

SONY®

Marrësi AV me shumë kanale

Udhëzimet e përdorimit

Lidhja dhe përgatitja

Luajtja

Menytë/Funksionet tjera

Problemet dhe zgjidhjet/
Specifikimet

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-DH590

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 Limited.

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 Limited, Da Vincilaan 7-D1, 1935 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/>



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 $\blacktriangle/\blacktriangledown$ and \odot .

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.

Table of Contents

Supplied Items	6
Main Features of the Receiver	7
Parts and Controls	8

1.0 Introduction

1: Deciding on the Speaker System	14
2: Setting/Connecting Speakers	15
3: Connecting a TV	18
4: Connecting Audio-Visual Devices	23
5: Connecting the FM Antenna (aerial)	25
6: Turning on the Receiver and Performing Easy Setup	25
7: Setting for HDMI	29

2.0 Playback

Playing Back Sound and Images on Connected TV and/or Audio-Visual Devices	30
Playing Back Sound on a BLUETOOTH Device	31
Selecting Sound Effects	33

3.0 Settings

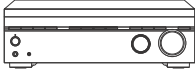
Operating Menu on the TV Screen	37
Selecting the speaker pattern	38
Reverting to the Factory Default Settings	39

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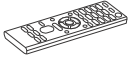
Troubleshooting	40
Precautions	47
Specifications	48
On Copyrights	50
On BLUETOOTH Communication	50
Supported Playable Formats	52
Index	53

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-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/strdh59/h_eu/

For the customers in Taiwan



<http://rd1.sony.net/help/ha/strdh59/zh-tw/>

For the customers in other areas



http://rd1.sony.net/help/ha/strdh59/h_zz/

Main Features of the Receiver

Compatible with digital audio formats

DTS-HD and Dolby TrueHD are supported (only when devices are connected via HDMI cables).

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 18).

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

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

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 26).

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 17).

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 31).
- 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

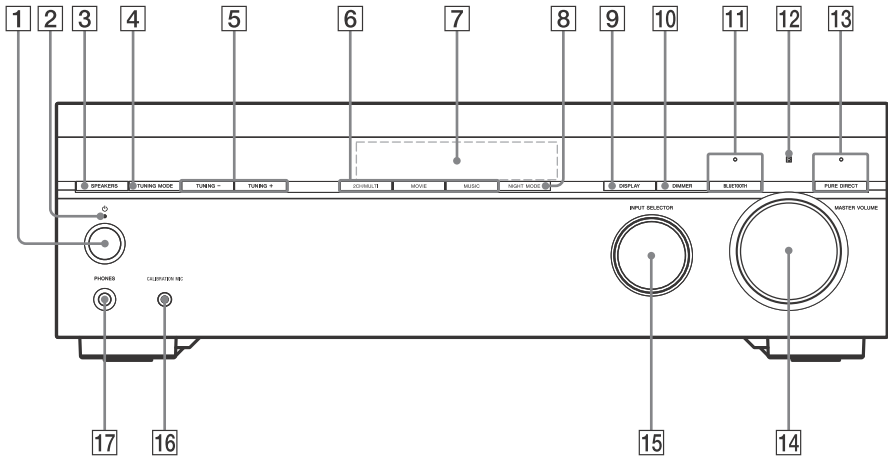
You can select from a variety of sound fields according to speaker connections or input sources (2ch Stereo, Direct, etc.) (page 33).

Equipped with an Audio Return Channel (ARC)-compatible HDMI jack

TV sound can be output from the receiver using only one HDMI cable (page 19, 21).

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

Turns on or off the speaker system.

- **“SPK ON”:** The speaker system is turned on.
- **“OFF SPEAKERS”*:** The speaker system is turned off.

* “OFF” and “SPEAKERS” appears alternately on the display panel.

Note

No sound is output from the speakers when you select “OFF SPEAKERS”. Be sure to select “SPK ON”.

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 33)

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 31)

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], [Bass], [Treble], and "D. RANGE" do not work when the Pure Direct function is selected.

