and press ENTER.
4. With the cursors, select a REMOTE MODE button for which you want to register a remote control code and press ENTER to display the sub-category selection screen.
5. With the cursors, select the target sub-category, and then press ENTER to display the brand name input screen.
6. Select a character with the cursors and press ENTER. Repeat it to enter the first three characters of the brand name.
7. Select "Search" with the cursors and press ENTER.
 - After a search is done, the list of possible brand names is displayed. If the brand name list is not displayed, select "Not Listed" with the cursors and press ENTER to return to the brand name input screen in step 6.
8. With the cursors, select the target brand name, and then press ENTER.
 - When the brand name is specified, the remote control code of the brand and how to register it will be displayed on the TV screen.
9. Follow the guidance displayed on the TV screen.

10. If the component can successfully be operated with its registered remote control code, select "OK" with the cursors and press ENTER.

- Only TV remote control codes can be entered for TV.
- Program a remote control code in accordance with the input since each button also works as the input selector. (For example, when the CD player is connected to the TV/CD jack, program the remote control code for the CD player to TV/CD)
- If the component cannot be operated, select "Try Next Code" with the cursors and press ENTER to display another code.
- It is possible to operate an MHL-enabled mobile device with the unit's remote controller by registering the code of the MHL-enabled mobile device below to the unit's remote controller. Operation may be unstable or incorrect depending on the mobile device used.

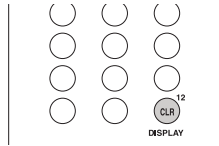
33101 (North American models)

32910 (European models)

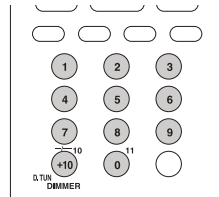
■ Consulting the Remote Control Code List

Find the remote control code in the remote control code list.

1. Look up the "Remote Control Code List" for the corresponding remote control code.
 - The codes in the Remote Control Code List are those known as of the date of publication and may be changed.
 - Only TV remote control codes can be entered for TV.
 - Program a remote control code in accordance with the input since each button also works as the input selector. (For example, when the CD player is connected to the TV/CD jack, program the remote control code for the CD player to TV/CD)
2. Press DISPLAY for 3 or more seconds while holding down the REMOTE MODE button to which you want to program the remote control code.
 - The remote indicator lights in the input mode.



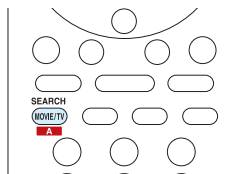
- With the number buttons, enter the 5-digit remote control code within 30 seconds.
 - Programming is complete when the remote indicator flashes twice. The remote indicator flashes once slowly when programming the remote control code fails. Try programming again.



■ Remapping the Colored Buttons

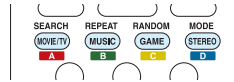
The colored button assignment on the AV receiver's remote controller can be remapped to match that on the remote controller of the component whose remote control code you programmed to REMOTE MODE. However, you will not be able to remap the colored buttons if Zone 2 is selected.

- Hold down the REMOTE MODE button to map and A (Red) simultaneously until the remote indicator lights (about 3 seconds).
 - Remapping is possible only for codes included in the categories of the Remote Control Code List such as DVD player and TV.



- Within 30 seconds, press the colored buttons from left to right, in the order you want to remap.
 - For example, if the colored buttons on the remote

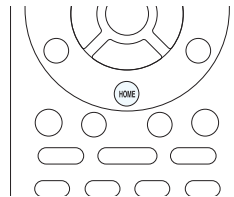
- controller of the other component are yellow, green, blue, and red from left to right, press the buttons on the AV receiver's remote controller in that order.
- Programming is complete when the remote indicator flashes twice. The remote indicator flashes once slowly when programming the remote control code fails. Try programming again.
 - Pressing any other button than a colored button cancels the remap operation.



■ Resetting the REMOTE MODE Buttons

You can reset the remote control code registered in the REMOTE MODE button to its default status. This operation can be executed on a single REMOTE MODE button.

- Press HOME for 3 or more seconds while holding down the REMOTE MODE button you want to reset.
 - The remote indicator will light.

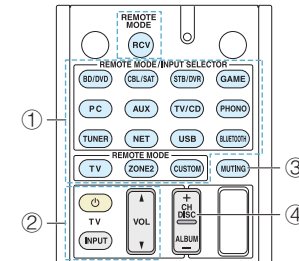


- Within 30 seconds, press the REMOTE MODE button again.
 - Resetting is complete when the remote indicator flashes twice.

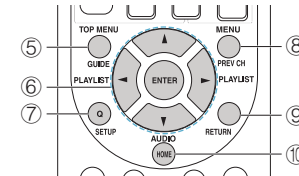
To reset all the remote controller settings, while holding down RCV, press and hold down HOME until the remote indicator stays lit (about 3 seconds). Within 30 seconds, press RCV again. Resetting is complete when the remote indicator flashes twice.

TV operation

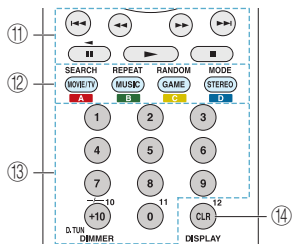
Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- REMOTE MODE
- TV, INPUT, VOL ▲/▼
- MUTING
- CH +/-



- GUIDE
- ▲/▼/◀/▶, ENTER
- SETUP
- PREV CH
- RETURN
- AUDIO (*)

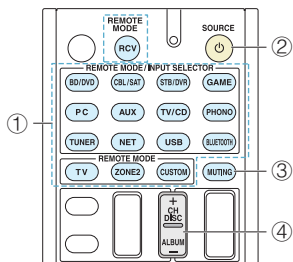


- ⑪ ►, ◄, ■, ◂, ▸, ◂, ▸, ◂, ▸ (※)
- ⑫ A (Red), B (Green), C (Yellow), D (Blue)
- ⑬ Number 1 to 9, 0, +10
- ⑭ CLR, DISPLAY

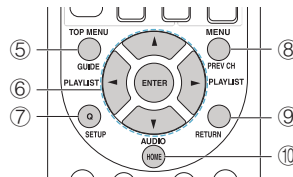
* Not CEC-compatible.

Blu-ray Disc player/DVD player/DVD recorder operation

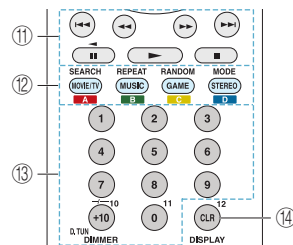
Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING
- ④ CH +/-, DISC +/-



- ⑤ TOP MENU
- ⑥ ▲/▼/◀/▶, ENTER
- ⑦ SETUP
- ⑧ MENU
- ⑨ RETURN
- ⑩ AUDIO(※)

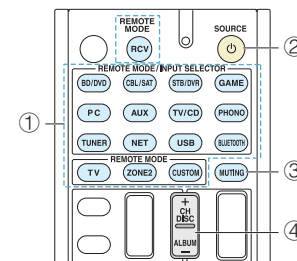


- ⑪ ►, ◄, ■, ◂, ▸, ◂, ▸, ◂, ▸
- ⑫ A (Red), B (Green), C (Yellow), D (Blue)
- ⑬ Number 1 to 9, 0, +10 (※)
- ⑭ CLR, DISPLAY

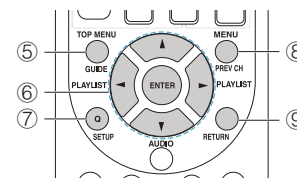
* Not CEC-compatible.

VCR/PVR operation

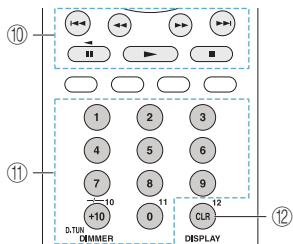
Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING
- ④ CH +/-



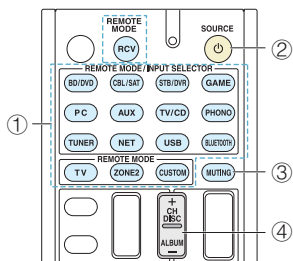
- ⑤ GUIDE
- ⑥ ▲/▼/◀/▶, ENTER
- ⑦ SETUP
- ⑧ PREV CH
- ⑨ RETURN



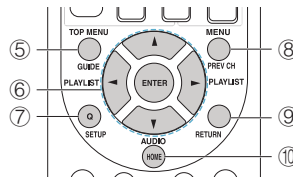
- ⑩ ►, ◼, ◼, ◼, ◀, ▶, ◀◀, ▶▶
- ⑪ Number 1 to 9, 0, +10
- ⑫ CLR, DISPLAY

Satellite receiver / Cable receiver operation

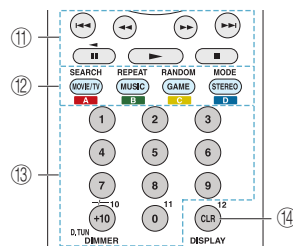
Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING
- ④ CH +/-



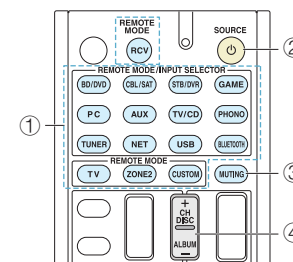
- ⑤ GUIDE
- ⑥ ▲/▼/◀/▶, ENTER
- ⑦ SETUP
- ⑧ PREV CH
- ⑨ RETURN
- ⑩ AUDIO



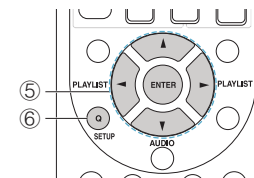
- ⑪ ►, ◼, ◼, ◼, ◀, ▶, ◀◀, ▶▶
- ⑫ A (Red), B (Green), C (Yellow), D (Blue)
- ⑬ Number 1 to 9, 0, +10
- ⑭ CLR, DISPLAY

CD player operation

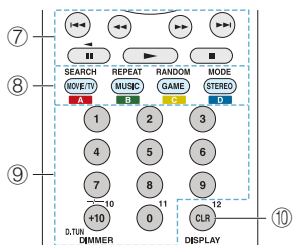
Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING
- ④ DISC +/-



- ⑤ ▲/▼/◀/▶, ENTER
- ⑥ SETUP



- ⑦ ►►, ■, ◄◄, ►►, ◄◄, ►►
- ⑧ SEARCH, REPEAT, RANDOM, MODE
- ⑨ Number 1 to 9, 0, +10
- ⑩ CLR, DISPLAY

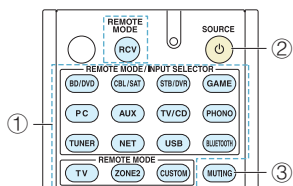
To operate CEC-compatible components

The TV and BD/DVD buttons on the remote controller are preprogrammed with remote control codes for linked operation of some CEC(Consumer Electronics Control)-compatible TV sets and Blu-ray Disk players. By connecting to the unit via HDMI, you may operate them using the AV receiver's remote controller.

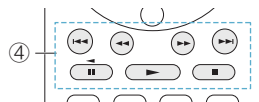
- If you cannot operate your CEC-compatible component, program one of the following remote control codes to the TV or BD/DVD button.
 TV: 11807/13100/13500 (CEC-compatible TV)
 BD/DVD: 32910/33101/33501/31612 (CEC-compatible BD/DVD player)

Cassette tape deck operation

Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Operation may be incorrect or impossible depending on the product.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING



- ④ ►►, ◄◄ (Reverse Playback), ■, ◄◄, ►►, ◄◄, ►►

Installation and Connection of Height Speakers

Using the Height Speakers

We recommend you to add Height speakers in order to ensure full effects of Aolby Atmos listening mode. There are several types of Height speakers. Refer to "Installation Method of the Height Speakers by Type".

