

SONY

Multi Channel
AV Receiver

Please read this manual carefully before operating your unit and retain for future reference.

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 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

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 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.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- 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.



Unplug this apparatus during lightning storms or when unused for long periods of time.

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.

- Disconnect the AC power cord from the MAINS.
- Strip 10 to 15 mm of the wire insulation of the speaker cable.
- 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 the USA

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.

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.

Supplied Items

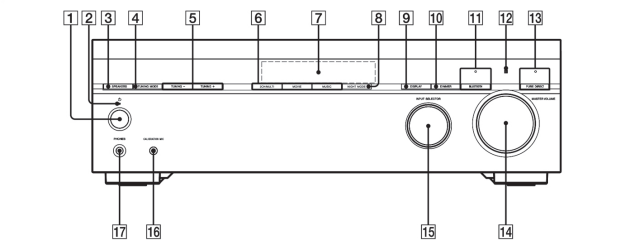
- Receiver (1)
- FM wire antenna (aerial) (1)
- Remote control (1)
- Calibration microphone (1)

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.

Parts and Controls

Receiver front panel



- (power)**
Turns the receiver on or sets it to the standby mode.
- 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.

- 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".

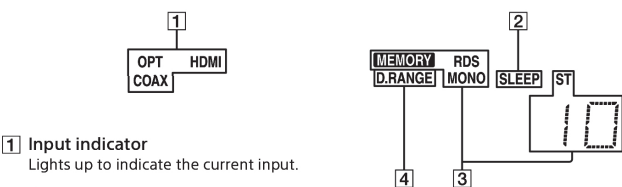
- TUNING MODE**
Selects auto tuning or preset tuning mode.
- TUNING +/-**
Scans a FM station or selects preset stations/channels.
- 2CH/MULTI, MOVIE, MUSIC**
- Display panel**
- NIGHT MODE**
Activates the Night Mode function which allows you to retain a theater-like environment at low volume levels.

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.
- DISPLAY**
Displays information on the display panel.
- DIMMER**
Adjusts the brightness of the display panel.

(headphones not supplied)

Indicators on the display panel



1 Input indicator
Lights up to indicate the current input.

OPT
Digital signals are input through the OPTICAL jack.

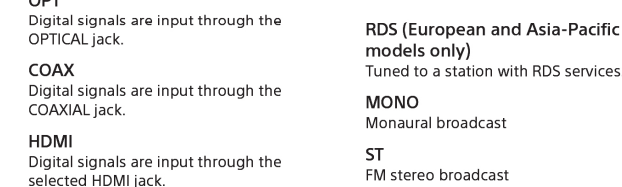
COAX
Digital signals are input through the COAXIAL jack.

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.

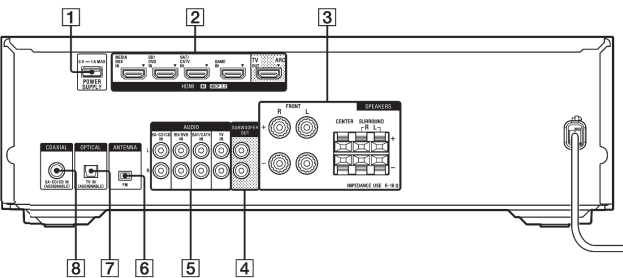
MONO
Monaural broadcast

ST
FM stereo broadcast

10
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.

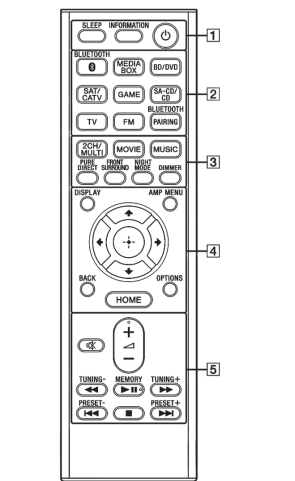
Receiver rear panel



- POWER SUPPLY port**
For power supply only.
- HDMI IN/OUT jacks**
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.
- SPEAKERS terminals**
- SUBWOOFER OUT jacks**
- AUDIO IN jacks**
- FM ANTENNA terminal**
- OPTICAL IN jack**
- COAXIAL IN jack**

Note: The image shown here is for illustrative purposes only and may be subject to change. The actual number of ports and their locations may vary depending on the model.

