

User Guide

Sound Bar ATS-B200



CONTENTS

INTRODUCTION	5
About this User Guide	5
Features	6
Supplied accessories	9
PART NAMES AND FUNCTIONS	11
Part names of the sound bar (front/top)	11
Part names of the sound bar (rear)	13
Part names of the remote control	14
PREPARATION	16
Preparation	
Precautions for preparation	19
Installing the sound bar	21
Connecting a TV	22
Connecting a TV using only the supplied digital optical audio cable	22
Connecting an audio device	25
Connecting an external subwoofer	26
Preparing the remote control	27
Turning on and off the sound bar	
PLAYBACK	29
Basic control during playback	29
Adjusting the sound to your preference	31
Sound functions of this product	31
Surround playback	
Stereo playback	
Adjusting the volume of the subwoofer Playing back human voices clearly (CLEAR VOICE)	
Enjoying enhanced bass sound (BASS EXT)	

Listening to audio from a Bluetooth® device	
ADDITIONAL FEATURES	40
Changing the brightness of the indicators (Dimmer)	40
Using a TV's remote control to control the sound bar (HDMI Cont	trol)41
Showing the type of audio signal and settings for functions	42
Controlling the sound bar with the app	43
CONFIGURATION	44
Enabling/disabling the HDMI Control function	44
Enabling/disabling the Auto Power Standby function	45
Enabling/disabling the Child Lock function	46
Enabling/disabling the Bluetooth Standby function	47
Enabling/disabling the Bluetooth function	48
Setting the dynamic range compression level	49
Initializing the sound bar	51
TROUBLESHOOTING	52
Check the following first when any problem occurs	52
When a problem occurs: Power or overall functionality	53
When a problem occurs: Audio	61
When a problem occurs: Bluetooth®	66
When a problem occurs: App	68
Other actions	69
How to minimize standby power consumption	
Precautions for remote control batteries	
Precautions for remote control batteries How to replace the remote control battery	
Precautions for remote control batteries	
Precautions for remote control batteries How to replace the remote control battery	72
Precautions for remote control batteries How to replace the remote control battery How to reset the sound bar APPENDIX Specifications of the Sound Bar	73
Precautions for remote control batteries How to replace the remote control battery How to reset the sound bar APPENDIX	73

CONTENTS

About third party software programs	
Mounting the sound bar on a wall	
Precautions for mounting the sound bar on a wall	
Mounting the sound bar on a wall (for qualified service	e personnel)

INTRODUCTION

About this User Guide

- This User Guide is for the following readers:
 - · the users of the product
 - the constructor, builder and dealer that mount the product on the wall
- This User Guide uses the following signal words for the important information:



This content indicates "risk of serious injury or death."



This content indicates "risk of injury."

NOTICE

Indicates points that you must observe in order to prevent product failure, damage or malfunction and data loss, as well as to protect the environment.

· NOTE

Indicates notes on instructions, restrictions on functions, and additional information that may be helpful.

- The illustrations and screens in this User Guide are for instructional purposes only.
- The company names and product names in this User Guide are the trademarks or registered trademarks of their respective companies.
- Various smartphones and tablet devices are collectively referred to as "mobile devices". When necessary, the type of mobile device is specified in the explanations.
- The [Search tag] is a keyword used in searches. This serves as a link from the Quick Start Guide to the User Guide

NOTE

The Safety Brochure and the Quick Start Guide are supplied with this product. See the Safety Brochure first.

Features

This sound bar is a speaker for your TV that allows you to easily enjoy surround sound on the TV.

■ Play surround sound

Virtual 3D surround sound technology, "DTS Virtual:X", allows surround sound to be heard not only from horizontal directions, but also from varying heights. This gives a vastness to the sound that seems to envelop your whole body, and enhances the feeling of being immersed in the worlds of movies, television, and music.



Related links

"Surround playback" (p.32)

■ Easily play audio content from a Bluetooth device



Related links

"Listening to audio from a Bluetooth® device" (p.37)

Additional features

Clear Voice

This function automatically distinguishes human voices from background sound and increases the volume of the voices only. Human voices in TV programs that use a lot of background music and sound effects can be heard more clearly.

• "Playing back human voices clearly (CLEAR VOICE)" (p.35)

Bass Extension

This function boosts bass levels that are often not strong enough when using a compact speaker, for more impactful sound.

• "Enjoying enhanced bass sound (BASS EXT)" (p.36)

Audio Return Channel (ARC) and HDMI Control function compatible

An Audio Return Channel (ARC) compatible TV can be connected to the sound bar using a single HDMI cable. An HDMI control function compatible TV allows for controlling the sound bar's basic functions using the TV's remote control.

- "Connecting a TV using an HDMI cable (sold separately)" (p.23)
- "Using a TV's remote control to control the sound bar (HDMI Control)" (p.41)

Dedicated app: "Sound Bar Remote"

The sound bar can be easily controlled from your mobile device.

■ Certified as a Yamaha Eco-Product



Yamaha Eco-Label is a mark that certifies products of high environmental performance.