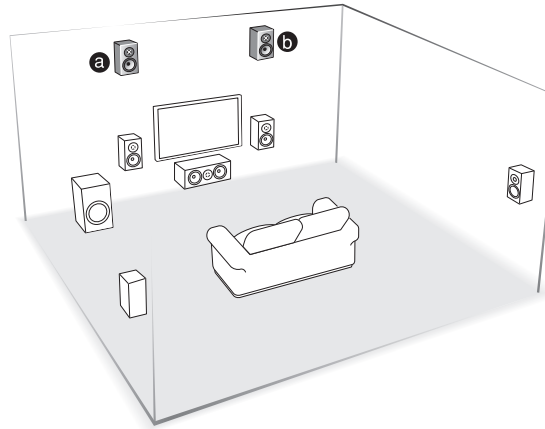
- Dolby recommends "Top Front" or "Top Middle" type to obtain the best Dolby Atmos effect.

Connection: Connect the Height speakers to SPEAKERS BACK or HEIGHT terminals of the unit, regardless of the type of Height speakers.

Installation Method of the Height Speakers by Type

■ Front High

Install **a** **b** Front High speakers on the upper part of the front wall as shown in the figure.

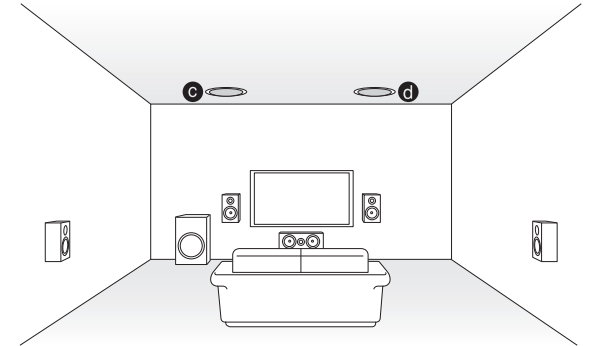


Change the setting: Press RCV and then HOME on the remote controller, select "Setup" - "2. Speaker Setup" - "Speaker Settings" and set "Height Speakers Type" to "Front High".

Installation and Connection of Height Speakers

■ Top Front

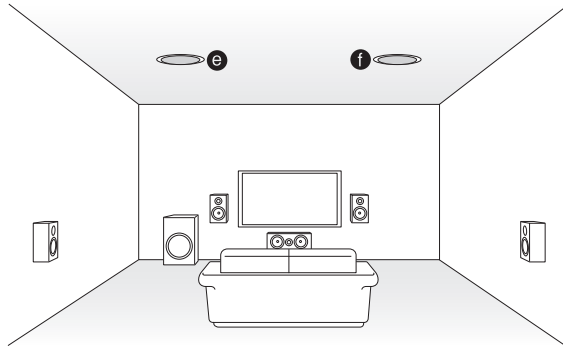
Install the **c** **d** Top Front speakers in the position around the middle of just above the listening position and just above the front speakers as shown in the figure. Use Ceiling speakers as the Top Front speakers.



Change the setting: Press RCV and then HOME on the remote controller, select "Setup" - "2. Speaker Setup" - "Speaker Settings" and set "Height Speakers Type" to "Top Front" as shown in the figure.

■ Top Middle

Install the **e** **f** Top Middle speakers in the position just above the listening position. Use Ceiling speakers as the Top Middle speakers.

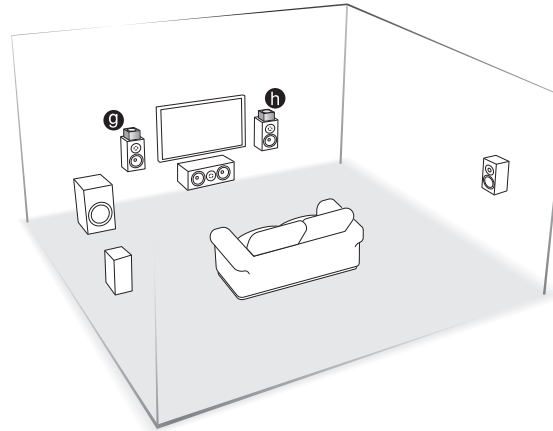


Change the setting: Press RCV and then HOME on the remote controller, select "Setup" - "2. Speaker Setup" - "Speaker Settings" and set "Height Speakers Type" to "Top Middle".

■ Dolby Enabled Speaker (Front)

g **h** Dolby Enabled Speaker (Front) is specially designed to be used as a Height speaker. It is to be placed on the top board of front speakers as shown in the figure. Dolby Enabled Speakers placed with their diaphragms facing toward the ceiling create higher effect in the Dolby Atmos and Dolby Surround listening modes by providing sounds echoing off the ceiling.

- There is integrated type of Dolby Enabled Speakers with the normal speakers. When using the integrated type of Dolby Enabled Speakers, place it to the Front speakers position.

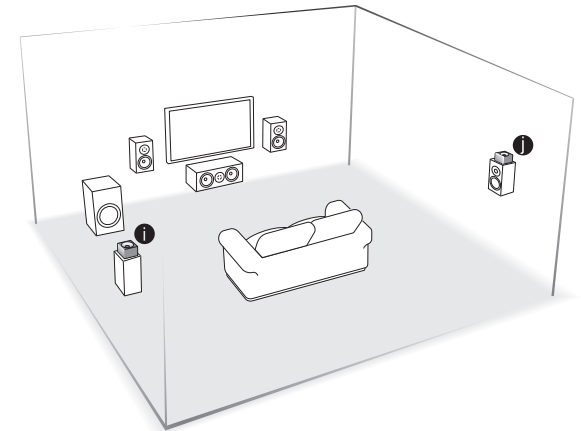


Change the setting: Press RCV and then HOME on the remote controller, select "Setup" - "2. Speaker Setup" - "Speaker Settings" and set "Height Speakers Type" to "Dolby Enabled Speaker (Front)" as shown in the figure.

■ Dolby Enabled Speaker (Surround)

i **j** Dolby Enabled Speaker (Surround) is specially designed to be used as a Height speaker. It is to be placed on the top board of surround speakers as shown in the figure. Dolby Enabled Speakers placed with their diaphragms facing toward the ceiling create higher effect in the Dolby Atmos and Dolby Surround listening modes by providing sounds echoing off the ceiling.

- There is integrated type of Dolby Enabled Speakers with the normal speakers. When using the integrated type of Dolby Enabled Speakers, place it to the Surround speakers position.



Change the setting: Press RCV and then HOME on the remote controller, select "Setup" - "2. Speaker Setup" - "Speaker Settings" and set "Height Speakers Type" to "Dolby Enabled Speaker (Surround)" as shown in the figure.

Connecting and Operating Onkyo RI Components

About RI Function

Connecting an Onkyo component with RI jack such as the separately sold RI Dock to the unit by using an RI cable and an analog audio cable enables the following RI functions:

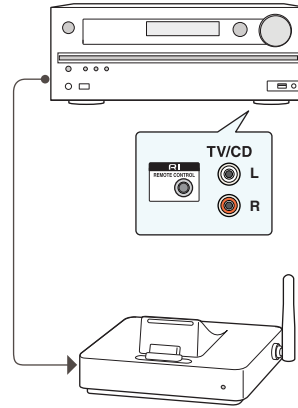
System On / Auto Power On: Starting playback on a component connected via RI when the unit is on standby mode, automatically turns on the unit to select the relevant component as its input source.

Direct Change: When playback is started on a component connected via RI, the unit selects that component as the input source.

Remote Controller Operation: Allows you to operate RI-compatible Onkyo components using the AV receiver's remote controller. Point the remote controller at remote control sensor of the unit. This operation is possible only when the RI remote control code is programmed.

- Some components may not support all RI functions.
- These functions do not work when Zone 2 is turned on.
- For information on the RI functions, also refer to each component's instruction manual.

RI Connection and Setting



Connect an Onkyo component with RI jack to this unit using an RI cable and an analog audio cable. For details, refer to the instruction manual of the component with RI jack. The RI cable can be connected in any order. When there are two RI jacks, both jacks work in the same way and are interchangeable.

To connect the RI Dock or cassette tape deck via RI, you must:

■ To rename the input selector

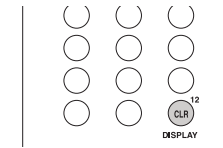
To make the RI functions work, you must rename the input selectors on the unit. Press TV/CD or GAME to display "TV/CD" or "GAME" on the main unit display. Then press and hold TV/CD or GAME 3 seconds or more to switch the display to "DOCK" or "TAPE".

■ To program the RI remote control code

Program the remote control code to any REMOTE MODE button on the remote controller. This will allow you to operate the component by pointing the remote controller at the unit instead of the component.

Connecting and Operating Onkyo RI Components

1. Press DISPLAY for 3 or more seconds while holding down the REMOTE MODE button to which you want to program the remote control code.
 - The remote indicator will light.
 - The RCV, ZONE2, and TV buttons cannot be programmed.

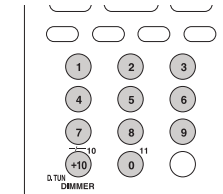


2. With the number buttons, enter the following 5-digit remote control code within 30 seconds.

RI Dock: 81993

Cassette tape deck with RI jack: 42157

- Programming is complete when the remote indicator flashes twice. The remote indicator flashes once slowly when programming the remote control code fails. Try programming again.



Change the input selector on the RI Dock to "DOCK" or "TAPE". For details, refer to the RI Dock's instruction manual.

To operate Onkyo components directly or Onkyo components that are not connected via RI, use the following remote control codes:

Onkyo DVD player: 30627

Onkyo CD player: 71817

RI Dock: 82990

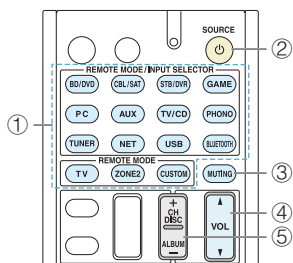
- With some models, operation may be not possible in part or not possible at all.

iPod/iPhone Operation

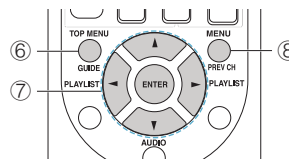
The RI Dock allows you to use the AV receiver's remote controller to operate and play music on your iPod/iPhone. Moreover, it also allows you to view videos on your iPod/iPhone on the screen of your TV, as well as perform RI operations if connected via RI. This operation is possible only when the RI remote control code is programmed.

Before performing any operation on your iPod/iPhone, be sure to have it updated to the latest version. Before performing any operation on your iPod/iPhone, make sure to have it updated to the latest version via iTunes. For details on the operation, refer to the RI Dock's instruction manual.

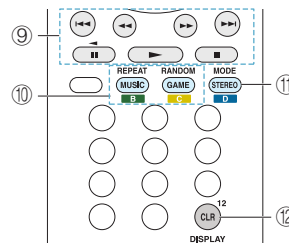
Switch the remote controller mode by pressing the REMOTE MODE button programmed with the remote control code for the iPod/iPhone, and operate by using the corresponding buttons. Point the remote controller at the unit.



