SONY

3-094-056-**13**(1)

Home Theatre System

Operating Instructions

HT-DDW1600

WARNING

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

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

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

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

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

Don't throw away batteries with general house waste; dispose of them correctly as chemical waste.

About This Manual

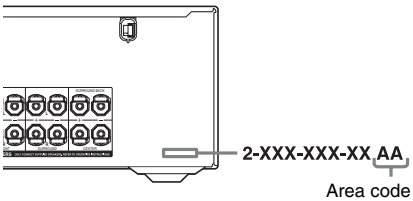
- The instructions in this manual are for model HT-DDW1600. In this manual, models of area code SP is used for illustration purposes unless stated otherwise. Any difference in operation is clearly indicated in the text, for example, “Models of area code MX only”.
- The instructions in this manual describe the controls on the supplied remote. You can also use the controls on the receiver if they have the same or similar names as those on the remote.

The HT-DDW1600 consists of:

• Receiver	STR-K1600
• Speaker system	
– Front speakers	SS-MSP16
– Center speaker	SS-CNP16
– Surround/Surround back speakers	SS-SRP16
– Sub woofer	SA-WP16

About area codes

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



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

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

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

** “DTS” and “DTS-ES | Neo:6” are registered trademarks of DTS, Inc. “96/24” is a trademark of DTS, Inc.

This receiver incorporates High-Definition Multimedia Interface (HDMI™) technology. HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Note for the supplied remote

RM-AAU013 (Models of area code MX, E51, AR only)

RM-AAU015 (Models of area code SP, AU, TH only)

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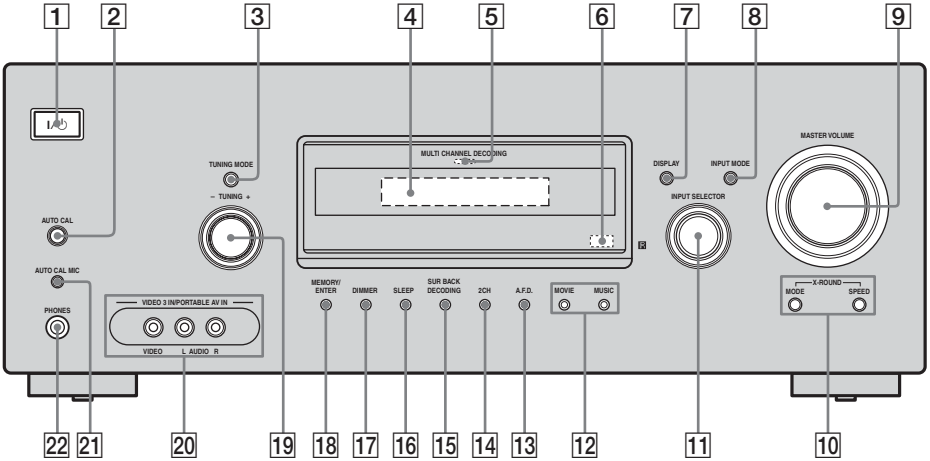


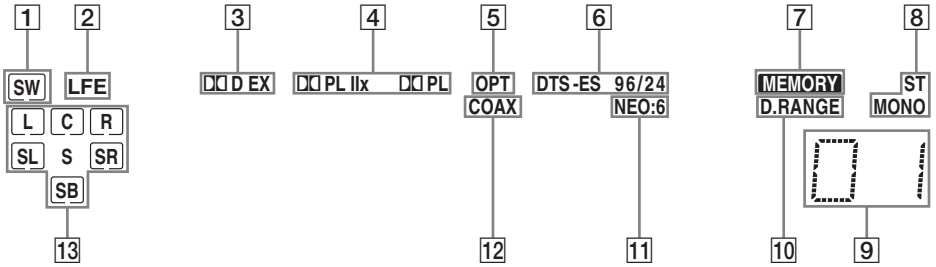
Name	Function
1 **I/⏻ (on/standby)**	Press to turn the receiver on or off (page 31, 39, 40, 57, 70, 78).
2 **AUTO CAL**	Press to activate the Auto Calibration function (page 33).
3 **TUNING MODE**	Press to select the tuning mode (page 58, 61, 78).
4 **Display**	The current status of the selected component or a list of selectable items appears here (page 7).
5 **MULTI CHANNEL DECODING lamp**	Lights up when multi channel audio is decoded (page 40).
6 **Remote sensor**	Receives signals from remote commander.

Name	Function
7 **DISPLAY**	Press to select information displayed on the display (page 66, 67).
8 **INPUT MODE**	Press to select the input mode when the same components are connected to both digital and analog jacks (page 62).
9 **MASTER VOLUME**	Turn to adjust the volume level of all speakers at the same time (page 36, 37, 39, 40).
10 **X-ROUND MODE**	Press to select the X-ROUND mode (page 66).
X-ROUND SPEED	Press to adjust the speed of X-ROUND effect (page 66).

continued

Name	Function
11 **INPUT SELECTOR**	Turn to select the input source to playback (page 37, 39, 40, 58, 59, 60, 61, 62, 65, 67, 68, 69).
12 **MOVIE, MUSIC**	Press to select sound fields (MOVIE, MUSIC) (page 54).
13 **A.F.D.**	Press to select A.F.D. mode (page 52, 56).
14 **2CH**	Press to select 2CH STEREO mode (page 56, 57).
15 **SUR BACK DECODING**	Press to select the surround back decoding mode (page 46).
16 **SLEEP**	Press to activate the Sleep Timer function and the duration which the receiver turns off automatically (page 68).
17 **DIMMER**	Press to change the brightness of the display (page 51).
18 **MEMORY/ ENTER**	Press to store a station or enter the selection when selecting the settings (page 31)
19 **TUNING +/–**	Turn to scan a station (page 58, 61).
20 **VIDEO 3 IN/ PORTABLE AV IN jacks**	To connect a camcorder or video game (page 27, 37).
21 **AUTO CAL MIC jack**	Connects to the supplied optimizer microphone for the Auto Calibration function (page 32).
22 **PHONES jack**	Connects to a headphone (page 74).

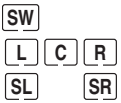
About the indicators on the display



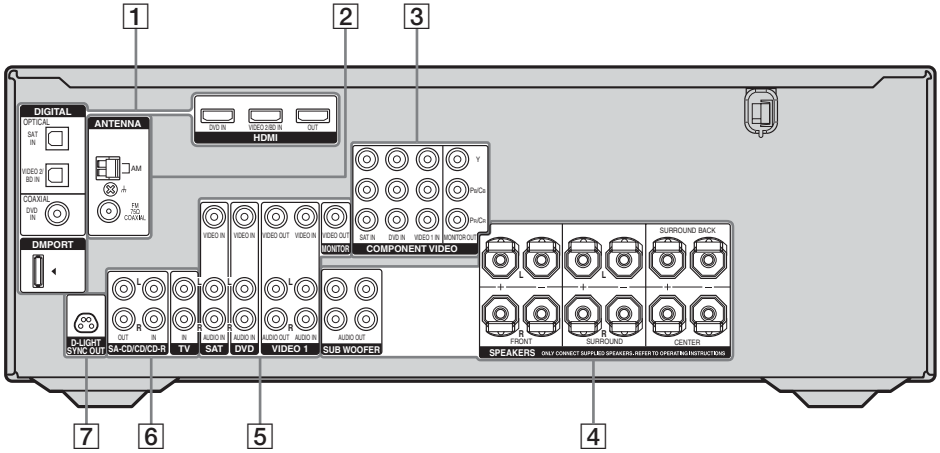
Name	Function
1 **SW**	Lights up when the audio signal is output from the SUB WOOFER jack.
2 **LFE**	Lights up when the disc being played back contains an LFE (Low Frequency Effect) channel and the LFE channel signal is actually being reproduced.
3 **D D (EX)**	"D D" lights up when Dolby Digital signals are input. "D D EX" lights up when Dolby Digital Surround EX signals are decoded. **Note** When playing a Dolby Digital format disc, be sure that you have made digital connections and that INPUT MODE is not set to "ANALOG" (page 62).
4 **D D PL (II)/(IIx)**	"D D PL" lights up when the receiver applies Pro Logic processing to 2 channel signals in order to output the center and surround channel signals. "D D PL II" lights up when the Pro Logic II Movie/Music/Game decoder is activated. "D D PL IIx" lights up when the Pro Logic IIx Movie/Music/Game decoder is activated. **Note** Dolby Pro Logic IIx decoding does not function for DTS format signals or for signals with a sampling frequency of more than 48 kHz.

Name	Function
5 **OPT**	Lights up when INPUT MODE is set to "AUTO IN" and the source signal is a digital signal being input through the OPTICAL jack, or when INPUT MODE is set to "OPT IN" (page 62).
6 **DTS (-ES)/ (96/24)**	"DTS" lights up when the receiver is decoding DTS signals. "DTS-ES" lights up when the receiver is decoding DTS-ES signals. "DTS 96/24" lights up when the receiver is decoding DTS 96 kHz/24 bit signals. **Note** When playing a DTS format disc, be sure that you have made digital connections and that INPUT MODE is not set to "ANALOG" (page 62).
7 **MEMORY**	Lights up when a memory function, such as Preset Memory (page 60), etc., is activated.
8 **Tuner indicators**	Lights up when using the receiver to tune in radio stations (page 58), etc.
9 **Preset station indicators**	Lights up when using the receiver to tune in radio stations you have preset. For details on presetting radio stations, see page 60.
10 **D.RANGE**	Lights up when dynamic range compression is activated (page 44).

continued

Name	Function
11 **NEO:6**	Lights up when DTS Neo:6 Cinema/Music decoder is activated (page 53).
12 **COAX**	Lights up when INPUT MODE is set to “AUTO IN” and the source signal is a digital signal being input through the COAXIAL jack, or when INPUT MODE is set to “COAX IN” (page 62).
13 **Playback channel indicators**	The letters (L, C, R, etc.) indicate the channels being played back. The boxes around the letters vary to show how the receiver downmixes the source sound.
L	Front Left
R	Front Right
C	Center (monaural)
SL	Surround Left
SR	Surround Right
S	Surround (monaural or the surround components obtained by Pro Logic processing)
SB	Surround back (the surround back components obtained by 6.1 channel decoding)
	Example: Recording format (Front/Surround): 3/2.1 Sound Field: A.F.D. AUTO 

Rear panel



1 DIGITAL INPUT/OUTPUT section

	OPTICAL IN jack	Connects to a DVD player, etc. The COAXIAL jack provides a better quality of loud sound (page 24, 26).
	COAXIAL IN jack	
	HDMI IN/ OUT jack[a)]	Connects to a DVD player, etc. The image and the sound are output to a TV or a projector (page 21).
	DMPORT jack[b)]	Connects to a DIGITAL MEDIA PORT adapter (page 64).

2 ANTENNA section

	FM ANTENNA jack	Connects to the FM wire antenna supplied with this receiver (page 29).
	AM ANTENNA terminals	Connects to the AM loop antenna supplied with this receiver (page 29).

3 COMPONENT VIDEO INPUT/ OUTPUT section

Green (Y) Blue (P_B/C_B) Red (P_R/C_R)	COMPONENT VIDEO INPUT/ OUTPUT jack[a)]	Connects to a DVD player, TV, a satellite tuner, etc. You can enjoy high quality image (page 23, 24, 26).

4 SPEAKER section

+ –		Connects to the speakers (page 17).
		Connects to the sub woofers (page 17).

5 VIDEO/AUDIO INPUT/OUTPUT section

White (L) Red (R)	AUDIO IN/ OUT jack	Connects the video and audio jacks of a VCR, DVD player, etc. (page 23, 24, 26, 27).
Yellow	VIDEO IN/ OUT jack[a)]	

continued

6 AUDIO INPUT/OUTPUT section

White (L) Red (R)	AUDIO IN/ OUT jack	Connects to an Super Audio CD player or CD recorder, etc. (page 19).

7 D-LIGHT SYNC OUT section

	D-LIGHT SYNC OUT jack	Connects to a lighting device (page 28).

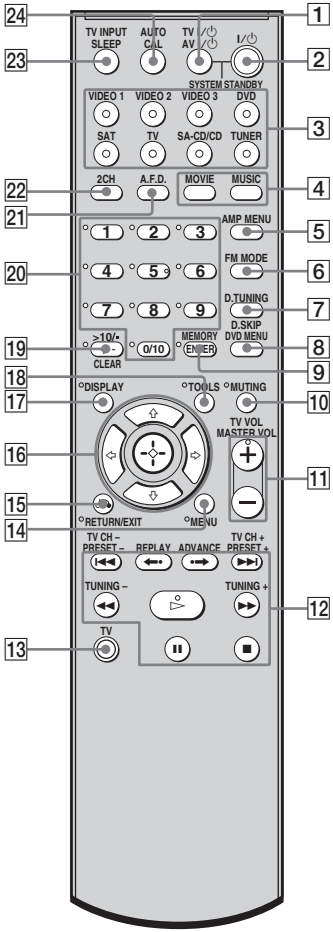
[a] You can watch the selected input image when you connect the HDMI OUT or MONITOR OUT jack to a TV (page 23).

[b] Models of area code SP, AU, TH only.

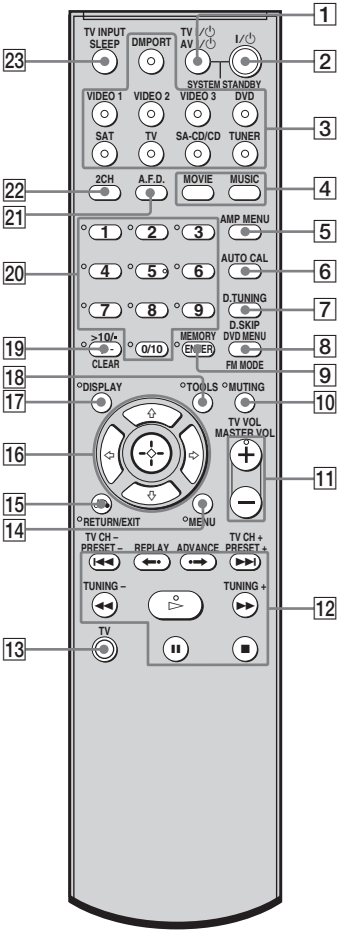
Remote commander

You can use the supplied remote RM-AAU013 (models of area code MX, E51, AR only) or RM-AAU015 (models of area code SP, AU, TH only) to operate the receiver and to control the Sony audio/video components that the remote is assigned to operate. For details, see “Changing button assignments” (page 69).

RM-AAU013
(Models of area code MX, E51, AR only)



RM-AAU015
(Models of area code SP, AU, TH only)



continued

Name	Function
1 **TV I/⏻ (on/standby)**	Press TV I/⏻ and TV (13) at the same time to turn the TV on or off.
AV I/⏻ (on/standby)	Press to turn on or off the Sony audio/video components that the remote is assigned to operate. If you press I/⏻ (2) at the same time, it will turn off the receiver and other components (SYSTEM STANDBY). **Note** The function of the AV I/⏻ switch changes automatically each time you press the input buttons (3).
2 **I/⏻ (on/standby)**	Press to turn the receiver on or off. To turn off all components, press I/⏻ and AV I/⏻ (1) at the same time (SYSTEM STANDBY).
3 **Input buttons**	Press one of the buttons to select the component you want to use. When you press any of the input buttons, the receiver turns on. The buttons are factory assigned to control Sony components as follows. You can change the button assignments following the steps in "Changing button assignments" on page 69.

Button	Assigned Sony component
VIDEO 1	VCR (VTR mode 3)
VIDEO 2	VCR (VTR mode 2)
VIDEO 3	Not assigned
DVD	DVD player
SAT	Digital Satellite Receiver
TV	TV
SA-CD/CD	Super Audio CD/ CD player
TUNER	Built-in tuner
DMPORT (RM-AAU015 only)	DIGITAL MEDIA PORT adapter

Name	Function
4 **MOVIE**	Press to select sound fields (MOVIE).
MUSIC	Press to select sound fields (MUSIC).
5 **AMP MENU**	Press to display the menu of the receiver. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.
6 **FM MODE (RM-AAU013 only)**	Press to select the FM monaural or stereo reception.
AUTO CAL (RM-AAU015 only)	Press to activate the Auto Calibration function (page 33).
7 **D.TUNING**	Press to enter direct tuning mode.
D.SKIP	Press to skip a disc when using a multi-disc changer.
8 **DVD MENU**	Press to display the menu of the DVD player on the TV screen. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.
FM MODE (RM-AAU015 only)	Press to select the FM monaural or stereo reception.
9 **ENTER**	Press to enter the value after selecting a channel, disc or track using the numeric buttons of the TV, VCR or satellite tuner.
MEMORY	Press to store a station.
10 **MUTING**	Press to activate the muting function. Press MUTING and TV (13) at the same time to activate the TV's muting function.
11 **TV VOL +[a)]/–**	Press TV VOL +/– and TV (13) at the same time to adjust the TV volume level.
MASTER VOL +[a)]/–	Press to adjust the volume level of all speakers at the same time.