14 MASTER VOLUME (page 30)

15 INPUT SELECTOR

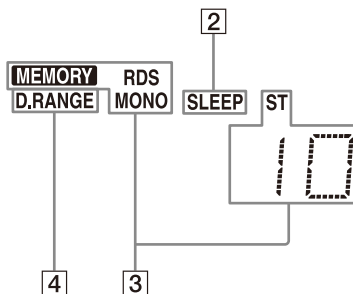
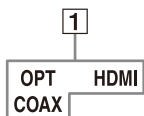
Selects the input channel connected to the device you want to use.

16 CALIBRATION MIC jack (page 26)

17 PHONES jack

Connect headphones here.

Indicators on the display panel



1 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.

2 SLEEP

Lights up when the sleep timer is activated.

3 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

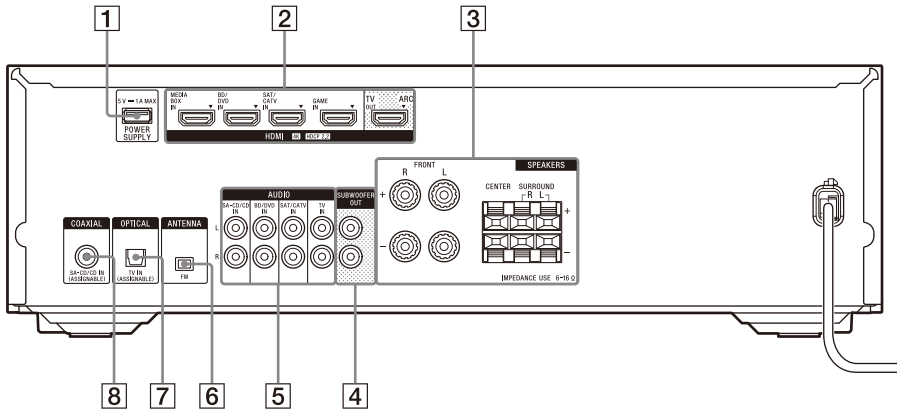


Preset station number (The number will change according to the preset station you select.)

4 D.RANGE

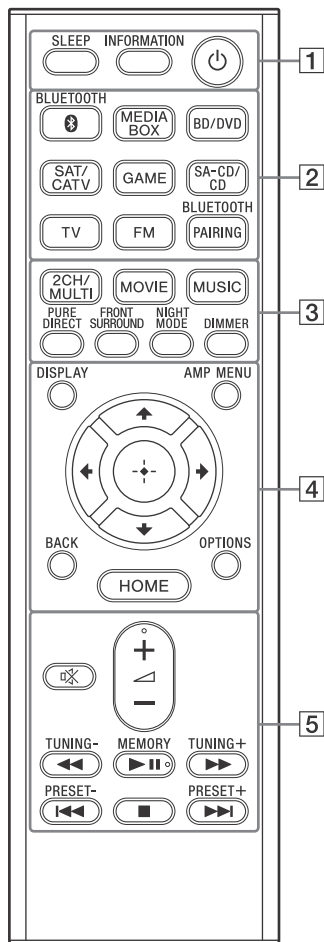
Lights up when dynamic range compression is activated.

Receiver rear panel



- 1 POWER SUPPLY port**
For power supply only.
- 2 HDMI IN/OUT jacks (page 18, 19, 20, 21, 22, 23)**
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 15, 16, 17)**
- 4 SUBWOOFER OUT jacks (page 16, 17)**
- 5 AUDIO IN jacks (page 22, 24)**
- 6 FM ANTENNA terminal (page 25)**
- 7 OPTICAL IN jack (page 20, 22)**
- 8 COAXIAL IN jack (page 24)**

Remote control



1 (power) (page 26)

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 31)

Switches the input of the receiver to [BT] and sets the receiver to the pairing mode.

3 2CH/MULTI, MOVIE, MUSIC (page 33)

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], [Bass], [Treble], 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 37)

Displays the options menu on the TV screen.

HOME (page 37)

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), ▶▶|| (play/pause)*,

◀◀/▶▶| (previous/next),

■ (stop) (page 32)

TUNING +/-

Scans a FM station.

MEMORY*

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

PRESET +/-

Selects preset stations or channels.