With an advanced energy saving design, this product achieves a low power consumption of not more than 1.8 watts when in standby mode.

Supplied accessories

Make sure you have received all of the following accessories:

· Sound bar (ATS-B200)



· Remote control



* A Lithium battery (CR2025) has already been inserted into the remote control.

· Power cord



• Digital optical audio cable



• Spacers (×2, on 1 sheet)



* Use when mounting the sound bar on a wall.

· Mounting template



* Use when mounting the sound bar on a wall.

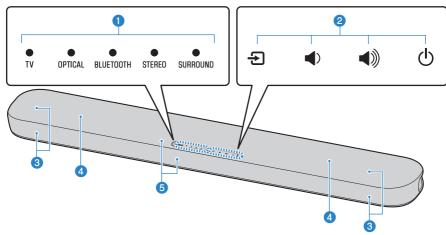
INTRODUCTION > Supplied accessories

Quick Start Guide	
Safety Brochure	

PART NAMES AND FUNCTIONS

Part names of the sound bar (front/top)

This section describes the part names and functions of the front/top of the sound bar.



Indicators

The indicators on the top panel flash or glow to show the operation and setting status. During normal playback, the setting status is indicated as follows:

TV / OPTICAL / BLUETOOTH: Selected input source

STEREO: Stereo playback

SURROUND: Surround playback

NOTE

This document uses the following illustrations to show that indicators are off, glowing, or flashing.







2 Controls

Touch the symbols with your fingertip to control the sound bar.

₹ (Input): Select an input source (p.29).

♠) / ♠ (Volume +/-): Adjust the volume (p.29).

(Power): Turn the sound bar on and off.

Speakers

PART NAMES AND FUNCTIONS > Part names of the sound bar (front/top)

- 4 Built-in subwoofers
- 6 Remote control sensors

NOTE

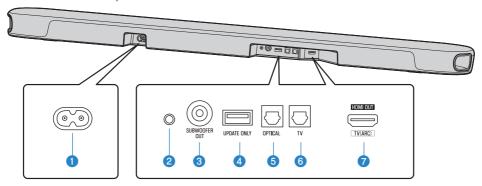
- To prevent unintended operation, do not place anything on the controls of the sound bar. Enabling the Child Lock function prevents accidental operation.
- The brightness of the indicators can be adjusted by pressing DIM.

Related links

- "Enabling/disabling the Child Lock function" (p.46)
- "Changing the brightness of the indicators (Dimmer)" (p.40)

Part names of the sound bar (rear)

This section describes the part names and functions of the rear of the sound bar.



- AC power input jack
- Reset button
 Hold down for at least 10 seconds to force the sound bar to turn off.
- **3** SUBWOOFER OUT jack (p.26)
- UPDATE ONLY jack
 Use to update the sound bar's firmware.

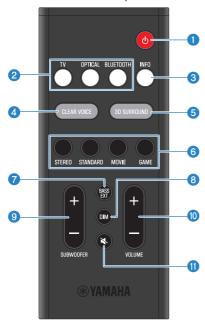
 Refer to the instructions supplied with the firmware for details.
- **OPTICAL input jack (p.25)**
- TV input jack (p.22)
- HDMI OUT/TV (ARC) jack (p.23)

Related links

- "Part names of the sound bar (front/top)" (p.11)
- "Part names of the remote control" (p.14)

Part names of the remote control

This section describes the part names and functions of the remote control.



1 (Power) button

Turn the sound bar on and off (p.28).

2 Input source buttons

Select an audio input source (p.29).

- . TV button: Audio from a TV
- OPTICAL button: Audio from a device connected to the OPTICAL input jack
- BLUETOOTH button: Audio from a Bluetooth device

6 INFO button

Shows information such as the type of audio signal being played and the settings for the sound bar's functions (p.42).

4 CLEAR VOICE button

Enable or disable the Clear Voice function (p.35).

5 3D SURROUND button

Press the button to enable or disable 3D surround playback (p.32).

6 Sound mode buttons

Switch to your preferred sound mode (p.31).

- STANDARD
- MOVIE
- GAME
- STEREO

BASS EXT button

Enable or disable the Bass Extension function (p.36).

0 DIM button

Switch the brightness of the indicators of the sound bar (p.40).

SUBWOOFER (+/-) button

Adjust the volume of the subwoofer (p.34).

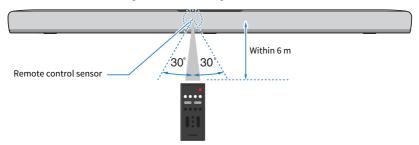
OVOLUME (+/-) button

Adjust the volume of the sound bar (p.29).

Mute the audio output (p.29). Press this button again, or press VOLUME (+/-) to unmute.

NOTE

• Use the remote control within the range shown in the following illustration:



• When the sound bar is mounted on a wall, point the remote control at the remote control sensor on the top of the sound bar.

Related links

- "Part names of the sound bar (front/top)" (p.11)
- "Mounting the sound bar on a wall (for qualified service personnel)" (p.89)

PREPARATION

Preparation

Install the sound bar and connect a TV to it.