Name	Function
12 **TV CH +/–**	Press TV CH +/– and TV (13) at the same time to select preset TV channels.
PRESET +/–	Press to select – preset stations. – preset channels of the VCR or satellite tuner.
I◄◄/►►I b)	Press to skip a track of the CD player, DVD player or Blu-ray disc player.
REPLAY ←·/ ADVANCE ·→	Press to replay the previous scene or fast forward the current scene of the VCR, DVD player or Blu-ray disc player.
◄◄/►► b)	Press to – search tracks in the forward/reverse direction of the DVD player. – start fast forward/rewind of the VCR, CD player or Blu-ray disc player.
TUNING +/–	Press to scan a station.
▷ a)b)	Press to start playback of the VCR, CD player, DVD player or Blu-ray disc player.
II b)	Press to pause playback or recording of the VCR, CD player, DVD player or Blu-ray disc player. (Also starts recording with components in recording standby.)
■ b)	Press to stop playback of the VCR, CD player, DVD player or Blu-ray disc player.
13 **TV**	Press TV and the button you want at the same time to activate the buttons with orange printing.
14 **MENU**	Press to display the menu of the VCR, DVD player, satellite tuner or Blu-ray disc player on the TV screen. Press MENU and TV (13) at the same time to display the TV's menu. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.

Name	Function
15 **RETURN/ EXIT ↶**	Press to – return to the previous menu. – exit the menu while the menu or on-screen guide of the VCR, DVD player, satellite tuner or Blu-ray disc player is displayed on the TV screen. Press RETURN/EXIT and TV (13) at the same time to return to the previous menu or exit the TV's menu while the menu is displayed on the TV screen.
16 ⊕ **↑/↓/←/→**	After pressing AMP MENU (5), DVD MENU (8) or MENU (14), press ↑, ↓, ← or → to select the settings. Then, press ⊕ to enter the selection for DVD MENU or MENU. Press ⊕ also to enter the selection of the receiver, VCR, satellite tuner, CD player, DVD player or Blu-ray disc player.
17 **DISPLAY**	Press to select information displayed on the TV screen of the VCR, satellite tuner, CD player, DVD player or Blu-ray disc player. Press DISPLAY and TV (13) at the same time to select TV information displayed on the TV screen.
18 **TOOLS**	Press to display options applicable to the entire disc (e.g. disc protection), recorder (e.g. audio settings during recording), or multiple items on a list menu (e.g. erasing multiple titles). Press TOOLS and TV (13) at the same time to display options applicable to the TV.

continued

Name	Function
19 **>10/-**	Press to select – track numbers over 10 of the VCR, satellite tuner or CD player. – channel numbers of the Digital CATV terminal.
-/--	Press -/-- and TV (13) at the same time to select the channel entry mode, either one or two digits of the TV.
CLEAR	Press to clear a mistake when you press the incorrect numeric button.
20 **Numeric buttons (number 5[a])**	Press to – preset/tune to preset stations. – select track numbers of the CD player, DVD player or Blu-ray disc player. Press 0/10 to select track number 10. – select channel numbers of the VCR or satellite tuner. Press the numeric buttons and TV (13) at the same time to select the TV channels.
21 **A.F.D.**	Press to select A.F.D. mode.
22 **2CH**	Press to select 2CH STEREO mode.
23 **TV INPUT**	Press TV INPUT and TV (13) at the same time to select the input signal (TV input or video input).
SLEEP	Press to activate the Sleep Timer function and the duration which the receiver turns off automatically.
24 **AUTO CAL (RM-AAU013 only)**	Press to activate the Auto Calibration function.

[a] The number 5, MASTER VOL +, TV VOL + and ▷ buttons have tactile dots. Use the tactile dots as references when operating the receiver.

[b] This button is also available for DIGITAL MEDIA PORT adapter operation. For details on the function of the button, see the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

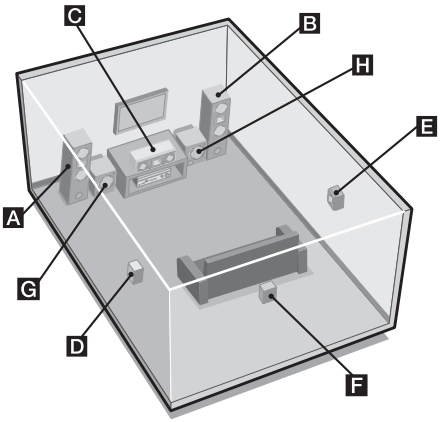
Notes

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

1: Installing speakers

This receiver allows you to use a 6 channel speaker with 4 sub woofers system.
To fully enjoy theater-like multi channel surround sound requires five speakers (two front speakers, a center speaker and two surround speakers) and a sub woofer (5.1 channel).
You can enjoy high fidelity reproduction of DVD software recorded sound in the Surround EX format if you connect one additional surround back speaker (6.1 channel) (see "Using the surround back decoding mode (SUR BACK DECODING)") on page 46.

Example of 6 channel speaker with 2 sub woofers system configuration



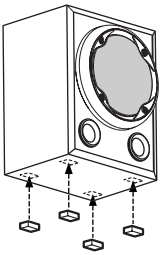
A Front speaker (Left)
B Front speaker (Right)
C Center speaker
D Surround speaker (Left)
E Surround speaker (Right)
F Surround back speaker
G Sub woofer
H Sub woofer

Tip

Since the sub woofer does not emit highly directional signals, you can place it wherever you want.

Installing the speakers on a flat surface

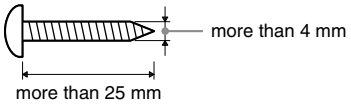
Before you install the center speaker, surround speakers, surround back speaker and sub woofers, be sure to attach the supplied foot pads to prevent vibration or movement as shown in the illustration below.

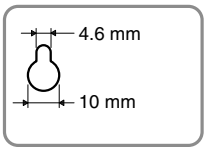


Installing the speakers on the wall

You can install your surround and surround back speakers on the wall.

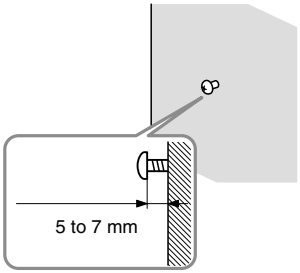
1 Prepare screws (not supplied) that are suitable for the hook on the back of each speaker as shown in the illustrations below.





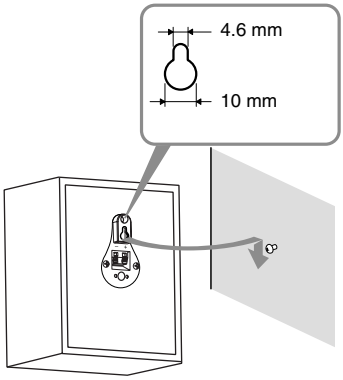
Hook on the back of the speaker

2 Fasten the screws to the wall. The screws should protrude 5 to 7 mm.



3 Hang the speakers on the screws.

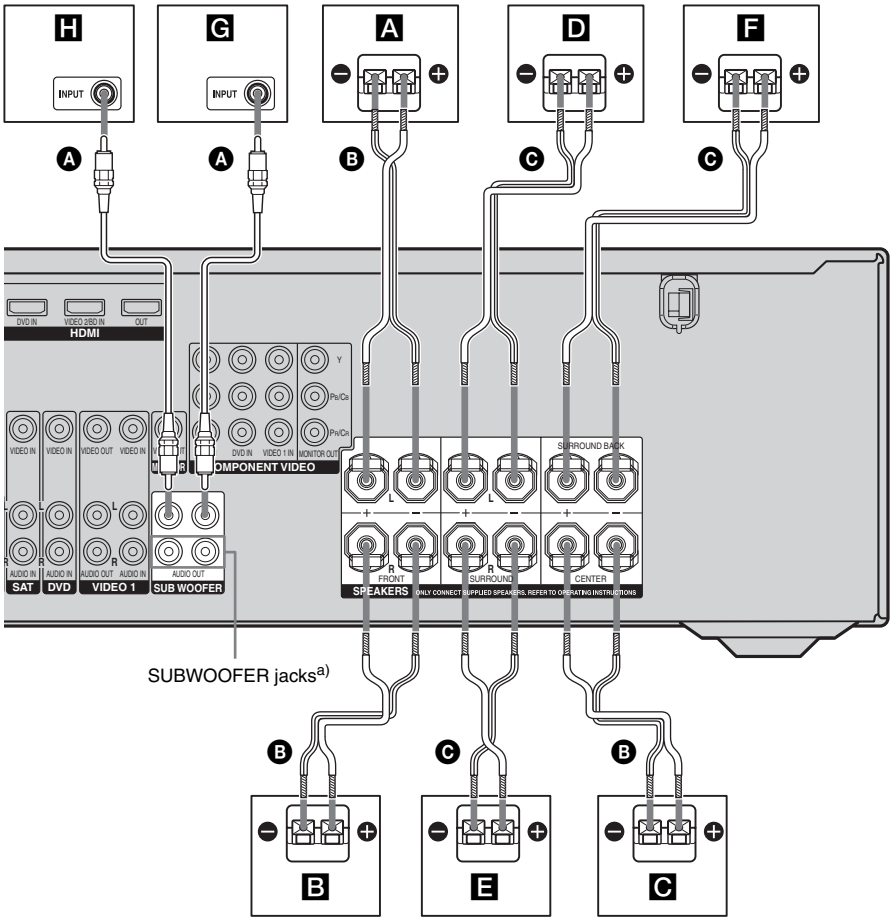
Hook on the back of the speaker



Notes

- Use screws that are suitable for the wall material and strength. As a plaster board wall is especially fragile, attach the screws securely to a beam and fasten them to the wall. Install the speakers on a vertical and flat wall where reinforcement is applied.
- Contact a screw shop or installer regarding the wall material or screws to be used.
- Sony is not responsible for accident or damage caused by improper installation, insufficient wall strength or improper screw installation, natural calamity, etc.

2: Connecting speakers



A Monaural audio cord (supplied)
B Speaker cord (short) (supplied)
C Speaker cord (long) (supplied)

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

a) If you have additional subwoofers, connect them to the SUBWOOFER jacks.
We recommend you to use SA-WP1600 subwoofer.

Tip

Use the supplied speakers to optimize the system's performance.

continued

To connect the speaker correctly

Check the speaker type by referring to the speaker label* on the speakers.

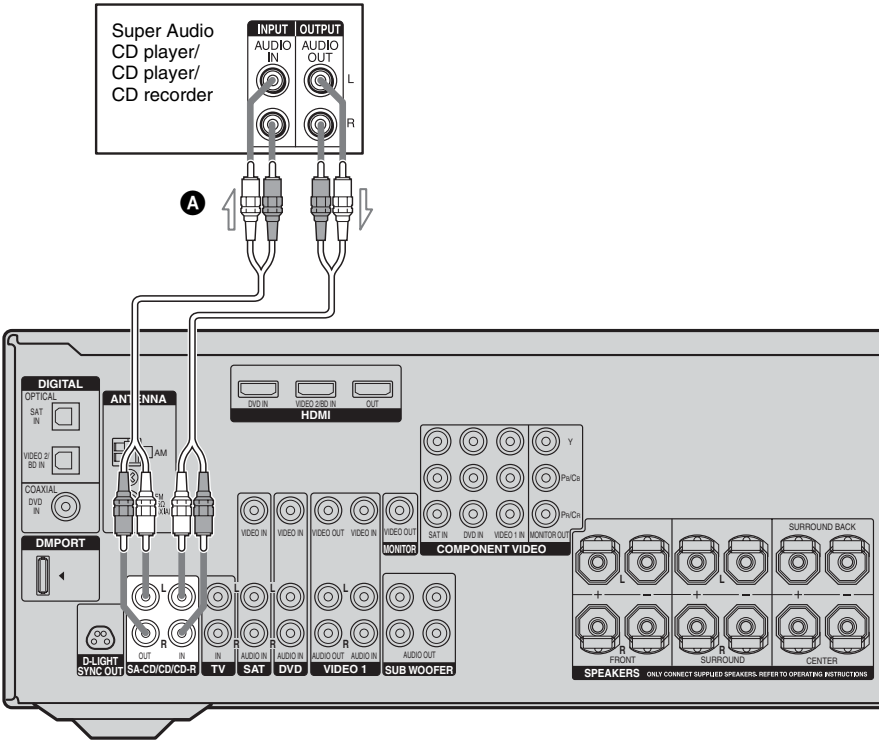
Character on speaker label	Speaker type	Location of speaker label
L	Front left	Rear panel
R	Front right	Rear panel
SL	Surround left	Rear panel
SR	Surround right	Rear panel
SB	Surround back	Rear panel

*The center speaker and sub woofer do not have any character on the speaker label. For details on the speaker type, see page 3.

3a: Connecting the audio components

Connecting a Super Audio CD/CD player or CD recorder

The following illustration shows how to connect a Super Audio CD player, CD player or CD recorder.
After connecting your Super Audio CD player, CD player or CD recorder, proceed to "3b: Connecting the video components" (page 20) or "4: Connecting the antennas" (page 29).



A Audio cord (not supplied)

3b: Connecting the video components

How to hook up your components

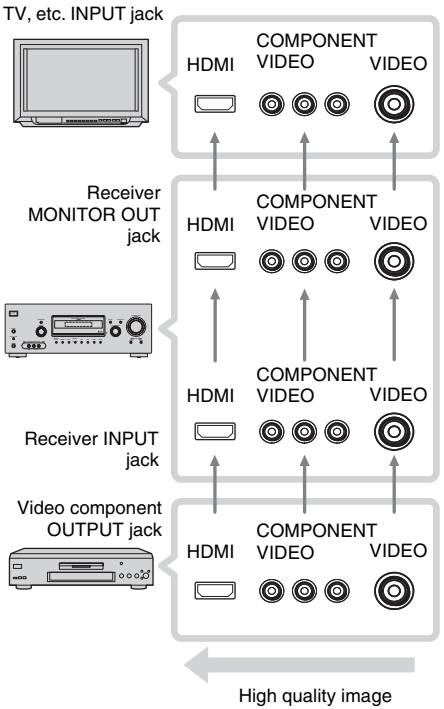
This section describes how to hook up your components to this receiver. Before you begin, refer to "Component to be connected" below for the pages which describe how to connect each component.
After hooking up all your components, proceed to "4: Connecting the antennas" (page 29).

Component to be connected

Component	Page
With HDMI jack	21
TV	23
DVD player/DVD recorder	24
Satellite tuner/Set-top box	26
VCR	27
Camcorder, video game, etc.	27

Video input/output jack to be connected

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



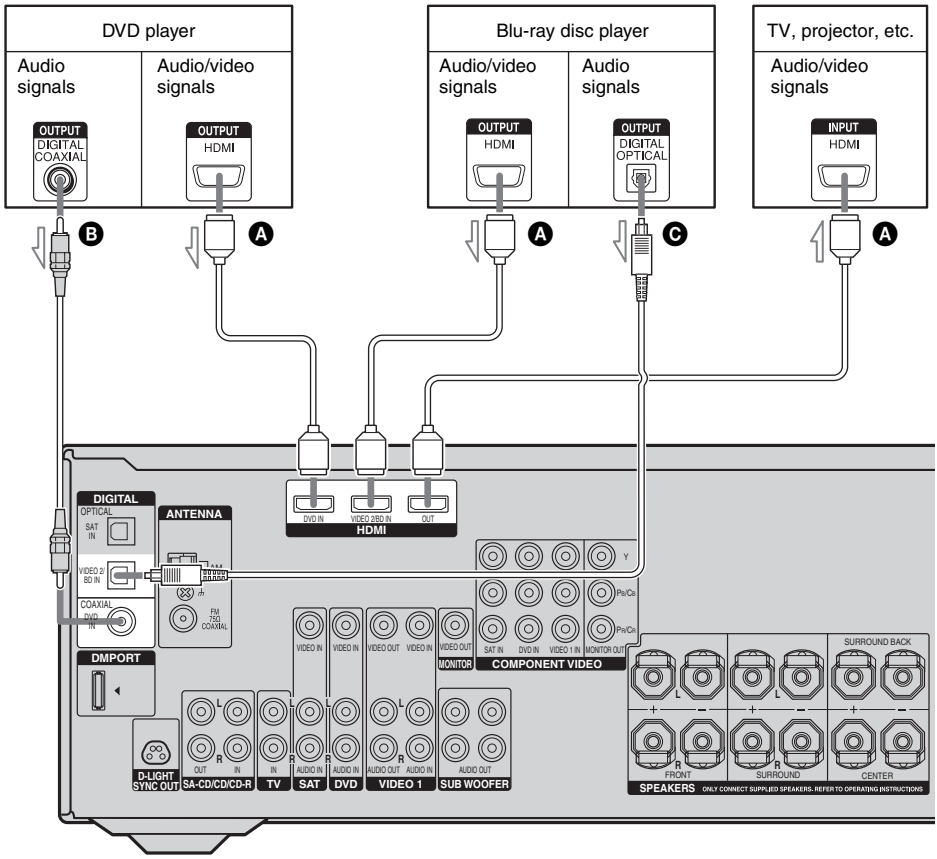
Notes

- Connect image display components such as a TV or a projector to the MONITOR OUT jack on the receiver.
- Turn on the receiver when the video and audio of a playback component are being output to a TV through the receiver. If the power supply of the receiver is not on, neither video nor audio is transmitted.