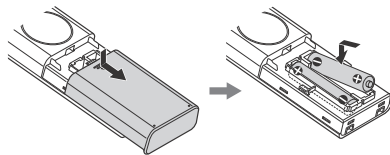
* The ◁, ▶▶, and MEMORY buttons have tactile dots. Use the tactile dots as reference when operating the receiver.

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 the batteries.

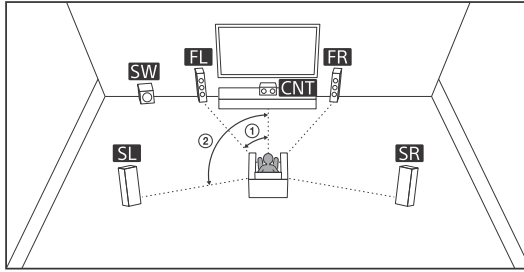


Note

- 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.

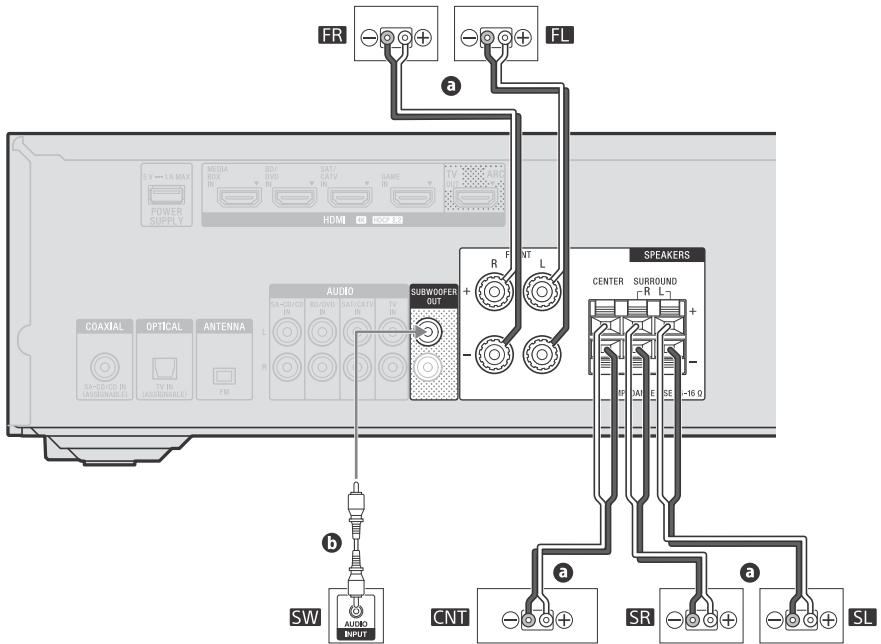
A 5.1-channel speaker system

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)

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 29).
- 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 Audio Return Channel (ARC).
- 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

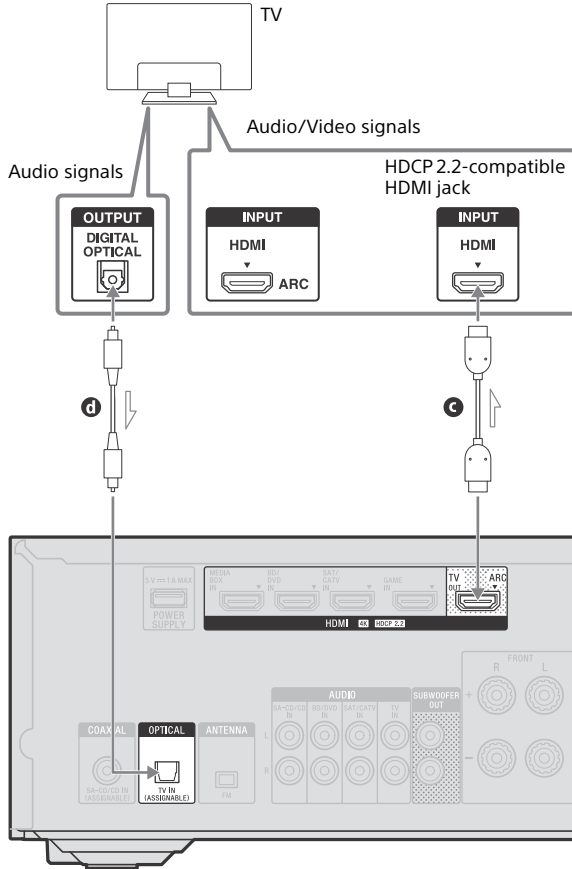
- All HDMI jacks on the receiver support 4K resolution and HDCP 2.2 (High-bandwidth Digital Content Protection System Revision 2.2). HDCP 2.2 is newly enhanced copyright protection technology that is used to protect content such as 4K movies.
- To watch HDCP 2.2 protected content such as 4K content, 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.