Remote control



- (power)**
Turns the receiver on or sets it to the standby mode.
- 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.

- 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.
- Remote control sensor**
Receives signals from remote control.
- 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.
- MASTER VOLUME**
- INPUT SELECTOR**
Selects the input channel connected to the device you want to use.
- CALIBRATION MIC jack**
- PHONES jack**
Connect headphones here.

- AMP MENU**
Displays the menu on the display panel to operate the receiver.
- (enter), +/-, +/-, +/-**
Press +, -, +/-, +/- to select the menu items. Then, press (enter) 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**
Displays the options menu on the TV screen.
- HOME**
Displays the home menu on the TV screen.
- (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)**
- TUNING +/-**
Scans a FM station.
- MEMORY***
Stores a station that you are receiving as a preset station.

- PRESET +/-**
Selects preset stations or channels.
- * The (left arrow), (right arrow), and MEMORY buttons have tactile dots. Use the tactile dots as reference when operating the receiver.

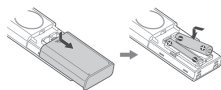
Note

- 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

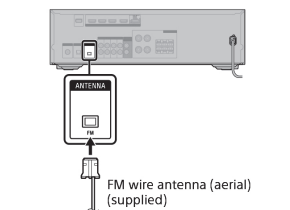
Insert two R03 (size AAA) batteries in the remote control. Make sure that the + and - ends are in the correct position when installing batteries.

(Batteries not supplied)



- 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.

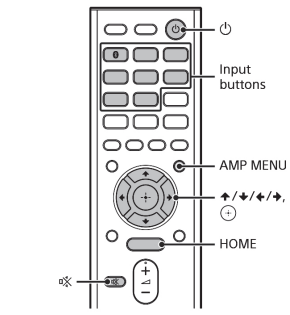
5: Connecting the FM Antenna (aerial)



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

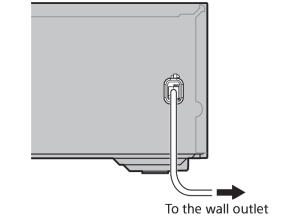
6: Turning on the Receiver and Performing Easy Setup

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

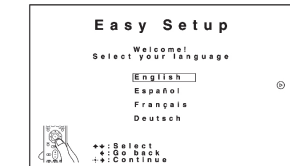
- Connect the AC power cord (mains lead) to a wall outlet.**



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

- 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

- Press HOME.**
The home menu is displayed on the TV screen.
- Press +/- to select [Easy Setup], and then press (enter).**

2. Selecting the language

You can select the language of messages on the screen.

Press +/- to select your language, and then press (enter).

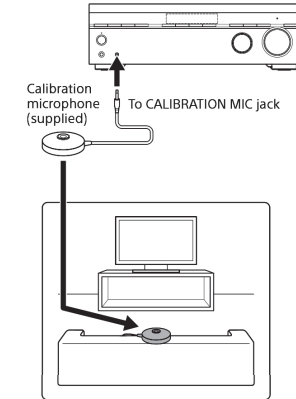
Before you perform Auto Calibration

Check the following items:

- Disconnect the headphones.
- For accurate measurement, make sure the environment is quiet and free from noise.
- Make sure the speaker system is not set to "OFF SPEAKERS". Press SPEAKERS on the receiver repeatedly to select "SPK ON".

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

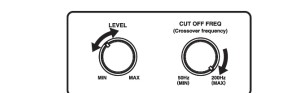
Be sure to set the calibration microphone at the same height as your ears.



- 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.

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

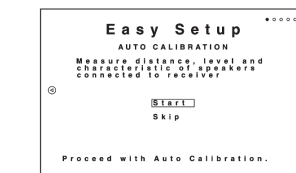
Adjust and set the subwoofer as follows:



- 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.