Connecting components with HDMI jacks

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

The sound is output from the TV speaker only when a playback component and this receiver, as well as this receiver and the TV are connected via a HDMI jack.
To output the sound from the supplied speakers and to take advantage of the multi channel surround sound, be sure to
– connect the digital audio jacks on the playback component to the receiver.
– turn off or mute the TV's volume.



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

continued

If you connect a Blu-ray disc player

- Be sure to change the factory setting of the VIDEO 2 input button on the remote so that you can use the button to control your Blu-ray disc player. For details, see “Changing button assignments” (page 69).
- You can also rename the VIDEO 2 input so that it can be displayed on the receiver’s display. For details, see “Naming inputs” (page 67).

Notes on HDMI connections

- This receiver may not be able to transfer video or audio signals with certain types of components.
- The multi/stereo area audio signals of a Super Audio CD are not output.
- Be sure to turn on the receiver when the video and audio of a playback component are being output to a TV via the receiver. If the power supply of the receiver is not turned on, neither video nor audio is transmitted.
- Audio signals (sampling frequency, bit length, etc.) transmitted from a HDMI jack may be restricted by the connected component. Check the setup of the connected component if the image is poor or the sound does not come out of a component connected via the HDMI cable.
- Video signals input to the HDMI IN jack can only be output from the HDMI OUT jack. The input video signals cannot be output from the VIDEO OUT or MONITOR OUT jacks.
- Check the setup of the connected component if an image is poor or the sound does not come out of a component connected via the HDMI cable.
- Refer to the operating instructions of each component connected for details.

Notes on digital audio signals connection

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

Tip

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

Connecting a TV

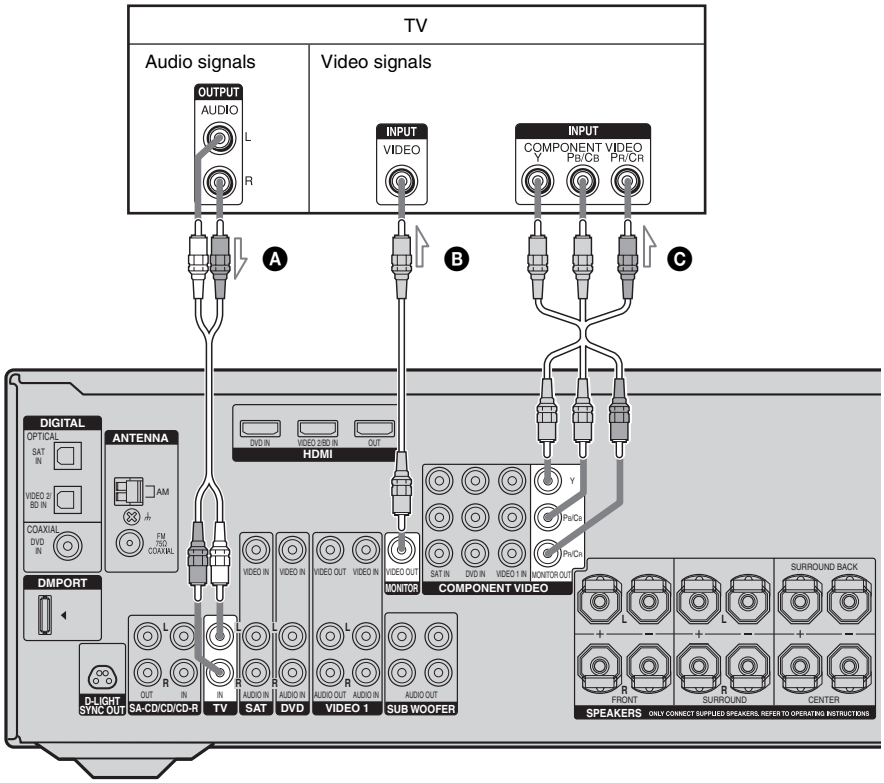
The image from a visual component connected to this receiver can be displayed on a TV screen.
It is not necessary to connect all the cables. Connect video cords according to the jacks of your components.

Notes

- Connect image display components such as a TV or a projector to the MONITOR OUT jack on the receiver.
- Be sure to turn on the receiver when the video and audio of a playback component are being output to a TV via the receiver. If the power supply of the receiver is not turned on, neither video nor audio is transmitted.

Tips

- You can watch the selected input image when you connect the MONITOR OUT jack to a TV.
- To output the sound of the TV from the speakers connected to the receiver, be sure to
  - connect the audio output jacks of the TV to the TV IN jack of the receiver.
  - turn off or mute the TV's volume



A Audio cord (not supplied)
B Video cord (not supplied)
C Component video cord (not supplied)

Connecting a DVD player/DVD recorder

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

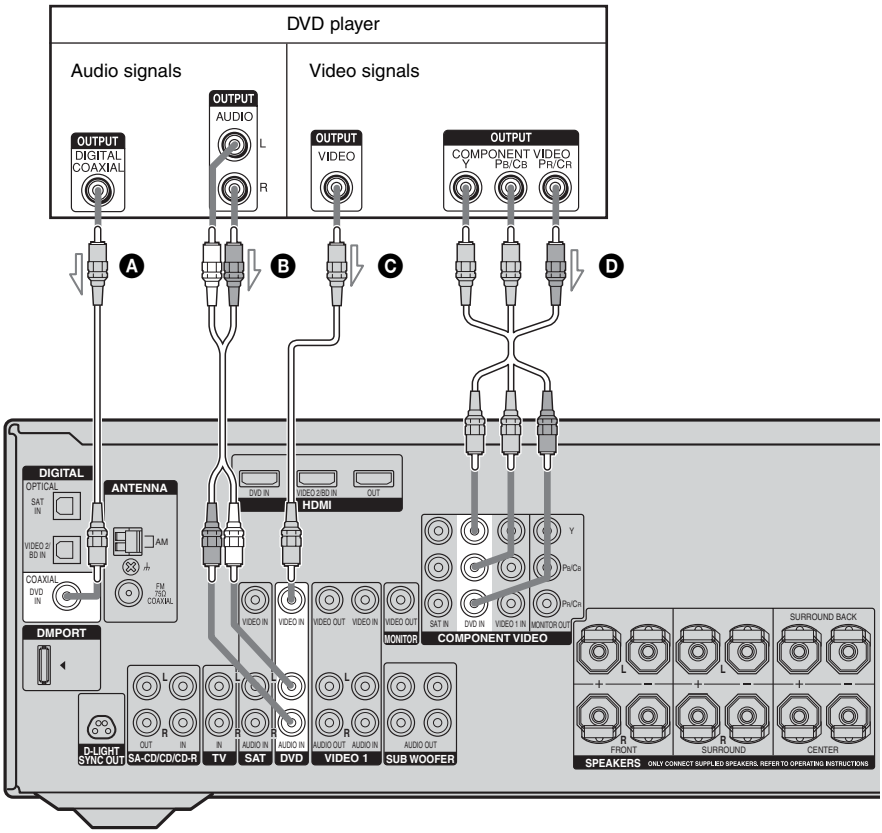
Note

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

Tip

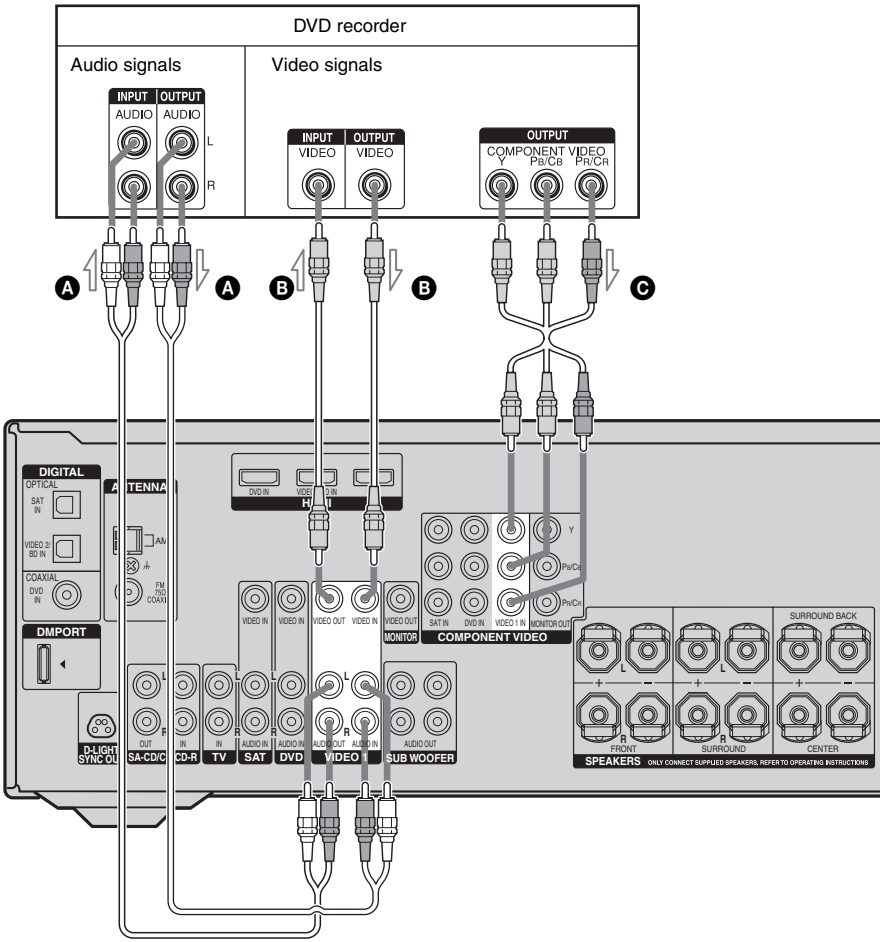
All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.

Connecting a DVD player



A Coaxial digital cord (supplied)
B Audio cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)

Connecting a DVD recorder



A Audio cord (not supplied)
B Video cord (not supplied)
C Component video cord (not supplied)

Notes

- Be sure to change the factory setting of the VIDEO 1 input button on the remote so that you can use the button to control your DVD recorder. For details, see “Changing button assignments” (page 69).
- You can also rename the VIDEO 1 input so that it can be displayed on the receiver’s display. For details, see “Naming inputs” (page 67).

Connecting a satellite tuner/ set-top box

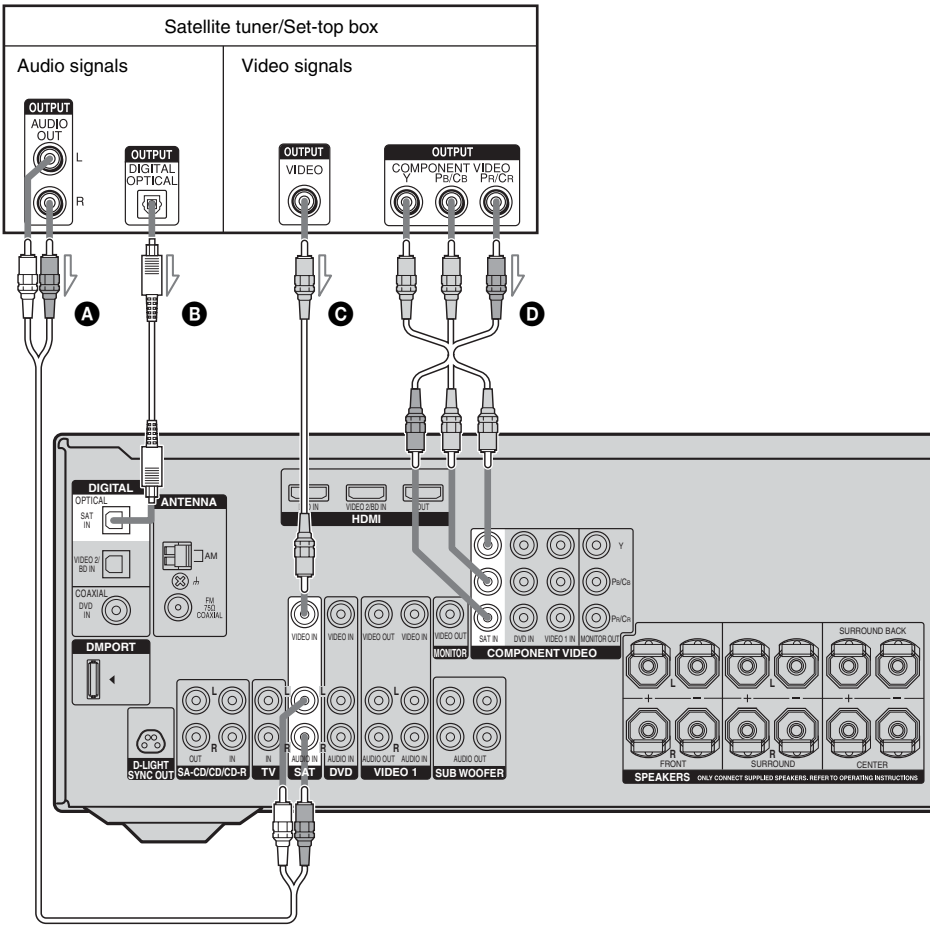
The following illustration shows how to connect a satellite tuner or set-top box. It is not necessary to connect all the cables. Connect audio and video cords according to the jacks of your components.

Notes

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

Tip

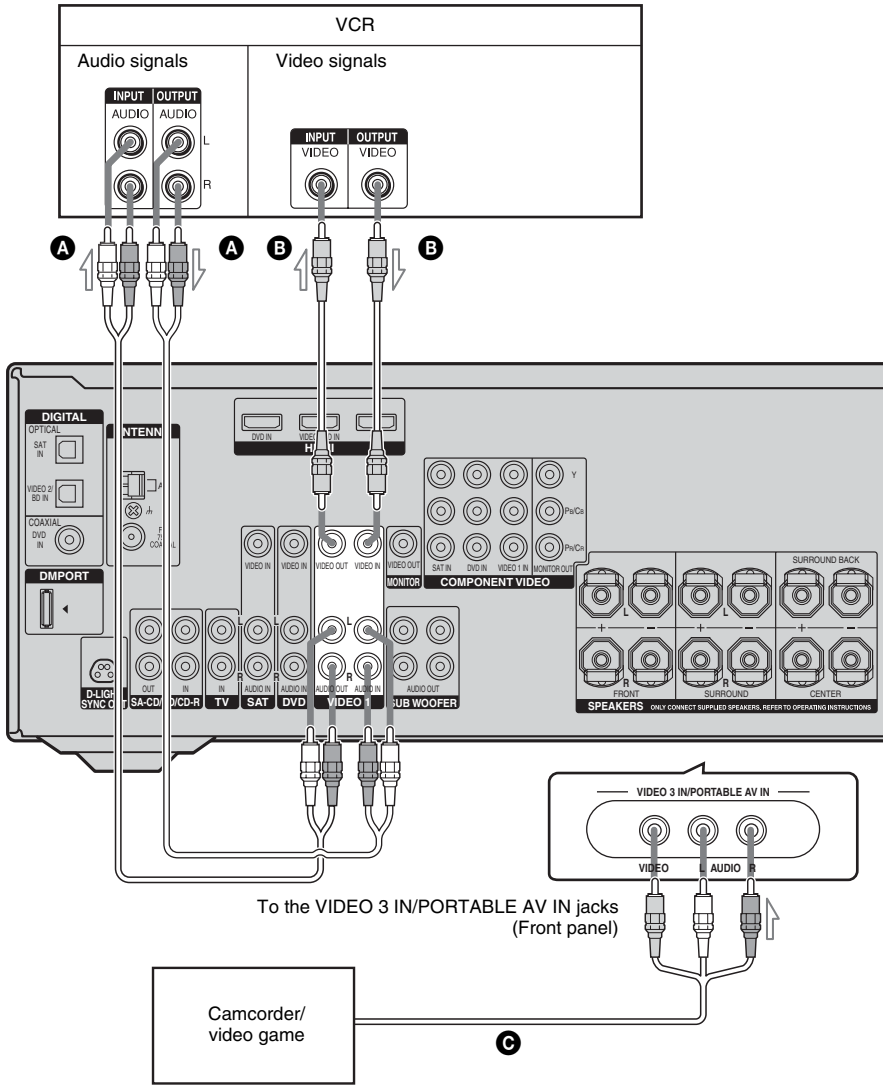
All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.