When the Audio Return Channel (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 Audio Return Channel (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.



- Ⓒ HDMI cable (not supplied)
- Ⓓ Optical digital audio cable (not supplied)

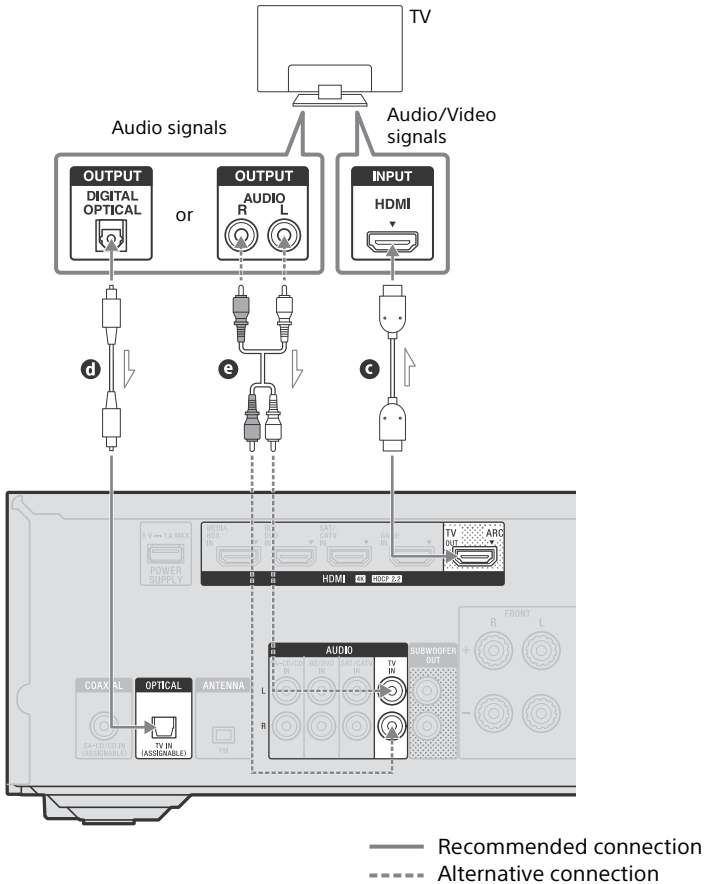
When an HDMI jack on the TV is not Audio Return Channel (ARC)-compatible

The Audio Return Channel (ARC) is a function that sends TV digital sound to audio-visual devices through an HDMI cable.

If "ARC" is not indicated for the TV's HDMI input jack, this TV is not compatible with the Audio Return Channel (ARC) function.

