SONY

Multi Channel AV Receiver

Operating Instructions

Connection and Preparation
Playback
Menu/Other Functions
Troubleshooting/ Specifications

STR-DH790

For the customers in the USA

Owner's Record
The model and serial numbers are located on the rear of the receiver. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. STR-DH790

Serial No. _____

WARNING

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

To reduce the risk of fire, do not cover the ventilation opening of the appliance with newspapers, tablecloths, curtains, etc.
Do not expose the appliance to naked flame sources (for example, lighted candles).

To reduce the risk of fire or electric shock, do not expose this appliance to dripping or splashing, and do not place objects filled with liquids, such as vases, on the appliance.

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

As the main plug is used to disconnect the unit from the mains, connect the unit to an easily accessible AC outlet. Should you notice an abnormality in the unit, disconnect the main plug from the AC outlet immediately.

The unit is not disconnected from the mains as long as it is connected to the AC outlet, even if the unit itself has been turned off.

CAUTION

Risk of explosion if the battery is replaced by an incorrect type.
Do not expose batteries or appliances with battery-installed to excessive heat, such as sunshine and fire.

CAUTION
HOT SURFACE
To reduce the risk of thermal burn hazard, do not touch the hot surface where this symbol is displayed.

FOR UNITED STATES CUSTOMERS. NOT APPLICABLE IN CANADA, INCLUDING IN THE PROVINCE OF QUEBEC.

POUR LES CONSOMMATEURS AUX ÉTATS-UNIS. NON APPLICABLE AU CANADA, Y COMPRIS LA PROVINCE DE QUÉBEC.

For the customers in the USA

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

Important Safety Instructions

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

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

Properly shielded and grounded cables and connectors must be used for connection to host computers and/or peripherals in order to meet FCC emission limits.

To reduce the risk of electric shock, the speaker cable should be connected to the apparatus and the speakers in accordance with the following instructions.

1) Disconnect the AC power cord from the MAINS.
2) Strip 10 to 15 mm of the wire insulation of the speaker cable.
3) Connect the speaker cable to the apparatus and the speakers carefully so as not to touch the core of speaker cable by hand. Also disconnect the AC power cord from the MAINS before disconnecting the speaker cable from the apparatus and the speakers.

This equipment must not be co-located or operated in conjunction with any other antenna or transmitter.

For the customers in Canada

Properly shielded and grounded cables and connectors must be used for connection to host computers and/or peripherals.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

For the customers in the USA and Canada

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20 cm or more away from person's body.

For the customers in Australia

Disposal of old electrical & electronic equipment (applicable in the European Union and other countries with separate collection systems)

For the customers in Europe

Disposal of waste batteries and electrical and electronic equipment (applicable in the European Union and other countries with separate collection systems)

This symbol on the product, the battery or on the packaging indicates that the product and the battery shall not be treated as household waste. On certain batteries this symbol might be used in combination with a chemical symbol. The chemical symbol for lead (Pb) is added if the battery contains more than 0.004% lead. By ensuring that these products and batteries are disposed of correctly, you will help to prevent potentially negative consequences for the environment and human health which could be caused by inappropriate waste handling. The recycling of the materials will help to conserve natural resources. In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only. To ensure that the battery and the electrical and electronic equipment will be treated properly, hand over these products at end-of-life to the appropriate collection point for the recycling of electrical and electronic equipment. For all other batteries, please view the section on how to remove the battery from the product safely. Hand the battery over to the appropriate collection point for the recycling of waste batteries. For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product or battery.

Notice for customers: the following information is only applicable to equipment sold in countries applying EU directives

This product has been manufactured by or on behalf of Sony Corporation.
EU Importer: Sony Europe B.V.
Inquiries to the EU Importer or related to product compliance in Europe should be sent to the manufacturer's authorized representative, Sony Belgium, bijkantoor van Sony Europe B.V., Da Vincilaan 7-D1, 1930 Zaventem, Belgium.

Hereby, Sony Corporation declares that this equipment is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address:
http://www.compliance.sony.de/

CE

This radio equipment is intended to be used with the approved version(s) of software that are indicated in the EU Declaration of Conformity. The software loaded on this radio equipment is verified to comply with the essential requirements of the Directive 2014/53/EU.
You can check the software version by pressing AMP MENU, then select "<SYSTEM>" using ↑/↓ and ⊕.

This Multi Channel AV Receiver is intended for sound and video playback from connected devices, music streaming from a BLUETOOTH® device, and FM tuner.

This equipment has been tested and found to comply with the limits set out in the EMC regulation using a connection cable shorter than 3 meters.

Excessive sound pressure from earphones and headphones can cause hearing loss.

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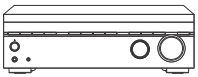
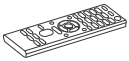
Supplied Items

- Receiver (1)



- Remote control (1)



- R03 (size AAA) batteries (2)

- FM wire antenna (aerial) (1)

- Calibration microphone (1)

- Startup Guide (1)

Explains how to connect the 5.1.2-channel speaker system, perform initial settings and listen to connected devices.

- Operating Instructions (this booklet) (1)

Explains necessary connections, initial settings, and basic operations.

About manuals provided for this product

- Some illustrations are presented as conceptual drawings, and may be different from the actual products.
- The manuals provided for this product mainly describe the procedures for using the remote control. You can also use the controls on the receiver if they have the same or similar names as those on the remote control.
- The text enclosed in bracket ([--]) appears on the TV screen, and the text enclosed in double quotation mark ("--") appears on the display panel.
- The items displayed on the TV screen may vary depending on the area.

The Help Guide (web-based online operating instructions) provides information on advanced functions and operations.

You can view the Help Guide on your computer as well as a smartphone or tablet.
Open your Web browser and enter the following URL or use the QR code reader function to access the site.

For the customers in Europe

http://rd1.sony.net/help/ha/strdh79/h_eu/

For the customers in Taiwan

http://rd1.sony.net/help/ha/strdh79/zh-tw/

For the customers in other areas

http://rd1.sony.net/help/ha/strdh79/h_zz/

Main Features of the Receiver

Compatible with the latest object-based audio formats

Dolby TrueHD, DTS-HD Master Audio, and the object-based audio formats (Dolby Atmos and DTS:X) are supported (only when devices are connected via HDMI cables). You can experience surround sound for 360 degrees.

Compatible with high quality 4K video formats*

- The receiver supports HDCP 2.2, Dolby Vision, HDR10 and Hybrid Log-Gamma, letting you enjoy high quality video images (page 24).

* You need to change the setting of "SIG. FMT." depending on the input video signal.

Equipped with an Auto Calibration function (Advanced D.C.A.C.) that makes your viewing and listening environment close to ideal

- Advanced D.C.A.C. measures and calibrates the distance, level, and frequency characteristics of the speakers using the supplied monaural calibration microphone to fit your viewing and listening environment (page 32).
- The Automatic Phase Matching (A.P.M.) function calibrates the phase characteristics of the speakers so that you can experience well-matched surround sound.

Reproduces a virtual surround sound even in an environment where the back speaker cannot be installed (Front Surround)

Allows you to enjoy surround sound equivalent to that of a 5.1-channel speaker system with only two front speakers (page 23).

Compatible with BLUETOOTH® wireless technology

- Connect a WALKMAN®, smartphone, or tablet to the receiver via the BLUETOOTH function to play music content on those devices wirelessly (page 37).
- You can turn on this receiver from a paired BLUETOOTH device even when the receiver is in standby mode. For details on operation, visit the Help Guide.

Sound fields selectable by preference

You can select from a variety of sound fields according to speaker connections or input sources (2ch Stereo, Direct, Auto Format Decoding, etc.) (page 39).

Equipped with an HDMI jack compatible with the eARC (Enhanced Audio Return Channel) and ARC (Audio Return Channel)

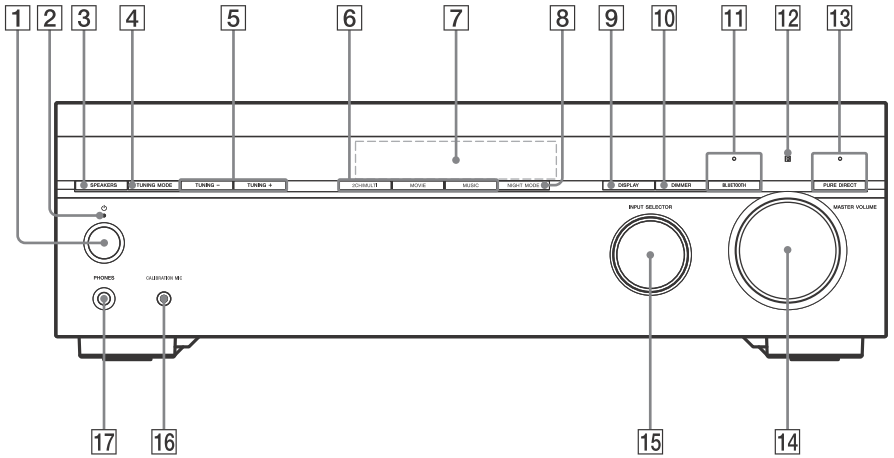
TV sound can be output from the receiver using only one HDMI cable (page 25, 26, 27).
eARC is a new feature of HDMI Specification 2.1.
When you connect an eARC-compatible TV to the receiver, in addition to the audio formats already supported by conventional ARC, you can also enjoy object-based audio formats such as Dolby Atmos - Dolby TrueHD and DTS:X as well as Multi Channel Linear PCM, which cannot be transmitted by ARC.

Supports bi-amplifier connection of front speakers

You can enhance the sound quality of the front speakers by connecting different amplifiers to the tweeter and woofer using a bi-amplifier connection (page 22).

Parts and Controls

Receiver front panel



1 ⏻ (power)

Turns the receiver on or sets it to the standby mode.

2 Power indicator

- **Green**: The receiver is turned on.
- **Red**: The receiver is in standby mode, and you have set one of the following:
  - "CTRL.HDMI" is set to "CTRL ON".
  - "BT STBY" is set to "STBY ON".*
  - "STBY.THRU" is set to "ON" or "AUTO".
- **The indicator goes off**: The receiver is in standby mode and:
  - "CTRL.HDMI" is set to "CTRL OFF".
  - "BT STBY" is set to "STBY OFF".
  - "STBY.THRU" is set to "OFF".

* The indicator lights up in red only if a device has been paired with the receiver and "BT POWER" is set to "BT ON". If no devices are paired with the receiver or "BT POWER" is set to "BT OFF", the indicator turns off.

3 SPEAKERS (page 46)

Switches the speaker system.

Note

No sound is output from the speakers when you select "OFF SPEAKERS". Be sure to select setting other than "OFF SPEAKERS".

4 TUNING MODE

Selects auto tuning or preset tuning mode.

5 TUNING +/–

Scans a FM station or selects preset stations/channels.

6 2CH/MULTI, MOVIE, MUSIC (page 39)

7 Display panel (page 10)

8 NIGHT MODE

Activates the Night Mode function which allows you to retain a theater-like environment at low volume levels.

Note

- The Night Mode function does not work in the following cases:
  - [Pure Direct] is set to [On].

– Headphones are connected.
– [Direct] is being used and an analog input is selected.

• The receiver may play signals at a lower sampling frequency than the actual sampling frequency of the input signals, depending on the audio format.

9 DISPLAY
Displays information on the display panel.

10 DIMMER
Adjusts the brightness of the display panel.

11 BLUETOOTH
Switches the input of the receiver to [BT] and automatically connects to the last connected device.
Sets the receiver to pairing mode when there is no pairing information on the receiver.
Disconnects the BLUETOOTH device when the receiver is connected to a BLUETOOTH device.

BLUETOOTH indicator (page 37)

12 Remote control sensor
Receives signals from remote control.

13 PURE DIRECT
Activates the Pure Direct function which allows you to enjoy higher-fidelity sound from all inputs.
The indicator above the button lights up when the Pure Direct function is activated.

Note

[Calibration Type], [Night Mode], [Equalizer], "A.P.M.", and "D.RANGE" do not work when the Pure Direct function is selected.

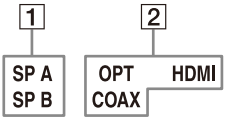
14 MASTER VOLUME (page 36)

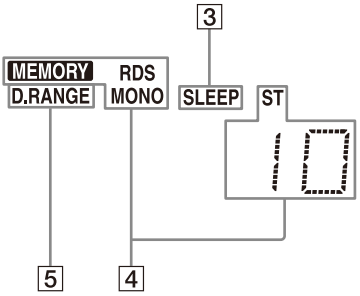
15 INPUT SELECTOR
Selects the input channel connected to the device you want to use.

16 CALIBRATION MIC jack (page 33)

17 PHONES jack
Connect headphones here.

Indicators on the display panel





1 **Speaker system indicator (page 46)**

2 **Input indicator**
Lights up to indicate the current input.

OPT
Digital signals are input through the OPTICAL jack.

COAX
Digital signals are input through the COAXIAL jack.

HDMI
Digital signals are input through the selected HDMI jack.

3 **SLEEP**
Lights up when the sleep timer is activated.

4 **Tuning indicator**
Lights up when the receiver tunes to a radio station.

MEMORY
A memory function, such as Preset Memory, etc., is activated.

RDS (European and Asia-Pacific models only)
Tuned to a station with RDS services.

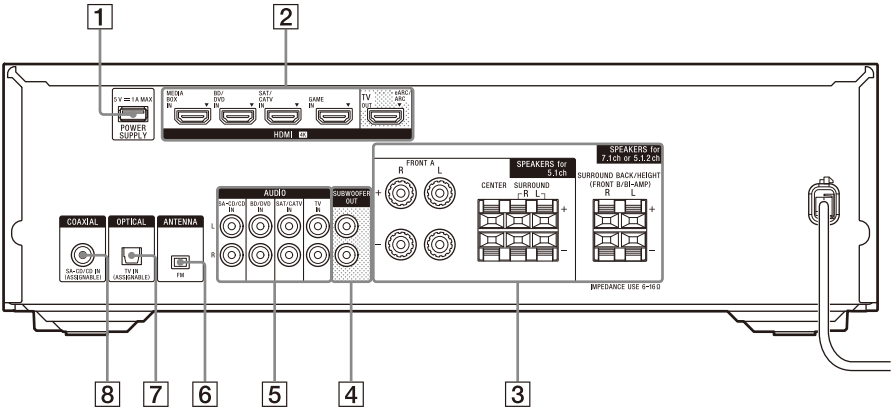
MONO
Monaural broadcast

ST
FM stereo broadcast

10
Preset station number (The number will change according to the preset station you select.)

5 **D.RANGE**
Lights up when dynamic range compression is activated.

Receiver rear panel



1 **POWER SUPPLY port**
For power supply only.

2 **HDMI IN/OUT jacks (page 24, 25, 26, 27, 28, 29)**
All of the HDMI IN/OUT jacks on the receiver support HDCP 2.2. HDCP 2.2 is newly enhanced copyright protection technology that is used to protect content such as 4K movies.