A Audio cord (not supplied)
B Optical digital cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)

Connecting components with analog video and audio jacks

The following illustration shows how to connect a component which has analog jacks such as a VCR, etc.



A Audio cord (not supplied)
B Video cord (not supplied)
C Audio/video cord (not supplied)

3c: Connecting the lighting device

Connecting a lighting device

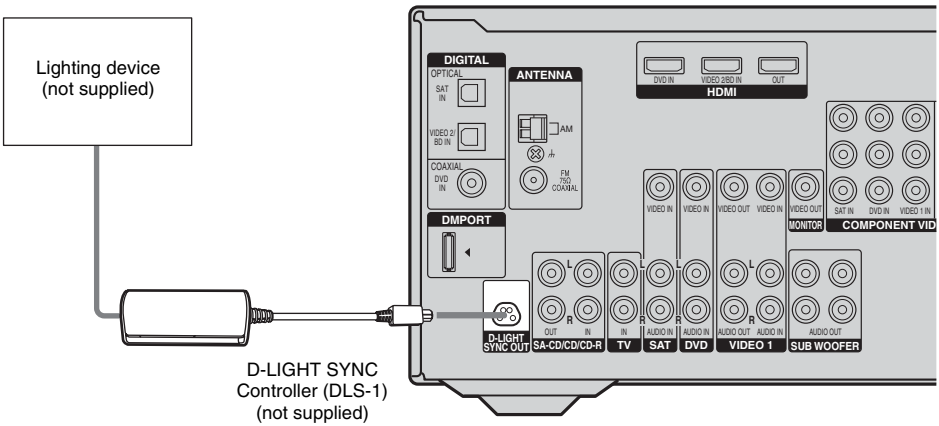
The following illustration shows how to connect a lighting device.

Connect the lighting device (not supplied) to the D-LIGHT SYNC OUT jack on the receiver using the D-LIGHT SYNC Controller (DLS-1) (not supplied).

For details on the use of the D-LIGHT SYNC Controller and the lighting device, refer to the operating instructions supplied with the respective device.

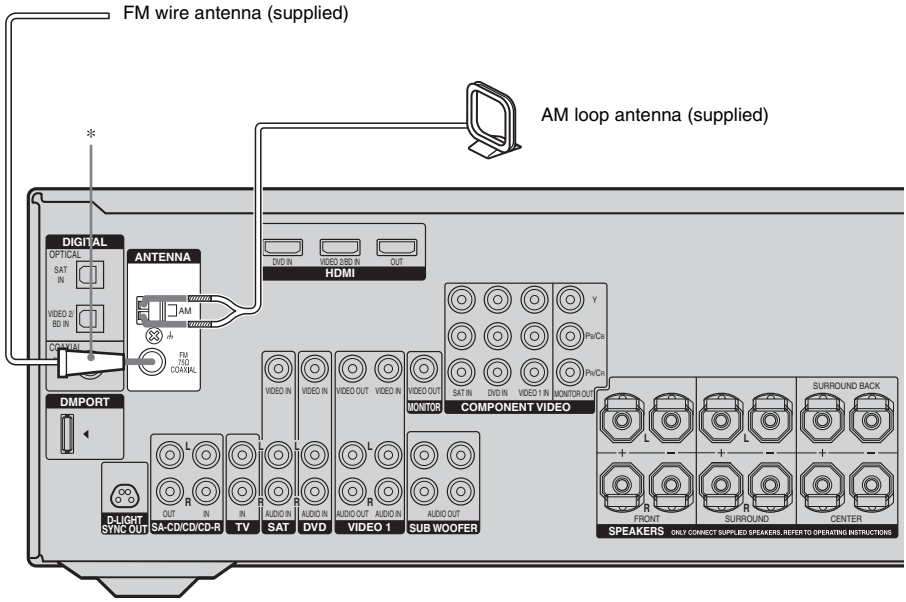
Notes

- The D-LIGHT SYNC Controller will send the control signal to the lighting device in order to make the lighting device reaction respectively with the music source.
- The lighting effect may be different depending on the connected lighting device or the type of music being played back.



4: Connecting the antennas

Connect the supplied AM loop antenna and FM wire antenna.



*The shape of the connector varies depending on the area code of this receiver.

Notes

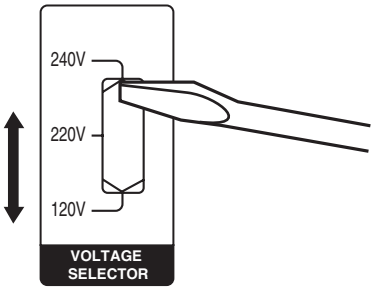
- To prevent noise pickup, keep the AM loop antenna away from the receiver and other components.
- Be sure to fully extend the FM wire antenna.
- After connecting the FM wire antenna, keep it as horizontal as possible.

5: Preparing the receiver and the remote

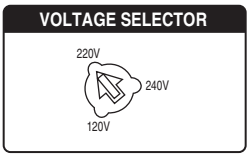
Setting the voltage selector

If your receiver and sub woofer has a voltage selector on the rear panel, check that the voltage selector is set to the local power supply voltage. If not, use a screwdriver to set the selector to the correct position before connecting the AC power cord to a wall outlet.

Receiver

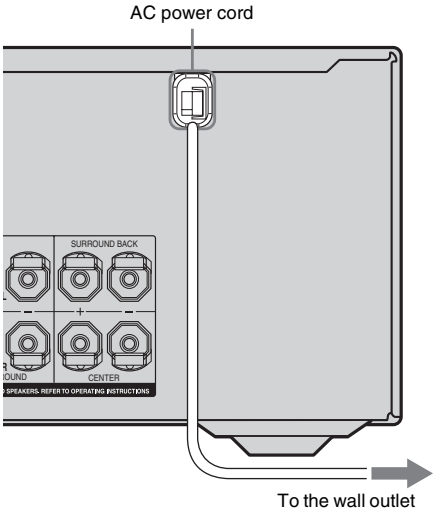


Sub woofer



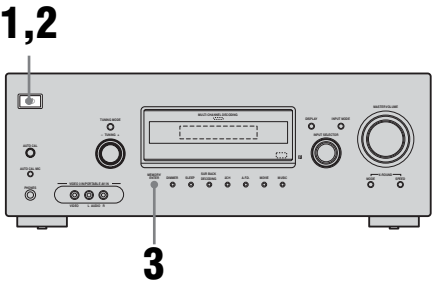
Connecting the AC power cord

Connect the AC power cord to a wall outlet.



Performing initial setup operations

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



1 Press I/⏻ to turn off the receiver.

2 Hold down I/⏻ for 5 seconds.

"PUSH" and "ENTER" appears on the display alternately.

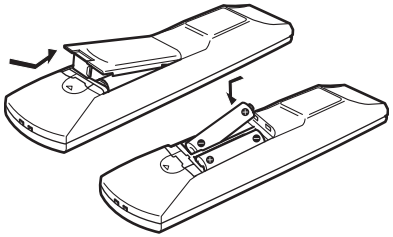
3 Press MEMORY/ENTER.

After "CLEARING" appears on the display for a while, "CLEARED" appears.
The following items are reset to their factory settings.

- All settings in the LEVEL, TONE, SUR, TUNER, AUDIO, VIDEO and SYSTEM menus.
- The sound field memorized for each input and preset station.
- All sound field parameters.
- All preset stations.
- All index names for inputs and preset stations.
- MASTER VOLUME is set to "VOL MIN".
- Input is set to "DVD".

Inserting batteries into the remote

Insert two R6 (size-AA) batteries in the RM-AAU013 (models of area code MX, E51, AR only) or RM-AAU015 (models of area code SP, AU, TH only) remote commander. Observe the correct polarity when installing batteries.



Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not use a new battery with old ones.
- Do not mix alkaline batteries and other kinds of batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you do not intend to use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.
- When you replace the batteries, the remote buttons may be reset to their factory settings. If this happens, reassign the buttons again (page 69).

Tip

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

6: Calibrating the appropriate settings automatically (AUTO CALIBRATION)

This receiver is equipped with D.C.A.C. (Digital Cinema Auto Calibration) Technology which allows you to perform Automatic Calibration as follows:

- Check the connection between each speaker and the receiver.
- Adjust the speaker level.
- Measure the distance of each speaker to your listening position.

You can also adjust the speaker levels and balance manually. For details, see "7: Adjusting the speaker levels and balance (TEST TONE)" (page 36).

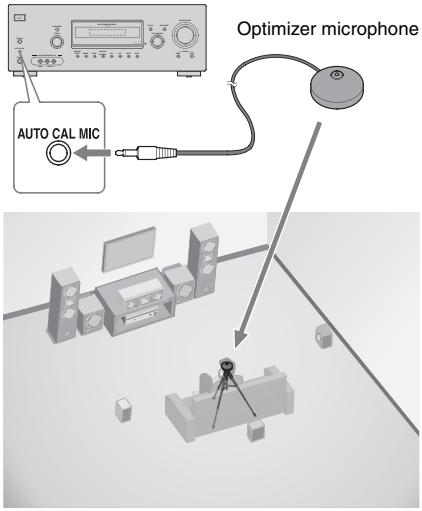
Before you perform Auto Calibration

Before you perform Auto Calibration, install and connect the speakers (page 15, 17).

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

Notes

- The Auto Calibration function does not work when headphones are connected.
- If the Muting function is on when we perform Auto Calibration, it will turn off automatically.



1 Connect the supplied optimizer microphone to the AUTO CAL MIC jack on the front panel.

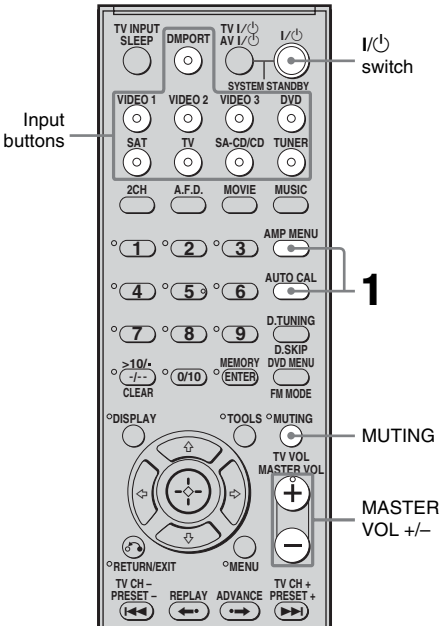
2 Set up the optimizer microphone.

Place the optimizer microphone at your listening position. You can also use a stool or tripod so that the optimizer microphone remains at the same height as your ears.

Tip

When you face the speaker towards the optimizer microphone, you will get a more accurate measurement.

Performing Auto Calibration



1 Press AMP MENU and then press AUTO CAL.

Measurement starts in 5 seconds and the display changes as follows:
A.CAL [5] → A.CAL [4] → A.CAL [3] → A.CAL [2] → A.CAL [1]
While the time is counting down, stand away from the measurement area to avoid measurement error.

2 Measurement starts.

The measurement process will take a few minutes to complete.
The table below shows the display when measurement starts.

Measurement for	Display
Environment noise level	NOISE.CHK
Speaker connection	MEASURE and SP DET. appears alternately*
Speaker level	MEASURE and GAIN appears alternately*
Speaker distance	MEASURE and DISTANCE appears alternately*

* The corresponding speaker indicator lights up in the display during measurement.

3 Measurement ends.

"COMPLETE" appears on the display and the settings are registered.

4 Disconnect the optimizer microphone from the receiver.

Notes

- Auto Calibration cannot detect the sub woofer. Therefore, the sub woofer settings will be maintained.
- You cannot select Auto Calibration when the headphone is connected.

Tips

- When Auto Calibration starts:
  - Stand some distance away from the speakers and the listening position to avoid measurement failure. This is because test signals are output from the speakers during measurement.
  - Avoid making noise to get a more accurate measurement.
- The Auto Calibration function will be canceled when you do the following during the measurement process:
  - Press I/⏻, input buttons or MUTING.
  - Change the volume level.
  - Press AUTO CAL again.

Error and warning codes

Error codes

When an error is detected during Auto Calibration, an error code will appear on the display cyclically after each measurement process as follows:
Error code → blank display → (error code → blank display)[a] → PUSH → blank display → ENTER

[a] Appears when there are more than one error code.

To rectify the error

1 Record down the error code.
2 Press ⊕ on the remote.
3 Press I/⏻ to turn off the receiver.
4 Rectify the error.
For details, see "Error code and remedies" below.
5 Turn on the receiver and perform Auto Calibration again (page 33).

Error code and remedies

Error code	Explanation	Remedies
ERROR 10	The environment is too noisy.	Make sure the environment is quiet during Auto Calibration.
ERROR 11	The speakers are placed too near the optimizer microphone.	Place your speakers further away from the optimizer microphone.
ERROR 12	None of the speakers are detected.	Make sure that the optimizer microphone is connected properly and perform Auto Calibration again.
ERROR 20	The front speakers are not detected or only one front speaker is detected.	Check the front speakers connection.
ERROR 21	Only one surround speaker is detected.	Check the surround speakers connection.
ERROR 23	Surround back speaker is detected but surround speakers are not connected.	Be sure to connect the surround speakers.

Warning codes

During Auto Calibration, the warning code provides information on the measurement result. The warning code will appear on the display cyclically as follows:

Warning code → blank display → (warning code → blank display)[b] → PUSH → blank display → ENTER

[b] Appears when there are more than one warning code.

You can choose to ignore the warning code as the Auto Calibration function will automatically adjust the settings. You can also change the settings manually.

To change the settings manually

1 Record down the warning code.
2 Press ⊕ on the remote.
3 Press I/⏻ to turn off the receiver.
4 Follow the solution provided in the "Warning code and solution" below.
5 Turn on the receiver and perform Auto Calibration again (page 33).

Warning code and solution

Warning code	Explanation	Solution
WARN. 40	The environment is noisy.	Make sure the environment is quiet during Auto Calibration.
WARN. 50	The center speaker is not connected.	Be sure to connect the center speaker.
WARN. 51	The surround speakers are not connected.	Be sure to connect the surround speakers.
WARN. 52	The surround back speaker is not connected.	Be sure to connect the surround back speaker.
WARN. 60	The front speakers balance are out of range.	Reposition your front speakers.[c)]
WARN. 62	The center speaker level is out of range.	Reposition your center speaker.[d)]
WARN. 63	The surround left speaker level is out of range.	Reposition your surround left speaker.[e)]
WARN. 64	The surround right speaker level is out of range.	Reposition your surround right speaker.[f)]
WARN. 65	The surround back speaker level is out of range.	Reposition your surround back speaker.[g)]
WARN. 70	The front speakers distance are out of range.	Reposition your front speakers.[c)]
WARN. 72	The center speaker distance is out of range.	Reposition your center speaker.[d)]
WARN. 73	The surround left speaker distance is out of range.	Reposition your surround left speaker.[e)]
WARN. 74	The surround right speaker distance is out of range.	Reposition your surround right speaker.[f)]
WARN. 75	The surround back speaker distance is out of range.	Reposition your surround back speaker.[g)]

[c)] For details, refer “Front speaker distance” (page 49).
[d)] For details, refer “Center speaker distance” (page 49).
[e)] For details, refer “Surround left speaker distance” (page 49).
[f)] For details, refer “Surround right speaker distance” (page 49).
[g)] For details, refer “Surround back speaker distance” (page 49).

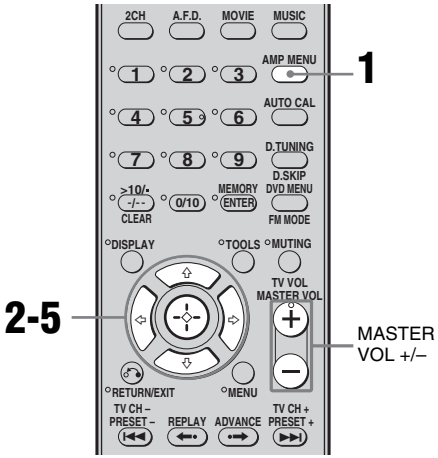
7: Adjusting the speaker levels and balance

(TEST TONE)

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

Tip

The receiver employs a test tone with a frequency centered at 800 Hz.



1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ⊕ or → to enter the menu.

3 Press ↑/↓ repeatedly to select "T. TONE".

4 Press ⊕ or → to enter the parameter.

5 Press ↑/↓ repeatedly to select "T. TONE Y".

The test tone is output from each speaker in sequence as follows:
Front left → Center → Front right → Surround right → Surround back → Surround left → Sub woofer

6 Adjust the speaker levels and balance using the LEVEL menu so that the level of the test tone sounds the same from each speaker.