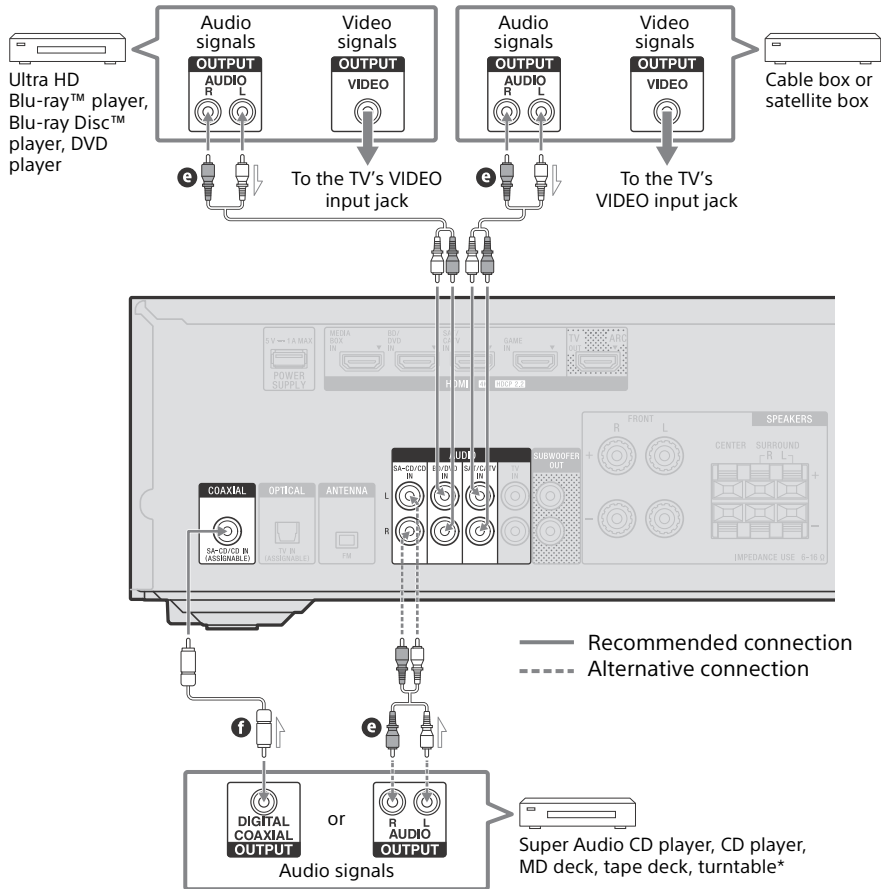
To output audio and video signals from the receiver to the TV, connect the receiver and the TV using an HDMI cable **c**.

To output TV audio signals to the receiver, connect the receiver and the TV using an optical digital audio cable **d** or stereo audio cable **e**.



- c** HDMI cable (not supplied)
- d** Optical digital audio cable (not supplied)
- e** Stereo audio cable (not supplied)

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 SA-CD/CD, BD/DVD, SAT/CATV, and TV).

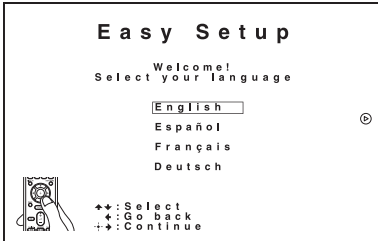
Tip

- 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.

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 37).



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.

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.

6 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.

7 When the measurement is successfully completed, press \uparrow/\downarrow 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 46) 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].

8 The Auto Calibration is completed.

Disconnect the calibration microphone, then press \oplus 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 \odot (power).
- Press the input buttons on the remote control or turn the INPUT SELECTOR on the receiver.

- Press HOME, AMP MENU, or M (muting) on the remote control.
- Press SPEAKERS on the receiver.
- Change the volume level.
- Connect the headphones.

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.
MOVIE	HD-D.C.S.	HD-D.C.S.	HD Digital Cinema Sound (HD-D.C.S.) is Sony's new innovative home theater technology using the latest acoustic and digital signal processing technologies. It is based on the precise response measurement data of a mastering studio. With this mode, you can enjoy Blu-ray and DVD movies at home with not only a high-quality of sound but also the optimal sound ambience, just as the movie's sound engineer intended in the mastering process.
	PLII Movie	PLII MV	Performs Dolby Pro Logic II Movie mode decoding. This setting is ideal for movies encoded in Dolby Surround. In addition, this mode can reproduce sound in 5.1-channel format when watching videos of overdubbed or old movies.
	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.
	Hall	HALL	Reproduces the acoustics of a concert hall.
	Jazz	JAZZ	Reproduces the acoustics of a jazz club.
	Concert	CONCERT	Reproduces the acoustics of a 300-seat live house.
	Stadium	STADIUM	Reproduces the feel of a large open-air stadium.
	Sports	SPORTS	Reproduces the feel of sports broadcasting.
	PLII Music	PLII MS	Performs Dolby Pro Logic II Music mode decoding. This setting is ideal for normal stereo sources such as CDs.
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).