3 **SPEAKERS terminals (page 16, 17, 18, 19, 20, 21, 22, 23)**

4 **SUBWOOFER OUT jacks (page 17, 18, 19, 20, 21, 22, 23)**

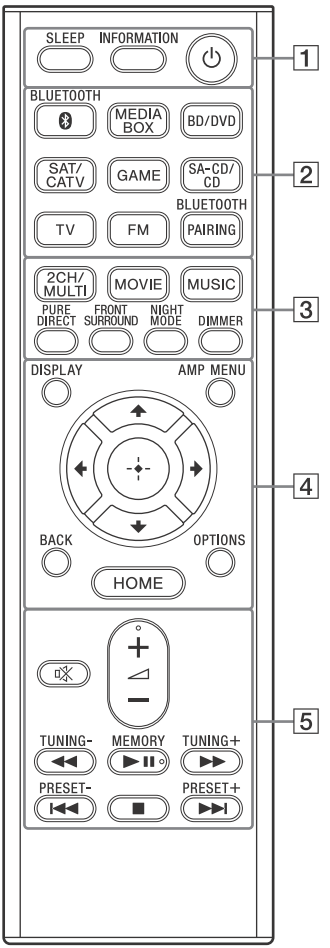
5 **AUDIO IN jacks (page 28, 30)**

6 **FM ANTENNA terminal (page 31)**

7 **OPTICAL IN jack (page 26, 28)**

8 **COAXIAL IN jack (page 30)**

Remote control



1 ⏻ (power) (page 32)
Turns the receiver on or sets it to the standby mode.

INFORMATION
Displays information such as audio format, etc. on the TV screen.

SLEEP
Sets the receiver to turn off automatically at a specified time.

2 Input buttons

BLUETOOTH, MEDIA BOX, BD/DVD, SAT/CATV, GAME, SA-CD/CD, TV, FM
Selects the input channel connected to the device you want to use. When you press any of the input buttons, the receiver turns on.

Note

When you press BLUETOOTH, the receiver turns on only if "BT POWER" is set to "BT ON" in the "<BT>" menu.

BLUETOOTH PAIRING (page 37)
Switches the input of the receiver to [BT] and sets the receiver to the pairing mode.

3 2CH/MULTI, MOVIE, MUSIC (page 39)
Selects a sound field.

PURE DIRECT
Activates the Pure Direct function which allows you to enjoy higher-fidelity sound from all inputs.

Note

[Calibration Type], [Night Mode], [Equalizer], "A.P.M.", and "D.RANGE" do not work when the Pure Direct function is selected.

FRONT SURROUND
Activates the Front Surround function which allows you to enjoy theater-like surround sound only with two front speakers.

NIGHT MODE
Activates the Night Mode function which allows you to retain a theater-like environment at low volume levels.

Note

- The Night Mode function does not work in the following cases:
  - [Pure Direct] is set to [On].
  - Headphones are connected.
  - [Direct] is being used and an analog input is selected.
- The receiver may play signals at a lower sampling frequency than the actual sampling frequency of the input signals, depending on the audio format.

DIMMER
Adjusts the brightness of the display panel.

4 DISPLAY
Displays information on the display panel.

AMP MENU
Displays the menu on the display panel to operate the receiver.

⊕ (enter), ↑/↓/←/→
Press ↑, ↓, ←, → to select the menu items. Then, press ⊕ to enter the selection.

BACK
Returns to the previous menu or exits a menu or on-screen guide that is displayed on the TV screen.

OPTIONS (page 43)
Displays the options menu on the TV screen.

HOME (page 43)
Displays the home menu on the TV screen.

5 (volume) +*/–
Adjusts the volume level of all speakers at the same time.

(muting)
Turns off the sound temporarily. Press the button again to restore the sound.

◀◀/▶▶ (fast rewind/fast forward), ▶II (play/pause)*, I◀◀ /▶▶I (previous/next), ■ (stop) (page 38)

TUNING +/–
Scans a FM station.

MEMORY*
Stores a station that you are receiving as a preset station.

PRESET +/–
Selects preset stations or channels.

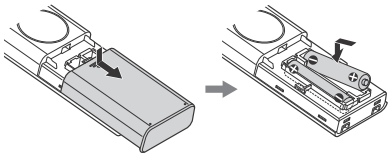
* The + , ▶II, and MEMORY buttons have tactile dots. Use the tactile dots as reference when operating the receiver.

Note

- The above explanation is intended to serve as examples.
- Depending on the model of your connected device, some functions explained in this section may not work with the supplied remote control.

To insert batteries into the remote control

Insert two R03 (size AAA) batteries (supplied) in the remote control. Make sure that the + and – ends are in the correct position when installing batteries.



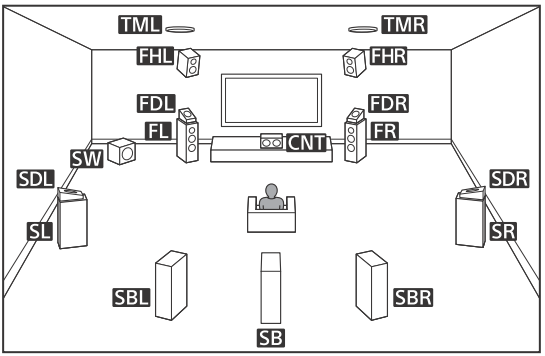
Note

- Do not leave the remote control in an extremely hot or humid place.
- Do not use a new battery with an old one.
- Do not mix manganese batteries and other kinds of batteries.
- We recommend that you use AAA manganese batteries.
- Do not expose the remote control sensor on the front panel of the receiver to direct sunlight or lights. Doing so may cause a malfunction.
- If you do not intend to use the remote control for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.
- When the receiver no longer responds to the remote control, replace both of the batteries with new ones.

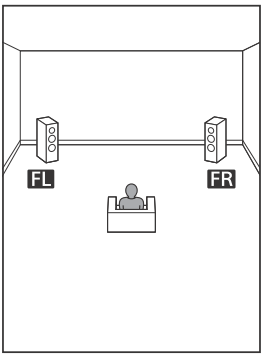
1: Deciding on the Speaker System

Decide on the speaker system you want to set up according to the number of speakers and subwoofers that you are using. The illustration and table below indicate the types of speakers that can be connected to the receiver and the general positions for placing the speakers.

Room with the receiver installed



Another location with Front B speakers



Abbreviations used in illustrations	Speaker type	Function of each speaker
FL	Front left speaker	Produces sounds from front left/right channels.
FR	Front right speaker	
CNT	Center speaker	Produces vocal sounds from center channel.
SL	Surround left speaker	Produces sounds from surround left/right channels.
SR	Surround right speaker	
SBL	Surround back left speaker	Produces sounds from surround back left/right channels.
SBR	Surround back right speaker	
SB	Surround back speaker	Produces sounds from surround back channel.
SW	Subwoofer	Produces LFE (low frequency effect) channel sounds and reinforces bass parts of other channels.
TML	Top middle left speaker	Produces sounds from top middle left/right channels.
TMR	Top middle right speaker	
FDL	Front Dolby Atmos enabled left speaker	Produces sounds from the top middle left/right channels and reflects these sounds off the ceiling. Enables playing back sounds of Dolby Atmos 3D movies without the need to install ceiling speakers.
FDR	Front Dolby Atmos enabled right speaker	

Abbreviations used in illustrations	Speaker type	Function of each speaker
SDL	Surround Dolby Atmos enabled left speaker	Produces sounds from the top middle left/right channels and reflects these sounds off the ceiling. Enables playing back sounds of Dolby Atmos 3D movies without the need to install ceiling speakers.
SDR	Surround Dolby Atmos enabled right speaker	
FHL	Front high left speaker	Produces sound from front height left/right channels.
FHR	Front high right speaker	

Tip

- When you connect only one surround back speaker (SB), place the surround back speaker directly behind the listening position.
- As the subwoofer (SW) does not emit highly directional signals, you can place it wherever you want.

Speaker systems described in this manual

This manual describes the installation, connection, and setting procedures using the typical speaker systems indicated in the table below as examples. To learn about all speaker systems supported by this receiver, see "Selecting the speaker pattern" (page 44).

Speaker system	For setting/ connecting speakers, see page	[ASSIGN SURROUND BACK TERMINALS]	[Speaker Pattern] "PATTERN"	[Front High/ Top/Dolby Speakers] "HEIGHT"
A 5.1-channel	17	[Surround Back Speakers/ Nothing]	[5.1ch] "5.1"	–
B 7.1-channel using surround back speakers	18	[Surround Back Speakers/ Nothing]	[7.1ch] "7.1"	–
C 5.1.2-channel using top middle speakers	19	[Height Speakers]	[5.1.2ch] "5.1.2"	[Top Middle Speakers] "TM"
D 5.1.2-channel using front Dolby Atmos enabled speakers	20	[Height Speakers]	[5.1.2ch] "5.1.2"	[Front Dolby Speakers] "FD"
E 5.1-channel with Front B speakers	21	[Front B Speakers]	[5.1ch] "5.1"	–
F 5.1-channel with Bi-Amplifier connection	22	[Bi-Amplifier Speakers]	[5.1ch] "5.1"	–
G 2.1-channel	23	[Surround Back Speakers/ Nothing]	[2.1ch] "2.1"	–

2: Setting/Connecting Speakers

Set up the speakers and subwoofers in a room using the layout you prefer for your speaker system and connect them to the receiver. The speaker layout drawings on page 17 and subsequent pages provide the ideal layout examples. You do not have to set up the speakers and subwoofers in exactly the same way as the layout examples. Adjust the speaker layout to optimally suit your room environment.

Note

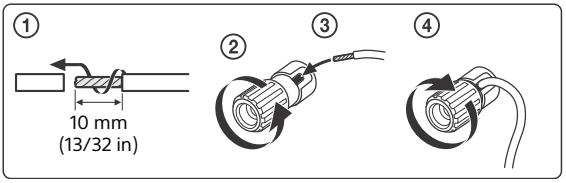
- Connect speakers with a nominal impedance of 6 ohms to 16 ohms.
- Before connecting cables, be sure to disconnect the AC power cord (mains lead).
- Before connecting the AC power cord (mains lead), make sure that metallic wires of the speaker cables are not touching each other between the SPEAKERS terminals or on the receiver rear panel. If the wires are touching, it may result in damage to the amplifier circuit.
- When you connect a subwoofer with an auto standby function, turn off the function when watching movies. If the auto standby function is set to on, it turns to standby mode automatically based on the level of the input signal to the subwoofer, and the sound may not be output.

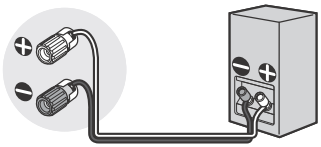
Tip

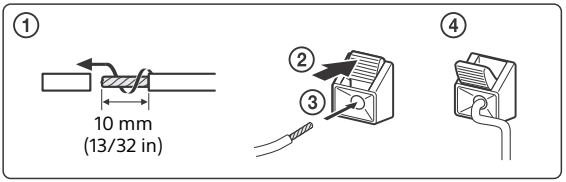
If you have one subwoofer, connect it to either of the SUBWOOFER OUT jacks. If you have two subwoofers, you can connect them to both SUBWOOFER OUT jacks.

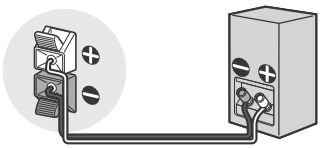
How to connect speaker cables

Connect speaker cables with the polarities + (red)/– (black) matched between the receiver and the speakers as illustrated below. Strip the jacket to 10 mm (13/32 in) at each end of the speaker cables, and then tightly twist the speaker wire strands. Insert the stripped ends of the cables into the terminals.







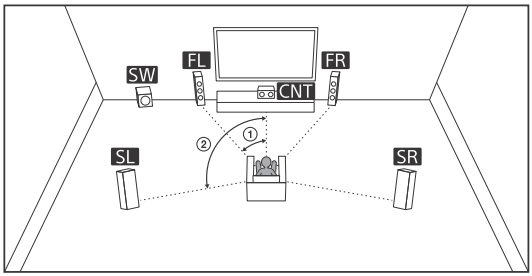


Note

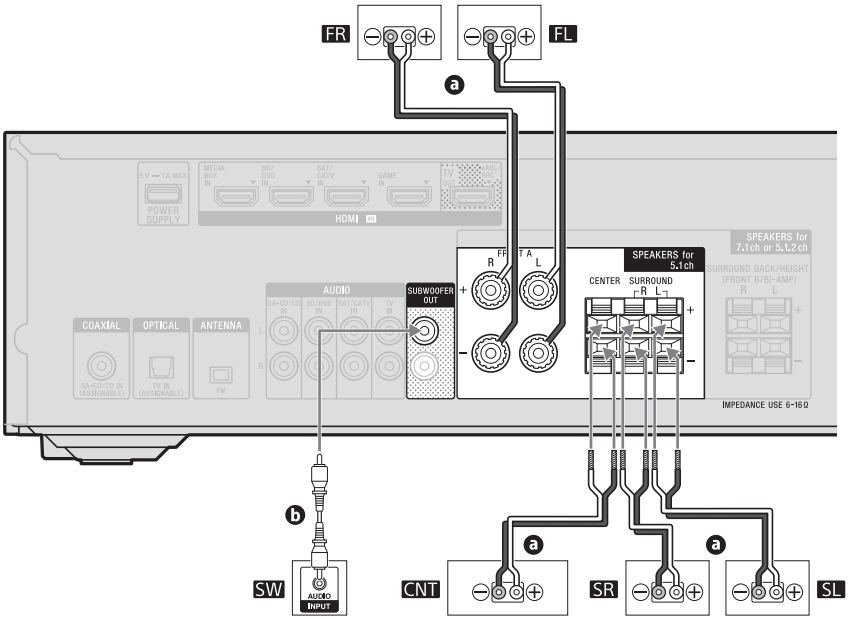
- Be sure not remove too much of the speaker cable sleeves, so as to prevent the wires of the speaker cables from touching each other.
- Improper connection may result in fatal damage to the receiver.

A 5.1-channel speaker system

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



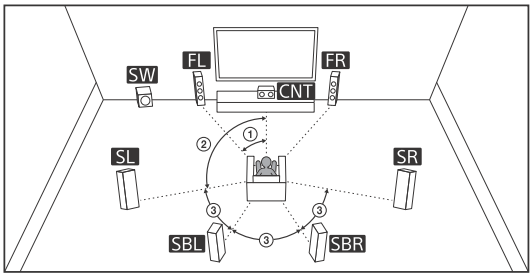
① 30˚ ② 100˚ – 120˚



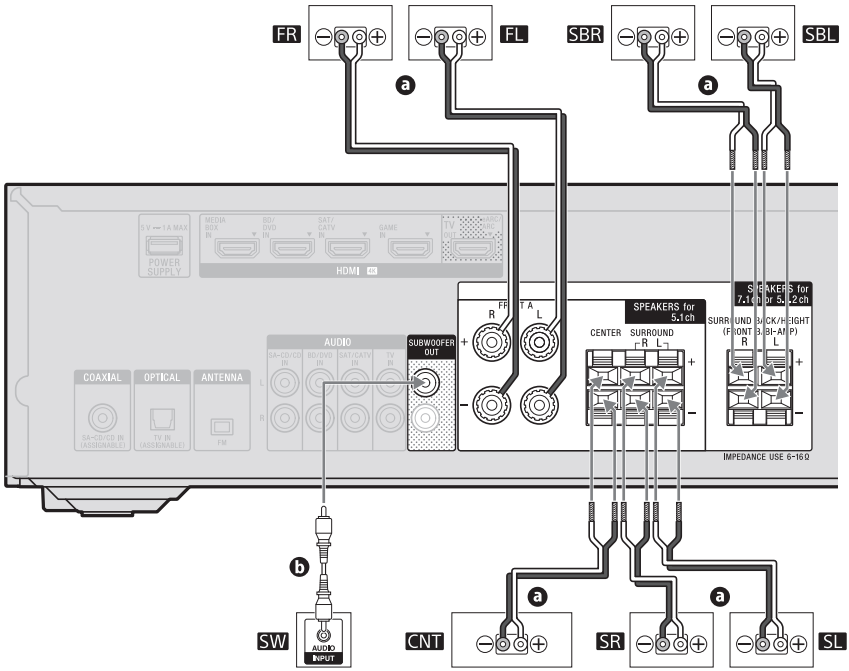
a Speaker cable (not supplied)
b Monaural audio cable (not supplied)

B 7.1-channel speaker system using surround back speakers

You can enjoy high-fidelity reproduction of recorded sound from DVD or Blu-ray Disc software in 6.1-channel or 7.1-channel format.