- ① REMOTE MODE
- ② SOURCE
- ③ MUTING
- ④ VOL ▲/▼
- ⑤ ALBUM +/-



- ⑥ TOP MENU
- ⑦ ▲/▼/◀/▶, ENTER, PLAYLIST ◀/▶
- ⑧ MENU



- ⑨ ▶, ||, ■, ◀, ▶, ◀◀, ▶▶
- ⑩ REPEAT, RANDOM
- ⑪ MODE
- ⑫ DISPLAY

- Pressing DISPLAY turns on the backlight for a few seconds.
- MODE allows you to use the Resume function to resume playing from the song that was playing when you removed your iPod/iPhone from the DS-A2 RI Dock.

Firmware Update

About Firmware Update

There are two methods for updating the firmware: via network and via USB.

Use the one that best suits your environment.

- For the latest information on updates, visit the Onkyo website.
- Before updating, make sure that the speaker setup microphone is not connected.
- During an update, do not
 - Disconnect and reconnect any cable, USB storage device, speaker setup microphone or headphones, or perform any operation on the component such as turn off its power
 - Access to this unit from a PC or smartphone using Android application
- The update may take about 20 minutes to complete for either method: via network or via USB.
Furthermore, existing settings are guaranteed regardless of the method used for update.

Disclaimer: The program and accompanying online documentation are furnished to you for use at your own risk.

Onkyo will not be liable and you will have no remedy for damages for any claim of any kind whatsoever concerning your use of the program or the accompanying online documentation, regardless of legal theory, and whether arising in tort or contract.

In no event will Onkyo be liable to you or any third party for any special, indirect, incidental, or consequential damages of any kind, including, but not limited to, compensation, reimbursement or damages on account of the loss of present or prospective profits, loss of data, or for any other reason whatsoever.

Updating the Firmware via Network

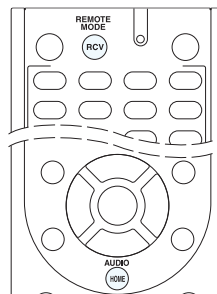
Before Start:

- Check that the unit is turned on, and the connection to the Internet is secured.
- Turn off the controller component (PC etc.) connected to the network.
- Stop any playing Internet radio, USB storage device, or server content.
- If the multi-zone function is active, press OFF on the main unit to turn it off.
- If "HDMI CEC (RIHD)" is set to "On", set it to "Off" (default value).
 - After pressing RCV, press HOME on the remote controller. Select "Setup" with the cursors and press ENTER. Then, after selecting "7. Hardware Setup" - "HDMI" and pressing ENTER, select "HDMI CEC (RIHD)" to select "Off".

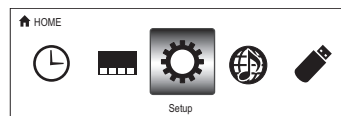
* The description may differ from the on-screen display but that will not change the way to operate or the function.

Update

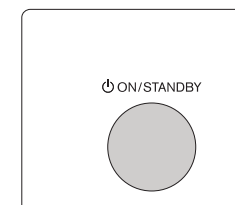
1. After pressing RCV, press HOME on the remote controller.



The HOME menu is displayed on the TV screen.



2. With the cursors, select "Setup" - "7. Hardware Setup" - "Firmware Update" - "Update via NET", and then press ENTER.
 - If "Firmware Update" is grayed out and cannot be selected, wait for a while until it starts up.
 - You will not be able to select "Update via NET" if there is nothing to update.
3. Press ENTER with "Update" selected to start update.
 - During the update, the TV screen may go black depending on the updated program. In that case, check the progress on the display of the unit. The TV screen will remain black until the update is complete and the power is turned on again.
 - "Completed!" is displayed when the update is complete.
4. Press ON/STANDBY on the main unit to turn the unit into standby mode. The process is completed and your firmware is updated to the latest version.
 - Do not use RECEIVER on the remote controller.



■ If an Error Message is Displayed

When an error occurs, "*-* Error!" is appeared on the display of the unit. ("*" represents an alphanumeric character.) Check the following:

Error Code

- *-01, *-10:
Ethernet cable not found. Connect the Ethernet cable properly.
- *-02, *-03, *-04, *-05, *-06, *-11, *-13, *-14, *-16, *-17, *-18, *-20, *-21:
Internet connection error. Check the following:
 - Whether the router is turned on
 - Whether this unit and router are connected to the network
 Try to disconnect and then connect again the power to the unit and router. This may solve the problem. If you are still unable to connect to the Internet, the DNS server or proxy server may be temporarily down. Check the service status with your ISP provider.
- Others:
Disconnect then reconnect the AC power cord, from the beginning.

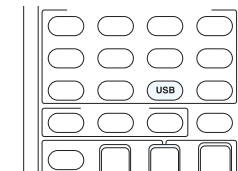
Updating the Firmware via USB

Before Start:

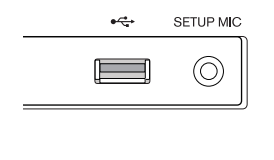
- Prepare a 64MB or larger USB storage device.
 - Media inserted in a USB card reader may not be used for this function.
 - USB storage devices with security function are not supported.
 - USB hubs and USB devices with hub function are not supported. Do not connect these devices to the unit.
 - Delete any data stored on the USB storage device.
 - Turn off the controller component (PC etc.) connected to the network.
 - Stop any playing Internet radio, USB storage device, or server content.
 - If the multi-zone function is active, press OFF on the main unit to turn it off.
 - If "HDMI CEC (RIHD)" is set to "On", set it to "Off" (default value).
 - After pressing RCV, press HOME on the remote controller. Select "Setup" with the cursors and press ENTER. Then, after selecting "7. Hardware Setup" - "HDMI" and pressing ENTER, select "HDMI CEC (RIHD)" to select "Off".
- * Some USB storage devices may take long to load, may not be loaded correctly, or may not be correctly fed depending on the device or their content.
- * Onkyo will not be liable whatsoever for any loss or damage of data, or storage failure arising from the use of the USB storage device with this AV receiver. Thank you for your understanding.
- * The description may differ from the on-screen display but that will not change the way to operate or the function.

■ Update

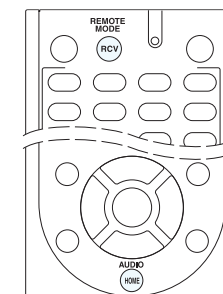
1. Connect the USB storage device to your PC.
2. Download the firmware file from the Onkyo website to your PC and unzip.
Firmware files are named in the following way:
ONKAVR****_*****.zip
Unzip the file on your PC. The number of unzipped files and folders varies depending on the model.
3. Copy all unzipped files and folders to the root folder of the USB storage device.
 - Make sure to copy the unzipped files.
4. Press USB on the remote controller to select "USB".



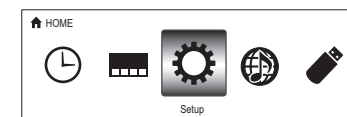
5. Connect the USB storage device to the USB port of the unit.
 - If you connect a USB hard disk drive to the USB port of the unit, we recommend that you use its AC adapter to power it.
 - If the USB storage device has been partitioned, each section will be treated as a been independent device.



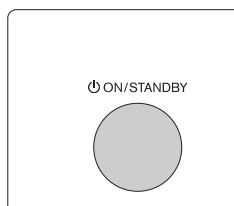
6. After pressing RCV, press HOME on the remote controller.



The HOME menu is displayed on the TV screen.



7. With the cursors, select "Setup" - "7. Hardware Setup" - "Firmware Update" - "Update via USB", and then press ENTER.
 - If "Firmware Update" is grayed out and cannot be selected, wait for a while until it starts up.
 - You will not be able to select "Update via USB" if there is nothing to update.
8. Press ENTER with "Update" selected to start update.
 - During the update, the TV screen may go black depending on the updated program. In that case, check the progress on the display of the unit. The TV screen will remain black until the update is complete and the power is turned on again.
 - During the update, do not turn off, or disconnect then reconnect the USB storage device.
 - "Completed!" is displayed when the update is complete.
9. Disconnect the USB storage device from the unit.
10. Press \odot ON/STANDBY on the main unit to turn the unit into standby mode. The process is completed and your firmware is updated to the latest version.
 - Do not use \odot RECEIVER on the remote controller.



■ If an Error Message is Displayed

When an error occurs, "*-*-* Error!" is appeared on the display of the unit. ("*" represents an alphanumeric character.) Check the following:

Error Code

- *-01, *-10:
USB storage device not found. Check whether the USB storage device or USB cable is correctly inserted to the USB port of the unit.
Connect the USB storage device to an external power source if it has its own power supply.
- *-05, *-13, *-20, *-21:

The firmware file is not present in the root folder of the USB storage device, or the firmware file is for another model. Retry from the download of the firmware file.

- **Others:**
Disconnect then reconnect the AC power cord, from the beginning.

Troubleshooting

Before starting the procedure

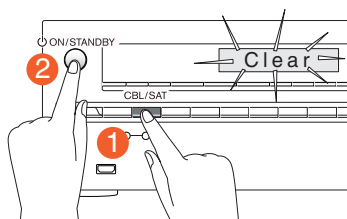
Problems may be solved by simply turning the power on/off or disconnecting/connecting the power cord, which is easier than working on the connection, setting and operating procedure. Try the simple measures on both the unit and the connected device. If the problem is that the video or audio is not output or the HDMI linked operation does not work, disconnecting/connecting the HDMI cable may solve it. When reconnecting, be careful not to wind the HDMI cable since if wound the HDMI cable may not fit well. After reconnecting, turn off and on the unit and the connected device.

Resetting the unit

Resetting the unit to the status at the time of shipment may solve the problem. If the measures above do not solve the problem, reset the unit with the following procedure. If you reset the unit status, your preferences will be reset to the defaults. Note them down before starting reset.

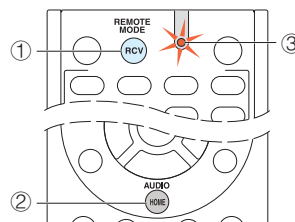
How to reset

1. While holding down CBL/SAT on the main unit (note that step 2 must be performed with this button pressed down)
2. Press \odot ON/STANDBY on the unit. "Clear" is appeared on the display and the unit will enter standby mode.



How to reset the remote controller

1. While holding down ①RCV on the remote controller (note that step 2 must be performed with this button pressed down)
2. Press and hold down ②HOME until the ③remote indicator stays lit (about 3 seconds). Within 30 seconds, press ①RCV again.



Power

Cannot turn on the unit

- Make sure that the power cord is properly plugged into the wall outlet.
- Unplug the power cord from the wall outlet, wait 5 seconds or more, then plug it in again.

The unit turns off unexpectedly

- The unit will automatically enter standby mode when Auto Standby has been set and launches.

The unit turns off and after restoring the power, it turns off again

- The protection circuit has been activated. Remove the power cord from the wall outlet immediately. Make sure that all speaker cables and input sources are properly connected, and leave the unit with its power cord disconnected for 1 hour. After that, reconnect the power cord and turn the power on. If the unit turns off again, avoid resetting it and unplug the power cord. Then contact your Onkyo dealer.

Caution: If "CHECK SP WIRE" appears on the display, the speaker cables may be short-circuited.

WARNING: If smoke, smell or abnormal noise is produced by the unit, unplug the power cord from the wall outlet immediately and contact the dealer or Onkyo Support.