1 Install the sound bar.

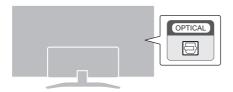
Installation procedure

"Installing the sound bar" (p.21)

2 Connect a TV to the sound bar.

Depending on the type of TV, connect the TV to the sound bar as follows:

• Connecting the TV using only the supplied digital optical audio cable



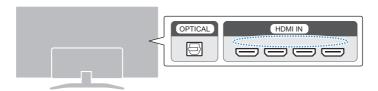
Connection procedure

- "Connecting a TV using only the supplied digital optical audio cable" (p.22)
- TV equipped with an HDMI jack labeled as "ARC"



Connection procedure

- "Connecting a TV using an HDMI cable (sold separately)" (p.23)
- TV not equipped with an HDMI jack labeled as "ARC"



Connection procedure

- "Connecting a TV using only the supplied digital optical audio cable" (p.22)
- "Connecting a TV using an HDMI cable (sold separately)" (p.23)

3 Connect an audio device (if required).

Connection procedure

"Connecting an audio device" (p.25)

4 Connect an external subwoofer (if required).

Connection procedure

"Connecting an external subwoofer" (p.26)

5 Prepare the remote control.

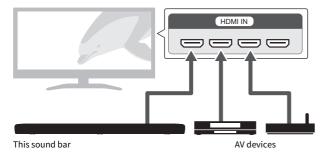
"Preparing the remote control" (p.27)

6 Turn on the sound bar.

"Turning on and off the sound bar" (p.28)

NOTE

• Connect AV devices (such as BD/DVD players and set top boxes) to the TV's HDMI input jacks.



- When playing audio from a TV or AV device via the sound bar, set the input sources as follows:
 - · Sound bar's input source: TV
 - TV's input source: AV device playing the content
- ARC (Audio Return Channel) is a function that sends audio signals from the TV's HDMI output jack.

Precautions for preparation

Before installing the sound bar and connecting other devices, be sure to read the following precautions. Be sure to always obey the precautions.

Precautions for installation



\ WARNING

- · Install in the manner instructed in the manual. Falling or toppling may result in injury or damage.
- Confirm that the finished installation is safe and secure. Also, carry out safety inspections periodically. Failure to observe this may cause devices to fall and result in injury.
- Do not expose the product to rain, use it near water or in damp or wet conditions, or place on the product any containers (such
 as vases, bottles or glasses) containing liquids which might spill into any openings or places where water may drop. A liquid
 such as water getting into the product may cause a fire, electric shocks, or malfunctions.
- Do not place any burning items or open flames near the product, since they may cause a fire.
- Do not use this product near medical devices or inside medical facilities. Radio waves from this product may affect electromedical devices.



CAUTION

- · Do not place the product in an unstable position where it might accidentally drop or fall over and cause injuries.
- When installing this product, do not obstruct heat dissipation. Failure to observe this may trap heat inside the product, causing a fire or malfunctions.
- Do not install the product in places where it may come into contact with corrosive gases or salt air, or places that have
 excessive smoke or steam. Doing so may result in malfunction.
- Avoid being near the product during a disaster, such as an earthquake. Since the product may turn over or fall and cause injury, quickly move away from the product and go to a safe place.

NOTICE

- Do not press hard on the speaker units or fabric-covered portion of this product.
- Do not place any objects susceptible to magnetism (such as a hard disk drive or magnetic card) near the product. The magnetic effect of the sound bar may cause damage to the object or its recorded data.
- Do not use this product in a location that becomes extremely hot, such as in direct sunlight or near a heater, or that becomes extremely cold, or that is subject to excessive dust or vibration. Failure to observe this may cause this product's panel to become deformed, the internal components to malfunction, or for operation to become unstable.
- If using a wireless function, avoid installing this product near metal walls or desks, microwave ovens, or other wireless network devices. Obstructions could shorten the transmission distance.

Precautions for connections



WARNING

- Use this product with the power supply voltage printed on it. Failure to connect to an appropriate AC outlet may cause a fire, electric shocks, or malfunctions.
- Be sure to use the supplied power cord. Do not use the supplied power cord for other devices. Failure to observe this may cause a fire, electric shocks, or malfunctions.
- Never insert or remove an electric plug with wet hands. Do not handle this product with wet hands. Failure to observe this may cause electric shocks or malfunctions.
- Do not touch the power plug or cord if there is a chance of lightning. Failure to observe this may cause electric shocks.
- When setting up the product, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction
 occurs, immediately turn off the power switch and disconnect the plug from the AC outlet. Even when the power switch is
 turned off, as long as the power cord is not unplugged from the wall AC outlet, the product will not be disconnected from the
 power source.
- If not using the product for long periods of time, be sure to pull the power plug from the AC outlet. Failure to observe this may cause a fire or malfunctions.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it. Failure to observe this may
 cause a fire or electric shocks.