① 30˚ ② 100˚ – 120˚ ③ Same angle



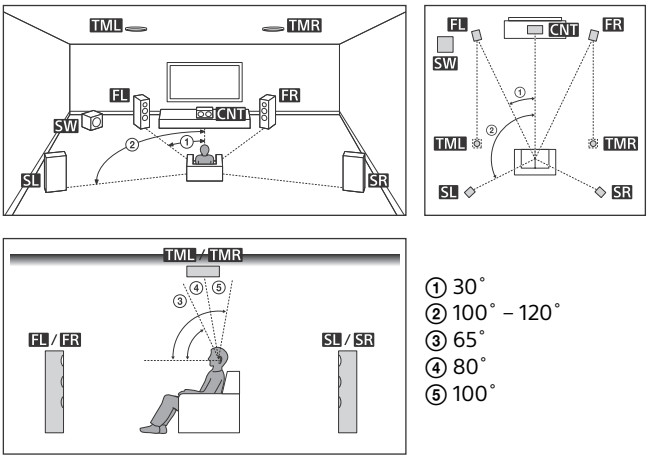
ⓐ Speaker cable (not supplied)
ⓑ Monaural audio cable (not supplied)

Tip

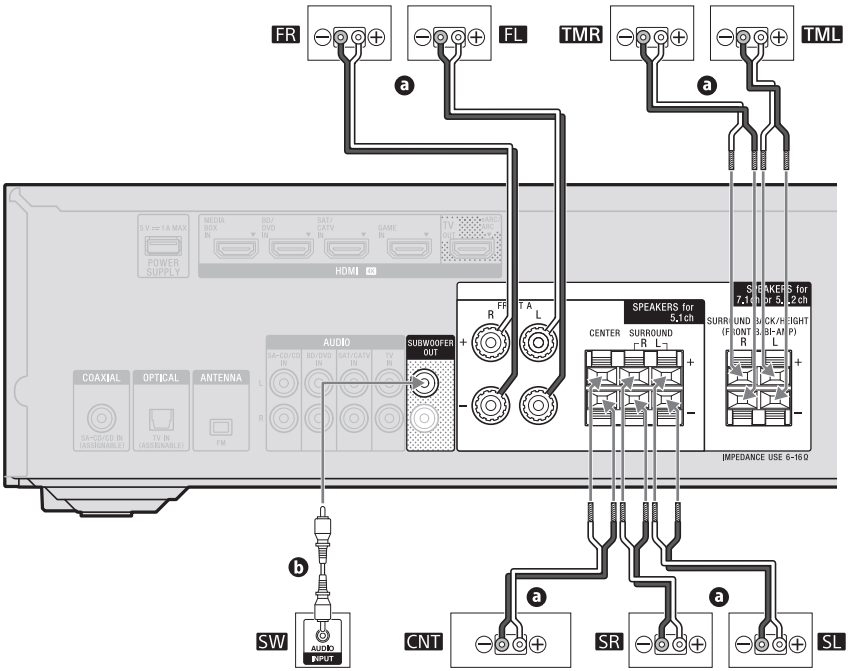
If you connect only one surround back speaker, place it directly behind the listening position and connect it to the L (+/–) terminals.

C 5.1.2-channel speaker system using top middle speakers

You can enjoy vertical sound effects by connecting additional two top middle speakers.



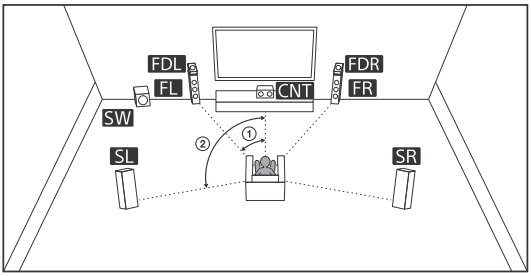
① 30˚
② 100˚ – 120˚
③ 65˚
④ 80˚
⑤ 100˚



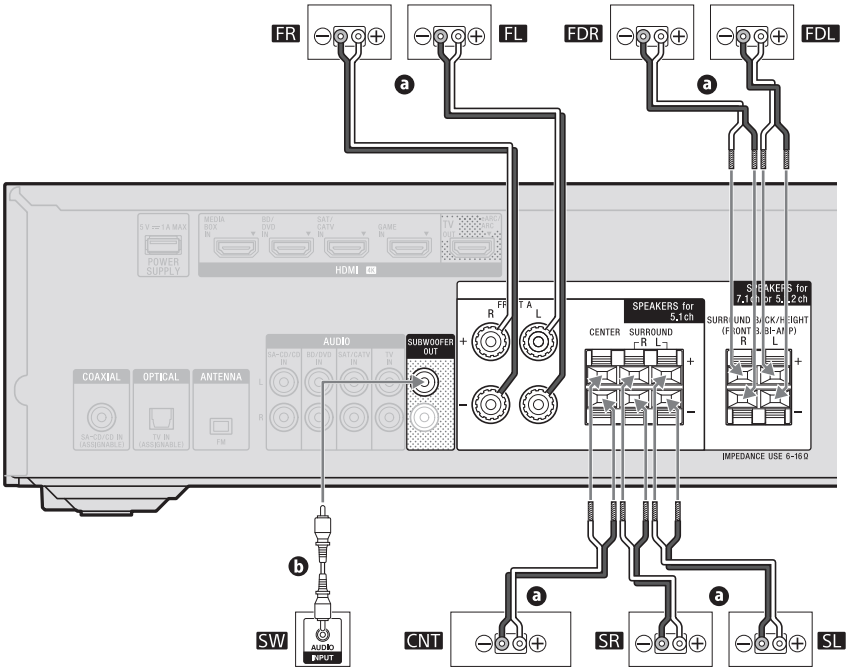
a Speaker cable (not supplied)
b Monaural audio cable (not supplied)

D 5.1.2-channel speaker system using front Dolby Atmos enabled speakers

You can enjoy vertical sound effects by connecting additional two front Dolby Atmos enabled speakers.



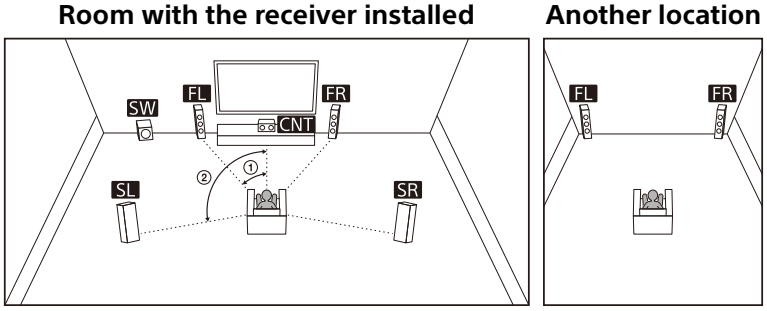
① 30˚ ② 100˚ – 120˚



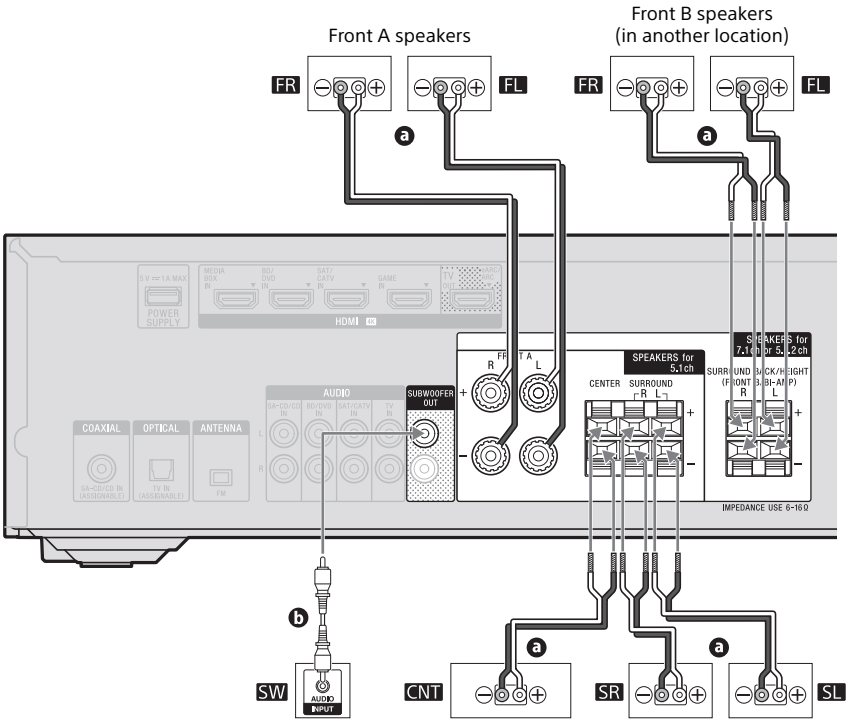
ⓐ Speaker cable (not supplied)
ⓑ Monaural audio cable (not supplied)

E 5.1-channel speaker system with Front B speakers

You can enjoy the audio in another location by connecting additional Front B speakers.



① 30˚ ② 100˚ – 120˚



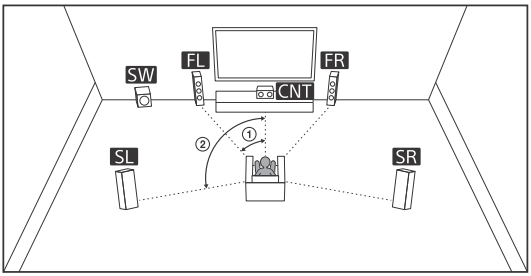
a Speaker cable (not supplied)
b Monaural audio cable (not supplied)

Note

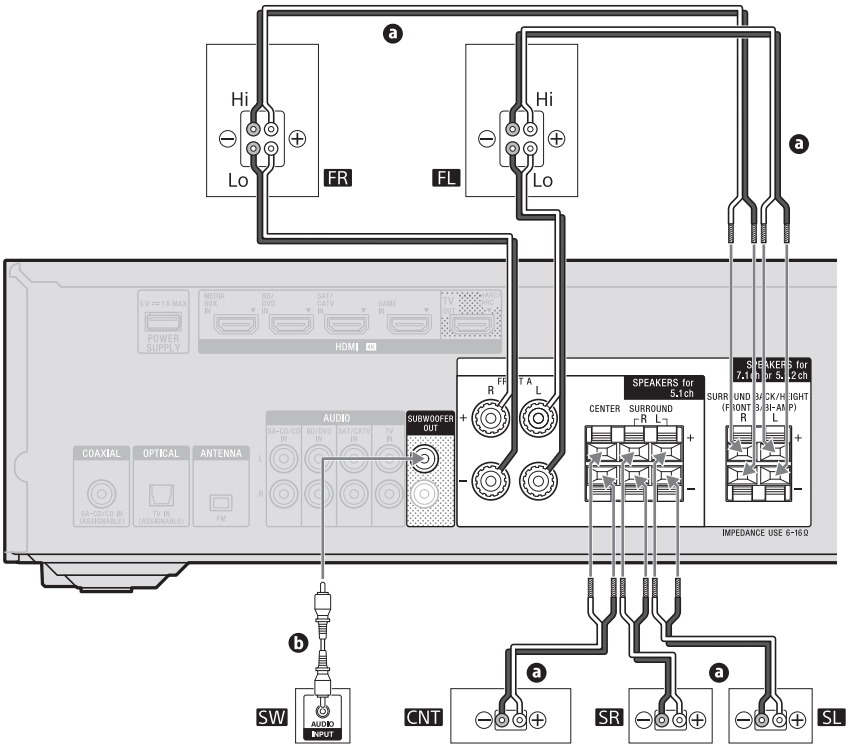
If you connect additional Front B speakers, you can select the speakers you want to use with the SPEAKERS button (page 46). No sound is output from the speakers when you select “OFF SPEAKERS”. Be sure to select setting other than “OFF SPEAKERS”.

F 5.1-channel speaker system with Bi-Amplifier connection

When the front speakers are Bi-wire speakers, which are equipped with separate terminals for high-frequency sounds (tweeter) and low-frequency sounds (woofer), you can make the bi-amplifier connection. Connect each pair of terminals for tweeter and woofer to this receiver as illustrated below. You can enjoy higher quality sound playback if you operate the tweeter and woofer using separate amplifiers.



① 30˚ ② 100˚ – 120˚



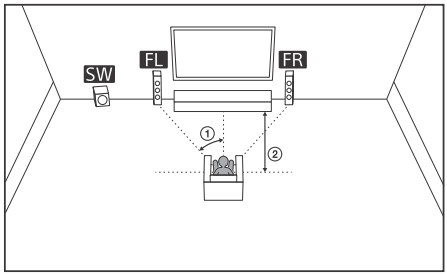
ⓐ Speaker cable (not supplied)
ⓑ Monaural audio cable (not supplied)

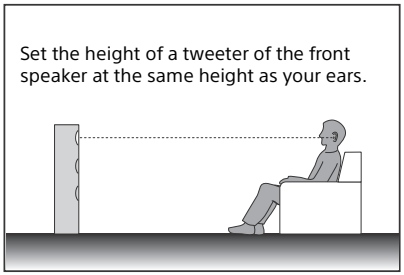
Note

Make sure that metal fittings of Hi/Lo attached to the speakers have been removed from the speakers to avoid receiver malfunction.

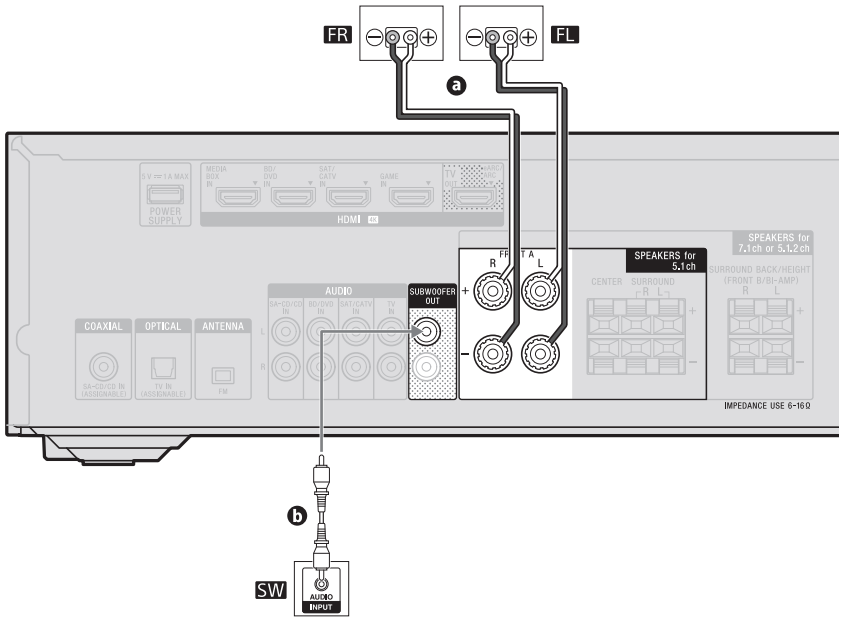
G 2.1-channel speaker system

If you select [Front Surround] for the sound field setting, you can enjoy surround effects equivalent to that of a 5.1-channel speaker system using only the two front speakers. Place the speakers as shown below and change the direction of the front speakers little by little to find the direction that provides the best surround effect.