For details, see "Adjusting the level (LEVEL menu)" (page 44).

Tips

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

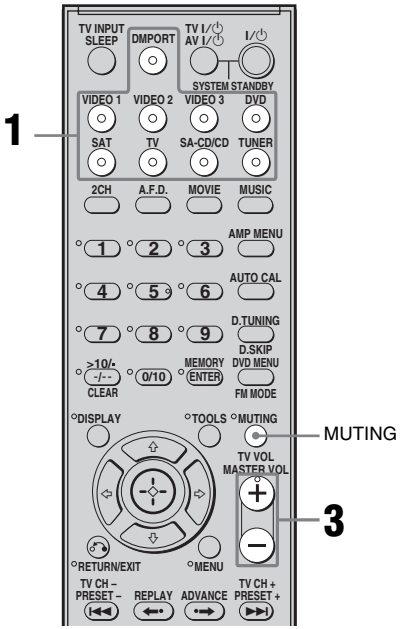
7 Repeat steps 1 to 5 to select "T. TONE N".

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

When a test tone is not output from the speakers

- The speaker cords may not be connected securely.
- The speaker cords may have the short-circuit problem.

Selecting a component



1 Press the input button to select a component.

You can also use INPUT SELECTOR on the receiver.

The selected input appears on the display.

Selected input [Display]	Components that can be played back
VIDEO 1 [VIDEO 1]	VCR, etc., connected to the VIDEO 1 jack
VIDEO 2 [VIDEO 2/BD][a)]	Blu-ray disc recorder, etc., connected to the VIDEO 2 jack
VIDEO3 [VIDEO 3/ PORTABLE AV][a)]	Camcorder, video game, etc., connected to the VIDEO 3 IN/PORTABLE AV IN jacks
DVD [DVD]	DVD player, etc., connected to DVD jack
SAT [SAT]	Satellite tuner, etc., connected to the SAT jack
TV [TV]	TV connected to TV jack
SA-CD/CD [SA-CD/CD/ CD-R][a)]	Super Audio CD/CD player, etc., connected to the SA-CD/CD jack
TUNER [FM or AM band]	Built-in radio tuner
DMPORT [DMPORT][b)]	DIGITAL MEDIA PORT adapter connected to DMPORT jack

[a)] "VIDEO 2/BD", "VIDEO 3/PORTABLE AV" and "SA-CD/CD/CD-R" scroll across the display once, then "VIDEO 2", "VIDEO 3" and "SA-CD/CD" appear respectively.

[b)] Models of area code SP, AU, TH only.

2 Turn on the component and start playback.

3 Press MASTER VOL +/– to adjust the volume.

You can also use MASTER VOLUME on the receiver.

To mute the sound

Press MUTING.

The muting function will be canceled when you do the following.

- Press MUTING again.
- Increase the volume.
- Turn off the receiver.

continued

To avoid damaging your speakers

Before you turn off the receiver, be sure to turn down the volume level.

To listen to the sub woofer

Be sure to use the buttons on the sub woofer for this operation.

1 Press POWER.
The POWER indicator lights up.

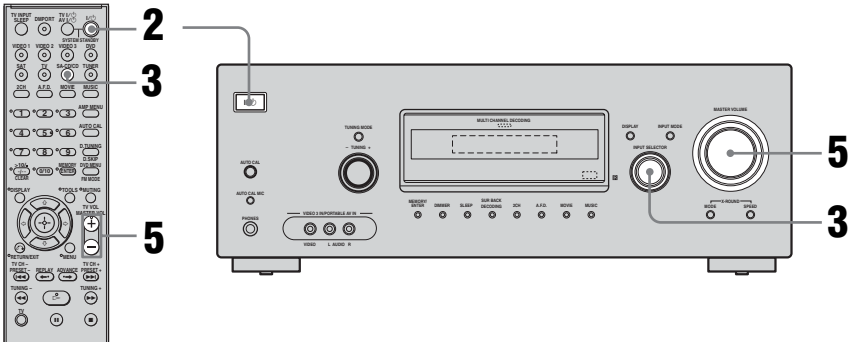
2 Turn LEVEL to adjust the volume.
Set the volume level to suit your preference accordingly to the selected input as slight adjustments may enhance the sound.

Note

Do not set the volume of the sub woofer to maximum as extraneous noise may be heard.

Listening/Watching a component

Listening to a Super Audio CD/CD



Notes

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

Tips

- You can select the sound field to suit the music. Refer to page 54 for details.
  Recommended sound fields:
  Classical: HALL
  Jazz: JAZZ
  Live concert: CONCERT
- You can listen to the sound that was recorded in the 2 channel format from all speakers (multi channel). Refer to page 52 for details.

1 **Turn on the Super Audio CD player/CD player, then place the disc on the tray.**

2 **Turn on the receiver.**

3 **Press SA-CD/CD.**

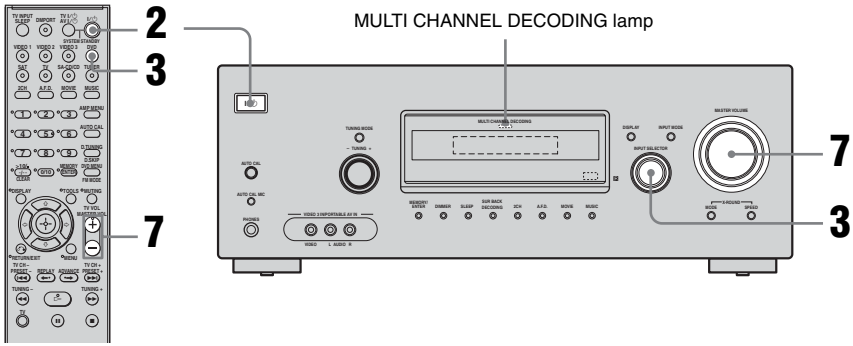
You can also use INPUT SELECTOR on the receiver to select “SA-CD/CD/CD-R”.

4 **Playback the disc.**

5 **Adjust to a suitable volume.**

6 **After you have finished listening to the Super Audio CD/CD, eject the disc and turn off the receiver and Super Audio CD player/ CD player.**

Watching a DVD



Notes

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

Tips

- Select the sound format of the disc to be played, if necessary.
- You can select the sound field to suit the movie/music. Refer to page 54 for details.
  Recommended sound fields:
  Movie: C.ST.EX
  Music: CONCERT

1 **Turn on the TV and DVD player.**

2 **Turn on the receiver.**

3 **Press DVD.**

You can also use INPUT SELECTOR on this receiver to select “DVD”.

4 **Switch the input of the TV so that an image of the DVD is displayed.**

5 **Set up the DVD player.**

Refer to the operating instructions supplied with the DVD player.

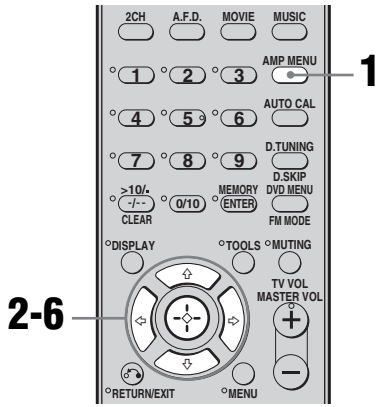
6 **Playback the disc.**

7 **Adjust to a suitable volume.**

8 **After you have finished watching the DVD, eject the disc and turn off the receiver, TV and DVD player.**

Navigating through menus

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



1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ↑/↓ repeatedly to select the menu you want.

3 Press ⊕ or → to enter the menu.

4 Press ↑/↓ repeatedly to select the parameter you want to adjust.

5 Press ⊕ or → to enter the parameter.

6 Press ↑/↓ repeatedly to select the setting you want.

The setting is applied automatically.

To return to the previous display

Press ←.

To exit the menu

Press AMP MENU.

Note

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

Overview of the menus

The following options are available in each menu. For details on navigating through menus, see page 41.

Menu [Display]	Parameters [Display]	Settings	Initial setting
LEVEL (44) [1-LEVEL]	Test tone[a)] [T. TONE]	T. TONE Y, T. TONE N	T. TONE N
	Front speaker balance[a)] [FRT BAL]	BAL L +1 to BAL L +8, BALANCE, BAL R +1 to BAL R +8	BALANCE
	Center speaker level [CNT LVL]	CNT –10 dB to CNT +10 dB (1 dB step)	CNT 0 dB
	Surround left speaker level [SL LVL]	SUR L –10 dB to SUR L +10 dB (1 dB step)	SUR L 0 dB
	Surround right speaker level [SR LVL]	SUR R –10 dB to SUR R +10 dB (1 dB step)	SUR R 0 dB
	Surround back speaker level [SB LVL]	SB –10 dB to SB +10 dB (1 dB step)	SB 0 dB
	Sub woofer level [SW LVL]	SW –10 dB to SW +10 dB (1 dB step)	SW 0 dB
	Dynamic range compressor[a)] [D. RANGE]	COMP. OFF, COMP. STD, COMP. MAX	COMP. OFF
TONE (45) [2-TONE]	Front speaker bass level [BASS LVL]	BASS –6 dB to BASS +6 dB (1 dB step)	BASS 0 dB
	Front speaker treble level [TRE LVL]	TRE –6 dB to TRE +6 dB (1 dB step)	TRE 0 dB
SUR (45) [3-SUR]	Sound field selection[a)] [S.F. SELCT]	2CH ST., A.F.D. AUTO, DOLBY PL, PLII MV, PLII MS, PLII GM, PLIIX MV, PLIIX MS, PLIIX GM, NEO6 CIN, NEO6 MUS, MULTI ST., C.ST.EX A, C.ST.EX B, C.ST.EX C, PORTABLE, HALL, JAZZ, CONCERT, HP 2CH, HP THEA	A.F.D. AUTO
	Surround back decoding mode[a)] [SB DEC]	SB OFF, SB AUTO, SB ON	SB AUTO
	Effect level[a)c)] [EFFECT]	EFCT. MIN, EFCT. STD, EFCT. MAX	EFCT. STD
TUNER (47) [4-TUNER]	FM station receiving mode[a)] [FM MODE]	FM AUTO, FM MONO	FM AUTO
	Naming preset stations[a)] [NAME IN]		

Menu [Display]	Parameters [Display]	Settings	Initial setting
AUDIO (47) [5-AUDIO]	Digital audio input decoding priority[a] [DEC. PRI.]	DEC. AUTO, DEC. PCM	DEC. AUTO for: VIDEO 2, SAT; DEC. PCM for: DVD
	Digital broadcast language selection[a] [DUAL]	DUAL M/S, DUAL M, DUAL S, DUAL M+S	DUAL M
	Synchronizes audio with video output[a] [A.V. SYNC.]	A.V.SYNC. Y, A.V.SYNC. N	A.V.SYNC. N
	Naming inputs[a] [NAME IN]		
VIDEO (48) [6-VIDEO][b]	DIGITAL MEDIA PORT video assign[a] [DMPORT V.]	–NONE, –VIDEO 1, –VIDEO 3, –DVD, –SAT	–NONE
	Naming inputs[a] [NAME IN]		
SYSTEM (49) [7-SYSTEM][d]	Front speakers distance[a] [FRT DIST.]	DIST. 1.0 m to DIST. 7.0 m (0.1 m step)	DIST. 3.0 m
	Center speakers distance[a] [CNT DIST.]	DIST. 1.0 m to DIST. 7.0 m (0.1 m step)	DIST. 3.0 m
	Surround left speaker distance[a] [SL DIST.]	DIST. 1.0 m to DIST. 7.0 m (0.1 m step)	DIST. 3.0 m
	Surround right speaker distance[a] [SR DIST.]	DIST. 1.0 m to DIST. 7.0 m (0.1 m step)	DIST. 3.0 m
	Surround back speaker distance[a] [SB DIST.]	DIST. 1.0 m to DIST. 7.0 m (0.1 m step)	DIST. 3.0 m
	Sub woofer phase polarity[a] [SW PHASE]	NORMAL, REVERSE	NORMAL
	Surround speaker position[a] [SUR POS.]	SIDE/LO, SIDE/HI, BEHD/LO, BEHD/HI	SIDE/LO
	Brightness of the display[a] [DIMMER]	0% dim, 40% dim, 70% dim	0% dim
A. CAL (51) [8-A. CAL][e]	Auto Calibration[a] [AUTO CAL]	A.CAL YES, A.CAL NO	A.CAL NO

[a] For details, refer to the page in the parentheses.
[b] Models of area code SP, AU, TH only.
[c] Except for PORTABLE setting.
[d] For models of area code MX, E51 and AR, SYSTEM menu will appears as “6-SYSTEM”.
[e] For models of area code MX, E51 and AR, A.CAL menu will appears as “7-A.CAL”.

Adjusting the level
(LEVEL menu)

You can use the LEVEL menu to adjust the balance and level of each speaker. These settings are applied to all sound fields. Select "1-LEVEL" in the amplifier menus. For details on adjusting the parameters, see "Navigating through menus" (page 41) and "Overview of the menus" (page 42).

LEVEL menu parameters

■ T. TONE (Test tone)

Lets you adjust the speaker levels and balance while listening to the test tone from your listening position. For details, see "7: Adjusting the speaker levels and balance (TEST TONE)" (page 36).

■ FRT BAL (Front speaker balance)

Lets you adjust the balance between front left and right speakers.

■ CNT LVL (Center speaker level)

■ SL LVL (Surround left speaker level)

■ SR LVL (Surround right speaker level)

■ SB LVL (Surround back speaker level)

■ SW LVL (Sub woofer level)

■ D. RANGE (Dynamic range compressor)

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

- COMP. OFF
  The dynamic range is not compressed.
- COMP. STD
  The dynamic range is compressed as intended by the recording engineer.
- COMP. MAX
  The dynamic range is compressed dramatically.

Tip

Dynamic range compressor lets you compress the dynamic range of the soundtrack based on the dynamic range information included in the Dolby Digital signal. "COMP. STD" is the standard setting, but it only enacts light compression. Therefore, we recommend using the "COMP. MAX" setting. This greatly compresses the dynamic range and lets you view movies late at night at low volumes. Unlike analog limiters, the levels are predetermined and provide a very natural compression.

Adjusting the tone
(TONE menu)

You can use the TONE menu to adjust the tonal quality (bass/treble level) of the front speakers.
Select “2-TONE” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

TONE menu parameters

■ BASS LVL (Front speaker bass level)

■ TRE LVL (Front speaker treble level)

Settings for the surround sound
(SUR menu)

You can use the SUR menu to select the sound field you want for your listening pleasure.
Select “3-SUR” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

SUR menu parameters

■ S.F. SELCT (Sound field selection)

Lets you select the sound field you want. For details, see “Enjoying Surround Sound” (page 52).

Note

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

■ SB DEC (Surround back decoding mode)

Lets you select the surround back decoding mode. For details, see “Using the surround back decoding mode (SUR BACK DECODING)” (page 46).

■ EFFECT (Effect level)

Lets you adjust the “presence” of the surround effect for sound fields selected with the MOVIE or MUSIC buttons and for “HP THEA” sound field. However, the surround effect is not available for “PORTABLE” sound field.

- EFCT. MIN
  The surround effect is minimum.
- EFCT. STD
  The surround effect is standard.
- EFCT. MAX
  The surround effect is maximum.

Using the surround back decoding mode

(SUR BACK DECODING)

By decoding the surround back signal of DVD software (etc.) recorded in Dolby Digital Surround EX, DTS-ES Matrix, DTS-ES Discrete 6.1, etc., format, you can enjoy the surround sound intended by the filmmakers. Select the surround back decoding mode using "SB DEC" on the SUR menu (page 45).

Types of the surround back decoding functions

■ SB AUTO

When the input stream contains the 6.1 channel decode flag[a)], the appropriate decoding is performed on the surround back signal.

Input stream	Output channel	Surround back decoding
Dolby Digital 5.1	5.1	—
Dolby Digital Surround EX[b)]	6.1	Matrix decoder that conforms to Dolby Digital EX
DTS 5.1	5.1	—
DTS-ES Matrix 6.1[c)]	6.1	DTS Matrix decoding
DTS-ES Discrete 6.1[d)]	6.1	DTS Discrete decoding

■ SB ON

To decode the surround back signal regardless of the 6.1 channel decode flag[a)], Dolby Digital EX is applied when the output channel is 6.1.

Input stream	Output channel	Surround back decoding
Dolby Digital 5.1	6.1	Matrix decoder that conforms to Dolby Digital EX
Dolby Digital Surround EX[b)]	6.1	Matrix decoder that conforms to Dolby Digital EX
DTS 5.1	6.1	Matrix decoder that conforms to Dolby Digital EX
DTS-ES Matrix 6.1[c)]	6.1	Matrix decoder that conforms to Dolby Digital EX
DTS-ES Discrete 6.1[d)]	6.1	Matrix decoder that conforms to Dolby Digital EX

■ SB OFF

Surround back decoding is not performed.