CAUTION

- Do not use an AC outlet where the power plug fits loosely when inserted. Failure to observe this may cause a fire, electric shocks, or burns.
- When disconnecting the power plug, always hold the plug itself and not the cord. Pulling by the cord can damage it and cause electric shocks or a fire.
- Insert the power plug firmly all the way into the AC outlet. Using the product when it is not plugged in sufficiently can cause
 dust to accumulate on the plug, causing a fire or burns.

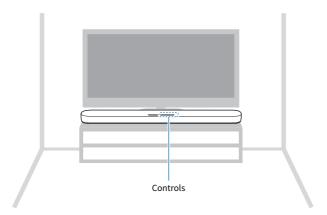
NOTICE

- If connecting external devices, be sure to thoroughly read the User Guide for each device and connect them in accordance with the instructions. Failure to properly handle a device in accordance with the instructions could cause malfunctions.
- Do not connect this product to industrial devices. This product has been designed to connect to consumer-use devices.
 Connection to an industrial-use device could cause this product to malfunction.

Installing the sound bar

- Before installing the sound bar, be sure to read the following precautions.
 - "Precautions for preparation" (p.19)

Install the sound bar as shown in the following illustration.



NOTE

The sound bar can also be mounted on a wall.

Related links

"Mounting the sound bar on a wall (for qualified service personnel)" (p.89)

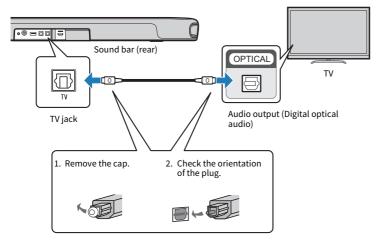
Connecting a TV

Connecting a TV using only the supplied digital optical audio cable

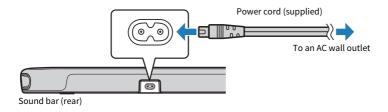
- Before connecting an external subwoofer, be sure to read the following precautions.
 - "Precautions for preparation" (p.19)

Connect a TV using the supplied digital optical audio cable.

1 Connect a TV to the sound bar.



2 Connect the sound bar to power.



NOTE

Connect an AV device (such as a set top box) to the TV.

Connecting a TV using an HDMI cable (sold separately)

- Before connecting an external subwoofer, be sure to read the following precautions.
 - · "Precautions for preparation" (p.19)

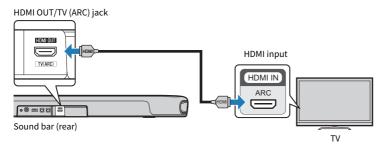
If a TV is connected via an HDMI cable, the sound bar can be controlled by the HDMI Control function using the TV's remote control.

■ Audio Return Channel (ARC)-compatible TV

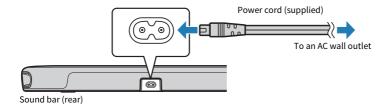
Connect an Audio Return Channel (ARC) compatible TV using an ARC-compatible HDMI cable (sold separately).

1 Connect a TV to the sound bar.

Connect an HDMI cable to the Audio Return Channel compatible jack (labeled as "ARC") on the TV.



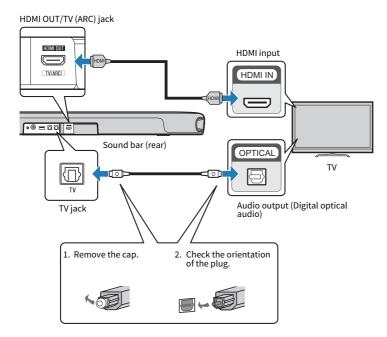
2 Connect the sound bar to power.



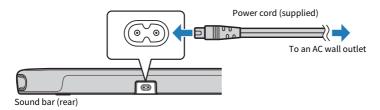
■ TV that does not support Audio Return Channel (ARC)

Connect the TV using an HDMI cable (sold separately) and supplied digital optical audio cable.

1 Connect a TV to the sound bar.



2 Connect the sound bar to power.



NOTE

- To activate the Audio Return Channel (ARC), enable the HDMI Control function of the sound bar. (The function is enabled by default.)
- Use a 19-pin HDMI cable with the HDMI logo printed on it.
- Use a cable that is as short as possible to prevent any degradation in signal quality.
- Connect an AV device (such as a set top box) to the TV.

Related links

"Enabling/disabling the HDMI Control function" (p.44)

Connecting an audio device

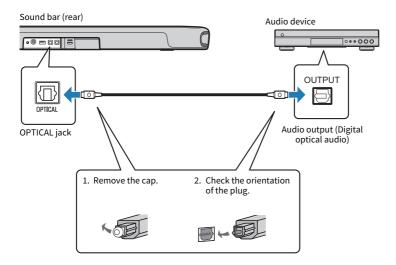
- Before connecting an audio device, be sure to read the following precautions.
 - "Precautions for preparation" (p.19)

Devices equipped with audio output jacks can be connected directly to the sound bar.

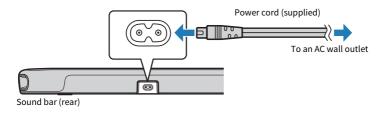
■ A device with a digital optical audio output jack

Connect an audio device using a digital optical audio cable.