① 30˚ ② 1.5 m – 3 m



a Speaker cable (not supplied)
b Monaural audio cable (not supplied)

3: Connecting a TV

Note

Be sure to make cable connections before connecting the AC power cord (mains lead).

Connect a TV to the HDMI TV OUT jack. You can set this receiver by operating the menu or the on-screen instructions displayed on the TV screen.
When you connect a TV, you can watch a video and listen to the sound input from the device connected to the receiver on the TV. You can also listen to the TV sound from the speaker through the receiver.

About HDMI features

- Sony recommends that you use an HDMI cable made by Sony or another HDMI-authorized cable. Be sure to use a High Speed HDMI Cable with Ethernet. For video signals that require a high bandwidth such as 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit etc., be sure to use a Premium High Speed HDMI Cable with Ethernet, which supports bandwidths up to 18 Gbps.
- When you use high bandwidth video formats such as 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit, be sure to set the HDMI signal format. For details, see “Setting the HDMI Signal Format” (page 35).
- We do not recommend using an HDMI-DVI conversion cable. If you connect an HDMI-DVI conversion cable to a DVI-D device, the sound and/or image may be lost. Connect separate audio cables or digital connecting cables, then reassign the input jacks if the sound is not output correctly.
- All HDMI jacks on the receiver support ITU-R BT.2020 wide color spaces, Deep Color (Deep Colour), and HDR (High Dynamic Range) contents pass-through.
- The HDMI TV OUT jack supports the eARC or ARC function.
- BT.2020 color space is new wider color standard that is defined for ultra-high definition television systems.
- HDR is an emerging video format that can display a wider range of brightness levels.
- For details on the supported video formats, visit the Help Guide.

Copyright protection regarding HDMI jacks

- All HDMI jacks on the receiver support 4K resolution and HDCP 2.2 (High-bandwidth Digital Content Protection System Revision 2.2).
  HDCP 2.2 is newly enhanced copyright protection technology that is used to protect content such as 4K movies.
- To watch HDCP 2.2 protected content such as 4K content, connect the HDMI jacks to jacks that support HDCP 2.2 on the TV and audio-visual device. For details on whether the TV and audio-visual device are equipped with HDCP 2.2-compatible HDMI jack, refer to the operating instructions of the connected device.

Audio cable connection

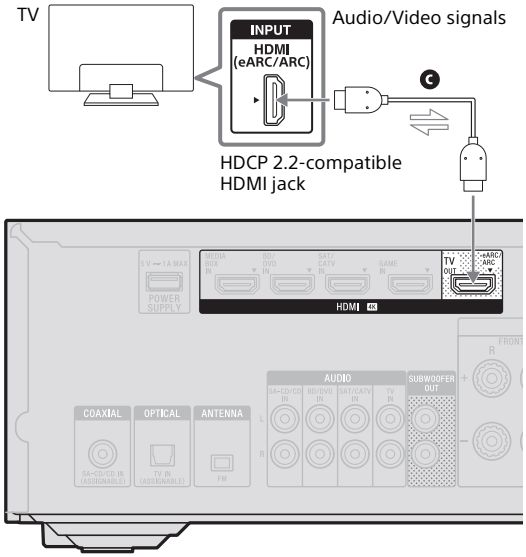
- When connecting an optical digital audio cable, insert the plugs straight until they click into place.
- Do not bend or tie optical digital audio cables.

- All of the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.
- When connecting a TV to the receiver via the TV IN jacks of the receiver, set the sound output jack of the TV to “Fixed” if it can be switched between “Fixed” or “Variable”.

Connecting a 4K TV

If the HDMI jack on the 4K TV is compatible with the eARC or ARC function and HDCP 2.2

Both eARC and ARC are functions that send TV digital sound to audio-visual devices through an HDMI cable.
If the TV’s HDMI input jack is labeled “eARC” or “ARC,” this TV is compatible with the eARC or ARC function. Simply by connecting the receiver with the TV’s eARC- or ARC-compatible HDMI input jack using an HDMI cable, you can listen to TV audio from the speakers connected to the receiver.



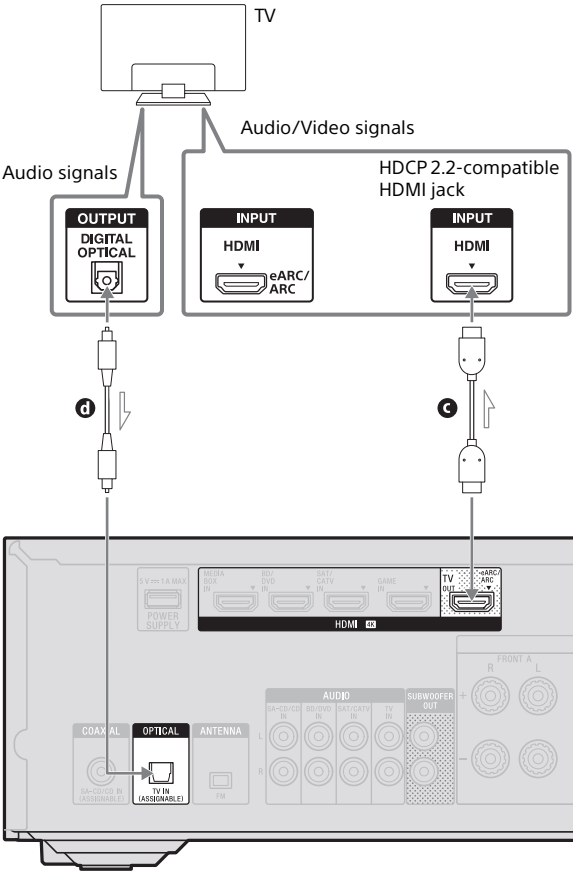
C HDMI cable (not supplied)

Note

- For this connection, you need to turn the Control for HDMI function on. Press AMP MENU, then press ↑/↓ and ⊕ to select “<HDMI>” – “CTRL.HDMI” – “CTRL ON”.
- You also need to set the eARC or ARC function of your TV to on. For details, refer to the operating instructions of the TV.
- If the HDMI TV OUT jack on your receiver is labeled “ARC,” update the software of the receiver. For details, refer to “Updating the software (UPDATE)” in Help Guide.
  If the HDMI TV OUT jack on your receiver is labeled “eARC/ARC,” its software already supports the eARC function.

If the eARC- or ARC-compatible HDMI jack on the 4K TV is not compatible with HDCP 2.2

4K content copyright is protected by HDCP 2.2.
To enjoy 4K content, connect the HDMI jack on the receiver to the HDCP 2.2-compatible HDMI jack on the TV using an HDMI cable.
In this case, the TV sound cannot be sent to the receiver using the eARC or ARC function of the TV. Connect the optical output jack of the TV and the OPTICAL TV IN jack of the receiver using an optical digital audio cable.

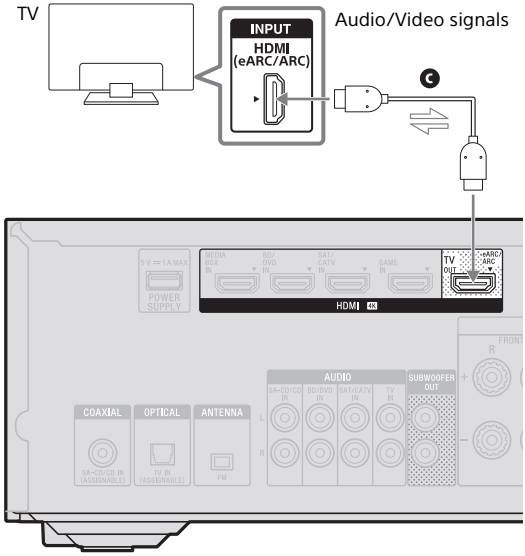


c HDMI cable (not supplied)
d Optical digital audio cable (not supplied)

Connecting a TV not compatible with 4K

If the HDMI jack on the TV is compatible with eARC or ARC

Both eARC and ARC are functions that send TV digital sound to audio-visual devices through an HDMI cable.
If the TV's HDMI input jack is labeled "eARC" or "ARC," this TV is compatible with the eARC or ARC function. Simply by connecting the receiver with the TV's eARC- or ARC-compatible HDMI input jack using an HDMI cable, you can listen to TV audio from the speakers connected to the receiver.



C HDMI cable (not supplied)

Note

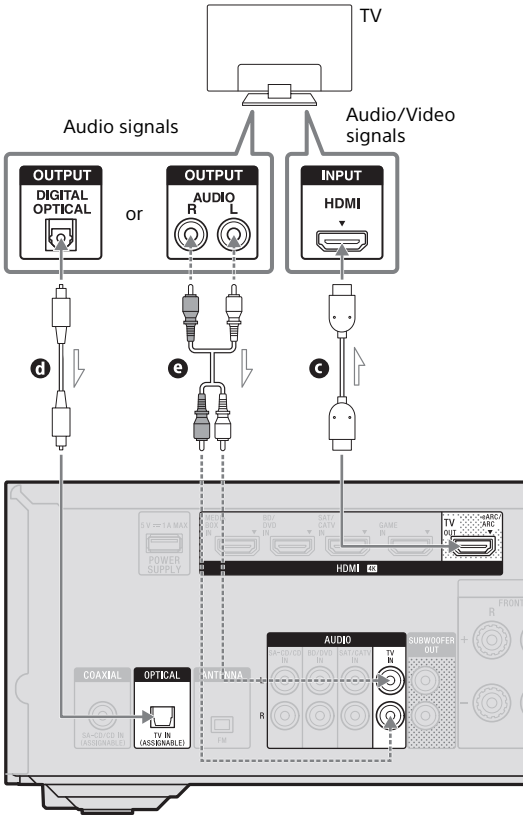
- For this connection, you need to turn the Control for HDMI function on. Press AMP MENU, then press ↑/↓ and ⊕ to select "<HDMI>" – "CTRL.HDMI" – "CTRL ON".
- You also need to set the eARC or ARC function of your TV to on. For details, refer to the operating instructions of the TV.
- If the HDMI TV OUT jack on your receiver is labeled "ARC," update the software of the receiver. For details, refer to "Updating the software (UPDATE)" in Help Guide.
  If the HDMI TV OUT jack on your receiver is labeled "eARC/ARC," its software already supports the eARC function.

Tip

If the eARC- or ARC-compatible HDMI jack of the TV is already connected to another device, disconnect the device and connect the receiver.

If the HDMI jack on the TV is not compatible with eARC or ARC

Both eARC and ARC are functions that send TV digital sound to audio-visual devices through an HDMI cable.
If the TV's HDMI input jack is not labeled "eARC" and/or "ARC," this TV is not compatible with the eARC or ARC function.
To output audio and video signals from the receiver to the TV, connect the receiver and the TV using an HDMI cable ❻.
To output TV audio signals to the receiver, connect the receiver and the TV using an optical digital audio cable ❹ or stereo audio cable ❺.

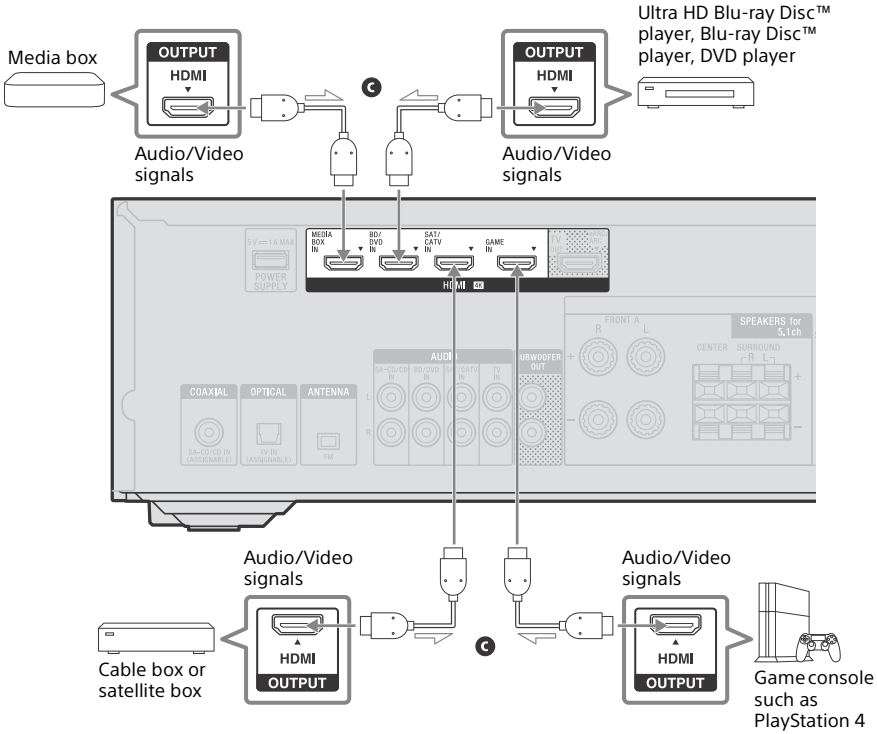


❻ HDMI cable (not supplied)
❹ Optical digital audio cable (not supplied)
❺ Stereo audio cable (not supplied)

4: Connecting Audio-Visual Devices

For notes when connecting audio-visual devices to the HDMI jacks on the receiver, see "About HDMI features" (page 24).

Connecting devices with HDMI jacks

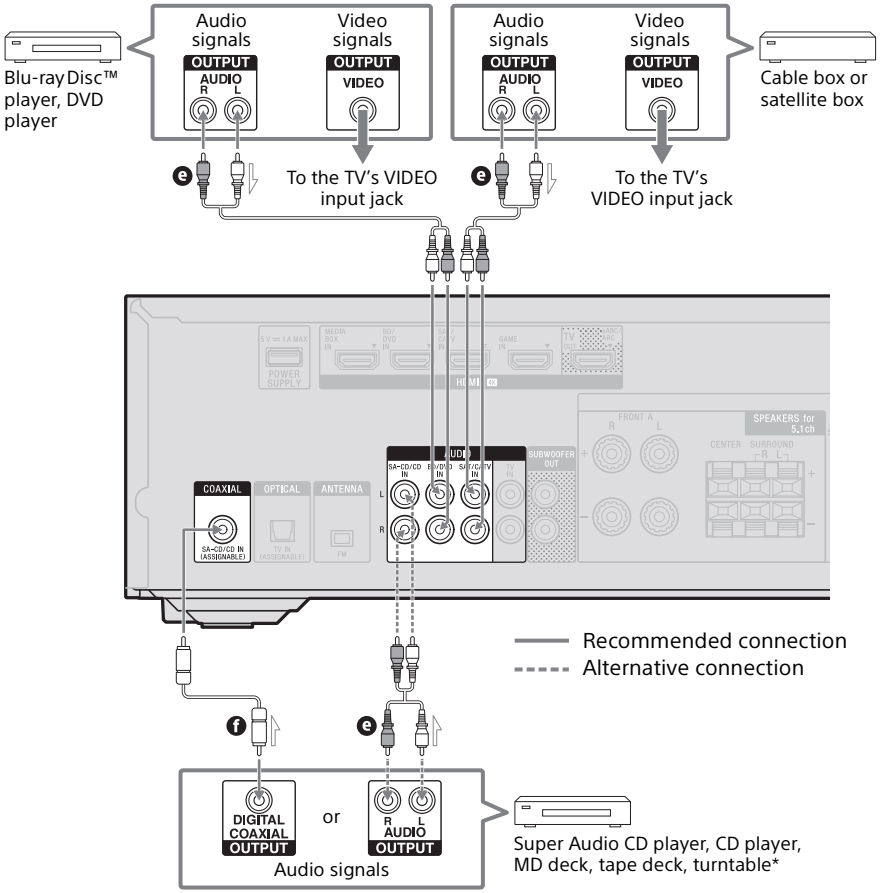


C HDMI cable (not supplied)

Tip

- This connection is an example. You can connect each HDMI device to any HDMI IN jacks.
- The image quality depends on the type of connecting jack. We recommend you connect your devices via an HDMI connection if they have HDMI jacks.