[a)] A 6.1 channel decode flag is information recorded in software such as DVDs.

[b)] A Dolby Digital DVD that includes a Surround EX flag. The Dolby Corporation web page can help you distinguish Surround EX films.

[c)] Software encoded with a flag to denote it has both DTS-ES Matrix and 5.1 channel signals.

[d)] Software encoded with both 5.1 channel signals and an extension stream designed for returning those signals to 6.1 discrete channels. Discrete 6.1 channel signals are DVD specific signals not used in movie theaters.

Notes

- There may be no sound from the surround back speaker in Dolby Digital EX mode. Some discs have no Dolby Digital Surround EX flag even though the packages have Dolby Digital EX logos. In this case, select "SB ON".
- You can select the surround back decoding mode only when A.F.D. mode is selected. However, this function is canceled when Dolby Pro Logic IIx is selected.

Settings for the tuner (TUNER menu)

You can use the TUNER menu to set the FM station receiving mode and to name preset stations.
Select “4-TUNER” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

TUNER menu parameters

■ FM MODE (FM station receiving mode)

- FM AUTO
  This receiver will decode the signal as stereo signal when the radio station is broadcast in stereo.
- FM MONO
  This receiver will decode the signal as mono signal regardless of the broadcast signal.

■ NAME IN (Naming preset stations)

Lets you set the name of preset stations. For details, see “Naming preset stations” (page 61).

Settings for the audio (AUDIO menu)

You can use the AUDIO menu to make settings for the audio to suit your preference.
Select “5-AUDIO” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

AUDIO menu parameters

■ DEC. PRI. (Digital audio input decoding priority)

Lets you specify the input mode for the digital signal input to the DIGITAL IN jacks.

- DEC. AUTO
  Automatically switches the input mode between DTS, Dolby Digital or PCM.
- DEC. PCM
  PCM signals are given priority (to prevent interruption when playback starts). However, when other signals are input, there may be no sound depending on the format. In this case, set to “DEC. AUTO”.

Note

When set to “DEC. AUTO” and the sound from the digital audio jacks (for a CD, etc.) is interrupted when playback starts, set to “DEC. PCM”.

continued

■ DUAL (Digital broadcast language selection)

Lets you select the language you want to listen to during digital broadcast. This feature only functions for Dolby Digital sources.

- DUAL M/S (Main/Sub)
  Sound of the main language will be output through the front left speaker and sound of the sub language will be output through the front right speaker simultaneously.
- DUAL M (Main)
  Sound of the main language will be output.
- DUAL S (Sub)
  Sound of the sub language will be output.
- DUAL M+S (Main + Sub)
  Mixed sound of both the main and sub languages will be output.

■ A.V. SYNC. (Synchronizes audio with video output)

- A.V.SYNC. Y (Yes) (Delay time: 68 ms)
  The audio output is delayed so that the time gap between the audio output and visual display is minimized.
- A.V.SYNC. N (No) (Delay time: 0 ms)
  The audio output is not delayed.

Notes

- This parameter is useful when you use a large LCD or plasma monitor or a projector.
- This parameter is valid only when you use a sound field selected with the 2CH or A.F.D. buttons.
- This parameter is not valid when
  – PCM 96 kHz, DTS 96/24 or DTS 2048 signals are input.
  – the receiver performing DTS-ES Matrix 6.1 decoding.
  – MULTI CH IN function is selected.

■ NAME IN (Naming inputs)

Lets you set the name of inputs. For details, see “Naming inputs” (page 67).

Settings for the video

(VIDEO menu)

(Models of area code SP, AU, TH only)

You can use the VIDEO menu to assign the composite video input to DMPORT input and to name inputs.
Select “6-VIDEO” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

VIDEO menu parameters

■ DMPORT V. (DIGITAL MEDIA PORT video assign)

Lets you assign the composite video input to DMPORT input so that you can view the image on the TV or projector. For details, see “Watching a connected component through DMPORT connection” (page 65).

■ NAME IN (Naming inputs)

Lets you set the name of inputs. For details, see “Naming inputs” (page 67).

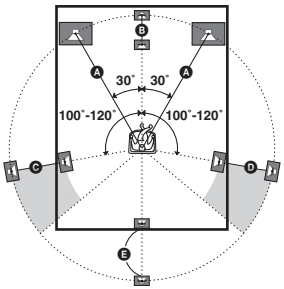
Settings for the system
(SYSTEM menu)

You can use the SYSTEM menu to set the distance of the speakers connected to this system.
Select “7-SYSTEM” in the amplifier menus (models of area code SP, AU, TH only). Select “6-SYSTEM” in the amplifier menus (models of area code MX, E51, AR only). For details on adjusting the parameters, see “Navigating through menus” (page 41) and “Overview of the menus” (page 42).

SYSTEM menu parameters

■ FRT DIST. (Front speakers distance)

Lets you set the distance from your listening position to the front speakers (Ⓐ). If both front speakers are not placed an equal distance from your listening position, set the distance as the average distance between the front speakers.



■ CNT DIST. (Center speaker distance)

Lets you set the distance from your listening position to the center speaker. Center speaker distance should be set from a distance equal to the front speaker distance (Ⓐ) to a distance 1.5 meters closer to your listening position (Ⓑ).

■ SL DIST. (Surround left speaker distance)

Lets you set the distance from your listening position to the surround left speaker. Surround left speaker distance should be set from a distance equal to the front speaker distance (Ⓐ) to a distance 4.5 meters closer to your listening position (Ⓒ).

■ SR DIST. (Surround right speaker distance)

Lets you set the distance from your listening position to the surround right speaker. Surround right speaker distance should be set from a distance equal to the front speaker distance (Ⓐ) to a distance 4.5 meters closer to your listening position (Ⓓ).

■ SB DIST. (Surround back speaker distance)

Lets you set the distance from your listening position to the surround back speaker. Surround back speaker distance should be set from a distance equal to the front speaker distance (Ⓐ) to a distance 4.5 meters closer to your listening position (Ⓔ).

continued

Tip

The receiver lets you to input the speaker position in terms of distance. However, it is not possible to set the center speaker further than the front speakers. Also, the center speaker cannot be set more than 1.5 meter closer from the front speakers.
Likewise, the surround speakers can not be set further away from the listening position than the front speakers. And they can be no more than 4.5 meter closer. This is because incorrect speaker placement is not conducive to the enjoyment of surround sound.
Please note that, setting the speaker distance closer than the actual location of the speakers will cause a delay in the output of the sound from that speaker. In other words, the speaker will sound like it is further away.
For example, setting the center speaker distance 1-2 meter closer than the actual speaker position will create a fairly realistic sensation of being "inside" the screen. If you cannot obtain a satisfactory surround effect because the surround speakers are too close, setting the surround speaker distance closer (shorter) than the actual distance will create a larger sound stage.
Adjusting these parameter while listening to the sound often results in much better surround sound. Give it a try!

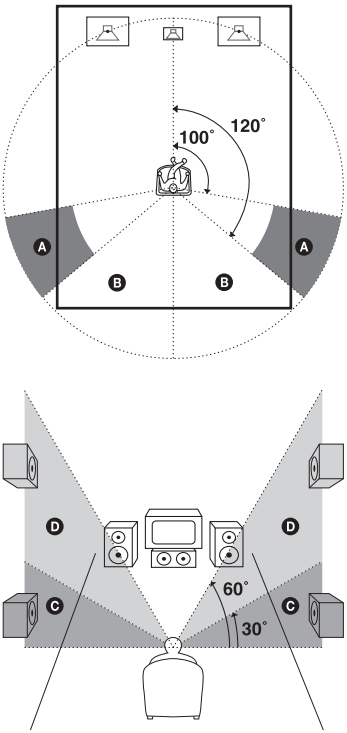
■ SW PHASE (Sub woofer phase polarity)

Lets you set the sub woofer phase polarity.

- NORMAL
  Normally, select "NORMAL".
- REVERSE
  Depending on the type of front speakers, the position of the sub woofer, and the cut-off frequency of the sub woofer, setting the phase polarity to "REVERSE" may produce better bass. Besides bass reproduction, the richness and tightness of the overall sound may also be affected. While listening from the main listening position, select the setting that best suits your environment.

■ SUR POS. (Surround speaker position)

Lets you specify the location of your surround speakers for proper implementation of the surround effects in the Cinema Studio EX modes (page 55).



- SIDE/LO
  Select if the location of your surround speakers corresponds to sections Ⓐ and Ⓒ.
- SIDE/HI
  Select if the location of your surround speakers corresponds to sections Ⓐ and Ⓓ.
- BEHD/LO
  Select if the location of your surround speakers corresponds to sections Ⓑ and Ⓒ.
- BEHD/HI
  Select if the location of your surround speakers corresponds to sections Ⓑ and Ⓓ.

Tip

Surround speaker position is designed specifically for implementation of the Cinema Studio EX modes. For other sound fields, speaker position is not so critical.

Those sound fields were designed under the premise that the surround speakers would be located behind the listening position, but presentation remains fairly consistent even with the surround speakers positioned at a rather wide angle. However, if the speakers are pointing toward the listener from the immediate left and right of the listening position, the surround effects become unclear unless set to "SIDE/LO" or "SIDE/HI".

Nevertheless, each listening environment has many variables, such as wall reflections, and you may obtain better results using "BEHD/HI" if your speakers are located high above the listening position, even if they are located to the immediate left and right.

Therefore, although it may result in a setting contrary to the above explanation, we recommend that you playback multi channel surround encoded software and select the setting that provides a good sense of spaciousness and that best succeeds in forming a cohesive space between the surround sound from the surround speakers and the sound of the front speakers. If you are not sure which sounds best, select "BEHD/LO" or "BEHD/HI" and then use the speaker distance parameter and speaker level adjustments to obtain proper balance.

■ DIMMER (Brightness of the display)

Lets you adjust the brightness in 3 steps.

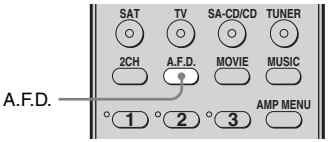
Calibrating the appropriate settings automatically

(A. CAL menu)

For details, see "6: Calibrating the appropriate settings automatically (AUTO CALIBRATION)" (page 32).

Enjoying Dolby Digital and DTS Surround sound (AUTO FORMAT DIRECT)

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



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

You can also use A.F.D. on the receiver. For details, see “Types of A.F.D. mode” (page 53).

Types of A.F.D. mode

Decoding mode	A.F.D. mode [Display]	Multi channel audio after decoding	Effect
(Detecting automatically)	A.F.D. AUTO [A.F.D. AUTO]	(Detecting automatically)	Performs the sound as it was recorded/ encoded without adding any surround effects. However, this receiver will generate a low frequency signal for output to the sub woofer when there is no LFE signals.
Dolby Pro Logic	PRO LOGIC [DOLBY PL]	4 channel	Performs Dolby Pro Logic decoding. The source recorded in 2 channel format is decoded into 4.1 channels.
Dolby Pro Logic II	PRO LOGIC II MOVIE [PLII MV]	5 channel	Performs Dolby Pro Logic II Movie mode decoding. This setting is ideal for movies encoded in Dolby Surround. In addition, this mode can reproduce sound in 5.1 channel for watching videos of overdubbed or old movies.
	PRO LOGIC II MUSIC [PLII MS]	5 channel	Performs Dolby Pro Logic II Music mode decoding. This setting is ideal for normal stereo sources such as CDs.
	PRO LOGIC II GAME [PLII GM]	5 channel	Performs Dolby Pro Logic II Game mode decoding. This setting is ideal for game softwares.
Dolby Pro Logic IIx	PRO LOGIC IIx MOVIE [PLIIX MV]	6 channel	Performs Dolby Pro Logic IIx Movie mode decoding. This setting expands Dolby Pro Logic II Movie or Dolby Digital 5.1 to discrete 6.1 movie channels.
	PRO LOGIC IIx MUSIC [PLIIX MS]	6 channel	Performs Dolby Pro Logic IIx Music mode decoding. This setting is ideal for normal stereo sources such as CDs.
	PRO LOGIC IIx GAME [PLIIX GM]	6 channel	Performs Dolby Pro Logic IIx Game mode decoding.
Neo:6	Neo:6 Cinema [NEO6 CIN]	6 channel	Performs DTS Neo:6 Cinema mode decoding.
	Neo:6 Music [NEO6 MUS]	6 channel	Performs DTS Neo:6 Music mode decoding. This setting is ideal for normal stereo sources such as CDs.
(Multi Stereo)	MULTI STEREO [MULTI ST.]	(Multi Stereo)	Outputs 2 channel left/right signals from all speakers.

continued

Notes

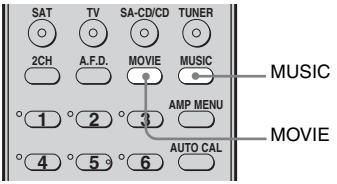
- DTS Neo:6 does not work for DTS 2CH audio, the sound is played as 2 channel.
- Dolby Pro Logic IIx decoding does not function for DTS format signals or for signals with a sampling frequency of more than 48 kHz.

Tip

When a multi channel signal is input, only Dolby Pro Logic IIx decoding is effective. When you select decoding modes other than Dolby Pro Logic IIx, multi channel sound (being encoded) is output.

Selecting a pre-programmed sound field

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



Press MOVIE repeatedly to select a sound field for movies or press MUSIC repeatedly to select a sound field for music.

For details, see "Types of sound field available" (page 55).

Types of sound field available

Sound field for	Sound field [Display]	Effect
Movie	CINEMA STUDIO EX A **DCS** [C.ST.EX A]	Reproduces the sound characteristics of the Sony Pictures Entertainment “Cary Grant Theater” cinema production studio. This is a standard mode, great for watching almost any type of movie.
	CINEMA STUDIO EX B **DCS** [C.ST.EX B]	Reproduces the sound characteristics of the Sony Pictures Entertainment “Kim Novak Theater” cinema production studio. This mode is ideal for watching science-fiction or action movies with lots of sound effects.
	CINEMA STUDIO EX C **DCS** [C.ST.EX C]	Reproduces the sound characteristics of the Sony Pictures Entertainment scoring stage. This mode is ideal for watching musicals or films where orchestra music is featured in the soundtrack.
Music	PORTABLE AUDIO ENHANCER [PORTABLE]	Reproduces a clear enhanced sound image from your portable audio device. This mode is ideal for MP3 and other compressed music.
	HALL [HALL]	Reproduces the acoustics of a classical concert hall.
	JAZZ CLUB [JAZZ]	Reproduces the acoustics of a jazz club.
	LIVE CONCERT [CONCERT]	Reproduces the acoustics of a 300-seat live house.
Headphone*	HEADPHONE 2CH [HP 2CH]	This mode is selected automatically if you use headphone when 2 channel mode (page 57)/A.F.D. mode (page 53) is selected. Standard 2 channel stereo sources completely bypass the sound field processing and multi channel surround formats are downmixed to 2 channels.
	HEADPHONE THEATER **DCS** [HP THEA]	This mode is selected automatically if you use headphone when sound field for movie/music is selected. It allows you to experience a theater-like environment while listening through a pair of headphones.

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

continued

About DCS (Digital Cinema Sound)

Sound fields with DCS mark use DCS technology.

DCS is a unique sound reproduction technology for home theater developed by Sony, in cooperation with Sony Pictures Entertainment, for enjoying the exciting and powerful sound of movie theaters at home. With this "Digital Cinema Sound" developed by integrating a DSP (Digital signal processor) and measured data, the ideal sound field intended by film makers can be experienced at home.

About CINEMA STUDIO EX modes

CINEMA STUDIO EX modes are suitable for watching motion picture DVDs (etc.), with multi channel surround effects. You can reproduce the sound characteristics of Sony Pictures Entertainment's dubbing studio in your home.

The CINEMA STUDIO EX modes consist of the following three elements.

- Virtual Multi Dimension
  Creates 5 sets of virtual speakers from a single pair of actual surround speakers.
- Screen Depth Matching
  Creates the sensation that the sound is coming from inside the screen like in theaters.
- Cinema Studio Reverberation
  Reproduces the type of reverberation found in theaters.

The CINEMA STUDIO EX modes integrate these three elements simultaneously.

Notes

- The effects provided by the virtual speakers may cause increased noise in the playback signal.
- When listening with sound fields that employ the virtual speakers, you will not be able to hear any sound coming directly from the surround speakers.
- This function does not work for signals with a sampling frequency of more than 48 kHz.
- The surround back decoding mode does not function when a sound field for movie or music is selected (page 46).

Tip

You can identify the encoding format of DVD software, etc., by looking at the logo on the package.