Audio

There is no sound, or it is very quiet

- Make sure that the proper input source is selected.
- Make sure that connecting plugs are pushed in all the way.
- Make sure that the inputs and outputs of all components are connected properly.
- Make sure that the polarity +/- of the speaker cables is correct, and that no bare wires are in contact with the metal part of speaker terminals.
- Make sure that the input source is properly selected.
- Make sure that the speaker cables are not shorting.
- Check the volume. The volume level is adjustable between Min, 1 to 99, Max (100). It is normal that the unit volume level is set up to 40 or around.
- If the MUTING indicator on the display flashes, press MUTING on the remote controller to unmute the unit.
- While headphones are connected to the PHONES jack, no sound is output from the speakers.
- If there is no sound from a BD/DVD player connected to an HDMI IN, check the BD/DVD player's output settings, and be sure to select a supported audio format.
- Check the digital audio output setting on the connected component. On some game consoles, such as those that support DVD, the default setting is off.
- With some DVD-Video discs, you need to select an audio output format from a menu.
- If your turntable uses an MC cartridge, you must connect an MC head amp, or an MC transformer.
- Make sure that none of the connecting cables are bent, twisted, or damaged.
- Not all listening modes use all speakers.
- Perform the automatic speaker setup again or manually set the presence or absence, crossover frequency, distance and level of each speaker.
- Make sure that the speaker setup microphone is not still connected.
- Set to "Off" if "Audio Selector" - "Fixed Mode" is set to "PCM" or "DTS".

Only the front speakers produce sound

- When the Stereo or Mono listening mode is selected, only the front speakers and subwoofer produce sound.
- Make sure the speakers are configured correctly.

■ **Only the center speaker produces sound**

- If you use the Dolby Surround listening mode with a mono source, such as an AM radio station or mono TV program, the sound is concentrated in the center speaker.
- Make sure the speakers are configured correctly.

■ **The surround speakers produce no sound**

- When the T-D (Theater-Dimensional), Stereo or Mono listening mode is selected, the surround speakers produce no sound.
- Depending on the source and current listening mode, not much sound may be produced by the surround speakers. Try selecting another listening mode.
- Make sure the speakers are configured correctly.

■ **The center speaker produces no sound**

- When the Stereo or Mono listening mode is selected, the center speaker produces no sound.
- Make sure the speakers are configured correctly.

■ **There is no sound from surround back speakers or height speakers.**

- Depending on the source and current listening mode, not much sound may be produced by the surround speakers. Try selecting another listening mode.
- Make sure the speakers are configured correctly.

■ **The subwoofer produces no sound**

- When you play source material that contains no information in the LFE channel, the subwoofer produces no sound.
- Make sure the speakers are configured correctly.

■ **There is no sound with a certain signal format**

- When listening to Dolby Digital and/or DTS sound, digital connection is necessary.
- Check the digital input terminal setting. If the connection is different from the default, re-setting is necessary.
- Check the digital audio output setting on the connected component. On some game consoles, such as those that support DVD, the default setting is off.

■ **There is no sound with Dolby Atmos signal format**

- Surround back speakers or height speakers need to be installed. Make sure required speakers are connected and configured as connected in the "Speaker Configuration".
- Make sure the input signal is the Dolby Atmos format.

■ **Cannot select the Pure Audio listening mode (European models)**

- The Pure Audio listening mode can not be selected while Zone 2 is on.

■ **Cannot select a desired listening mode**

- Depending on the connecting status of the speaker, some listening modes may not be selected. Check the details in "Using the Listening Modes" section.

■ **Cannot play 5.2ch**

- Make sure the speakers are configured correctly.
- Not all listening modes use all speakers.

■ **Can not get 6.2 ch/7.2 ch playback**

- 6.2 ch/7.2 ch playback is not possible if surround back speakers and height speakers are not connected.
- Depending on the number of connected speakers, it is not always possible to select all of the listening modes.

■ **The speaker volume cannot be set as required**

- Check to see if a maximum volume has been set.

■ **Noise can be heard**

- Using cable ties to bundle audio cables with power cords, speaker cables, etc. may degrade the audio performance, so refrain from doing it.
- An audio cable may be picking up interference. Try repositioning your cables.

■ **The Late Night function does not work**

- Make sure the source material is Dolby Digital, Dolby Digital Plus, or Dolby TrueHD.

■ **About DTS signals**

- When DTS program material ends and the DTS bitstream stops, the unit remains in DTS listening mode and the dts indicator remains on. This is to prevent noise when you use the pause, fast forward, or fast reverse function on your player. If you switch your player from DTS to PCM, you may not hear any sound because the unit does not switch formats immediately. In such case, you should stop your player for about 3 seconds and then resume playback.
- With some CD and LD players, you will not be able to playback DTS material properly even though your player is connected to a digital input on the unit. This is

usually because the DTS bitstream has been processed (e.g., output level, sampling rate, or frequency response changed) and the unit does not recognize it as a genuine DTS signal. In such cases, you may hear noise.

- Playing DTS program material, using the pause, fast forward, or fast reverse function on your player may produce a short audible noise. This is not a malfunction.

■ **The beginning of audio received by an HDMI IN cannot be heard**

- Since it takes longer to identify the format of an HDMI signal than it does for other digital audio signals, audio output may not start immediately.

Video

■ **There is no picture**

- Make sure that all video connecting plugs are pushed in all the way.
- Make sure that each video component is properly connected.
- If the TV is connected to the HDMI OUT jack of the unit, set "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" to "MAIN" or "SUB" according to the output jack. If the playback source is connected to the video (composite) jack or component video jacks and you want to output the video to the TV via the HDMI OUT jack, set "HDMI Input" to "----".
- If the video source is connected to a component video input, you must assign that input to an input selector, and your TV must be connected to COMPONENT VIDEO OUT terminal.
- If the video source is connected to a composite video input, your TV must be connected to the MONITOR OUT V terminal.
- If the video source is connected to an HDMI input, you must assign that input to an input selector, and your TV must be connected to the HDMI output(s).
- While the Pure Audio (European models) listening mode is selected, the analog video circuitry is turned off and only video signals input through HDMI IN can be output.
- Make sure the switching of input screens is proper at the monitor side such as a TV.
- When the image input from the composite video input

terminal does not get displayed, make sure that the component video input terminal is not set to the selected input. If selected, images input from the composite video input terminal cannot be output to this input switching. If only composite video input terminal connection is used, set the component video input terminal to "-----".

- Images of a component connected to the composite video input terminal cannot be output by converting on the monitor of a TV or other components connected to COMPONENT VIDEO OUT terminal.
- If "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "MAIN+SUB" or "MAIN" and Zone 2 is active, and also if on the unit you change to any other input from the TV connected to the HDMI OUT SUB jack, the image of the TV connected to the HDMI OUT MAIN jack will not be displayed.
- "Resolution" is effective only for the HDMI OUT MAIN jack if "1. Input/Output Assign" - "Monitor Out" - "Monitor Out" is set to "MAIN+SUB".

■ There is no picture from a source connected to an HDMI IN

- Reliable operation with an HDMI-to-DVI adapter is not guaranteed. In addition, video signals from a PC are not supported.
- Check if "Resolution Error" is displayed on the main unit display when video input via HDMI IN jack is not displayed. In this case, the TV does not support the resolution of the video input from the player. Change the setting on the player.

■ The on-screen menus do not appear

- On your TV, make sure that the video input to which this unit is connected is selected.
- Set "On Screen Display" to "On" in "6. Miscellaneous" - "OSD Setup".

Tuner

■ Reception is noisy, FM stereo reception is noisy, or the "FM STEREO" indicator does not stay lit

- Re-check the antenna connection.
- Relocate your antenna.
- Move the unit away from your TV or PC.
- Passing cars and airplanes can cause interference.

- Concrete walls weaken radio signals.
- Listen to the station in mono.
- When listening to an AM station, operating the remote controller may cause noise.
- If nothing improves the reception, install an outdoor antenna.

Remote Controller

■ The remote controller does not work

- Before operating this unit using remote controller, be sure to press RCV.
- Make sure that the batteries are installed with the correct polarity.
- Install new batteries. Do not mix different types of batteries, or old and new batteries.
- Make sure that the remote controller is not too far away from the unit, and that there is no obstruction between the remote controller and the remote control sensor of the unit.
- Make sure that the unit is not subjected to direct sunshine or inverter-type fluorescent lights. Relocate if necessary.
- If the unit is installed in a rack or cabinet with colored-glass doors or if the doors are closed, the remote controller may not work reliably.
- Make sure you have selected the correct remote controller mode.
- When using the remote controller to control other manufacturers' AV components, some buttons may not work as expected.
- Make sure you have entered the correct remote control code.
- Make sure to set the same ID on both the unit and remote controller.

■ Operating other Onkyo component by using a RI remote control code is not available

- Make sure that the Onkyo component is properly connected with RI cable. When RI cable is used for connection, make sure to connect analog audio cable as well. (Connecting only an RI cable will not be enough.)
- Make sure you have selected the correct remote controller mode.
- Make sure that the input display is correctly set.

- Input the RI remote control code again.
- When the RI remote control code is input, point the remote controller at remote control sensor of the unit.

■ Cannot operate Onkyo components (ones without RI connection) and components of other makers

- Make sure that the connection with other components is correct.
- Input a correct remote control code again. If there are several codes, try each code.
- Make sure that the remote controller mode is correctly selected.
- Operate the remote controller by setting toward the light receiving section of each component.
- Some components may not start the operation.

RI Dock for iPod/iPhone

■ There is no sound

- Make sure your iPod/iPhone is actually playing.
- Make sure your iPod/iPhone is properly inserted in the Dock.
- Make sure the unit is turned on, the correct input source is selected, and the volume is turned up.
- Make sure that connecting plugs are pushed in all the way.
- Try resetting your iPod/iPhone.

■ There is no video

- Make sure that your iPod/iPhone model's TV OUT setting is set to On.
- Make sure the correct input is selected on your TV or the unit.
- Some versions of the iPod/iPhone do not output video.

■ The AV receiver's remote controller does not control my iPod/iPhone

- Make sure your iPod/iPhone is properly inserted in the Dock. If your iPod/iPhone is in a case, it may not connect properly to the Dock. Always remove your iPod/iPhone from the case before inserting it into the Dock.
- The iPod/iPhone cannot be operated while it is displaying the Apple logo.
- Make sure you have selected the correct remote controller mode.

- When you use the AV receiver's remote controller, point it toward this unit.
- Before operating with the remote controller, you may need to play on your iPod/iPhone to make the input selector be recognized.
- Try resetting your iPod/iPhone.
- Depending on your iPod/iPhone model and generation, some buttons may not work as expected.

■ The unit unexpectedly selects my iPod/iPhone as the input source

- Always pause iPod/iPhone playback before selecting a different input source. If playback is not paused, the Direct Change function may select your iPod/iPhone as the input source by mistake during the transition between tracks.

■ iPod/iPhone does not work properly

- Try reconnecting your iPod/iPhone.

Multi-zone Function

■ There is no sound

- With multi-zone function, sound is output only when the signal input source is an external component connected to the analog audio input jacks of the unit, "NET", "USB", "BLUETOOTH", "AM" or "FM". Zone audio output is not possible if the player and the unit are connected via HDMI cable or digital cable. Connect the RCA audio output jacks of the player and the analog audio input jacks of the unit with an analog audio (RCA) cable. Also, some players require analog audio output setting.

Wi-Fi (Wireless LAN) Network

■ Cannot access to Wi-Fi (Wireless LAN) network or sound playback is interrupted and communication does not work

- Try plugging/unplugging the power supply of wireless LAN router and the unit, check the wireless LAN router power-on status, and try reboot of the wireless LAN router.
- The setting of SSID and encryption (WEP, etc.) is not correct. Make sure the network settings of the unit is properly set.