1 Connect an audio device to the sound bar.



2 Connect the sound bar to power.



NOTE

When connecting a device equipped with video output, connect the video output jack directly to the video input jack on the TV.

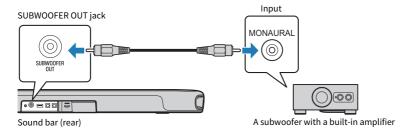
Connecting an external subwoofer

- Before connecting an external subwoofer, be sure to read the following precautions.
 - "Precautions for preparation" (p.19)

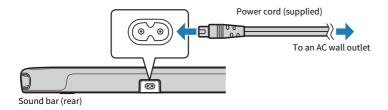
The sound bar has built-in subwoofers; however, an external subwoofer with a built-in amplifier can be connected to further enhance low frequency sound.

1 Connect an external subwoofer to the sound bar.

Connect an external subwoofer using a monaural cable (sold separately).



2 Connect the sound bar to power.

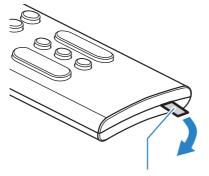


NOTE

Audio is output from both the built-in subwoofers and external subwoofer.

Preparing the remote control

Remove the battery insulating strip before attempting to use the remote control.



Battery insulating strip

Related links

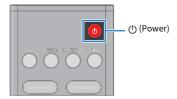
"How to replace the remote control battery" (p.71)

Turning on and off the sound bar

Turn the sound bar on and off.

1 Press ().

Pressing the button turns the sound bar on and off.



When the sound bar is turned on, all the indicators glow, and then some indicators remain glowing to show the setting status (normal display).



When the sound bar is turned off, the indicators go off.

PLAYBACK

Basic control during playback

This section describes the basic control operations available during playback.

■ Selecting an input source

Press one of the following buttons.

- TV button: Audio from a TV
- OPTICAL button: Audio from a device connected to the OPTICAL input jack
- BLUETOOTH button: Audio from a Bluetooth device



The indicator of the selected input source button glows.



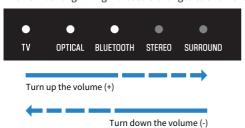
One of the indicators glows

Adjusting volume

Press VOLUME (+/-) to adjust the volume.



The number of glowing indicators changes to show the volume level.



If audio is being output from both the TV speakers and the sound bar, mute the TV.

To temporarily mute the sound bar, press ❖. To unmute, press ❖ again or press VOLUME (+/-).



While muted, the indicators will show the following.



Flashing

Related links

- "Surround playback" (p.32)
- "Stereo playback" (p.33)
- "Playing back human voices clearly (CLEAR VOICE)" (p.35)
- "Enjoying enhanced bass sound (BASS EXT)" (p.36)
- "Listening to audio from a Bluetooth® device" (p.37)

Adjusting the sound to your preference

Sound functions of this product

The sound functions of this product are as follows:

Sound modes

This product allows you to enjoy listening to audio in the following modes.

STANDARD

This sound mode is the best suited for general content, such as sports, sitcoms, and reality shows. Surround playback is performed.

MOVIE

This sound mode is the best suited for movies. Surround playback is performed.

GAME

This sound mode is the best suited for video games. Surround playback is performed.

STEREO

2-channel stereo playback.

Sound settings

This product provides the following sound functions.

3D surround

When the 3D surround function is enabled, Virtual 3D surround sound technology, "DTS Virtual:X", allows surround sound to be heard not only from horizontal directions, but also from varying heights.

Clear Voice

The human voices within the audio can be heard more easily when the Clear Voice function is enabled. The function is recommended for movies or dramas that use a lot of background music and sound effects.

Bass Extension

Bass sound is enhanced and becomes more powerful when the Bass Extension function is enabled.

Related links

- "Surround playback" (p.32)
- "Stereo playback" (p.33)
- "Playing back human voices clearly (CLEAR VOICE)" (p.35)
- "Enjoying enhanced bass sound (BASS EXT)" (p.36)

Surround playback

Press STANDARD, MOVIE, or GAME to switch to surround playback in that sound mode. Select your preferred sound mode according to the content viewed or listened to.



■ Enabling or disabling 3D surround

Press 3D SURROUND to enable or disable 3D surround.





Glowing green: 3D surround enabled Glowing white: 3D surround disabled

Related links

"Sound functions of this product" (p.31)

Stereo playback

Press STEREO to switch to 2-channel stereo playback.





Related links

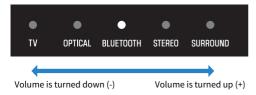
"Sound functions of this product" (p.31)

Adjusting the volume of the subwoofer

Adjust the volume of the subwoofer only. The volume of the entire system remains the same. Press SUBWOOFER (+/-) to adjust the volume.



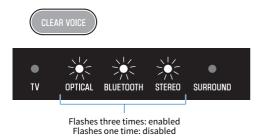
The glowing indicator changes to show the volume level.



Playing back human voices clearly (CLEAR VOICE)

The human voices within the audio can be heard more easily when the Clear Voice function is enabled. The function is recommended for movies or dramas that use a lot of background music and sound effects.