Connecting devices with analog audio jacks and coaxial digital audio jack



e Stereo audio cable (not supplied)
f Coaxial digital audio cable (not supplied)

* To connect a turntable that only has a PHONO output jack, you need to connect a phono equalizer (not supplied) between the turntable and this receiver.

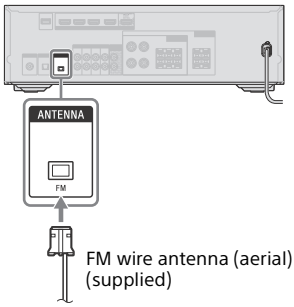
Note

To listen to the sounds from a device connected to the AUDIO IN jacks, do not connect any device to the HDMI IN, COAXIAL IN, and OPTICAL IN jacks, which are labeled with the same device name (such as BD/DVD, SAT/CATV, SA-CD/CD, and TV).

Tip

- You can connect devices other than those indicated above to the AUDIO IN jacks.
- You can rename each input so that the name can be displayed on the display panel of the receiver. For details, refer to "Changing the name for each input (Name)" in Help Guide.

5: Connecting the FM Antenna (aerial)

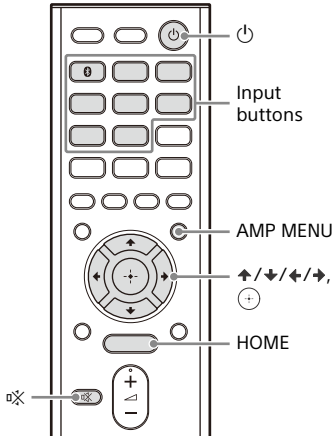


Note

- Be sure to fully extend the FM wire antenna (aerial).
- After connecting the FM wire antenna (aerial), keep it as horizontal as possible.

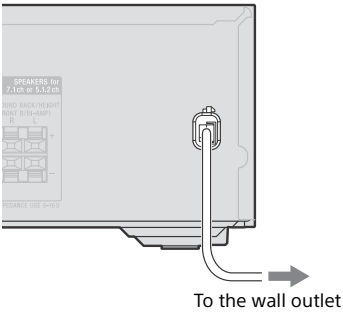
6: Turning on the Receiver and Performing Easy Setup

Turn on the receiver and a TV to perform the initial settings in accordance with the instructions on the Easy Setup screen displayed on the TV.



1. Displaying the Easy Setup screen on the TV screen

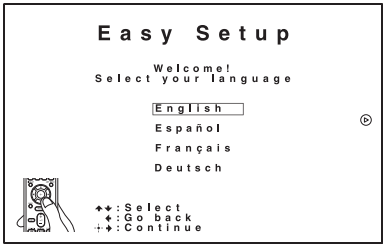
1 Connect the AC power cord (mains lead) to a wall outlet.



2 Turn the TV on, and then switch the input of the TV to the input to which the receiver is connected.

3 Press ⏻ (power) to turn on the receiver.

The Easy Setup screen is displayed on the TV.



Note

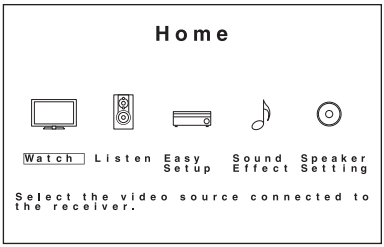
You cannot perform Easy Setup without connecting a TV to the receiver.

Tip

- When you turn on the receiver after the receiver is initialized, the Easy Setup screen also appears on the TV.
- To turn off the receiver, press ⏻ (power) again.

To display the Easy Setup screen manually

1 Press HOME.
The home menu is displayed on the TV screen (page 43).



2 Press ←/→ to select [Easy Setup], and then press ⊕.

2. Selecting the language

You can select the language of messages on the screen.

Press ↑/↓ to select your language, and then press ⊕.

3. Performing Auto Calibration

The Auto Calibration function allows you to:

- Check the connection between each speaker and the receiver.
- Adjust the speaker level.
- Measure the distance of each speaker from your seating position.*
- Measure the speaker size.*
- Measure the frequency characteristics (EQ).*

* The measurement result is not utilized when [Direct] is selected for the sound field setting and an analog input is selected.

Before you perform Auto Calibration

Check the following items:

- Disconnect the headphones.
- For accurate measurement, make sure the environment is quiet and free from noise.
- Set the speaker output to a setting other than “OFF SPEAKERS” using SPEAKERS button (page 46).

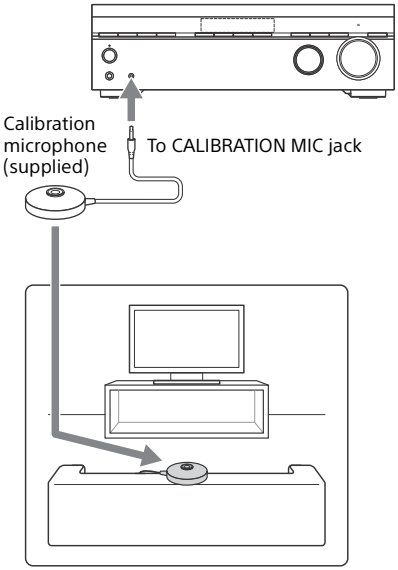
Note

- The speakers emit very loud sound during the measurement and the volume cannot be adjusted. Be considerate of your neighbors and any children who are present.
- If the muting function has been activated before you perform Auto Calibration, the muting function will shut off automatically.
- It may not be possible to take the correct measurements or to perform Auto Calibration at all if special speakers such as dipole speakers are used.

• Depending on the characteristics of the subwoofer you are using, the setup distance value may be different from the actual position.

1 Connect the supplied calibration microphone to CALIBRATION MIC jack. Then, place the calibration microphone at your listening position.

Be sure to set the calibration microphone at the same height as your ears.

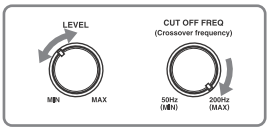


Note

- Insert the plug of the calibration microphone all the way into the CALIBRATION MIC jack. If the calibration microphone is not connected securely, measurements may not be made properly.
- Remove any obstructions between the calibration microphone and the speakers.

2 When a subwoofer is connected, turn on the subwoofer and turn up the volume.

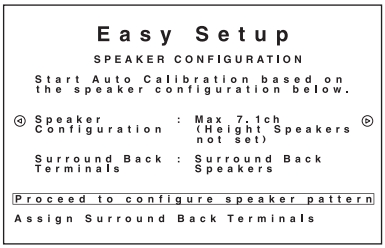
Adjust and set the subwoofer as follows:



- Turn the LEVEL to just before the mid-point.
- If you connect a subwoofer with a crossover frequency function, set the value to maximum.
- If you connect a subwoofer with an auto standby function, set it to off (deactivated).

For details, refer to the operating instructions of the subwoofer.

3 Set the measurement conditions.



① When speakers are connected to the SPEAKERS SURROUND BACK/HEIGHT(FRONT B/BI-AMP) terminals of the receiver, press ↑/↓ to select [Assign Surround Back Terminals], and then press ⊕.

② Press ↑/↓ to assign the surround back terminals by referring to "Speaker systems described in this manual" (page 15), and then press ⊕.

③ Press ⊕, then press ↑/↓ to select the speaker pattern, and then press ⊕.
When [Front High/Top/Dolby Speakers] is displayed, press ⊕, then press ↑/↓ to select a speaker type, and then press ⊕.

Example: For 5.1-channel speaker system
– Select [Surround Back Speakers/ Nothing] in step ②.
– Select [5.1ch] in step ③.

Note

You can refer to the speaker layout diagram guide for the speaker placement in your room (page 14).

4 Press →.

5 Press ↑/↓ to select [Start], and then press ⊕ to start the Auto Calibration.

6 Make sure that the calibration microphone is connected to the receiver, and then press ⊕.

7 Confirm the instructions on the screen, and then press ⊕.

The measurement starts in 5 seconds. The measurement process takes approximately 30 seconds. A test tone is output from each speaker in sequence.
When the measurement ends, a beep sounds and the screen switches.

8 When the measurement is successfully completed, press ↑/↓ to select [Save&Exit], and then press ⊕.

The measurement results are saved and the setting process is finished.
If the measurement fails, error codes or warning messages (page 53) will be displayed. Confirm the message, perform necessary adjustments, and then select [Retry] to perform Auto Calibration again.
To exit the setting process without saving the measurement results, select [Exit].

9 The Auto Calibration is completed.

Disconnect the calibration microphone, then press ⊕ to exit the Auto Calibration.

Tip

The Auto Calibration (D.C.A.C.) is designed to achieve proper sound balance for your room. You can also adjust the speaker levels manually, according to your preference, using “T. TONE” in the “<LEVEL>” menu. For details on Test Tone, visit the Help Guide.

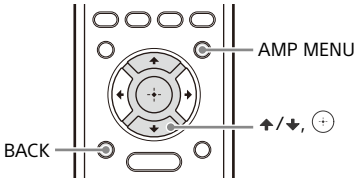
To cancel Auto Calibration

The Auto Calibration function will be canceled when you perform the following during the measurement process:

- Press ⏻ (power).
- Press the input buttons on the remote control or turn the INPUT SELECTOR on the receiver.
- Press HOME, AMP MENU, or 🔇 (muting) on the remote control.
- Press SPEAKERS on the receiver.
- Change the volume level.
- Connect the headphones.

7: Setting for HDMI

Perform this setting when the receiver is connected to a TV or audio-visual devices using an HDMI cable.



Activating the eARC or ARC function

If the receiver is connected to a TV's HDMI input jack that is compatible with the eARC or ARC function (page 25, 26, 27), turn on the Control for HDMI and eARC or ARC functions.

1 Press AMP MENU, then press ↑/↓ and ⊕ to select "<HDMI>" – "CTRL.HDMI" – "CTRL ON".

2 Press ↑/↓ and ⊕ to select "EARC" – "ON".

The eARC function is enabled, and you can now listen to TV audio from the speakers connected to the receiver. When you connect an eARC-compatible TV, the eARC function is activated. When you connect a TV that is compatible with ARC but not with eARC, the ARC function is activated. If you select "OFF" for "EARC" while the receiver is connected to an eARC-compatible TV, the eARC function will not be activated, but the ARC function will be activated.

Note

- Be sure to set the Control for HDMI function of your TV to on. For details, refer to the operating instructions of the TV.
- If your TV has a similar menu for eARC or ARC, also check the relevant settings on the TV when you select "ON" for "EARC" on the receiver. For details, refer to the operating instructions of the TV.

Tip

- To return to the previous menu, press BACK.
- To exit the menu, press AMP MENU.
- For details on TV sound troubleshooting, see "TV sound" (page 47).

Setting the HDMI Signal Format

Select the appropriate setting for the connected TV and audio-visual devices.

1 Press AMP MENU, then press ↑/↓ and ⊕ to select "<HDMI>" – "SIG. FMT.".

2 Press ↑/↓ to select the input you want, and then press ⊕.

3 Press ↑/↓ to select the setting fit to the video signal format of the connected TV and/or audio-visual device, and then press ⊕.

"STANDARD": Select this when you do not use high bandwidth video format.
"ENHANCED": Select this when you use high bandwidth video formats such as 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit.

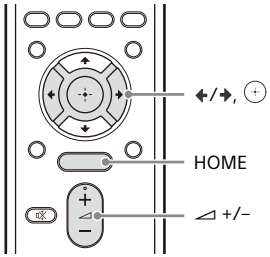
For details on the video format, visit the Help Guide.

Note

- Depending on the TV or the video device, 4K content and/or 3D content may not be displayed.
- For details on the connected device, refer to the operating instructions of the device.
- If your TV have similar menu for high bandwidth video format, check the setting on the TV menu when you select "ENHANCED" on this receiver. For details on the TV menu setting, refer to the operating instructions of the TV.

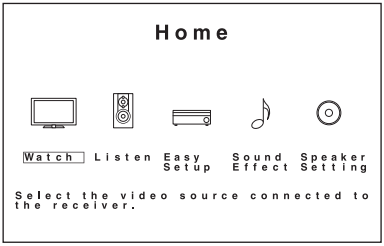
Playing Back Sound and Images on Connected TV and/or Audio-Visual Devices

You can connect audio-visual devices to the receiver to enjoy a wide range of content such as movies and audio.



1 Press HOME.

The home menu is displayed on the TV screen.



Note

Depending on the TV, the home menu may take some time to appear on the TV screen.

2 Press ←/→ to select [Watch] or [Listen], and then press ⊕.

The menu item list appears on the TV screen.

3 Press ←/→ to select the device you want to play, and then press ⊕.

4 Start playback on the connected device.

Tip

To enjoy the sound and image of a connected device without turning on the receiver, set "STBY.THRU" to "ON" in the "<HDMI>" menu.

5 Press +/– to adjust the volume.

Note

Before you turn off the receiver, be sure to turn down the volume level to avoid damaging your speakers the next time you turn on the receiver.

Tip

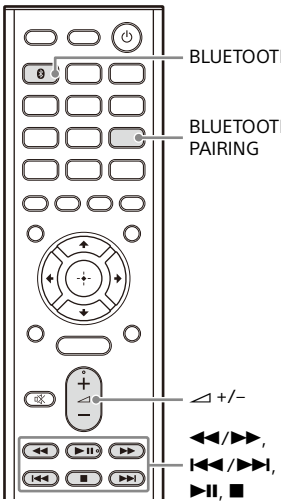
- To turn the volume up or down quickly
  - Turn the MASTER VOLUME knob quickly.
  - Press and hold one of the +/– buttons.
- To make fine adjustments
  - Turn the MASTER VOLUME knob slowly.
  - Press one of the +/– buttons and release it immediately.

To listen to FM radio

You can listen to FM broadcasts in high-quality sound through the built-in tuner. For details on operation, visit the Help Guide.

Playing Back Sound on a BLUETOOTH Device

You can receive audio content from a WALKMAN®, smartphone or tablet that has a BLUETOOTH function and listen to it via this receiver.