- Start the Auto Calibration.**






- Press +/- to select [Start], and then press (enter).**

- Make sure that the calibration microphone is connected to the receiver, and then press (enter).**

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 /  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 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  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.

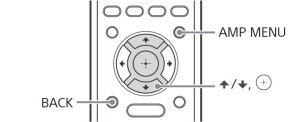
To cancel Auto Calibration

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

- Press .
- 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 Audio Return Channel (ARC) function

If the receiver is connected to a TV's HDMI input jack that is compatible with the Audio Return Channel (ARC) function, turn on the Control for HDMI function.

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

The Audio Return Channel (ARC) function will be activated and the TV sound will be output to the receiver.

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.




Tip




- To return to the previous menu, press BACK.
- To exit the menu, press AMP MENU.

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.

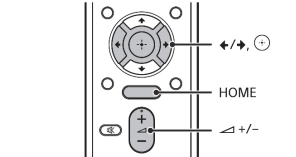
Note

- 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.

Playback


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.

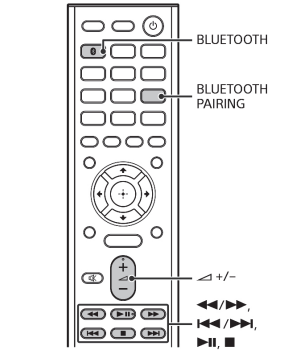
2 Press /  to select [Watch] or [Listen], and then press .

The menu item list appears on the TV screen.

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

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".

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-DH590".



4 Select "STR-DH590" on the BLUETOOTH device display.

If "STR-DH590" 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),  (previous/next),  (play/pause),  (stop).
- If you press  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.

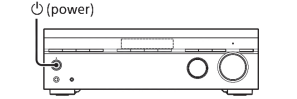
Tip

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

Reverting to the Factory Default Settings

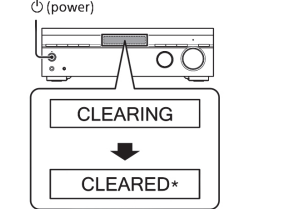
You can clear all memorized settings and restore the receiver to the factory default settings by the following procedure. Be sure to use the buttons on the receiver to perform this operation.

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/ Specifications

Troubleshooting

If a problem occurs while operating the receiver, check the following to resolve the problem before contact a service center.

- Check to see if the problem is listed in this "Troubleshooting" section.
- enter search keywords to check whether the troubleshooting for your problem is described.
- For the customers in other areas: http://rd1.sony.net/help/ha/strdh59/h_zz/
- Reset sound fields to the default settings.
- Clear all saved settings and restore the receiver to the factory default settings.

If the problem persists after doing all of the above, contact a service center.

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" 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".

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.
- Ease 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.

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 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 mV³⁾
Digital (Coaxial)
Impedance: 75 ohms
S/N: 100 dB (A⁴⁾, 20 kHz LPF
Digital (Optical)
S/N: 100 dB (A⁴⁾, 20 kHz LPF)

Compatible BLUETOOTH profiles²⁾
A2DP 1.2 (Advanced Audio Distribution Profile)
AVRCP 1.6 (Audio Video Remote Control Profile)
Supported Codecs³⁾
SBC⁴⁾, AAC
Transmission range (A2DP)
20 Hz – 20,000 Hz (Sampling frequency 44.1 kHz)

Frequency band and maximum output power (European models only)

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

The cables mentioned in this guide is not supplied with your unit.

The remote control vary depend of model: The buttons on remote control may have a different name or location than the remote control shows in this manual.

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
200 W
Standby mode: 0.3 W
(When "CTRL.HDMI" is set to "CTRL OFF", "STBY.THURU" 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.THURU" 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.)
7.1 kg (15 lb 11 oz)

Design and specifications are subject to change without notice.

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" 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).



PRINTED IN MEXICO
SC:06.07.2020
OBPN:*472690612* (1)
SHNMDL:STRDH590_B
TAB / Elbrd:J.E.

804109777