Press CLEAR VOICE to enable or disable the function.



NOTE

Press INFO to see whether the Clear Voice function is enabled or disabled.

Related links

"Showing the type of audio signal and settings for functions" (p.42)

Enjoying enhanced bass sound (BASS EXT)

Bass sound is enhanced and becomes more powerful when the Bass Extension function is enabled. Press BASS EXT to enable or disable the function.





Flashes three times: enabled Flashes one time: disabled

NOTE

Press INFO to see whether the Bass Extension function is enabled or disabled.

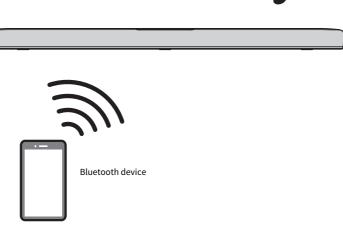
Related links

"Showing the type of audio signal and settings for functions" (p.42)

Listening to audio from a Bluetooth® device

Audio content from a Bluetooth device can be played through the sound bar.





1 Press BLUETOOTH to switch the input source to Bluetooth.

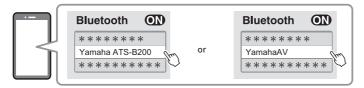


The sound bar enters the connection wait status, and the BLUETOOTH indicator flashes.



2 On the Bluetooth device, enable the Bluetooth function.

3 Select the sound bar on the Bluetooth device.

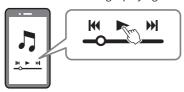


When the connection is established, the BLUETOOTH indicator on the sound bar stops flashing and starts glowing blue.



4 Start playback on the Bluetooth device.

The sound bar will begin playing audio from the Bluetooth device.



NOTE

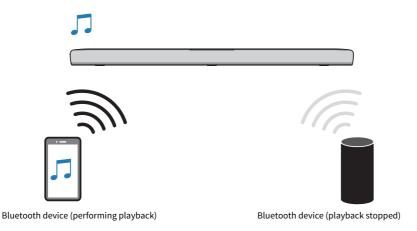
- "Compressed Music Enhancer" is enabled during playback from a Bluetooth device to reproduce the rich, deep sound that the
 audio had prior to compression.
- Enabling the Bluetooth standby function allows the sound bar to be turned on automatically when a connection operation is performed with a Bluetooth device.
- If other Bluetooth devices have been connected before, the sound bar will connect to the last connected device when the input source is switched to Bluetooth.
- The Bluetooth connection is terminated if one of the following operations is performed.
 - The Bluetooth function on the Bluetooth device is turned off.
 - BLUETOOTH on the sound bar's remote control is held down for at least five seconds.
 - \bullet An input source other than Bluetooth is selected on the sound bar.
 - · The sound bar is turned off.
- Adjust the volume level of the Bluetooth device if necessary.
- Perform Bluetooth device operations within 10 meters (33 ft) of the sound bar.

Related links

"Enabling/disabling the Bluetooth Standby function" (p.47)

■ Switching Bluetooth devices for playback (multipoint connection)

The sound bar can be connected to two Bluetooth devices simultaneously. It is easy to switch between the Bluetooth devices for playback.



Perform the following procedures to switch between devices for playback.

- 1 Stop playback on the Bluetooth device.
- 2 Start playback on the other Bluetooth device.

Audio from the other Bluetooth device can be heard on the sound bar.

NOTE

When connecting a new Bluetooth device, disconnect the currently connected Bluetooth device and then connect the new device

ADDITIONAL FEATURES

Changing the brightness of the indicators (Dimmer)

Change the brightness of the indicators of the sound bar to one of three levels: "Bright", "Dim", or "Off". The brightness is "Dim" by default.

- 1 Turn on the sound bar.
- 2 Press DIM.



Press the button to change the brightness in the order of "Dim", "Off" and "Bright".

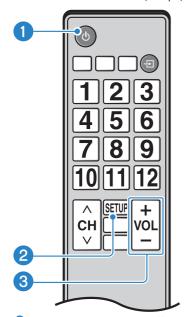
NOTE

Indicators glow brightly just after operation and then change to the specified brightness after a few seconds.

Using a TV's remote control to control the sound bar (HDMI Control)

When the sound bar is connected to a TV via an HDMI cable, the sound bar can be controlled using the TV's remote control. This is called the HDMI Control function.

TV's remote control (example)



Turn the power on and off

Both the TV and the sound bar turn on/off at the same time.

2 Switch the audio output device

The audio output device can be switched to the TV or the sound bar. Control operations vary depending on the TV's type.

6 Adjust volume

The sound bar's volume can be adjusted when the TV's audio output is set to the sound bar.

Related links

"Enabling/disabling the HDMI Control function" (p.44)

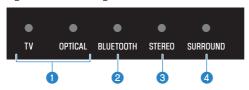
Showing the type of audio signal and settings for functions

The type of audio signal being played and settings for the sound bar's functions can be confirmed.

1 Press INFO.



The indicators on the sound bar will show the following information on the type of audio signal and the settings for functions for three seconds immediately after INFO is pressed.