- Connection to an SSID that includes multi-byte characters is not supported. Name the SSID of the wireless LAN router using single-byte alphanumeric characters only and try again.
- Cannot receive radio wave due to a bad connection. Shorten the distance from wireless LAN access point or remove obstacles for a good visibility, and try again. Place the unit away from microwave ovens or other access points. 2.4 GHz band for wireless LAN may not be enough. Connect ETHERNET terminal of the unit and the router via an Ethernet cable after selecting "7. Hardware Setup" - "Network" and changing "Wi-Fi" to "Off(Wired)".
- Place the AV receiver away from the devices emitting electromagnetic waves on the 2.4GHz band (microwave ovens, game consoles, etc.). If this does not solve the problem, stop using other components which emit electromagnetic waves.
- When other wireless LAN devices are used near the unit, several issues such as interrupted playback and communication may occur. You can avoid these issues by changing the channel of your wireless LAN router. For instructions on changing channels, see the instruction manual provided with your wireless LAN router.
- If there is a metallic object near the unit, wireless LAN connection may not be possible as the metal can effect on the radio wave.
- If there is more than one access point in the network, separate each access point.
- It is recommended to place the Wi-Fi router (access point) and the unit in the same room.

■ The connection does not complete even when the automatic setting button is pressed on the wireless LAN router

- The wireless LAN router setting may be switched to Manual. Return the setting to Auto.
- Try the manual set-up. The connection may succeed.

■ On the list of SSID on the TV menu screen, there is no corresponding SSID

- When the wireless LAN router setting is at stealth mode (mode to hide the SSID key) or when ANY connection is off, the SSID is not displayed. Change the setting and try again.

Bluetooth

■ Music playback is unavailable on the unit even after successful Bluetooth connection

- Depending on the characteristics or specifications of your Bluetooth-enabled device, playback on the unit is not guaranteed.
- When the audio volume of your Bluetooth-enabled device is set low, the playback of audio may be unavailable. Volume up the Bluetooth-enabled device.
- Depending on the Bluetooth-enabled device, Send/Receive selector switch may be provided. Select Send mode.
- Even when a music file is playing on the Bluetooth-enabled device, the sound cannot be played if the connection is not established with the unit. Make sure that the unit is connected (this unit is selected as the sound output destination).

■ Sound is interrupted

- Problem may be occurring at the Bluetooth-enabled device. Check the information on a web page.

■ The audio quality is poor after connection with a Bluetooth-enabled device

- The Bluetooth reception is poor. Move the Bluetooth-enabled device closer to the unit or remove any obstacle between the Bluetooth-enabled device and this unit.

■ Cannot connect with this unit

- Try plugging/unplugging the power of the unit and try turning on/off the Bluetooth-enabled device. Re-startup of the Bluetooth-enabled device may be effective.
- The Bluetooth-enabled device does not support the profiles required for this unit.
- The Bluetooth function of the Bluetooth-enabled device is not enabled. Refer to the user manual of the Bluetooth-enabled device for how to enable the Bluetooth function.
- Near components such as microwave oven or cordless phone, which use the radio wave in the 2.4 GHz range, a radio wave interference may occur, which disables the use of this unit.

■ Bluetooth connection cannot be built

- When building a Bluetooth connection between this unit and your Bluetooth-enabled device for the first time, if the connection fails, select "7. Hardware Setup" - "Bluetooth", execute "Clear" in "Pairing Information", turn off and then on again your Bluetooth-enabled device to clear the device name, and build the connection again.
- If there is a metallic object near the unit, Bluetooth connection may not be possible as the metal can effect on the radio wave.
- If the wireless LAN and Bluetooth connections are used at the same time, try to connect the ETHERNET port and router with the Ethernet cable after selecting "7. Hardware Setup" - "Network" and changing "Wi-Fi" to "Off(Wired)" for a better connection.

■ The Auto Reconnect function does not work

- This function may not work depending on your Bluetooth-enabled device.
In that case, pair the unit and the Bluetooth-enabled device and then play again

NET/USB Function

■ Cannot access the network server

- When NET is blinking, the AV receiver is not properly connected to the home network.
- Make sure your network server has been started up.
- Make sure your network server is properly connected to the home network.
- Make sure your network server is correctly set.
- Make sure that the router LAN side port is properly connected to the AV receiver.
- Make sure that the correct IP address is allocated in "7. Hardware Setup" - "Network".

■ Playback stops while listening to music files on the network server

- Make sure the network server is compatible with this unit.
- When the PC is serving as the network server, try quitting any application software other than the server software (Windows Media® Player 12 etc.).
- If the PC is downloading or copying large files, the playback may be interrupted.

■ Cannot access the Internet radio

- Certain network service or contents available through the unit may not be accessible in case the service provider terminates its service.
- If a specific radio station is unavailable for listening, make sure the registered URL is correct, or whether the format distributed from the radio station is supported by the AV receiver.
- When NET is blinking, the AV receiver is not properly connected to the home network.
- Make sure that your modem and router are properly connected, and make sure they are both turned on.
- Make sure that connecting to Internet from other components is possible. If connecting is not possible, turn off all components connected to the network, wait for a while, and then turn on the components again.
- Make sure that the router LAN side port is properly connected to the AV receiver.
- Make sure that the correct IP address is allocated in "7. Hardware Setup" - "Network".
- Depending on ISP, setting the proxy server is necessary.
- Make sure that the used router and/or modem is supported by your ISP.

■ Cannot connect to the AV receiver from a Web browser

- Make sure that the IP address of the AV receiver is correctly input to the Internet browser.
- When DHCP is used for allocating the IP address, the IP address of this AV receiver may have been changed.
- Make sure that both AV receiver and PC are properly connected to the network.

■ USB storage device is not displayed

- Check whether the USB storage device or USB cable is correctly inserted to the USB port of the unit.
- Remove the USB storage device from the AV receiver once, and then try re-connecting.
- Performance of the hard disk that receives power from the USB port of the unit is not guaranteed.
- Depending on the type of format, the playback may not be performed normally. Check the type of the file formats that is supported.
- USB storage device with security functions may not be played.

Others

■ Power consumption in standby mode

- In the following cases, the power consumption in standby mode may reach up to a maximum of 5 W:
 - When "Network Standby" in "7. Hardware Setup" - "Network" - "Network Standby" is set to "On".
 - When "7. Hardware Setup" - "HDMI" - "HDMI CEC (RIHD)" is set to "On". (Depending on the TV status, the AV receiver will enter normal standby mode.)
 - The "7. Hardware Setup" - "HDMI" - "HDMI Through" setting is set to other than "Off".
 - When "Wakeup via Bluetooth" in "7. Hardware Setup" - "Bluetooth" is set to "On".
- The power consumption in standby mode may be larger than the value above while the MHL (Mobile High-definition Link) enabled mobile device connected to the AUX INPUT HDMI/MHL jack is being charged.

■ The sound changes when I connect my headphones

- When a listening mode other than Direct, Pure Audio (European models), or Mono is selected, connecting a headphone automatically selects Stereo.

■ The display does not work

- The display is turned off when the Pure Audio (European models) listening mode is selected.

■ How do I change the language of a multiplex source

- Select "Main" or "Sub" for "Multiplex Input Channel" in "3. Audio Adjust" - "Multiplex/Mono".

■ The RI functions do not work

- To use RI, you must make an RI connection and an analog audio connection (RCA) between the component and AV receiver, even if they are connected digitally.
- While Zone 2 is selected, the RI functions do not work.

■ The functions System On/Auto Power On and Direct Change do not work for components connected via RI

- These functions do not work when Zone 2 is turned on.

■ When performing Automatic Speaker Setup, the measurement fails and the message "Ambient noise is too high." is displayed.

- This can be caused by a malfunction in your speaker unit. Check if the unit produces normal sounds.

■ The display is dark

- Make sure that Dimmer function is not working. Press DIMMER button and change the brightness level of the display.

■ The following settings can be made for the composite video inputs

- While holding down the input selector button to configure, press HOME once at a time until "Video ATT:On" appears on the display. To resume the setup, repeat the above described step until "Video ATT: Off" is appeared on the display.
This setting is possible for input selectors assigned with one of the video inputs "VIDEO 1" to "VIDEO 3" in "1. Input/Output Assign" - "Composite Video Input". If you have a game console connected to the composite video input, and the picture is not very clear, you can attenuate the gain.
Video ATT:Off: (default).
Video ATT:On: (Gain is reduced by 2dB.)

■ If the picture on your TV/monitor connected to the HDMI output(s) is unstable

- Try turning the DeepColor function off. To turn off the DeepColor function, press STB/DVR and ⏻/STANDBY on the AV receiver simultaneously.
While holding down STB/DVR, press ⏻/STANDBY repeatedly until "Deep Color:Off" is appeared on the display. To reactivate the DeepColor function, repeat the above described step until "Deep Color:On" is appeared on the display.

The AV receiver contains a microPC for signal processing and control functions. In very rare situations, severe interference, noise from an external source, or static electricity may cause it to lockup. In the unlikely event that this happens, unplug the power cord from the wall outlet, wait at least 5 seconds, and then plug it back in.

Onkyo is not responsible for damages (such as CD rental fees) due to unsuccessful recordings caused by the unit's malfunction.

Before you record important data, make sure that the material will be recorded correctly.

Before disconnecting the power cord from the wall outlet, set the AV receiver to standby.

Reference information

Linked Operation with CEC-compatible Components

The AV receiver is compatible with the following components (as of January 2014).

TV (Random order):

- Toshiba TV sets
- Sharp TV sets

Players/Recorders (Random order):

- Onkyo and Integra RIHD-compatible players
- Toshiba players and recorders
- Sharp players and recorders (only when used together with Sharp TV sets)

Models other than those mentioned above may have some interoperability if compatible with CEC, which is part of the HDMI Standard, but operation cannot be guaranteed.

Caution: For RI functions to work properly, do not connect more RIHD-compatible components than the quantities specified below, to the HDMI jack. RI functions are not guaranteed when more RIHD-compatible components than the below mentioned quantities are connected. Furthermore, do not connect the AV receiver to another AV receiver/AV amplifier via HDMI.

- Blu-ray Disc/DVD players: up to 3.
- Blu-ray Disc/DVD recorders: up to 3.
- Cable TV tuner, terrestrial digital tuner, and satellite broadcasting tuner: up to 4 units.

Checking whether the HDMI Linked Operation Settings Are Enabled

1. Turn on the power of all connected components.
2. Turn off the power of the TV, and confirm that the power of the connected components is turned off automatically with the link operation.
3. Turn on the power of the Blu-ray Disc/DVD player/recorder.
4. Start playback on the Blu-ray Disc/DVD player/recorder, and verify the following:
 - The AV receiver automatically turns on, and selects the input to which the Blu-ray Disc/DVD player/recorder is connected.
 - The TV automatically turns on, and selects the input to which the AV receiver is connected.
5. Following the operating instructions of the TV, select "Use the TV speakers" from the menu screen of the TV, and confirm that the audio is output from the speakers of the TV, and not from the speakers connected to the AV receiver.
6. Select "Use the speakers connected from the AV receiver" from the menu screen of the TV, and confirm that the audio is output from the speakers connected to the AV receiver, and not from the TV speakers.