About the BLUETOOTH indicator

The BLUETOOTH indicator above the BLUETOOTH button on the receiver lights up or flashes in blue to show the BLUETOOTH status.

Receiver status	Indicator status
The receiver is searching for a BLUETOOTH device to connect	Flashes slowly
BLUETOOTH pairing	Flashes quickly
BLUETOOTH connection is established	Lights up

Registering BLUETOOTH devices to the receiver (Pairing operation)

Pairing is an operation in which BLUETOOTH devices are registered to each other before connection. Follow the steps below to pair the BLUETOOTH device and the receiver. Once the BLUETOOTH devices are paired, there is no need to pair them again. When the pairing is complete, proceed to "Listening to sound on a paired BLUETOOTH device" (page 38).

1 Place the BLUETOOTH device within 1 meter (3.3 feet) of the receiver.

2 Press BLUETOOTH PAIRING.

"PAIRING" flashes on the display panel. Perform step 3 within five minutes, otherwise pairing will be canceled. If pairing is canceled, repeat this step.

3 Perform pairing on the BLUETOOTH device to detect the receiver.

For details, refer to the operating instructions of your BLUETOOTH device.
A list of detected devices may appear on the BLUETOOTH device display depending on the type of BLUETOOTH device. The receiver is displayed as "STR-DH790".

4 Select "STR-DH790" on the BLUETOOTH device display.

If "STR-DH790" is not displayed, repeat this process from step 1.
When the BLUETOOTH connection is established, the paired device name appears on the display panel.

5 Start playback on the BLUETOOTH device.

6 Adjust the volume.

Adjust the volume of the BLUETOOTH device first. If the volume level is still too low, press ◿ +/– to adjust the volume level of the receiver.

To cancel pairing operation

Pairing operation will be canceled when you switch the input.

Note

- Some applications of BLUETOOTH device cannot be controlled from the receiver.
- If a passkey is required on the display of the BLUETOOTH device in step 4, enter "0000". The passkey may be called "Passcode", "PIN code", "PIN number" or "Password".
- You can pair up to ten BLUETOOTH devices. If an 11th BLUETOOTH device is paired, the least recently connected device will be replaced by the new one.

Tip

- You can operate a BLUETOOTH device using ◀◀/▶▶ (fast rewind/fast forward), I◀◀/▶▶I (previous/next), ▶II (play/pause), ■ (stop). For details on operation, visit the Help Guide.
- If you press ▶II in [BT] input when no BLUETOOTH device is connected, the receiver automatically connects to the last connected BLUETOOTH device.

Listening to sound on a paired BLUETOOTH device

1 Turn on the BLUETOOTH function on the BLUETOOTH device.

2 Press BLUETOOTH.

The receiver connects to the last connected BLUETOOTH device and the device name appears on the display panel.

3 Start playback on the BLUETOOTH device.

4 Adjust the volume.

Adjust the volume of the BLUETOOTH device first. If the volume level is still too low, press ◿ +/– to adjust the volume level of the receiver.

To disconnect a BLUETOOTH connection

The BLUETOOTH connection will be disconnected when you perform either of the following operations:

- Switch the input.
- Turn off the BLUETOOTH function on the BLUETOOTH device.
- Press BLUETOOTH PAIRING.
- Turn off the receiver or the BLUETOOTH device.
- Press BLUETOOTH on the receiver again.

Note

- The functions may differ depending on the specifications of the BLUETOOTH device.
- The audio playback on this receiver may be delayed from that on the BLUETOOTH device because of the characteristics of the BLUETOOTH wireless technology.

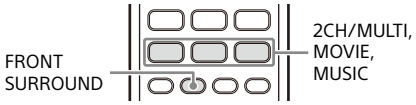
Tip

- You can enable or disable AAC codec reception from BLUETOOTH device. For details on "BT AAC" setting, visit the Help Guide.
- You can connect to the receiver from a paired BLUETOOTH device when "BT POWER" is set to "BT ON" in the "<BT>" menu. For details, visit the Help Guide.

Selecting Sound Effects

Selecting a sound field

You can select a sound field according to your speaker configuration, the audio content, or your individual preferences.



Press 2CH/MULTI, MOVIE, MUSIC, or FRONT SURROUND.

Sound fields are displayed on the display panel.
For 2CH/MULTI, MOVIE, or MUSIC, press the button repeatedly until the sound field you want is displayed.
For details on each sound field, see "Selectable sound fields and their effects" (page 40).

Note

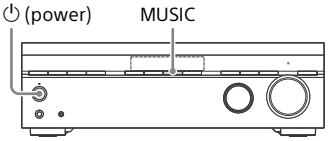
- When listening with headphones, only the sound field for headphones appear.
- The sound fields for MOVIE and MUSIC may not work, depending on the input or the speaker pattern you select, or with audio formats.
- The receiver may play signals at a lower sampling frequency than the actual sampling frequency of the input signals, depending on the audio format.
- Some speakers or the subwoofer may not output sound, depending on the sound field setting.

To reset sound fields to the default settings

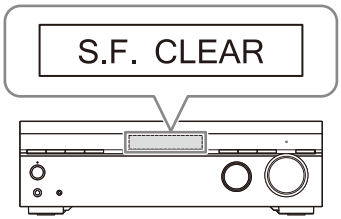
Be sure to use the buttons on the receiver to perform this operation.

1 Turn off the receiver.

2 Press and hold MUSIC and press ⏻ (power) on the receiver.



"S.F. CLEAR" appears on the display panel and all sound fields are reset to their default setting.



Selectable sound fields and their effects

Button	Sound field	Display panel	Effects of the sound field
2CH/MULTI	2ch Stereo	2CH ST.	Plays back 2-channel audio signals without adding any surround effect. Monaural and multi-channel audio signals are output after being converted into a 2-channel signal. This sound field is suited for playing back audio signals as they are from two front speakers only, without adding any virtual surround effect. The sound is output from the front left/right speakers only. There is no sound from the subwoofer.
	Multi Ch Stereo	MULTI ST.	Outputs sound from all connected speakers. When 2-channel or monaural audio signals are input, the receiver outputs sound from all speakers without adding any surround effect. When multi-channel audio signals are input, sound may not be output from certain speakers depending on the speaker settings or playback content.
	Direct	DIRECT	Plays back all audio signals without adding any surround effect.
	Auto Format Decoding	A.F.D.	Decodes and plays back audio signals using the optimal processing method according to the audio signal input.
MOVIE	Dolby Surround	DSUR	Dolby Surround upmixer expands traditional audio content for playback through any multi-channel speaker configuration, including height speakers. This makes it possible to reproduce height information for sound images even when playing back conventional movie or audio content, providing a more realistic sense of immersion than ever before. This upmixer is a new and enhanced replacement for the popular Dolby Pro Logic II technology.
	Neural-X	NEURAL-X	Neural:X is a new upmixer technology developed by DTS and remaps stereo, 5.1, and 7.1 movies and music to match your speaker layout. This makes it possible to reproduce height information for sound images even when playing back conventional movie or audio content, providing a more realistic sense of immersion than ever before.
	Front Surround	FRT SUR.	Reproduces full surround effects with only two front speakers using Sony's virtual signal processing technology.
MUSIC	Audio Enhancer	ENHANCER	Reproduces a clear enhanced sound from your portable audio device. This mode is ideal for MP3 and other compressed audio formats.
Headphone(2ch)*		HP 2CH	Plays back 2-channel audio signals without adding any surround effect. Sound from monaural and multi-channel audio signals are output after being converted into a 2-channel signal.

* There is no button to select [Headphone(2ch)]. This mode is selected automatically if you use headphones (Other sound fields cannot be selected).

Note

- Depending on the audio format, if you select [Direct] and play a 5.1ch source when surround speakers and two surround back speakers are connected, the same audio as that from surround speakers will be output from surround back speakers, similar to that of a 7.1ch surround system. The sound level of surround and surround back speakers are adjusted automatically for optimum balance.

• Dolby Atmos is decoded as Dolby TrueHD or Dolby Digital Plus when a sound field other than [Multi Ch Stereo], [Auto Format Decoding], or [Dolby Surround] is selected.

Relations between sound fields and speaker outputs

The list below shows which speaker outputs sound when a certain sound field is selected.

2-channel content

Button	Sound field	Display panel	Front speakers	Center speaker	Surround speakers	Surround back speakers	Subwoofer	Height speaker
2CH/ MULTI	2ch Stereo	2CH ST.	◎	–	–	–	–	–
	Multi Ch Stereo	MULTI ST.	◎	○	○	○	○[1)]	○
	Direct (Analog input)	DIRECT	◎	–	–	–	–	–
	Direct (Others)	DIRECT	◎	–	–	–	○[2)]	–
	Auto Format Decoding	A.F.D.	◎	●	●	●	○[1)]	●
MOVIE	Dolby Surround	DSUR	◎	○	○	○	○[1)]	○
	Neural-X	NEURAL-X	◎	○	○	○	○[1)]	○
	Front Surround	FRT SUR.	◎	–	–	–	○[1)]	–
MUSIC	Audio Enhancer	ENHANCER	◎	–	–	–	○[2)]	–

– : No sound is output.

◎ : Outputs sound.

○ : Outputs sound depending on the speaker pattern setting and content to be played back.

● : For Dolby and DTS audio streams, outputs sound depending on the speaker pattern setting. No sound is output for Linear PCM, DSD, or AAC.

[1)] Outputs sound when you connect a subwoofer and set the speaker pattern to a setting (“x.1”) that has an active subwoofer.

[2)] Outputs sound when you connect a subwoofer, set the speaker pattern to a setting (“x.1”) that has an active subwoofer, and [Small] is selected for [Size] in [Speaker Setting] menu.

Multi-channel content

Button	Sound field	Display panel	Front speakers	Center speaker	Surround speakers	Surround back speakers	Subwoofer	Height speaker
2CH/ MULTI	2ch Stereo	2CH ST.	◎	–	–	–	–	–
	Multi Ch Stereo	MULTI ST.	◎	○	○	○	○	○
	Direct	DIRECT	◎	○	○	○	○	○
	Auto Format Decoding	A.F.D.	◎	○	○	○	○	○
MOVIE	Dolby Surround	DSUR	◎	○	○	○	○	○
	Neural-X	NEURAL-X	◎	○	○	○	○	○
	Front Surround	FRT SUR.	◎	–	–	–	○	–
MUSIC	Audio Enhancer	ENHANCER	◎	○	○	○	○	○

– : No sound is output.

◎: Outputs sound.

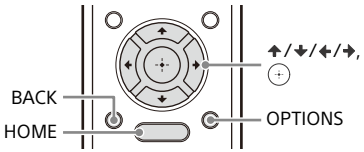
○: Outputs sound depending on the speaker pattern setting and content to be played back.

Note

When no sound is heard, check that all the speakers are securely connected to the correct speaker terminals (page 16), and the correct speaker pattern (page 44) is selected.

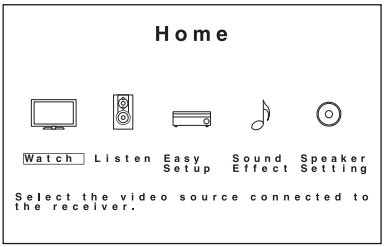
Operating Menu on the TV Screen

You can display the menu on the TV screen to operate the receiver.



1 Press HOME.

The home menu is displayed on the TV screen.



2 Press ←/→ to select the menu you want, and then press ⊕.

The menu item list is displayed on the TV screen.

3 Press ↑/↓/←/→ to select the menu item you want to adjust, and then press ⊕.

Tip

- You can display the function list by pressing OPTIONS and selecting a related function.
- To return to the previous screen, press BACK.
- To exit the menu, press HOME to display the home menu, and then press HOME again.
- You can set some functions using the display panel on the receiver. For details, visit the Help Guide.

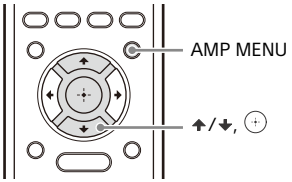
Home menu items

Menu	Description
Watch	Select to display video from the connected device.
Listen	Select to listen to sound from the built-in FM tuner or the connected device.
Easy Setup	Select to re-run the [Easy Setup] to make the basic settings.
Sound Effect	Select to enjoy sound effect.
Speaker Setting	Select to adjust various settings for speaker.

For details on the [Sound Effect] and [Speaker Setting] menu items, visit the Help Guide.

Selecting the speaker pattern

You can also select the speaker pattern you want according to your speaker installation without performing the [Easy Setup].



1 Press AMP MENU.

2 Press ↑/↓ and ⊕ to select "<SPKR>" – "PATTERN".

3 Press ↑/↓ to select the speaker pattern, and then press ⊕.

4 Press ↑/↓ to select "HEIGHT", and then press ⊕.

5 Press ↑/↓ to select a speaker type, and then press ⊕.

Tip

Front high speakers, top middle speakers, and Dolby Atmos enabled speakers are referred to collectively as "height speakers".

Speaker pattern ("PATTERN")

Speaker pattern	Front left/right speaker	Center speaker	Surround left/right speaker	Surround back left speaker	Surround back right speaker	Subwoofer	Height speakers*
"7.1"	○	○	○	○	○	○	–
"7.0"	○	○	○	○	○	–	–
"6.1[SB]"	○	○	○	○	–	○	–
"6.0[SB]"	○	○	○	○	–	–	–
"6.1"	○	–	○	○	○	○	–
"6.0"	○	–	○	○	○	–	–
"5.1.2"	○	○	○	–	–	○	○
"5.0.2"	○	○	○	–	–	–	○
"5.1[SB]"	○	–	○	○	–	○	–
"5.0[SB]"	○	–	○	○	–	–	–
"5.1"	○	○	○	–	–	○	–
"5.0"	○	○	○	–	–	–	–
"4.1.2"	○	–	○	–	–	○	○
"4.0.2"	○	–	○	–	–	–	○
"4.1"	○	–	○	–	–	○	–
"4.0"	○	–	○	–	–	–	–
"3.1.2"	○	○	–	–	–	○	○
"3.0.2"	○	○	–	–	–	–	○

Speaker pattern	Front left/right speaker	Center speaker	Surround left/right speaker	Surround back left speaker	Surround back right speaker	Subwoofer	Height speakers*
"3.1"	○	○	–	–	–	○	–
"3.0"	○	○	–	–	–	–	–
"2.1.2"	○	–	–	–	–	○	○
"2.0.2"	○	–	–	–	–	–	○
"2.1"	○	–	–	–	–	○	–
"2.0"	○	–	–	–	–	–	–

– : Not used.
○: Used.

* When you connect height speakers, set the speaker pattern to a "x.x.2" setting. Then, select the speaker type (page 45).

Tip

When you connect a subwoofer, set the speaker pattern to a "x.1" setting.

Speaker type for height speakers ("HEIGHT")

This setting only available when you set the speaker pattern to a setting ("x.x.2") that has height speakers (page 44).

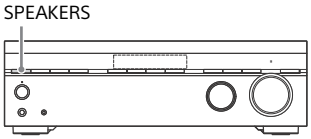
Speaker pattern	Surround Dolby Atmos enabled speakers ("SRD")	Front Dolby Atmos enabled speakers ("FD")	Top middle speakers ("TM")	Front high speakers ("FH")
"5.1.2"	○	○	○	○
"5.0.2"	○	○	○	○
"4.1.2"	○	○	○	○
"4.0.2"	○	○	○	○
"3.1.2"	–	○	○	–
"3.0.2"	–	○	○	–
"2.1.2"	–	○	○	–
"2.0.2"	–	○	○	–

– : This setting is not available.
○: This setting is available.