The type of audio signal

TV glows white: Dolby Digital
TV glows red: DTS
OPTICAL glows white: AAC

TV and OPTICAL off: PCM or no input signal

2 Whether Dolby Pro Logic II is enabled or disabled

Glows: enabled Off: disabled

NOTE

Dolby Pro Logic II is enabled automatically when 2-channel stereo signals are played in surround.

3 Whether the Bass Extension function is enabled or disabled

Glows: enabled Off: disabled

Whether the Clear Voice function is enabled or disabled

Glows: enabled Off: disabled

Controlling the sound bar with the app

By installing the dedicated free app "Sound Bar Remote" on a mobile device, the sound bar can be controlled from the mobile device.

Search for "Sound Bar Remote" on the App Store or Google Play and install it on the mobile device.



The main functions are as follows:

- Turn the power on/off, select an input source, adjust the volume, and adjust the subwoofer volume
- · Switch between sound modes
- Enable or disable 3D surround
- Enable or disable the Bass Extension and Clear Voice functions
- · Change the brightness of the indicators (Dimmer)

For details on the app, see the description of the app on the App Store or Google Play.

NOTE

- This sound bar supports Sound Bar Remote only. This sound bar cannot be controlled using other apps (such as Sound Bar Controller).
- To control the sound bar using the app, configure the settings on the mobile device as follows:
 - · Enable the Bluetooth function.
 - For Android devices, configure the settings to allow obtaining of location information.
- Sound Bar Remote uses the location information of the Android device only to detect the sound bar. Your personal information will
 not be collected.

CONFIGURATION

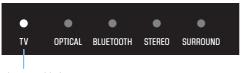
Enabling/disabling the HDMI Control function

Enabling the HDMI Control function allows the sound bar to be controlled using the TV's remote control. Default setting: Enabled

- 1 Turn off the sound bar.
- 2 Hold down TV for at least five seconds.



The HDMI Control function switches from enabled to disabled, or from disabled to enabled. The indicator shows the setting applied as follows, and the sound bar is turned on.



Glows: enabled Off: disabled

NOTE

To activate the Audio Return Channel (ARC), enable the HDMI Control function.

Related links

- "Connecting a TV using an HDMI cable (sold separately)" (p.23)
- "Connecting an audio device" (p.25)
- "The sound bar cannot be controlled using the TV's remote control" (p.60)

Enabling/disabling the Auto Power Standby function

Enabling the Auto Power Standby function turns off the sound bar in any of the following situations.

- No control operations for eight hours
- No audio input and no control operations for 20 minutes

The default setting varies depending on the model.

Models for U.S.A., Canada, Mexico, Australia, China and Taiwan: Disabled

Models for Europe, U.K., Korea, and other areas: Enabled

- 1 Turn off the sound bar.
- **2** While holding down $oldsymbol{\pm}$ on the sound bar, hold down $oldsymbol{\oplus}$ for at least five seconds.



The Auto Power Standby function switches from enabled to disabled, or from disabled to enabled.

The indicator shows the setting applied as follows, and the sound bar is turned on.



Enabling/disabling the Child Lock function

Locking the controls of the sound bar prevents accidental operation (Child Lock function). Default setting: Disabled (no Child Lock)

- 1 Turn off the sound bar.
- 2 Hold down INFO for at least five seconds.



The Child Lock function switches from enabled to disabled, or from disabled to enabled. The indicator shows the setting applied as follows, and the sound bar is turned on.



Glows: enabled (Child Lock) Off: disabled (no Child Lock)

Enabling/disabling the Bluetooth Standby function

Enabling the Bluetooth Standby function allows the sound bar to be turned on automatically when a Bluetooth device connects to the sound bar.

Default setting: Enabled

- 1 Turn off the sound bar.
- 2 Hold down BLUETOOTH for at least five seconds.



The Bluetooth Standby function switches from enabled to disabled, or from disabled to enabled.

The indicator shows the setting applied as follows, and the sound bar is turned on.



Enabling/disabling the Bluetooth function

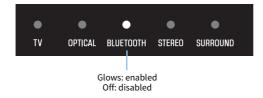
The Bluetooth function can be disabled.

Default setting: Enabled

- 1 Turn off the sound bar.
- 2 Hold down DIM for at least five seconds.



The Bluetooth function switches from enabled to disabled, or from disabled to enabled. The indicator shows the setting applied as follows, and the sound bar is turned on.



Setting the dynamic range compression level

Compressing the dynamic range of audio signals (the volume difference between the loudest and quietest sounds) makes it easier to listen at a low volume. This setting is applied only when Dolby Digital audio signals are being played.

Default setting: No compression

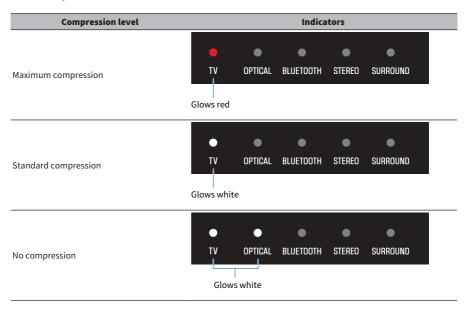
1 Turn off the sound bar.