Caution :

- Even if you set to output audio on the TV speakers, audio will be output from the speakers connected to the AV receiver when you adjust the volume or switch the input on the AV receiver. To output audio from the TV speakers, redo the corresponding operations on the TV.
- In case of an RIHD connection with RI and RI audio control compatible components, do not connect the RI cable at the same time.
- On the TV, when you select anything other than the HDMI jack to which the AV receiver is connected, the input on the AV receiver will be switched to "TV/CD".
- The AV receiver will automatically power on in conjunction when it determines it to be necessary. Even if the AV receiver is connected to an RIHD compatible TV or player/recorder, it will not power on if it is not necessary. It may not power on in conjunction when the TV is set to output audio from the TV.
- Linked system functions with the AV receiver may not work depending on the component model connected. In such cases, operate the AV receiver directly.

- When the player/recorder cannot be operated with the remote controller of the AV receiver, the corresponding component may not be programmed to support the remote controller operation of CEC. Program the remote control code of the component maker to the remote controller for using.

About HDMI

HDMI (High Definition Multimedia Interface) is a digital interface standard for connecting TVs, projectors, Blu-ray Disc/DVD players, set-top boxes, and other video components. Until now, several separate video and audio cables have been required to connect AV components. With HDMI, a single cable can carry control signals and digital audio, digital video (2-channel PCM, multichannel digital audio, and multichannel PCM).

The HDMI video stream (i.e., video signal) is compatible with DVI (Digital Visual Interface) (*1), so TVs and displays with a DVI input can be connected by using an HDMI-to-DVI adapter cable. (This may not work with some TVs and displays, resulting in no picture.)

This unit supports HDCP (High-bandwidth Digital Content Protection) (*2), so it can display picture only on HDCP-compatible components.

HDMI of the unit supports the following functions. Audio Return Channel, 3D, x.v.Color, DeepColor, Lip Sync, 4K (Upscaling and Passthrough).

Audio Formats Supported by The Unit:

- 2-channel linear PCM (32 - 192 kHz, 16/20/24 bit)
- Multichannel linear PCM (up to 7.1 ch, 32 - 192 kHz, 16/20/24 bit)
- Bitstream (Dolby Atmos, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-HD High Resolution Audio, DTS-HD Master Audio)
- DSD

Your Blu-ray Disc/DVD player must also support HDMI output of the above audio formats.

About Copyright Protection:

The unit supports Revision 1.4 and Revision 2.2 (HDMI OUT MAIN and HDMI IN3 only) of the HDCP (High-bandwidth Digital Content Protection) (*2), a copy-protection system for digital video signals. Other devices connected to the unit must also support HDCP.

- *1 DVI (Digital Visual Interface): The digital display interface standard set by the DDWG (*3) in 1999.
- *2 HDCP (High-bandwidth Digital Content Protection): The video encryption technology developed by Intel for HDMI/DVI. It is designed to protect video content and requires a HDCP-compatible HDMI/DVI receiver to display the encrypted video.
- *3 DDWG (Digital Display Working Group): Led by Intel, Compaq, Fujitsu, Hewlett Packard, IBM, NEC, and Silicon Image, this open industry group's objective is to address the industry's requirements for a digital connectivity specification for high-performance PC and digital displays.

Caution :

- There are some content that can be played only with HDCP Rev. 2.2 compatible devices. To play such content, connect an HDCP Rev.2.2 compatible TV or player to the HDMI OUT MAIN jack or HDMI IN3 jack of the unit.
- The HDMI video stream (i.e., video signal) is compatible with DVI (Digital Visual Interface), so TVs and displays with a DVI input can be connected by using an HDMI-to-DVI adapter cable. (Note that DVI connections only carry video, so you will need to make a separate connection for audio.) However, reliable operation with such an adapter is not guaranteed. In addition, video signals from a PC are not supported.
- The HDMI audio signal (sampling rate, bit length, etc.) may be restricted by the connected source component. If the picture is poor or there is no sound from a component connected via HDMI, check its setup. Refer to the connected component's instruction manual for details.

Resolution supported by HDMI OUT MAIN/SUB jack

See below the video signal types and resolutions that the unit can output when it receives the input signals of the following types and resolutions. The supported resolutions are shown as "Input : Output".

(North American models)**■ HDMI : HDMI**

4K : 4K (*1/*2)
 1080p/24: 4K, 1080p/24 (*1), 2560 × 1080p
 2560 × 1080p: 4K (*3), 2560 × 1080p (*1)
 1680 × 720p : 4K (*3), 1080p/24, 2560 × 1080p,
 1680 × 720p (*1), 1080p
 1080p : 4K (*4), 2560 × 1080p, 1080p (*1)
 1080i : 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i (*1), 720p
 720p: 4K (*4), 1080p/24, 2560 × 1080p, 1680 × 720p,
 1080p, 1080i, 720p (*1)
 480p : 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i,
 720p, 480p (*1)
 480i: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i,
 720p, 480p, 480i (*1)

■ HDMI : Component

No output

■ HDMI : Composite

No output

■ Component : HDMI

480i: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i,
 720p, 480p, 480i (*1)

■ Component : Component

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

■ Composite : HDMI

480i: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i,
 720p, 480p, 480i (*1)

■ Composite: Composite

480i: 480i

*1 Supported resolutions for HDMI OUT SUB.

*2 Supported resolution: [3840 × 2160 24/30/60Hz], [4096 × 2160 24/30/60Hz]

*3 Supported resolution: [3840 × 2160 24/30Hz]

*4 Supported resolution: [3840 × 2160 24/30Hz], [4096 × 2160 24/30Hz]

(European models)**■ HDMI : HDMI**

4K : 4K (*1/*2)
 1080p/24: 4K, 1080p/24 (*1), 2560 × 1080p
 2560 × 1080p: 4K (*3), 2560 × 1080p (*1)
 1680 × 720p : 4K (*3), 1080p/24, 2560 × 1080p,
 1680 × 720p (*1), 1080p
 1080p : 4K (*4), 2560 × 1080p, 1080p (*1)
 1080i : 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i (*1), 720p
 720p: 4K (*4), 1080p/24, 2560 × 1080p, 1680 × 720p,
 1080p, 1080i, 720p (*1)
 480p/576p: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p,
 1080i, 720p, 480p/576p (*1)
 480i/576i: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p,
 1080i, 720p, 480p/576p, 480i/576i (*1)

■ HDMI : Component

No output

■ HDMI : Composite

No output

■ Component : HDMI

480i/576i: 4K (*4), 2560 × 1080p, 1680 × 720p,
 1080p, 1080i, 720p, 480p/576p, 480i/576i (*1)

■ Component : Component

1080p : 1080p
 1080i : 1080i
 720p : 720p
 480p/576p: 480p/576p
 480i/576i: 480i/576i

■ Composite : HDMI

480i: 4K (*4), 2560 × 1080p, 1680 × 720p, 1080p, 1080i,
 720p, 480p/576p, 480i/576i (*1)

■ Composite: Composite

480i/576i: 480i/576i

- *1 Supported resolutions for HDMI OUT SUB.
- *2 Supported resolution: [3840 × 2160 24/25/30/50/60Hz], [4096 × 2160 24/25/30/50/60Hz]
- *3 Supported resolution: [3840 × 2160 24/25/30Hz]
- *4 Supported resolution: [3840 × 2160 24/25/30Hz], [4096 × 2160 24/25/30Hz]

Home network (LAN)

The connection of several components via cables enabling the mutual communication is called a network.

At households, many families create (generally, the term "build" is used) a network to connect PC and gaming machines to the Internet and to exchange data between PC.

The network established in a relatively narrow area such as one household is called a LAN (Local Area Network). In this manual, a term "home network" (network for a family) is used instead of "LAN," so this LAN becomes more familiar.

By connecting this unit with the network server such as a PC, playing music files in the network server (in the PC) is possible. Moreover, by connecting to the Internet, listening to the Internet radio is also possible.

This unit, PC, and Internet are not directly connected.

When connecting with a PC and/or Internet, several components (network components) are necessary.

Components necessary for establishing a home network (LAN):

Components necessary for the home network (LAN) for using the NET function of this unit are as follows.

■ Router

A router is a device that controls information (data) flow between the unit, PC, and the Internet.

As a network term, the flow of information (data) is called "traffic". The router has a role to control the information flow as the traffic control, between connected components.

- A router with a built-in 100Base-TX switch is recommended.
- In addition, if your router has the DHCP function, facilitating the network setting becomes possible.

- Some routers have a built-in modem, and some Internet Service Providers (ISP) require you to use specific routers.

Please consult your ISP or PC dealer if you are unsure.

■ CAT5 Ethernet cable

The Ethernet cable is a cable that actually connects components that comprise the network. There are straight type and cross type Ethernet cables.

- Use a shielded CAT5 Ethernet cable (straight-type) to connect the unit to your home network.

Consult your cable store for details of Ethernet cable.

■ Network server (When PC etc./network server is used)

Component that stores music files and provides the unit with those files at the time of playback.

- Requirements for use with this unit depend on the component that is used as a network server.
- Conditions for pleasant playback of music files on the unit depend on the using network server (PC performance). See instruction manuals of using components.

■ Modem (when Internet radio is used)

Device that connects home network (LAN) and Internet. There are many kinds of modems depending on the forms of Internet connection.

In addition, when connecting to the Internet, it is required to conclude an agreement with a company that provides Internet connection service, called ISP (Internet Service Provider).

Use a modem that is recommended by your ISP company for the Internet connection.

There are some devices that have both router and modem functions.

Within above network components, prepare a router, Ethernet cable, and network server when the NET function "network server" is used.

For enjoying the NET function "Internet radio," it is necessary to use the router, Ethernet cable, and modem (and agreement with ISP).

Server Requirements

■ Server playback

This unit can play digital music files stored on a PC or media server and supports the following technologies:

- Windows Media® Player 11
- Windows Media® Player 12
- DLNA-certified media server

The network server must be connected to the same network as this unit.

Up to 20,000 folders can be displayed, and folders may be nested up to 16 levels deep.

Caution: Depending on the media server, the unit may not recognize it, or may not be able to play its music files.

■ Remote playback

Remote playback is the function that enables this unit to play music files saved in different components by operating the DLNA-compliant controller component and PC in the home network.

- Windows Media® Player 12
- DLNA-certified (within DLNA Interoperability Guidelines version 1.5) media server or controller component.

* The setting varies depending on the media server or controller components. Refer to your components' instruction manual for details.

If the operating system of your personal PC is Windows® 8/Windows® 7, Windows Media® Player 12 is already installed. For more information, see the Microsoft web site.

USB Storage Device Requirements

- USB mass storage device class (but not always guaranteed).
- FAT16 or FAT32 file system format.
- If the USB storage device has been partitioned, each section will be treated as an independent device.
- Up to 20,000 folders can be displayed, and folders may be nested up to 16 levels deep.
- USB hubs and USB storage devices with hub functions are not supported. Do not connect these devices to the unit.

Caution :

- If the media you connect is not supported, the message “No Storage” will be displayed.
- Sound files that are protected by copyright cannot be played.
- When the USB audio player and this unit are connected, the audio player screen and the screen of the unit may be different. In addition, control functions of the audio player (classifying and sorting music files and adding information, etc.) are not available on this unit.
- Do not connect a PC to the USB port of the unit. Inputting sound to the USB port of the unit from a PC is not possible.
- Media inserted to the USB card reader may not be available in this function.
- Some USB storage devices and its contents may require some time to be read.
- Depending on the USB storage device, proper reading of the contents and proper supply of the power supply may not be possible.
- Onkyo accepts no responsibility whatsoever for the loss or damage to data stored on a USB storage device when that device is used with this unit. We recommend that you back up your important music files beforehand.
- Performance of the hard disk that receives power from the USB port of the unit is not guaranteed.
- If you connect a USB hard disk drive to the USB port of the unit, we recommend that you use its AC adapter to power it.
- When an audio player that are operated with batteries is used, make sure that the batteries have enough remaining power.
- USB storage devices with security functions cannot be played.