- DOLBY DIGITAL : Dolby Digital discs
- DOLBY SURROUND DOLBY SURROUND : Dolby Surround encoded programs
- dts Digital Surround : DTS Digital Surround encoded programs

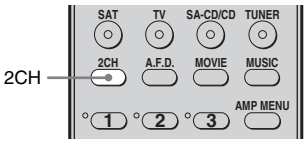
To turn off the surround effect for movie/music

Press 2CH to select "2CH ST." or press A.F.D. repeatedly to select "A.F.D. AUTO".

Using only the front speakers and sub woofers

(2CH STEREO)

In this mode, the receiver outputs the sound from the front left/right speakers and the sub woofers.
When multi channel surround formats are input, the signals are downmixed to 2 channel with bass frequencies being output from the sub woofer.
When standard 2 channel stereo sources are input, the receiver's bass redirection circuitry will be activated. The front channel bass frequencies will be output from the sub woofer.



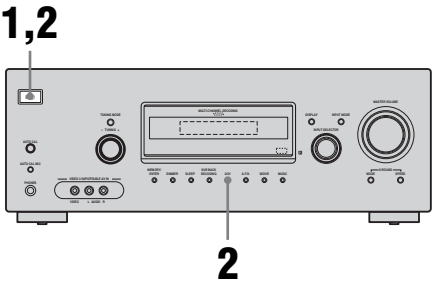
Press 2CH.

Note

To listen to 2 channel stereo sources using the front left/right speakers and a sub woofer, select "A.F.D. AUTO".
This receiver will generate a low frequency signal for output to the sub woofer when there is no L.F.E. signal, which is a low-pass sound effect output from a sub woofer to a 2 channel signal.

Resetting sound fields to the initial settings

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



1 **Press I/⏻ to turn off the power.**

2 **While holding down 2CH, press I/⏻.**

"S.F. CLR." appears on the display and all sound fields are reset to their initial setting.

Listening to FM/AM radio

You can listen to FM and AM broadcasts through the built-in tuner. Before operation, make sure you have connected the FM and AM antennas to the receiver (page 29).

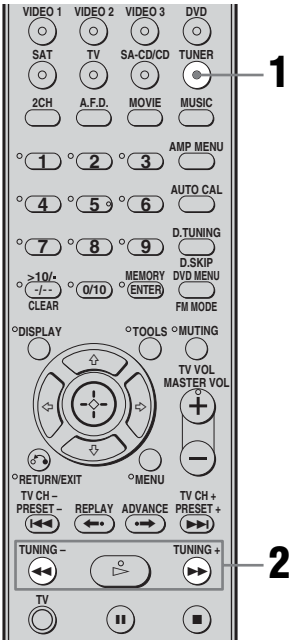
Tip

The tuning scale differs depending on the area code as shown in the following table. For details on area codes, see page 3.

Area code	FM	AM
SP, AU, TH	50 kHz	9 kHz
MX, AR	50 kHz	10 kHz
E51	50 kHz	10 kHz*

* The AM tuning scale can be changed (page 78).

Automatic tuning



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

You can also use INPUT SELECTOR on the receiver.

2 Press TUNING + or TUNING –.

Press TUNING + to scan from low to high; press TUNING – to scan from high to low.

The receiver stops scanning whenever a station is received.

Using the controls on the receiver

1 Turn INPUT SELECTOR to select the FM or AM band.

2 Press TUNING MODE repeatedly to select "AUTO T.".

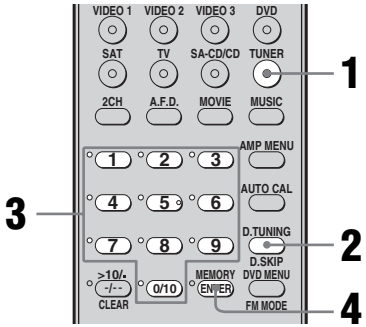
3 Turn TUNING +/–.

In case of poor FM stereo reception

If the FM stereo reception is poor and “ST” flashes on the display, select monaural audio so that the sound will be less distorted.
Press FM MODE repeatedly until the “MONO” indicator lights up on the display. To return to stereo mode, press FM MODE repeatedly until the “MONO” indicator on the display do not light up.

Direct tuning

Enter the frequency of a station directly by using the numeric buttons.



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

You can also use INPUT SELECTOR on the receiver.

2 Press D.TUNING.

3 Press the numeric buttons to enter the frequency.

Example 1: FM 102.50 MHz
Press 1 ➡ 0 ➡ 2 ➡ 5 ➡ 0
Example 2: AM 1,350 kHz
Press 1 ➡ 3 ➡ 5 ➡ 0
If you have tuned in an AM station, adjust the direction of the AM loop antenna for optimum reception.

4 Press ENTER.

You can also use MEMORY/ENTER on the receiver.

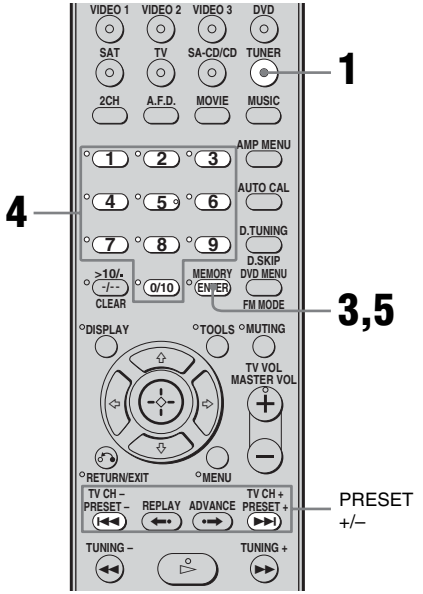
If you cannot tune in a station

Make sure you have entered the right frequency. If not, repeat steps 2 to 4. If you still cannot tune in a station, the frequency is not used in your area.

Presetting radio stations

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

Presetting radio stations



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

You can also use INPUT SELECTOR on the receiver.

2 Tune in the station that you want to preset using Automatic Tuning (page 58) or Direct Tuning (page 59).

Switch the FM reception mode, if necessary(page 59).

3 Press MEMORY.

You can also use MEMORY/ENTER on the receiver.
"MEMORY" lights up for a few seconds. Perform steps 4 and 5 before "MEMORY" goes out.

4 Press the numeric buttons to select a preset number.

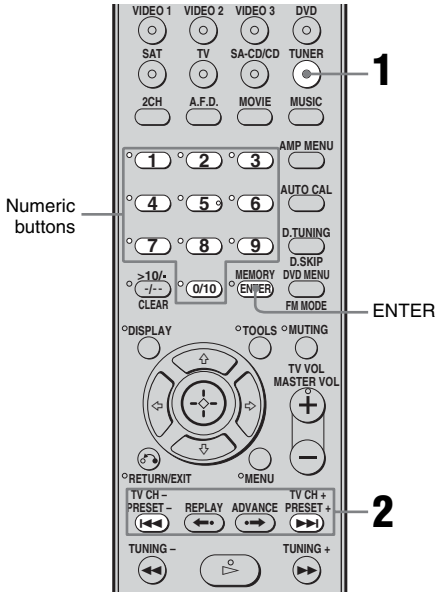
You can also press PRESET + or PRESET – repeatedly to select a preset number.
If "MEMORY" goes out before you select the preset number, start again from step 3.

5 Press ENTER.

You can also use MEMORY/ENTER on the receiver.
The station is stored as the selected preset number.
If "MEMORY" goes out before you press ENTER, start again from step 3.

6 Repeat steps 1 to 5 to preset another station.

Tuning to preset stations

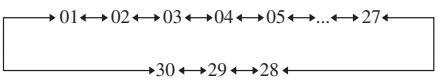


1 Press TUNER repeatedly to select the FM or AM band.

You can also use INPUT SELECTOR on the receiver.

2 Press PRESET + or PRESET – repeatedly to select the preset station you want.

Each time you press the button, you can select a preset station as follows:



You can also press the numeric buttons to select the preset station you want. Then, press ENTER to enter the selection.

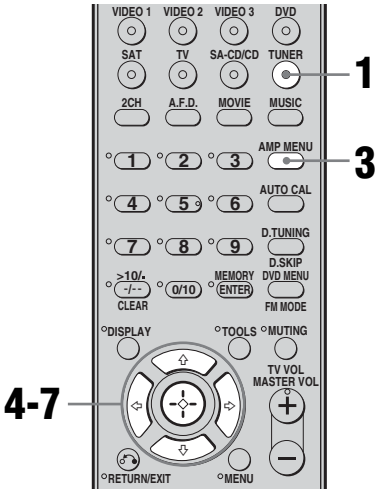
Using the controls on the receiver

1 Turn INPUT SELECTOR to select the FM or AM band.

2 Press TUNING MODE repeatedly to select "PRESET T.".

3 Turn TUNING +/– to select the preset station you want.

Naming preset stations



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

You can also use INPUT SELECTOR on the receiver.

2 Tune in the preset station you want to create an index name for (page 61).

3 Press AMP MENU.

"1-LEVEL" appears on the display.

4 Press ↑/↓ repeatedly to select "4-TUNER".

5 Press ⊕ or → to enter the menu.

continued

6 **Press ↑/↓ repeatedly to select "NAME IN".**

7 **Press ⊕ or → to enter the parameter.**

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

To create an index name

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

If you made a mistake

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

Tips

- You can select the character type as follows by pressing ↑/↓.
  Alphabet (upper case) ⟶ Numbers ⟶ Symbols
- To enter a blank space, you can
  – press ↑/↓ repeatedly until a blank space appears in the display.
  – press → without input a character.

2 Press ⊕.
The entered name is registered.

Other Operations

Switching the audio input mode

(INPUT MODE)

You can select the audio input mode by setting the audio input mode when you connect components to both digital and analog audio input jacks on the receiver.

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

You can also use the input buttons on the remote.

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

The selected audio input mode appears on the display.

Audio input modes

- AUTO IN
  Gives priority to digital audio signals when there are both digital and analog connections. If there are no digital audio signals, analog audio signals are selected.
- COAX IN
  Specifies the digital audio signals input to the DIGITAL COAXIAL jack.
- OPT IN
  Specifies the digital audio signals input to the DIGITAL OPTICAL jack.
- ANALOG
  Specifies the analog audio signals input to the AUDIO IN (L/R) jacks.

Note

Some audio input modes may not be set up depending on the input.

Enjoying the DIGITAL MEDIA PORT (DMPORT)

(Models of area code SP, AU, TH only)

The DIGITAL MEDIA PORT (DMPORT) allows you to enjoy sound from a network system such as a portable audio source or computer.

By connecting a DIGITAL MEDIA PORT adapter (not supplied), you can enjoy sound from the connected component on the receiver.

For details, see the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

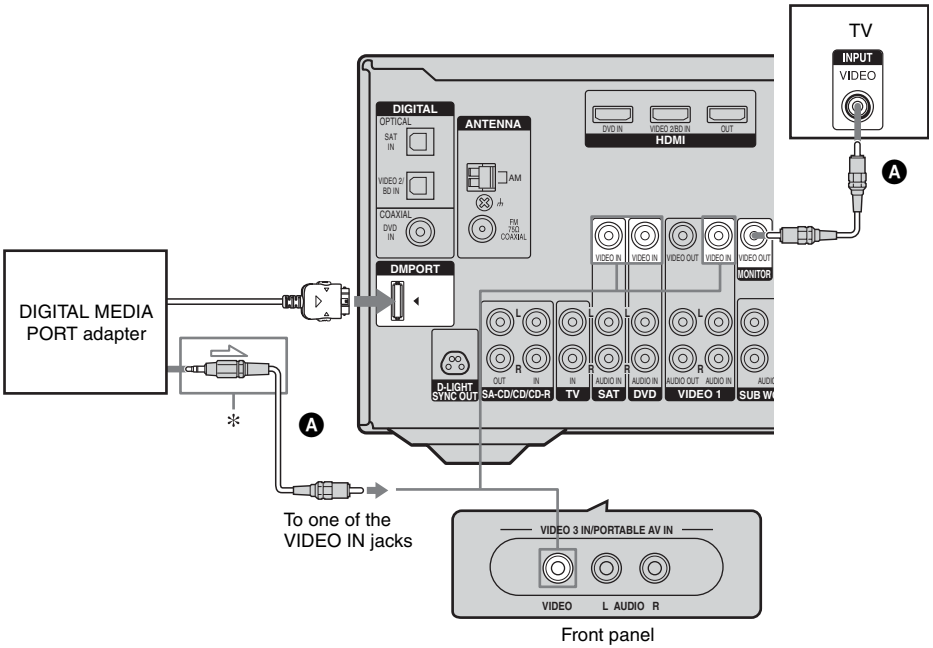
Notes

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

Connecting the DIGITAL MEDIA PORT adapter

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

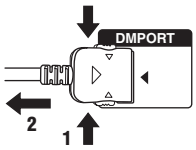
You can also view the images on the TV screen by connecting the video output of the DIGITAL MEDIA PORT adapter to the receiver.
To view the images, proceed to "Watching a connected component through DMPORT connection" on page 65.



* The type of connector varies depending on the DIGITAL MEDIA PORT adapter.
For details, see the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

A Video cord (not supplied)

To detach the DIGITAL MEDIA PORT adapter from DMPORT jack



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

Notes

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

Listening to a connected component through DMPORT connection

1 Press DMPORT.

You can also use the INPUT SELECTOR on the receiver to select "DMPORT".

2 Start playback of the connected component.

The sound is played back on the receiver. For details, see the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

Watching a connected component through DMPORT connection

You need to assign composite video input to DMPORT input so that you can view the images on the TV screen.

1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ↑/↓ repeatedly to select "6-VIDEO".

3 Press ⊕ or → to enter the menu.

4 Press ↑/↓ repeatedly to select "DMPORT V.".

5 Press ⊕ or → to enter the parameter.

6 Press ↑/↓ repeatedly to select the composite video input you want to assign to DMPORT input.

Initial setting: –NONE
The assignable composite video input are VIDEO 1, VIDEO 3, DVD and SAT inputs.

For example, select "–VIDEO 1".
When you press DMPORT, the images from the component connected to the VIDEO 1 VIDEO IN jack through DIGITAL MEDIA PORT adapter will appear on the TV screen.

To return to the previous display

Press ←.

Notes

- Depending on the type of DIGITAL MEDIA PORT adapter, you can operate the connected component by using the remote. For details on remote button operation, see page 11.
- Be sure you have made the video connection from DIGITAL MEDIA PORT adapter to the receiver (page 64).
- Be sure you have connected the MONITOR OUT of the receiver to the TV (page 64).
- Depending on the DIGITAL MEDIA PORT adapter, video output may not be possible.

Tip

When listening to MP3 or other compressed music using a portable audio source, you can enhance the sound. Press MUSIC repeatedly to select "PORTABLE" (page 54).

Creating a party environment
(X-ROUND)

You can create a party environment by using X-ROUND to change the sound effect of your speakers.
Be sure to use the buttons on the receiver for this operation.

Press X-ROUND MODE repeatedly to select the X-ROUND mode you want.

Each time you press the button, the display changes cyclically as follows:

X-WAVE → X-FADER → X-BAL → X-OFF

Types of X-ROUND mode

X-ROUND mode	Effect
X-WAVE	Sound moves in circular motion (clockwise direction).
X-FADER	Sound moves from front speakers to surround speakers or vice versa.
X-BAL	Sound moves from left speakers to right speakers or vice versa.
X-OFF	Sound effect will automatically goes back to the previously selected sound field.

Tip
You can take the full advantage of the X-Round sound to bring the exciting and powerful environment in a party. The best X-Round effect is from 2 channel sources.

Adjusting the X-ROUND effect

You can adjust the speed of each X-ROUND effect.

Press X-ROUND SPEED repeatedly to adjust the speed of selected X-ROUND.

Each time you press the button, the display changes cyclically as follows:

SPEED 1 → SPEED 2 → SPEED 3 → SPEED 4 → ... → SPEED 18 → SPEED 19 → SPEED 20

Note
If you press X-ROUND SPEED during X-OFF, the display will turn dark.

Changing the X-ROUND display

Press DISPLAY repeatedly on the receiver.

Each time you press the button, the display changes cyclically as follows:

Index name of the input selector → Selected input selector → Selected X-ROUND mode

Note
When X-ROUND effect is turned on, the X-ROUND display will replace sound field display.

Naming inputs

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

1 Press the input button to select the input you want to create an index name for.

You can also use INPUT SELECTOR on the receiver.

2 Press AMP MENU.

"1-LEVEL" appears on the display.

3 Press ↑/↓ repeatedly to select either "5-AUDIO" or "6-VIDEO".

For models of area code MX, E51 and AR, you can only select "5-AUDIO".