Multi-channel content

Button	Sound field	Display panel	Front speakers	Center speaker	Surround speakers	Subwoofer
2CH/ MULTI	2ch Stereo	2CH ST.	⊙	–	–	–
	Multi Ch Stereo	MULTI ST.	⊙	○	○	○
	Direct	DIRECT	⊙	○	○	○
MOVIE	HD-D.C.S.	HD-D.C.S.	⊙	○	○	○
	PLII Movie	PLII MV	⊙	○	○	○
	Front Surround	FRT SUR.	⊙	–	–	○
MUSIC	Audio Enhancer	ENHANCER	⊙	○	○	○
	Hall	HALL	⊙	○	○	○
	Jazz	JAZZ	⊙	○	○	○
	Concert	CONCERT	⊙	○	○	○
	Stadium	STADIUM	⊙	○	○	○
	Sports	SPORTS	⊙	○	○	○
	PLII Music	PLII MS	⊙	○	○	○

– : No sound is output.

⊙ : Outputs sound.

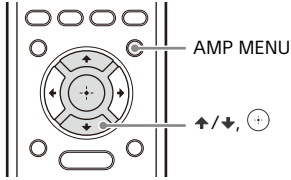
○ : Outputs sound depending on the speaker pattern setting and content to be played back.

Note

When no sound is heard, check that all the speakers are securely connected to the correct speaker terminals (page 15), and the correct speaker pattern (page 14) is selected.

Selecting the speaker pattern

You can select the speaker pattern you want according to your speaker installation.



- 1 Press AMP MENU, then press ↑/↓ and ⊕ to select "<SPKR>" – "PATTERN".
- 2 Press ↑/↓ to select the speaker pattern you want, and then press ⊕.

Speaker pattern	Front left/right speaker	Center speaker	Surround left/right speaker	Subwoofer
"5.1"	○	○	○	○
"5.0"	○	○	○	-
"4.1"	○	-	○	○
"4.0"	○	-	○	-
"3.1"	○	○	-	○
"3.0"	○	○	-	-
"2.1"	○	-	-	○
"2.0"	○	-	-	-

- : Not used.
○ : Used.

Tip

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

“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 speaker system is set to “OFF SPEAKERS”. Press SPEAKERS on the receiver repeatedly to select “SPK ON” and perform Auto Calibration again.

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

- 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.
- 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.

[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.

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 section¹⁾

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 Power²⁾
(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, and surround 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/N³⁾: 105 dB (A⁴), 500 mV⁵⁾
Digital (Coaxial)
Impedance: 75 ohms
S/N: 100 dB (A⁴), 20 kHz LPF
Digital (Optical)
S/N: 100 dB (A⁴), 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, 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)

On Copyrights

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- 2) For DTS patents, see <http://patents.dts.com>. Manufactured under license from DTS, Inc. DTS, the Symbol, DTS and the Symbol together, DTS-HD, DTS-HD and the DTS-HD logo are registered trademarks or trademarks of DTS, Inc. in the United States and/or other countries. © DTS, Inc. All Rights Reserved.

This receiver incorporates High-Definition Multimedia Interface (HDMI™) technology. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

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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 48) 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).

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
Dolby Digital Plus ("DD+") ¹⁾	7.1 ²⁾	HDMI
Dolby TrueHD ("DTHD") ¹⁾	7.1 ²⁾	HDMI
DTS ("DTS")	5.1	COAXIAL/OPTICAL, HDMI
DTS 96/24 ("DTS 9624")	5.1	COAXIAL/OPTICAL, HDMI
DTS-HD High Resolution Audio ("DTSHD HR") ¹⁾	7.1 ²⁾	HDMI
DTS-HD Master Audio ("DTSHD MA") ¹⁾	7.1 ²⁾	HDMI
DTS Express ("DTS EXP")	5.1	HDMI
DSD ("DSD") ¹⁾	5.1	HDMI
Multi Channel Linear PCM ("PCM") ¹⁾	7.1 ²⁾	HDMI

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⁾ The signals will be output as 5.1 channel.

R

Receiver

Display panel 10

Front panel 8

Rear panel 11

Remote control 12

Battery 13

Reset

Receiver 39

Sound fields 33

S

Sound effects 33

Sound field 33

Speaker

Cable 15

Pattern 38

Sports 34

Stadium 34

Subwoofer 14

Supplied items 6

Supported playable formats

Audio 52

T

TV screen

Home menu 37

W

Watch 37



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