Switching the front speakers

When two front speaker systems are connected to the receiver, you can select the front speaker system you want to operate.

Press SPEAKERS on the receiver repeatedly to select the front speaker system you want to operate.



Each time you press this button, the display changes cyclically.
"SPK A": Speakers connected to the SPEAKERS FRONT A terminals.
"SPK B"*: Speakers connected to the SPEAKERS SURROUND BACK/HEIGHT(FRONT B/BI-AMP) terminals.
"SPK A+B"*: Speakers connected to both the SPEAKERS FRONT A and SPEAKERS SURROUND BACK/HEIGHT(FRONT B/BI-AMP) terminals (parallel connection).
"OFF SPEAKERS": "OFF" and "SPEAKERS" appears alternately on the display panel. No audio signals are output from any speaker terminals.

* You can only select this setting when [Surround Back Terminals] is set to [Front B Speakers] in the [Speaker Setting] menu.

Note

- This setting is not available when headphones are connected.
- Before you perform Auto Calibration, set the speaker output to a setting other than "OFF SPEAKERS".

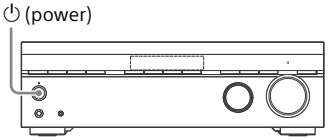
Tip

The "SP A" or/and "SP B" indicators on the display panel lights up to show which set of terminals are selected. "SP A" and "SP B" light off when the speaker system is turned off.

Reverting to the Factory Default Settings

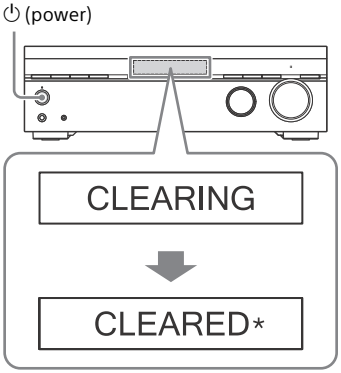
You can clear all memorized settings and restore the receiver to the factory default settings by the following procedure.
Be sure to use the buttons on the receiver to perform this operation.

1 Press ⏻ (power) to turn off the receiver.



2 Press and hold ⏻ (power) for 5 seconds.

"CLEARING" appears on the display panel during initialization. When initialization is complete, "CLEARED*" appears on the display panel.



Note

It takes a few seconds for the memory to be cleared completely. Do not turn the receiver off until "CLEARED*" appears on the display panel.

Troubleshooting

If a problem occurs while operating the receiver, check the following to resolve the problem before consulting your nearest Sony dealer.

- Check to see if the problem is listed in this “Troubleshooting” section.
- Visit the Help Guide and enter search keywords to check whether the troubleshooting for your problem is described.

  For the customers in Europe:
  http://rd1.sony.net/help/ha/strdh79/h_eu/

  For the customers in Taiwan:
  http://rd1.sony.net/help/ha/strdh79/zh-tw/

  For the customers in other areas:
  http://rd1.sony.net/help/ha/strdh79/h_zz/
- Reset sound fields to the default settings (page 39).
- Clear all saved settings and restore the receiver to the factory default settings (page 46).

If the problem persists after doing all of the above, consult your nearest Sony dealer.

General

The receiver is turned off automatically.

- If “AUTO.STBY” is set to “STBY ON”, set it to “STBY OFF” in the “<SYSTEM>” menu.
- The sleep timer function was activated.
- “PROTECT” (page 53) was activated.

The indicator on the display panel turns off.

- If the PURE DIRECT indicator on the front panel lights up, press PURE DIRECT to turn off this function.
- Press DIMMER on the receiver to select “BRIGHT” or “DARK”.

TV sound

No TV sound is output from the receiver.

- When the receiver is connected to a TV compatible with the eARC or ARC function, make sure the receiver is connected to an HDMI input jack compatible with the eARC or ARC function (page 25, 26, 27). Make sure that the HDMI input jack of your TV is labeled “eARC” or “ARC”.
- If the TV is compatible with the eARC or ARC function, make sure the eARC or ARC function on the TV is set to on.
- If the TV is compatible with the eARC or ARC function, make sure the Control for HDMI function on the TV is set to on.
- Make sure “CTRL.HDMI” is set to “CTRL ON” in the “<HDMI>” menu.
- If you connect to a TV that is compatible with the ARC function but not compatible with the eARC function, set “EARC” to “OFF” in the “<HDMI>” menu.
- Make sure the TV supports the System Audio Control function. Set the speaker setting of the TV (BRAVIA) to “Audio System”. Refer to the operating instructions of your TV regarding how to set the TV.
- If the TV does not have a System Audio Control function, set “AUDIO.OUT” in the “<HDMI>” menu to:
  - “TV+AMP” if you want to listen to the sound from the TV speaker and receiver.
  - “AMP” if you want to listen to the sound from the receiver only.

- If sound is still not output or if sound is interrupted, connect the optical digital audio cable (not supplied) and set on the receiver "<HDMI>" – "CTRL.HDMI" – "CTRL OFF".
- If the TV is not compatible with the eARC or ARC function, connect the receiver to the TV using an optical digital audio cable (not supplied) or a stereo audio cable (not supplied). There will be no TV sound from the connected speakers when the receiver is connected to an HDMI input jack of a TV that is not compatible with the eARC or ARC function.
- Be sure to select the correct device or input when watching a program from a device connected to the TV. Refer to the section on this operation in the operating instructions of the TV.
- If the sound of a cable box or satellite box connected to the TV is not output, connect the device to an HDMI input jack of the receiver and switch the input of the receiver to the input for the connected device (page 29).
- Depending on the order in which you connect the TV and the receiver, the receiver may be muted and "MUTING" is displayed on the display panel of the receiver. If this happens, turn on the TV first, then the receiver.

No sound is output from the TV when the receiver is in standby mode.

- When the receiver enters standby mode, sound is output from the last HDMI device selected before you turned off the receiver. If you are enjoying content from another device, play the content on the device and perform the One-Touch Play operation, or turn on the receiver to select the HDMI device from which you want to enjoy content.
- Make sure "STBY.THRU" is set to "ON" or "AUTO" in the "<HDMI>" menu.

Audio

No sound or only a very low level of sound is heard, no matter which device is selected.

- Check that all connecting cables are inserted to their input/output jacks on the receiver, speakers and the devices.
- Check that the receiver and all devices are turned on.
- Check that MASTER VOLUME on the receiver is not set to "VOL MIN".
- Press SPEAKERS on the receiver to select a setting other than "OFF SPEAKERS" (page 46).
- Check that headphones are not connected to the receiver.
- Press 🔇 (muting) to cancel the muting function. "MUTING" disappears from the display panel.
- Try pressing the input button on the remote control or turning INPUT SELECTOR on the receiver to select the input to which you want to listen.
- 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 severe humming or noise.

- Check that the speakers and device are connected securely.
- Make sure that the connecting cables are not near a transformer or motor.
- Move your audio device away from the TV.
- If the plugs and jacks are dirty, wipe them with a cloth slightly moistened with alcohol.

No sound or only a very low level of sound is heard from specific 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 device may not be connected to the receiver correctly. Check that all of the cables are fully inserted into the jacks on both the receiver and the device.
  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 that is not outputting any sound.
- Make sure you have connected to both the L and R jacks of an analog device, as analog devices require both L and R jack connections. Use a stereo audio cable (not supplied).
- Adjust the speaker level.
- Check that the speaker settings are appropriate for the setup using "AUTO CAL" in the "<A.CAL>" menu or "PATTERN" in the "<SPKR>" menu. Then check that sound is output from each speaker correctly using "T. TONE" in the "<LEVEL>" menu.
- Check that the subwoofer is connected correctly and securely.
- Make sure you have turned on your subwoofer.
- Depending on the selected sound field, sound may not be available from the subwoofer (page 41, 42).

There is no sound from a specific device.

- Check that the device is correctly connected to the corresponding audio input jacks.
- Check that the cable(s) used for the connection is (are) fully inserted into the jacks on both the receiver and the device.
- Check the "IN MODE" setting in the "<INPUT>" menu.
- Check that the device is correctly connected to the corresponding HDMI jack.
- The HDMI settings of some playback devices need to be configured. Refer to the operating instructions supplied with each device.
- Be sure to use a High Speed HDMI Cable with Ethernet when you view images or listen to sound, especially for 1080p, Deep Color (Deep Colour), 4K or 3D transmission. Premium High Speed HDMI Cable with Ethernet that supports 18 Gbps is required for 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit etc.
- Sound may not be output from the receiver while the home menu is displayed on the TV screen. Press HOME to exit the home menu.
- Audio signals (format, sampling frequency, bit length, etc.) transmitted from an HDMI jack may be suppressed by the connected device. Check the setup of a device connected via an HDMI cable if the image is poor or the sound does not come out of the device.
- When a connected device does not support the copyright protection technology (HDCP), the image and/or the sound from the HDMI TV OUT jack may be distorted or may not be output. If this is the case, check the specifications of the connected device.
- Set the image resolution of the playback device to more than 720p/1080i to enjoy High Bitrate Audio (DTS-HD Master Audio, Dolby TrueHD).
- The image resolution of the playback device may need to be configured to certain settings before you can enjoy DSD and Multi Channel Linear PCM. Refer to the operating instructions of the playback device.
- When you connect the receiver to a video device (projector, etc.), sound may not be output from the receiver. In this case, set "AUDIO.OUT" to "AMP" in the "<HDMI>" menu.

- You cannot listen to the sound of a device connected to the receiver while TV input is selected on the receiver. Be sure to change the input of the receiver to HDMI if you want to watch a program on a device connected via HDMI connection to the receiver.
- Check that the selected digital audio input jack is not assigned to another input.

The left and right sound is unbalanced or reversed.

- Check that the speakers and device are connected correctly and securely.
- Adjust the sound level parameters using [Level] in the [Speaker Setting] menu.

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 audio input jacks of this receiver, make sure the digital audio output setting of the connected device is available.
- Set “AUDIO.OUT” to “AMP” in the “<HDMI>” menu.
- You can only enjoy High Bitrate Audio (DTS-HD Master Audio and Dolby TrueHD) and object-based audio formats (DTS:X and Dolby Atmos) with an HDMI connection.
- If your device has digital audio output setting, check that the setting is not set to PCM.

The surround effect cannot be obtained.

- Be sure to select the optimal sound field for the content. For details on the sound fields, see “Selectable sound fields and their effects” (page 40).
- Dolby Surround and Neural:X do not work when the speaker pattern is set to “2.0” or “2.1”.

Image and sound are not output from the TV when the receiver is in standby mode.

- Set “<HDMI>” – “CTRL.HDMI” to “CTRL ON”, and then set “STBY.THRU” to “ON” or “AUTO”.
- Turn on the receiver, then select the input to which the playing device is connected.
- If connected to devices other than those manufactured by Sony that support the Control for HDMI function, set “<HDMI>” – “CTRL.HDMI” – “CTRL ON”.

The sound is output from both the receiver and the TV.

- Mute the sound of the receiver or the TV.

There is a time gap between the visual display on the TV and the audio output from the speaker connected to the receiver.

- Press AMP MENU and change the “A/V SYNC” settings in the “<Audio>” menu.
- Adjust the A/V Sync settings on the TV. For details, refer to the operating instructions of the TV.

Video

No image appears on the TV screen.

- Try pressing the input button on the remote control or turning INPUT SELECTOR on the receiver to select the input to which you want to watch.
- Set your TV to the appropriate input mode.
- Make sure that cables are correctly and securely connected to devices.
- Disconnect the HDMI cable from the receiver and TV and then reconnect the cable.
- Set “SIG. FMT.” of the selected input to “STANDARD” in the “<HDMI>” menu.
- Some playback devices need to be set up. Refer to the operating instructions supplied with each device.

- Be sure to use a High Speed HDMI Cable with Ethernet when you view images or listen to sound, especially for 1080p, Deep Color (Deep Colour), 4K or 3D transmission.
  Premium High Speed HDMI Cable with Ethernet, which can support bandwidths up to 18 Gbps, is required for 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit, etc.
- If you want to play HDCP 2.2 content, connect the receiver to an HDMI input jack of a TV that is compatible with HDCP 2.2.

No 3D content appears on the TV screen.

- Depending on the TV or the video device, 3D content may not be displayed. For details on the 3D HDMI video format supported by the receiver, visit the Help Guide.
- Be sure to use a High Speed HDMI Cable with Ethernet.

No 4K content appears on the TV screen.

- Depending on the TV or the video device, 4K content may not be displayed. Check the video capability and settings of your TV and video device.
- Be sure to use a High Speed HDMI Cable with Ethernet. When you use high bandwidth video formats such as 4K/60p 4:4:4, 4:2:2 and 4K/60p 4:2:0 10 bit, a Premium High Speed HDMI Cable with Ethernet, which can support bandwidth up to 18 Gbps, is required.
- If your TV has similar menu for high bandwidth video format, check the setting on the TV menu when you set “SIG. FMT.” to “ENHANCED” (page 35) on this receiver. For details on the setting of the TV menu, refer to the operating instructions of the TV.
- Be sure to connect the receiver to an HDMI input jack of a TV that is supporting 4K. You have to connect an HDMI cable to an HDMI jack that supports HDCP 2.2 when you use a playback device for 4K resolution video content, etc.

No image is output from the TV screen when the receiver is in standby mode.

- When the receiver enters standby mode, the image from the last HDMI device selected before you turned off the receiver is displayed. If you are enjoying content from another device, play the content on the device and perform the One-Touch Play operation, or turn on the receiver to select the HDMI device from which you want to enjoy content.
- Make sure “STBY.THRU” is set to “ON” or “AUTO” in the “<HDMI>” menu.

The home menu does not appear on the TV screen.

- Disconnect the HDMI cable from the receiver and TV and then reconnect the cable.
- Check that the appropriate input is selected on the TV. Select the HDMI input to which the receiver is connected.
- Press HOME to display the home menu.
- The home menu may take some time to appear on the TV screen depending on the TV.

HDR (High Dynamic Range) images cannot be displayed in HDR mode.

- Depending on the TV or video equipment, HDR images may not be displayed in HDR mode. Check the video capability and setting of your TV or video equipment.
- Some video equipment may not output HDR contents in HDR mode if “SIG. FMT.” is set to “STANDARD”, even if both TV and video equipment support HDR and 18 Gbps bandwidth. In this case set “SIG. FMT.” of selected input to “ENHANCED” in the “<HDMI>” menu. When you select “ENHANCED”, use Premium High Speed HDMI cables with Ethernet which can support bandwidth up to 18 Gbps.

FM radio

The FM reception is poor.

- Extend and adjust the position of the FM wire antenna (aerial) to a place where the reception conditions are good.

- Place the FM wire antenna (aerial) near a window.
- Position the FM wire antenna (aerial) as horizontally as possible.

You cannot tune to radio stations.

- Check that the antennas (aerials) are connected securely. Adjust the antennas (aerials) if necessary.
- The signal of the stations is too weak with automatic tuning. Use direct tuning.
- No stations have been preset or the preset stations have been cleared (when tuning by scanning preset stations is used). Preset the stations.
- Press DISPLAY repeatedly so that the frequency appears on the display panel.

BLUETOOTH device

Pairing cannot be done.