Supported Audio Formats

- For server playback and playback from a USB storage device, this unit supports the following music file formats.
- Music files of the following formats that can be played depend on the network server. For example, when using Windows Media® Player 12, not all music files in the PC can be played. The music files that can be played are the ones registered to the Windows Media® Player 12 library.
- Variable bit-rate (VBR) files are supported. However, playback times may not be displayed correctly.
- This unit supports the gapless playback of the USB storage device in the following conditions. When WAV, FLAC and Apple Lossless files are continuously played back with the same format, sampling frequency, channels and quantization bit rate.
- Remote playback does not support the gapless

playback.

- For playback via wireless LAN, the sampling rate of 88.2 kHz or higher, DSD and Dolby TrueHD are not supported.

Caution :

- With remote playback, this unit does not support the following music file formats:
 - FLAC, Ogg Vorbis, DSD and Dolby TrueHD.

■ MP3 (.mp3 or .MP3)

- Supported formats: MPEG-1/MPEG-2 Audio Layer 3
- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 8 kbps and 320 kbps, and VBR.

■ WMA (.wma or .WMA)

- Supported sampling rates: 8 kHz, 11.025 kHz, 16 kHz, 22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 5 kbps and 320 kbps, and VBR.
- WMA Pro/Voice formats are not supported.

■ WMA Lossless (.wma or .WMA)

- Supported sampling rates: 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz
- Quantization bit: 16 bit, 24 bit

■ WAV (.wav or .WAV)

WAV files contain uncompressed PCM digital audio.

- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
- Quantization bit: 8 bit, 16 bit, 24 bit
 - * For playback from a USB storage device, sampling rates of 176.4 kHz and 192 kHz are not supported.

■ AAC (.aac/.m4a/.mp4/.3gp/.3g2/.AAC/.M4A/.MP4/.3GP or .3G2)

- Supported formats: MPEG-2/MPEG-4 Audio
- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz
- Supported bitrates: Between 8 kbps and 320 kbps, and VBR.

■ FLAC (.flac or .FLAC)

- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
- Quantization bit: 8 bit, 16 bit, 24 bit
 - * For playback from a USB storage device, sampling rates of 176.4 kHz and 192 kHz are not supported.

■ Ogg Vorbis (.ogg or .OGG)

- Supported sampling rates: 8 kHz, 11.025 kHz, 16 kHz, 22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 32 kbps and 500 kbps, and VBR.
- Incompatible files cannot be played.

■ LPCM (Linear PCM)

- Supported sampling rates: 44.1 kHz, 48 kHz
- Quantization bit: 16 bit
 - * Only for playback via DLNA.

■ Apple Lossless (.m4a/.mp4/.M4A/.MP4)

- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz
- Quantization bit: 16 bit, 24 bit

■ DSD (.dsf or .DSF)

- Supported sampling rates: 2.8224 MHz, 5.6448 MHz
 - * For playback from a USB storage device, 5.6448 MHz is not supported.

■ Dolby TrueHD (.vr/.mlp/.VR/.MLP)

- Supported sampling rates: 48 kHz, 64 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz
 - * For playback from a USB storage device, only sampling rates of 48 kHz is supported.
 - * Playback via DLNA is not supported.

Radio Wave Caution

The AV receiver uses a 2.4 GHz radio wave frequency, which is a band used by other wireless systems as 1 and 2 described below.

1. Devices which use a 2.4 GHz radio wave frequency
 - Cordless phones
 - Cordless facsimiles
 - Microwave ovens
 - Wireless LAN devices (IEEE802.11b/g/n)
 - Wireless AV equipment
 - Wireless controllers for game systems
 - Microwave oven-based health aids
 - Video transmitter
 - Specific type of external monitor and LCD display
2. Less common devices which use a 2.4 GHz radio wave frequency
 - Anti-theft systems
 - Amateur radio stations (HAM)
 - Warehouse logistic management systems
 - Discrimination systems for train or emergency vehicles

If these devices and the AV receiver are used at the same time, the audio may be undesirably stopped or disturbed due to a radio wave interference.

Suggestions for improvement

- Switch off the devices which emit the radio wave.
- Place the interfering devices away from the AV receiver.
- The AV receiver uses radio wave, and a third person can receive the wave on purpose or accidentally. Do not use the communication for important or fatal matters.
- We assume no responsibility whatsoever for any error or damage of network environment or access device resulting from the use of this apparatus.
Confirm with the provider or access device maker for more information.

Scope of Operation

Use of the AV receiver is limited to home use.
(Transmission distances may be reduced depending on communication environment.)

In the following locations, poor condition or inability to

receive radio waves may cause the audio to be interrupted or stopped:

- In reinforced concrete buildings or steel framed or iron framed buildings.
- Near large metallic furniture.
- In a crowd of people or near a building or obstacle.
- In a location exposed to the magnetic field, static electricity or radio wave interference from radio communication equipment using the same frequency band (2.4 GHz) as the AV receiver, such as a 2.4 GHz wireless LAN device (IEEE802.11b/g/n) or microwave oven.
- If you live in a heavily populated residential area (apartment, townhouse, etc.) and if your neighbor's microwave oven is placed near your AV receiver, you may experience radio wave interference. If this occurs, move your AV receiver to a different place.
When the microwave oven is not in use, there will be no radio wave interference.

Radio Wave Reflections

The radio waves received by the AV receiver include the radio wave coming directly from the devices and waves coming from various directions due to reflections by walls, furniture and building (reflected waves). The reflected waves (due to obstacles and reflecting objects) further produce a variety of reflected waves as well as variation in reception condition depending on locations. If the audio cannot be received properly due to this phenomenon, try moving the location of the wireless LAN device a little. Also note that audio may be interrupted due to the reflected waves when a person crosses or approaches the space between the AV receiver and the wireless LAN device.

- We assume no responsibility whatsoever for any damages resulting from the use of this apparatus except in the cases deemed acceptable under the applicable laws and regulations.
- Operation in all environment is not guaranteed for wireless LAN. The communication may not be possible or have desirable communication speed.

Precautions

- Do not use this apparatus near an electronic device handling high-accuracy controls or weak signals. Doing so may cause an accident due to a malfunction of the device.
- Do not use this apparatus in use prohibited location such as an aircraft equipment or a hospital. Doing so may cause an accident due to a malfunction of an electronic device or an electro-medical apparatus. Follow the instructions of the medical facilities.

■ Electronic device which requires cautions

Hearing aid, pace maker, other medical electronic devices, fire alarm, automatic door, and other automatic control device.

When using a pace maker or other medical electronic devices, confirm with the medical electronic device maker or dealer for the effect of the radio wave.

Remote control sensor

■ Television (A to E)

A.R. Systems	10037, 10556
Accent	10037
Acoustic Solutions	11667, 11585, 11037
Action	10650
Addison	10653, 11150
AEG	11037
Aiko	10037
Aim	10037
Akai	10037, 12676, 10208, 10714, 10556, 12414, 13183, 10178
Akiba	10037
Akito	10037
Akura	10037, 10714, 11667, 11585, 10171, 11037
Alba	11037, 12676, 10037, 10714, 11585
Alien	11037
Allstar	10037
Amstrad	10037, 10171, 11037
Anam	10037, 10650
Andersson	11585, 12676
Anitech	10037
Ansonic	10037
AOC	11365, 12769, 10178, 10625, 11150
Apex Digital	12397
Ardem	10714, 10037
Arena	10037
Ario	12397
Aristona	10556, 10037
ART	11037
Art Mito	11585

Asberg	10037
Astra	10037
ATD	10698
Atlantic	10037
Audiosonic	10714, 10037
Audioworld	10698
Autovox	12676
Aventura	10171
Axxon	10714
Baird	10208
Barco	10556
Base	10698
Basic Line	10037, 11037, 10556
Baur	10037, 10195
Beaumarck	10178
Beijing	10208
Beko	10714, 10037
Bell & Howell	10017
Belson	10698
Belstar	11037
Beon	10037
Berthen	10556
Bestar	10037
Bexa	12493
BGH	12414
Black Diamond	11037
Blaupunkt	10195
Blue Sky	10714, 10037, 11037, 10556, 10625
BPL	10208, 10037
Brandt	10625, 11585, 10714
Brinkmann	10037
Briovega	10037
Britania	12414
Bush	11037, 10037, 10714, 12676, 11667, 10208, 10556, 10698, 11585

Byd:sign	12209
Camper	10037
Carad	11037
Carena	10037
Carrefour	10037
Cascade	10037
Casio	10037
Cathay	10037
CCE	13782, 10037
Celcus	12676, 11585
Celebrity	10000
Centrum	11037
Centurion	10037
Changhong	13434, 12769, 10508
Chimei	12769
Chun Yun	10000, 11150
Chung Hsin	11150
Clarivox	10037
Clatronic	10037, 10714
Clayton	11037
Coby	13478
Commercial Solutions	11447
Condor	10037
Conrowa	10698
Contec	10037
Cosmel	10037
CPTEC	10625
Crown	10037, 10714, 10208, 11037
Crypton	11667
Curtis	12397
Cyberpix	11667
D-Vision	10037, 10556
Daewoo	10037, 10556, 10178, 11150
Dansai	10037, 10208
Dantax	11037, 10714, 12676
Datsura	10208
Dawa	10037

Daytron	10037
De Graaf	10208
Decca	10037
Denver	10037
Desmet	10037
Diamant	10037
Diamond	10698
Digatron	10037
Digihome	11667, 12676
Digiline	10037
Digisonic	11826
Digitor	10698, 10037
Dixi	10037
Drean	10037
DSE	10698
Dual	11667, 10037, 11037, 11585, 12676, 10714
Dumont	10017
Durabrand	10171, 10178, 10714, 11037
Dux	10037
DX Antenna	13817
Dynatron	10037
Dynex	12049
E.S.C.	10037
ECE	10037
Elbe	10037, 10556
Electroband	10000
Electrograph	11755
Elektra	10017
Elfunk	11037
ELG	10037
Elin	10037
Elite	10037
Emerson	11864, 10171, 11394, 10178, 10037, 10714
Envision	11365, 11506
Epson	11379
Erres	10037

ESA	10171
Euroman	10037
Europa	10037
Europhon	10037
Evesham Technology	11667
Excello	11037
Exquisit	10037

■ Television (F to J)

F&U	12676
FairTec	11585
Ferguson	10625, 11037, 10037, 10195, 11585, 12676
Fidelity	10037, 10171
Finlandia	10208
Finlux	11667, 10714, 12676, 10037, 10556
Firstline	10714, 10037, 11037, 10208, 10556
Fisher	10208
Flint	10037
Formenti	10037
Fraba	10037
Freesat	11636
Friac	10037
Frigidaire	11826
Fujitsu	10809
Fujitsu Siemens	10809
Funai	13817, 10171, 11394, 11037, 10714
Gaba	11037
Galaxi	10037
Galaxis	10037
Gateway	11755
GE	11447, 10178, 10625, 11454
GEC	10037