4 Press ⊕ or → to enter the menu.

5 Press ↑/↓ to select "NAME IN".

6 Press ⊕ or → to enter the parameter.

The cursor flashes and you can select a character. Follow the procedure given in "To create an index name" (page 62).

Changing the display

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

Press DISPLAY repeatedly.

Each time you press the button, the display changes cyclically as follows.

All inputs except the FM and AM band

Index name of the input* ⟶ Selected input ⟶ Sound field currently applied

FM and AM band

Preset station name* ⟶ Frequency ⟶ Sound field currently applied

* Index name appears only when you have assigned one to the input or preset station (page 61, 67). Index name does not appear when only blank spaces have been entered, or it is the same as the input name.

Note

Characters or marks may not be displayed for some languages.

Using the Sleep Timer

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

Press SLEEP repeatedly while the power is on.

Each time you press the button, the display changes cyclically as follows:

2-00-00 → 1-30-00 → 1-00-00 → 0-30-00 → OFF

When sleep timer is activated, the display dims.

Note

If you press any buttons on the remote or receiver after the display dims, the display brightens up. After a while, the display dims again if no button is pressed.

Tip

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

Recording using the receiver

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

Recording onto a CD-R

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

1 Press one of the input buttons to select the playback component.

You can also use INPUT SELECTOR on the receiver.

2 Prepare the playback component for playing.

For example, tune to the radio station you want to record.

3 Prepare the recording component.

Insert a blank CD-R into the CD recorder and adjust the recording level.

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

Note

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

Recording onto a recording media

You can record from a video component using the receiver. See the operating instructions supplied with your recording component.

1 Press one of the input buttons to select the playback component.

You can also use INPUT SELECTOR on the receiver.

2 Prepare the playback component for playing.

For example, insert the video tape you want to copy into the VCR.

3 Prepare the recording component.

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

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

Notes

- Some sources contain copy guards to prevent recording. In this case, you may not be able to record from the source.
- When DMPORT input is selected and you have assigned VIDEO 1 input to DMPORT input, no video signals are output from the VIDEO 1 VIDEO OUT jack.

Using the Remote

Changing button assignments

You can change the factory settings of the input buttons to suit the components in your system. For example, if you connect a DVD recorder to the VIDEO 1 jacks on the receiver, you can set the VIDEO 1 button on this remote to control the DVD recorder.

1 Hold down the input button of which you want to change the assignment.

Example: Hold down VIDEO 1.

2 Referring to the table below, press the corresponding button for the category you want.

Example: Press 4.
Now you can use the VIDEO 1 button to control the DVD recorder.

continued

Categories and the corresponding buttons

Categories	Press
VCR (command mode VTR 3)[a)]	1
VCR (command mode VTR 2)[a)]	2
DVD player/DVD recorder (command mode DVD1)[b)]	3
DVD recorder (command mode DVD3)[b)]	4
CD player	5
Euro Digital Satellite Receiver	6
DVR	7
DSS (Digital Satellite Receiver)	8
Blu-ray disc player (command mode BD1)	9
Blu-ray disc recorder (command mode BD3)	0/10
TV	-/--

[a)] Sony VCRs are operated with a VTR 2 or VTR 3 setting which corresponds to 8 mm and VHS respectively.

[b)] Sony DVD recorders are operated with a DVD1 or DVD3 setting. For details, refer to the operating instructions supplied with the DVD recorders.

To clear all remote button assignments

RM-AAU013
(Models of area code MX, E51, AR only)
Press I/⏻, AUTO CAL and MASTER VOL – at the same time.
RM-AAU015
(Models of area code SP, AU, TH only)
Press I/⏻, DMPORT and MASTER VOL – at the same time.
The remote is reset to its factory settings.

Additional Information

Glossary

■ Component video

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

■ Composite video

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

■ Dolby Digital

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

■ Dolby Digital Surround EX

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

■ Dolby Pro Logic II

This technology converts 2ch stereo recorded audio into 5.1ch for playback. There is a MOVIE mode for movies and MUSIC mode for stereo sources such as music. Old movies encoded in the traditional stereo format can be enhanced with 5.1ch surround sound.

■ Dolby Pro Logic IIx

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

■ Dolby Surround (Dolby Pro Logic)

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

■ DTS 96/24

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

■ DTS Digital Surround

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

■ DTS-ES

Format for 6.1ch playback with surround back information. There are two modes, “Discrete 6.1” which records all channels independently, and “Matrix 6.1” which matrixes surround back channel into LS and RS channels. It is ideal for playback of motion picture soundtracks.

■ DTS Neo:6

This technology converts 2ch stereo recorded audio for 6.1ch playback. There are two modes to select according to the playback source or your preference, CINEMA for movies, and MUSIC for stereo sources such as music.

■ HDMI (High-Definition Multimedia Interface)

HDMI is an interface that supports both video and audio on a single digital connection. The HDMI connection carries standard to high definition video signals and multi-channel audio signals to audio/video components, such as HDMI equipped TVs, in digital form without degradation. The HDMI specification supports HDCP (High-bandwidth Digital Contents Protection), a copy protection technology that incorporates coding technology for digital video signals.

■ Sampling frequency

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

Precautions

On safety

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

On power sources

- Before operating the receiver, check that the operating voltage is identical with your local power supply.
  The operating voltage is indicated on the nameplate on the back of the receiver.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- The AC power cord must be changed only at a qualified service shop.

On heat buildup

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

On placement

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

On operation

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

If you encounter color irregularity on a nearby TV screen

The front and center speakers and the sub woofers are magnetically shielded to allow it to be installed near a TV set. However, color irregularities may still be observed on certain types of TV sets. As the surround and surround back speakers are not magnetically shielded, we recommend that you place them slightly further away from a TV set (page 15).

If color irregularity is observed...

Turn off the TV set once, then turn it on again after 15 to 30 minutes.

If color irregularity is observed again...

Place the speaker further away from the TV set.

If howling occurs

Reposition the speakers or turn down the volume on the receiver.

On cleaning

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

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

Troubleshooting

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

Audio

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

- Check that the speakers and components are connected securely.
- Check that all speaker cords are connected correctly.
- Check that both the receiver and all components are turned on.
- Check that MASTER VOLUME is not set to “VOL MIN”.
- Check that headphone is not connected.
- Press MUTING to cancel the muting function.
- Check that you have selected the correct component with the input buttons.
- The protective device on the receiver has been activated. Turn off the receiver, eliminate the short-circuit problem, and turn on the power again.

There is no sound from a specific component.

- Check that the component is connected correctly to the audio input jacks for that component.
- Check that the cord(s) used for the connection is (are) fully inserted into the jacks on both the receiver and the component.

continued

There is no sound from one of the front speakers.

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

There is no sound from analog 2 channel sources.

- Check that the INPUT MODE is not set to "COAX IN" or "OPT IN" for the selected input (page 62).

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

- Check that the INPUT MODE is not set to "ANALOG" (page 62).

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

- Check the HDMI connection.
- You cannot listen to the Super Audio CD by connecting HDMI.
- Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with each component.

There is no sound from the speakers of the receiver when you connect the receiver and the playback component via a HDMI connection.

- Make sure that you have connected the digital audio jacks on the playback component to the receiver. Then, turn off or mute the TV's volume.

The left and right sounds are unbalanced or reversed.

- Check that the speakers and components are connected correctly and securely.
- Adjust the balance parameters using the LEVEL menu.

There is severe hum or noise.

- Check that the speakers and components are connected securely.
- Check that the connecting cords are away from a transformer or motor, and at least 3 m away from a TV set or fluorescent light.
- Move your audio components away from the TV.
- The plugs and jacks are dirty. Wipe them with a cloth slightly moistened with alcohol.

There is no sound, or only a very low-level sound is heard from the center/surround/surround back speakers.

- Select a CINEMA STUDIO EX mode (page 55).
- Adjust the speaker level (page 36).

There is no sound from the surround back speaker.

- Some discs have no Dolby Digital Surround EX flag even though the packages have Dolby Digital Surround EX logos. In this case, select "SB ON" (page 46).

There is no sound from the sub woofer.

- Check that the sub woofer is connected correctly and securely.
- Make sure you have turned on your sub woofer.

The surround effect cannot be obtained.

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

Dolby Digital or DTS multi channel sound is not reproduced.

- Check that the DVD, etc. you are playing is recorded in Dolby Digital or DTS format.
- When connecting the DVD player, etc., to the digital input jacks of this receiver, check the audio setting (the settings for the audio output) of the connected component.

The MULTI CHANNEL DECODING lamp does not light up.

- Check that the playback component is connected to a digital jack and the input is selected properly on this receiver.
- Check whether the input source of the software being played back corresponds to the multi channel format.
- Check whether the setup on the playback component is set to multi channel sound.

Video

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

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

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

- Check the HDMI connection.
- Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with the each component.
- Assign the HDMI input correctly.

Recording cannot be carried out.

- Check that the components are connected correctly.
- Select the source component using the input buttons.

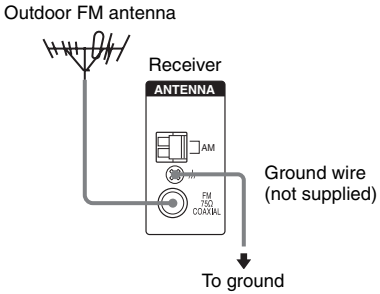
* Models of area code SP, AU, TH only.

continued

Tuner

The FM reception is poor.

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



Radio stations cannot be tuned in.

- Check that the antennas are connected securely. Adjust the antennas and connect an external antenna, if necessary.
- The signal strength of the stations is too weak (when tuning in with automatic tuning). Use direct tuning.
- Make sure you set the tuning interval correctly (when tuning in AM stations with direct tuning).
- No stations have been preset or the preset stations have been cleared (when tuning by scanning preset stations). Preset the stations (page 60).
- Press DISPLAY repeatedly on the receiver so that the frequency appears on the display.

Remote control

The remote does not function.

- Point the remote at the remote sensor on the receiver.
- Remove any obstacles in the path between the remote and the receiver.
- Replace all the batteries in the remote with new ones, if they are weak.
- Make sure you select the correct input on the remote.

Error messages

If there is a malfunction, the display shows a message. You can check the condition of the system by the message. Refer to the following table to solve the problem. If any problem persists, consult your nearest Sony dealer. If an error message appears while you perform Auto Calibration, see “Error and warning codes” (page 34) to solve the problem.

DEC. EROR

Appears when a signal the receiver cannot decode (ex. DTS-CD) is input and “DEC. PRI.” on the AUDIO menu is set to “DEC. PCM”. Set it to “DEC. AUTO” (page 43).

PROTECT

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

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

Clearing the receiver's memory may remedy the problem (page 31). However, note that all memorized settings will be reset to their factory settings and you will have to readjust all settings on the receiver.

If the problem persist

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

Reference sections for clearing the receiver's memory

To clear	See
All memorized settings	page 31
Customized sound fields	page 54

Specifications

Amplifier section

Power Output[1)]

Models of area code SP, MX, E51, AU, AR, TH

Stereo mode output (rated) (6 ohms, 1 kHz, THD 1%)

90 W + 90 W[1)]
85 W + 85 W[3)]

Surround mode output (reference)[2)]

RMS output

FRONT: 185 W per channel[1)]
170 W per channel[3)]
(with SS-MSP16)

CENTER: 185 W[1)]
170 W[3)]
(with SS-CNP16)

SURROUND: 185 W per channel[1)]
170 W per channel[3)]
(with SS-SRP16)

SURROUND BACK:
185 W[1)]
170 W[3)]
(with SS-SRP16)

[1)]Measured under the following conditions:

Area code	Power requirements
AU, E51, SP, TH	240 V AC, 50 Hz
MX	127 V AC, 60 Hz
AR	230 V AC, 50 Hz

[2)]Reference power output for front, center, surround and surround back speakers. Depending on the sound field settings and the source, there may be no sound output.

[3)]Measured under the following conditions:

Area code	Power requirements
AR	220 V AC, 50 Hz

continued

Inputs

Analog	Sensitivity: 800 mV/50 kohms
Digital (Coaxial)	Impedance: 75 ohms

Outputs (Analog)

AUDIO OUT	Voltage: 800 mV/10 kohms
SUB WOOFER	Voltage: 2 V/1 kohm

Tone

Gain levels	±6 dB, 1 dB step

Reproduction frequency range:
28 – 20,000 Hz

FM tuner section

Tuning range	87.5 - 108.0 MHz
Antenna	FM wire antenna
Antenna terminals	75 ohms, unbalanced

Intermediate frequency
10.7 MHz

AM tuner section

Tuning range
Models of area code SP, AU, TH
With 9-kHz tuning scale:
531 – 1,602 kHz
Models of area code E51
With 10-kHz tuning scale:
530 – 1,610 kHz[4)]
With 9-kHz tuning scale:
531 – 1,602 kHz[4)]
Models of area code MX, AR
With 10-kHz tuning scale:
530 – 1,610 kHz
Antenna: Loop antenna
Intermediate frequency
450 kHz

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

Video section

Inputs/Outputs

Video:	1 Vp-p, 75 ohms
COMPONENT VIDEO:	
	Y: 1 Vp-p, 75 ohms
	P_B/C_B: 0.7 Vp-p, 75 ohms
	P_R/C_R: 0.7 Vp-p, 75 ohms
	80 MHz HD Pass Through

General

Power requirements

Area code	Power requirements
SP, TH	230 – 240 V AC, 50/60 Hz
AU	240 V AC, 50 Hz
MX	127 V AC, 60 Hz
E51	120/220/240 V AC, 50/60 Hz
AR	220 – 230 V AC, 50/60 Hz

Power output (DIGITAL MEDIA PORT)
(Models of area code SP, AU, TH only)
DC OUT: 5V, 700 mA
Power consumption: 200 W
Power consumption (during standby mode)
0.3 W
Dimensions (width/height/depth) (Approx.)
430 × 157.5 × 316 mm including projecting parts and controls
Mass (Approx.): 8.0 kg

Speaker section

• Front speakers (SS-MSP16)

Speaker system	2-way, 3 unit, magnetically shielded
Speaker units	
Woofer:	160 mm, cone type × 2
Tweeter:	25 mm, horn type
Enclosure type	Bass reflex
Rated Impedance	4 ohms

Dimensions (width/height/depth) (Approx.)
250 × 950 × 274 mm
Mass (Approx.): 14.1 kg

• Center speaker (SS-CNP16)

Speaker system	2-way, 3 unit, magnetically shielded
Speaker units	
Woofer:	100 mm, cone type × 2
Tweeter:	25 mm, horn type
Enclosure type	Bass reflex
Rated Impedance	4 ohms
Dimensions (width/height/depth) (Approx.)	514 × 174 × 223 mm
Mass (Approx.)	4.9 kg

• Surround/Surround back speakers (SS-SRP16)

Speaker system	Full range
Speaker units	
Woofer:	100 mm, cone type
Enclosure type	Bass reflex
Rated Impedance	4 ohms
Dimensions (width/height/depth) (Approx.)	171 × 216 × 163 mm
Mass (Approx.)	1.5 kg

• Sub woofers (SA-WP16)

Speaker system	Active sub woofer, magnetically shielded
Speaker unit	250 mm cone type
Enclosure type	Acoustically loaded bass reflex
RMS output	200 W[5)] 175 W[6)]
Input	LINE IN (input pin jacks)

[5)]Measured under the following conditions:

Area code	Power requirements
AU, E51, SP, TH	240 V AC, 50 Hz
MX	127 V AC, 60 Hz
AR	230 V AC, 50 Hz

[6)]Measured under the following conditions:

Area code	Power requirements
AR	220 V AC, 50 Hz

Power requirements

Area code	Power requirements
SP, TH	230 – 240 V AC, 50/60 Hz
AU	240 V AC, 50 Hz
MX	127 V AC, 60 Hz
E51	120/220/240 V AC, 50/60 Hz
AR	220 – 230 V AC, 50/60 Hz

Power consumption	80 W
Dimensions (width/height/depth) (Approx.)	335 × 410 × 412 mm including front panel
Mass (Approx.)	10.6 kg

Supplied speakers

Front speakers (2)
Center speaker (1)
Surround speakers (2)
Surround back speaker (1)
Sub woofers (2)

Supplied accessories

FM wire antenna (1)
AM loop antenna (1)
Speaker cord (long) (3)
Speaker cord (short) (3)
Monaural audio cord (2)
Coaxial digital cord (1)
Foot pad (speakers) (16)
Foot pad (sub woofers) (8)
Optimizer microphone (ECM-AC2 or ECM-AC2a) (1)
Remote commander RM-AAU013 (Models of area code MX, E51, AR only) (1)
Remote commander RM-AAU015 (Models of area code SP, AU, TH only) (1)
R6 (size-AA) batteries (2)

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

Design and specifications are subject to change without notice.

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3094056131 (1)

Sony Corporation Printed in Malaysia

http://www.sony.net/