- Move the BLUETOOTH device closer to the receiver.
- Pairing may not be possible if there are other BLUETOOTH devices near the receiver. In this case, turn off the other BLUETOOTH devices.
- Correctly enter the same passkey that was entered on the BLUETOOTH device.

Cannot make a BLUETOOTH connection.

- The BLUETOOTH device you attempted to connect does not support the A2DP profile, and cannot be connected with the receiver.
- Press BLUETOOTH to connect to the last connected BLUETOOTH device.
- Turn on the BLUETOOTH function of the BLUETOOTH device.
- Establish a connection from the BLUETOOTH device.
- The pairing registration information has been erased. Perform the pairing operation again.
- While connected to a BLUETOOTH device, this receiver cannot be detected.
- Erase the pairing registration information of the BLUETOOTH device on the BLUETOOTH device and perform the pairing operation again.

The sound skips or fluctuates, or the connection is lost.

- The receiver and the BLUETOOTH device are too far apart.
- If there are obstructions between the receiver and your BLUETOOTH device, remove these or move the receiver and/or device avoid them.
- If there is a device that generates electromagnetic radiation, such as a wireless LAN, other BLUETOOTH device, or a microwave oven nearby, move it away.

The sound of your BLUETOOTH device cannot be heard on the receiver.

- Turn up the volume on your BLUETOOTH device first, and then adjust the volume using + on the remote control (or MASTER VOLUME on the receiver).

Severe humming or noise.

- If there are obstructions between the receiver and your BLUETOOTH device, remove them or move the receiver and/or device avoid them.
- If there is a device that generates electromagnetic radiation, such as a wireless LAN, other BLUETOOTH device, or a microwave oven nearby, move it away.
- Turn down the volume of the connected BLUETOOTH device.

Remote control

The remote control does not function.

- Point the remote control at the remote control sensor on the receiver.
- Remove any obstructions between the remote control and the receiver.

- Replace both of the batteries in the remote control with new ones if they are weak.

Error messages

"PROTECT" appears on the display panel.

The receiver will automatically turn off after a few seconds. Check the followings: Unplug the AC power cord (mains lead) and let the receiver cool down for 30 minutes while performing the following troubleshooting:

- Disconnect all of the speakers and subwoofer.
- Check that the speaker wires are tightly twisted on both ends.
- Check that the receiver is not covered and ventilation holes are not blocked.
- Check that the nominal impedance of the connected speakers fall within the impedance range indicated on the rear panel of the receiver.
- Connect the front speaker first, plug in the AC power cord (mains lead) and turn on the receiver. Increase the volume level and operate the receiver for at least 30 minutes until it completely warms up. Then, connect each additional speaker one by one and test each additional speaker until you detect which speaker is causing the protection error.

After checking the above items and fixing any problems, plug in the AC power cord (mains lead) and turn on the receiver. If the problem persists, consult your nearest Sony dealer.

"USB FAIL" appears on the display panel.

An over-current from the POWER SUPPLY port was detected. Turn off the receiver, disconnect the USB device, and then turn on the receiver again.

Messages after Auto Calibration measurements

[Error 30:]

Headphones are connected. Please disconnect the headphones and retry calibration.

[Error 31:]

The front speakers are not selected correctly. Select the front speakers correctly using SPEAKERS on the receiver and perform Auto Calibration again while sound is being output. For details on selecting the front speakers, see "Switching the front speakers" (page 46).

[Error 32:], [Error 33: F], [Error 33: S], [Error 33: SBL], [Error 33: HT]

- Sound is not detected from one or both of the speakers.
  - Sound is not detected from one or both of the front speakers. Please ensure that the calibration microphone is not damaged, and is connected to the CALIBRATION MIC jack on the front panel of the receiver, and that all speakers are properly connected.
  - Sound is not detected from either the left or right surround speakers. Please ensure that the surround speakers are connected to the SURROUND terminals.
  - The surround back speaker is connected to the SURROUND BACK/ HEIGHT R terminal. When using only one surround back speaker, please connect it to the SURROUND BACK/ HEIGHT L terminals.
  - Only one height speaker is detected. Please ensure that both the height speakers are connected to the SURROUND BACK/HEIGHT terminals.
- Sound is not detected from any speakers, please ensure that the calibration microphone is not damaged and is connected to the CALIBRATION MIC jack on the front panel of the receiver.

[Error 35: FL], [Error 35: FR], [Error 35: SL], [Error 35: SR], [Error 35: FC], [Error 35: SW], [Error 35: SBL], [Error 35: SBR], [Error 35: SB], [Error 35: HTL], [Error 35: HTR]

The speaker pattern configuration does not match calibration result, or the noise level is high. Please check the speaker pattern and connection, or re-calibrate in a quiet environment.

[Warning 40:]

The measurement has been completed, but the noise level is high. For best possible results, calibrate in as quiet a place as possible.

[Warning 41:], [Warning 42:]

The input signal from the calibration microphone is too large. The microphone may be too close to the speakers. Please place the calibration microphone at your desired listening position, and perform Auto Calibration again.

[Warning 43:]

The distance and position of the subwoofer cannot be detected. Please check the subwoofer and re-calibrate in a quiet environment.

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 rear of the receiver.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.
- The AC power cord (mains lead) must be changed only at a qualified service shop.

On heat buildup

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

On placement

- Place the receiver in a location with adequate ventilation to prevent heat buildup and prolong the life of the receiver.
- Do not place the receiver near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place anything on top of the cabinet that might block the ventilation holes and cause malfunctions.

- Do not place the receiver near device such as a TV, VCR, or tape deck. (If the receiver is being used in combination with a TV, VCR, or tape deck, and is placed too close to that device, noise may result, and picture quality may suffer. This is especially likely when using an indoor antenna (aerial).)
- Use caution when placing the receiver on surfaces that have been specially treated (with wax, oil, polish, etc.) as staining or discoloration of the surface may result.

On operation

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

On cleaning

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

On replacement of parts

In the events that this receiver is repaired, repaired parts may be retained for reuse or recycling purposes.

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION: (USA models only)

With 6 ohm loads, both channels driven, from 20 Hz – 20,000 Hz; rated 90 watts per channel minimum RMS power at stereo mode, with no more than 0.09% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section[1)]

Speaker impedance use
6 ohms – 16 ohms

Minimum RMS Output Power
(6 ohms, 20 Hz – 20 kHz, THD 0.09%)
90 W + 90 W

Stereo Mode Output Power
(6 ohms, 1 kHz, THD 0.9%)
105 W + 105 W

Surround Mode Output Power[2)]
(6 ohms, 1 kHz, THD 0.9%)
145 W per channel

[1)] Measured under the following conditions:

Area	Power requirements
USA, Canada, Taiwan	120 V AC, 60 Hz
Oceania, Europe	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.

Frequency response
Analog
10 Hz – 100 kHz, +0.5/–2 dB (with sound field and equalizer bypassed)

Input
Analog
Sensitivity: 500 mV/50 kilohms
S/N[3)]: 105 dB (A[4)], 500 mV[5)])
Digital (Coaxial)
Impedance: 75 ohms
S/N: 100 dB (A[4)], 20 kHz LPF)
Digital (Optical)
S/N: 100 dB (A[4)], 20 kHz LPF)

Output (Analog)
SUBWOOFER
Voltage: 2 V/1 kilohm

Equalizer
Gain levels
±10 dB, 1 dB step

3) INPUT SHORT (with sound field and equalizer bypassed)
4) Weighted network
5) Input level

FM tuner section

Tuning range
USA and Canadian models:
87.5 MHz – 108.0 MHz (100 kHz step)
Other models:
87.5 MHz – 108.0 MHz (50 kHz step)

Antenna (aerial)
FM wire antenna (aerial)

Antenna (aerial) terminals
75 ohms, unbalanced

HDMI Video

Resolution
- 480p/60 Hz
- 576p/50 Hz
- 720p/60 Hz, 50 Hz, 30 Hz, 24 Hz
- 1080i/60 Hz, 50 Hz
- 1080p/60 Hz, 50 Hz, 30 Hz, 25 Hz, 24 Hz
- 4K/60 Hz, 50 Hz, 30 Hz, 25 Hz, 24 Hz

Support
HDCP 2.2, HDR (HDR10, Hybrid Log-Gamma, Dolby Vision), 3D, Deep Color (Deep Colour), ITU-R BT.2020, eARC/ARC

Power supply section

POWER SUPPLY port
DC 5 V 1 A (Max.)

BLUETOOTH section

Communication system
BLUETOOTH Specification version 4.2

Output
BLUETOOTH Specification Power Class 1

Maximum communication range
Line of sight approx. 30 m (98.4 feet)[1)]

Frequency band
2.4 GHz band

Modulation method
FHSS (Freq Hopping Spread Spectrum)

Compatible BLUETOOTH profiles[2)]
A2DP 1.2 (Advanced Audio Distribution Profile)
AVRCP 1.6 (Audio Video Remote Control Profile)

Supported Codecs[3)]
SBC[4)], AAC

Transmission range (A2DP)
20 Hz – 20,000 Hz (Sampling frequency 44.1 kHz)

Frequency band and maximum output power (European models only)
BLUETOOTH

Frequency band	Maximum output power
2,400 MHz – 2,483.5 MHz	≤ 6.0 dBm

1) The actual range will vary depending on factors such as obstacles between devices, magnetic fields around a microwave oven, static electricity, cordless phone, reception sensitivity, antenna's performance, operating system, software application, etc.
2) BLUETOOTH standard profiles indicate the purpose of BLUETOOTH communication between devices.
3) Codec: Audio signal compression and conversion format
4) Subband Codec

General

Power requirements

Area	Power requirements
USA, Canada, Taiwan	120 V AC, 60 Hz
Oceania	230 V AC, 50 Hz
Europe	230 V AC, 50/60 Hz

Power consumption
240 W
Standby mode: 0.3 W
(When "CTRL.HDMI" is set to "CTRL OFF", "STBY.THRU" is set to "OFF", and "BT STBY" is set to "STBY OFF".)

BLUETOOTH Standby mode (all wireless network ports are activated): 0.5 W
(When "BT STBY" is set to "STBY ON", "CTRL.HDMI" is set to "CTRL OFF", and "STBY.THRU" is set to "OFF".)

Dimensions (width/height/depth) (Approx.)
430 mm × 133 mm × 297 mm (17 in × 5 1/4 in × 11 3/4 in) including projecting parts and controls

Mass (Approx.)
7.4 kg (16 lb 6 oz)

Design and specifications are subject to change without notice.

On Copyrights

This receiver incorporates Dolby[1)] Digital Surround and the DTS[2)] Digital Surround System.

[1)] Manufactured under license from Dolby Laboratories. Dolby, Dolby Atmos, Dolby Audio, Dolby Vision, and the double-D symbol are trademarks of Dolby Laboratories.

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On BLUETOOTH Communication

Supported BLUETOOTH version and profiles

Profile refers to a standard set of functions for various BLUETOOTH product features. See “BLUETOOTH section” in “Specifications” (page 56) for the BLUETOOTH version and profiles supported by this receiver.

Effective communication range

BLUETOOTH devices should be used within approximately 10 meters (33 feet) (unobstructed distance) of each other. The effective communication range may become shorter under the following conditions.

- When a person, metal object, wall or other obstruction is between the devices with a BLUETOOTH connection
- Locations where a wireless LAN is installed
- Around microwave ovens that are in use
- Locations where other electromagnetic waves are generated

Effects of other devices

BLUETOOTH devices and wireless LAN (IEEE 802.11b/g/n) device use the same frequency band (2.4 GHz). When using your BLUETOOTH device near a device with wireless LAN capability, electromagnetic interference may occur. This could result in lower data transfer rates, noise, or inability to connect. If this happens, try the following remedies:

- Use this receiver at least 10 meters (33 feet) away from the wireless LAN device.
- Turn off the power to the wireless LAN device when using your BLUETOOTH device within 10 meters (33 feet).
- Install this receiver and BLUETOOTH device as closer to each other as possible.

Effects on other devices

The radio waves broadcast by this receiver may interfere with the operation of some medical devices. Since this interference may result in malfunction, always turn off the power on this receiver and BLUETOOTH device in the following locations:

- In hospitals, on trains, in airplanes, at gas stations, and any place where flammable gasses may be present
- Near automatic doors or fire alarms

Note

- This receiver supports security functions that comply with the BLUETOOTH specification to ensure secure connection during communication using BLUETOOTH technology. However, this security may be insufficient depending on the setting contents and other factors, so always be careful when performing communication using BLUETOOTH technology.
- Sony shall not be held liable in any way for damages or other loss resulting from information leaks during communication using BLUETOOTH technology.
- BLUETOOTH communication is not necessarily guaranteed with all BLUETOOTH devices that have the same profile as this receiver.
- BLUETOOTH devices connected with this receiver must comply with the BLUETOOTH specification prescribed by the Bluetooth SIG, Inc., and must be certified to comply. However, even when a device complies with the BLUETOOTH specification, there may be cases where the characteristics or specifications of the BLUETOOTH device make it impossible to connect, or may result in different control methods, display or operation.
- Noise may occur or the audio may cut off depending on the BLUETOOTH device connected with this receiver, the communications environment, or surrounding conditions.

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

Supported Playable Formats

Supported digital audio formats

The digital audio formats that this receiver can decode depend on the digital audio output jacks of the connected device. This receiver supports the following audio formats.

Digital audio format	Maximum number of decoded channels	Connection with the receiver
Dolby Digital (“DD”)	5.1	COAXIAL/OPTICAL, HDMI, eARC, ARC
Dolby Digital Plus (“DD+”)[1)]	7.1	HDMI, eARC, ARC
Dolby TrueHD (“DTHD”)[1)]	7.1	HDMI, eARC
Dolby Atmos – Dolby Digital Plus (“ATMOS”)[1),2)]	5.1.2 or 7.1	HDMI, eARC, ARC
Dolby Atmos – Dolby TrueHD (“ATMOS”)[1),2)]	5.1.2 or 7.1	HDMI, eARC
DTS (“DTS”)	5.1	COAXIAL/OPTICAL, HDMI, eARC, ARC
DTS-ES Discrete (“DTSES.DSC”)	6.1	COAXIAL/OPTICAL, HDMI, eARC, ARC
DTS-ES Matrix (“DTSES.MTX”)	6.1	COAXIAL/OPTICAL, HDMI, eARC, ARC
DTS 96/24 (“DTS 9624”)	5.1	COAXIAL/OPTICAL, HDMI, eARC, ARC
DTS-HD High Resolution Audio (“DTSHD HR”)[1)]	7.1	HDMI, eARC
DTS-HD Master Audio (“DTSHD MA”)[1)]	7.1	HDMI, eARC
DTS:X (“DTS-X”)[1)]	5.1.2 or 7.1	HDMI, eARC
DTS:X Master Audio (“DTS-X MA”)[1)]	5.1.2 or 7.1	HDMI, eARC
DTS Express (“DTS EXP”)	7.1	HDMI, eARC
DSD (“DSD”)[1)]	5.1	HDMI
Multi Channel Linear PCM (“PCM”)[1)]	7.1	HDMI, eARC

[1)] Audio signals are output in another format if the playback device does not correspond to the actual format. For details, refer to the operating instructions of the playback device.

[2)] Dolby Atmos is decoded as Dolby Digital Plus or Dolby TrueHD if the speaker pattern is set to “2.0”, “2.1”, “3.0”, “3.1”, “4.0”, “4.1”, “5.0” or “5.1”.

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