Genesis	10037
Genexxa	10037
GFM	10171, 11864
Gibraltar	10017
Gibson	11826
Gintai	11150
Godrej	11585
GoGen	12676
GoldStar	10178, 10037, 10714, 11150
Goodmans	10037, 11037, 11667, 10714, 11585, 10556, 10625, 12676
Gorenje	11585, 12676
Gradiente	10037
Graetz	10714
Granada	10208, 10037
Grandin	10037, 10714, 11037, 10556
Grundig	10195, 11223, 10556, 10037, 11667, 12676
H-Buster	13620
Haier	13620, 10698, 10037, 10508
Hallmark	10178
Hankook	10178
Hannspree	11826
Hanseatic	10037, 10714, 10625, 10556
Hantarex	10037
Hantor	10037
Harwood	10037
Hauppauge	10037
HB	10714
HCM	10037
Heran	11826
Herosonic	11826
Highline	10037
Hinari	10037, 10208
HiPlus	11826

Hisawa	10714
Hisense	10556, 10508, 10208
Hitachi	11643, 12676, 11576, 11585, 11691, 11037, 11667, 10037, 10150, 10178, 10508, 11150, 12170
Hitachi Fujian	10150
Hitec	10698
Hoher	10714
Hornlyphon	10037
Hua Tun	11150
Hypson	10037, 10714, 10556, 11037
Hyundai	10698, 12676, 11037
Iberia	10037
ICE	10037
iLo	11394
Imperial	10037
Indiana	10037
Inno Hit	11037, 11585
Innova	10037
Insignia	12049, 10171
Integra	11807, 13100, 13500
Inteq	10017
Interbuy	10037
Interfunk	10037
Internal	10556
Intervision	10037
Irradio	10037
IRT	10698
Isis	12676
Isukai	10037
ITS	10037
ITT	12676, 10208
ITT Nokia	10208
ITV	10037

JCB	10000
Jinfeng	10208
Jinxing	10037, 10556, 10698
JMB	12676, 10556
Jubilee	10556
JVC	11774, 10653, 11601, 12271, 11428, 10508, 10650, 12676

■ Television (K to N)

Kaisui	10037
Karcher	10714
Kathrein	10556
Kendo	11037, 11585, 12676, 10037
Kennex	11037
Kioto	10556
Kiton	10037
KLL	10037
Kneissel	10037, 10556
Kolin	10150, 10037, 11150, 11755
Kolster	10037
Konka	10037, 10714
Konnig	10037
Korpel	10037
Kosmos	10037
Kunlun	10208
Kupperbusch	12676
L&S Electronic	10714
Lavis	11037
Lecson	10037
Lenco	10037, 11037
Leyco	10037

LG	11840, 11860, 11423, 12731, 12182, 12358, 12362, 10178, 12424, 10037, 10714, 10017, 10556, 10698
LiesenKotter	10037
Lifetec	10037, 11037, 10714
Linetech	12676
Linsar	12676, 11667, 11585
Local India Brand	10208
Local Malaysia Brand	10698
Lodos	11037
Loewe	10633
Logik	11037, 10698, 11585
Luma	11037
Lumatron	10037
Lumenio	10037
Lux May	10037
Luxor	11037, 12676, 10208
LXI	10178
Madison	10037
Magnavox	12372, 11454, 11506, 10171, 11365, 11755, 11867
Magnum	10714, 10037
Manesth	10037
Manhattan	10037, 11037
Marantz	10037, 10556
Mark	10037, 10714
Mastro	10698
Masuda	10037
Matsui	10037, 10195, 10208, 11037, 10714, 10556, 11667, 12676

Matsushita	10650
Maxent	11755
Maxess	12493
Meck	10698
Mediator	10037, 10556
Medion	10714, 10037, 11037, 12676, 11667, 10556, 10698, 11585
Megatron	10178
MEI	11037
Melectronic	10037, 10195, 10714
Memorex	10178, 10150, 11037
Mercury	10037
Mermaid	10037
Metronic	10625
Metz	11037, 10195
MGA	10150, 10178
Micromaxx	10037, 10714, 11037
Midland	10017
Mikomi	11585, 11667
Minato	10037
Minerva	10195
Ministry Of Sound	11667
Minoka	10037
Mitsubishi	10150, 11250, 12313, 10178, 10037, 10556, 11150, 11037, 11171
Moree	10037
Morgan's	10037
Moserbaer	11585
MTlogic	10714
Mudan	10208
Multitec	11037, 10037
Multitech	10037
Myryad	10556
NAD	10037, 10178

Naiko	10037
Nakimura	10037
National	10208, 10508
NEC	12461, 10178, 10508, 10653, 11150
Neckermann	10037, 10556
NEI	10037, 11037
Neoka	11826
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NetTV	11755
Neufunk	10556, 10714, 10037
Nevir	12676
New Sonic	11826
New Tech	10037, 10556
Newave	10178, 11150
Nikkai	10037
Nikkei	10714
Nikko	10178
Nokia	10208
Norcent	11365
Nordmende	10195, 11585, 10037, 10714, 11667
Normerel	10037
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NPG	13434

■ Television (O to S)

Oceanic	10208
OK Line	11037
OK.	13434, 12676
Okano	10037
OKI	11667, 12676, 13434, 11585
Omni	10698
Onei	11667
Onida	10653, 12414
Onimax	10714

Onix	10698
Onkyo	11807, 13100, 13500
Onn	11667
Opera	10037, 10714
Optimus	10650
Orava	11037
Orbit	10037
Orion	10037, 10556, 10714, 11037, 12676
Orline	10037
Ormond	11037
Osaki	10037, 10556
Osio	10037
Osume	10037
Otto Versand	10037, 10556, 10195
Pacific	10714, 11037, 10556
Palladium	10037, 10714, 10556
Palsonic	12461, 10698, 10037
Panama	10037
Panasonic	11636, 11291, 11480, 11650, 10650, 13825, 12170, 10037, 10208, 10508
Panavideo	13825
Panavision	10037
Panda	10208, 10508, 10698
Penney	10178
Perdio	10037
Perfekt	10037
Philco	13426, 12414, 10037, 10178

Philips	10037, 12800, 10556, 11887, 11867, 11506, 12372, 12680, 11454, 10171, 11365, 10017, 10000, 10178, 11394
Phocus	10714
Phoenix	10037
Phonola	10037, 10556
Pioneer	11457, 10037, 10698, 11636, 12171
PJ	11506
Plantron	10037
Playsonic	10714, 10037
Polaroid	12676, 11826
Powerpoint	10037, 10698
Prima	12461
Prinston	11037
Pro Vision	10037, 10556, 10714
Profitronic	10037
Proline	10625, 10037, 11037, 12676
Proscan	11447
Prosonic	10714, 12676, 10037, 11585, 11667
Protech	10037, 11037
Proton	10178
Pulsar	10017
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Quasar	11291, 10650
Quelle	10037, 11037, 10195
R-Line	10037
Radiola	10037, 10556
Radiomarelli	10037

RadioShack	10037, 10178
Radiotone	10037, 11037
RCA	11447, 12746, 10625, 12434, 12932, 12187, 10000, 10178, 10618, 11454, 13426
Realistic	10178
Recor	10037
Rectiligne	10037
Red Star	10037
Reflex	10037, 11037
Relisys	11585
Relon	11826
Remotec	10037, 10171
Reoc	10714
Revox	10037
RFT	10037
Roadstar	11037, 10037, 10714
Rowa	10698, 10037
Runco	10017
Saba	10625, 10714, 12676
Sagem	10618
Saivod	11037, 10037
Salora	10208
Sampo	11755, 10171, 10178, 10650
Samsung	12051, 11632, 10618, 10037, 10556, 10178, 10208, 11150
Sansui	10037, 10714
Sanyo	10208, 11142, 11585, 12676, 12461, 11974, 12769, 10508, 11037, 11150, 11365, 11667
SBR	10037, 10556

Schaub Lorenz	10714, 12676, 11667
Schneider	10037, 10556, 10714, 11037, 11585, 12676
Schontech	11037
Scotch	10178
Scott	10178
Sears	10171, 10178
Seelver	11037
SEG	11037, 10037, 13434
SEI	10037
Sei-Sinudyne	10037
Semp Toshiba	13793
Sencor	10714
Senzu	12493
Serie Dorada	10178
Shanghai	10208
Sharp	11659, 12360, 10818, 11393, 12676, 10650, 11165, 11423
Sheng Chia	11150
Shintoshi	10037
Shivaki	10178, 10037
Siam	10037
Siemens	10195, 10037
Siera	10556, 10037
Silva	10037
Silva Schneider	10037
SilverCrest	12676, 11037
Sinudyne	10037
SKY	10037
Skyworth	12769, 10037, 10698
Solavox	10037
Soniko	10037
Soniq	12493
Sonitron	10208
Sonneclair	10037
Sonoko	10037

Sonorol	10208
Sontec	10037
Sony	12778, 11825, 10810, 10000, 11651, 11505, 11167
Soundesign	10178
Soundwave	10037, 11037
Sowa	10178, 11150
Soyea	10698
Soyo	11826
Squareview	10171
SR Standard	10037, 11037
Starlite	10037
STI	13793
Strato	10037
Sunny	10037
Sunstar	10037
Sunstech	12676
Sunwood	10037
Supersonic	10208
SuperTech	10037, 10556
Supra	10178
Supreme	10000
Svasa	10208
Sylvania	10171, 11864, 11394
Symphonic	10171, 11394
Synco	11755, 10000, 10178, 11826
Sysline	10037
■ Television (T to Z)	
Tacico	10178, 11150
Tai Yi	11150
Talent	10178
Tashiko	10650, 11150
Tatung	10037, 11150
TCL	12434, 13183, 13426, 12414, 10698

TCM	10714
Teac	10037, 11037, 10698, 10714, 11755, 10171, 10178
Tec	10037
Tech Line	10037, 11585
Technica	11037
Technics	10556, 10650
Technika	11667, 12676
TechniSat	10556
Technisson	10714
Techno	11585
Technosonic	10556, 10625
Techwood	11667, 11037, 12676
Tecnimagen	10556
Teco	10178, 10653
Tedelex	10208
Teknika	10150
TELE System	11585
Telecor	10037
Telefunken	10625, 12676, 12414, 10698, 11585, 10037, 10714, 11667
Telefusion	10037
Telegazi	10037
Telemeister	10037
Telesonic	10037
Telestar	10037, 10556
Teletech	10037, 11037
Televue	10037
Tennessee	10037
Tensai	10037, 11037
Terris	11667
Tesla	11037, 10037, 10556, 10714
Tevion	10714, 11037, 10037, 10556, 11585, 11667

Thomson	10625, 11447, 10037
Thorn	10037
TMK	10178
TNCi	10017
Tokai	10037, 11037
Tokaido	11037
Topline	11037
Toshiba	11508, 11524, 11656, 12676, 10508, 13570, 10650, 11037, 10195, 10618, 11150, 11169
TRANS-continent	10037, 10556, 11037
Tranasonic	10037, 10698
Triad	10556
Triumph	10037, 10556
TVTEXT 95	10556
Uher	10037
Ultravox	10037
Unic Line	10037
Uniden	12122, 12676, 11667
United	10714, 11037, 10037, 10556
Universal	10037, 10714
Universum	10037, 11037, 10195, 10618
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V7 Videoseven	11755
Vestel	11037, 10037, 11585, 11667
Vexa	10037
Victor	11428, 10650, 10653
Videocon	10508, 10037
VideoSystem	10037
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