2 Hold down one of the following buttons for at least five seconds.

Compression level	Function	Button to hold
Maximum compression	Apply the maximum amount of dynamic range compression.	STANDARD
Standard compression	Apply an amount of dynamic range compression well suited for a typical room.	MOVIE
No compression	Dynamic range compression is not applied.	GAME

The dynamic range compression level setting is changed.

The indicators show the applied compression level setting as shown in the following illustration, and the sound bar turns on.



Initializing the sound bar

Reset the settings of the sound bar to the factory presets.

- 1 The sound bar is turned off.
- 2 While holding down ♠ on the sound bar, hold down ∪ until all indicators flash.



Initialization is performed. When initialization is complete, the indicators will show the following.



Flash (initialization complete)

TROUBLESHOOTING

Check the following first when any problem occurs

Make sure of the following when the sound bar does not function properly.

- The power cords of all the devices are connected to AC wall outlets securely.
- The sound bar, TV and AV devices are turned on.
- The connectors of each cable are securely inserted into jacks on each device.

When a problem occurs: Power or overall functionality

The power turns off suddenly

The Auto Power Standby function turned off the sound bar.

Enabling the Auto Power Standby function turns off the sound bar automatically in any of the following situations.

- · No control operations for eight hours
- No audio input and no control operations for 20 minutes

Turn on the sound bar again. The Auto Power Standby function can be disabled.

"Enabling/disabling the Auto Power Standby function" (p.45)

• The protection circuitry has been activated. (The TV indicator on the sound bar flashes red.)

After confirming that all connections are made properly, turn on the sound bar again. If the power still turns off frequently, unplug the power cord from the AC wall outlet and contact the nearest authorized Yamaha dealer or service center.

The power cannot be turned on

■ The protection circuitry has been activated three times consecutively.

To protect the product, the power cannot be turned on. Unplug the power cord from the AC wall outlet and contact the nearest authorized Yamaha dealer or service center.

No operations can be performed from the sound bar's controls

• The controls of the sound bar are locked.

Unlock the controls of the sound bar.

• "Enabling/disabling the Child Lock function" (p.46)

All indicators are off although the power is on (the power appears to be off)

• Indicator brightness is set to "Off".

Change the brightness.

• "Changing the brightness of the indicators (Dimmer)" (p.40)

The sound bar does not function correctly

- The internal microcomputer is frozen due to an external electric shock (such as lightning or excessive static electricity) or to a drop in the power supply voltage.
 - Press the Reset button on the rear of the sound bar for at least 10 seconds to force the sound bar to turn off. Wait for at least 10 seconds, then turn on the sound bar again.

The sound bar turns on by itself

Another Bluetooth device is being operated nearby.

Terminate the Bluetooth connection with the sound bar.

• "Listening to audio from a Bluetooth® device" (p.37)

The sound bar cannot be controlled with the remote control

The sound bar is out of the operating range.

Use the remote control within the operating range.

• "Part names of the remote control" (p.14)

• The battery has run out.

Replace the battery with a new one.

- "How to replace the remote control battery" (p.71)
- The remote control sensor of the sound bar is exposed to direct sunlight or strong lighting.

Adjust the lighting angle or reposition the sound bar.

The sound bar cannot be controlled using the TV's remote control

The HDMI Control function is not properly configured.

Confirm that the settings are properly configured as follows:

- The HDMI Control function of the sound bar is enabled.
- The HDMI Control function is enabled on the TV.
- In the TV's HDMI settings, the audio output destination is set to an option other than the TV's built-in speakers.

If the sound bar still cannot be controlled with the TV's remote control, perform the following:

- Turn off the sound bar and the TV, and then turn them back on again.
- Unplug the power cord of the sound bar, as well as the power cords of external devices connected to the sound bar via an HDMI cable, from the AC wall outlet. Plug them in again after about 30 seconds.

Related links

"Enabling/disabling the HDMI Control function" (p.44)

The TV does not support the sound bar's control functions.

Even if your TV supports the HDMI Control function, some functions may not be available. For details, see the documentation supplied with your TV.

When a problem occurs: Audio

No sound

• The input source you are attempting to play back from is not selected.

Select the correct input source.

· "Basic control during playback" (p.29)

The mute function is active.

Cancel the mute function.

"Basic control during playback" (p.29)

• The volume is too low.

Turn up the volume.

"Basic control during playback" (p.29)

• The power cord of the sound bar is not connected securely.

Make sure that the power cord of the sound bar is properly connected to an AC wall outlet.

An input jack is connected to another input jack.

Connect the input jack on the sound bar to the output jack on the AV device.

Signals that the sound bar cannot play back are being input.

Change the digital audio output setting on the TV or AV device to a type of audio signal supported by the sound bar.

"Supported digital audio signal formats" (p.76)

● The HDMI Control function is disabled.

When connecting a TV that supports ARC (Audio Return Channel) to the sound bar using an HDMI cable only, enable the HDMI Control function.

To output audio from the sound bar when the HDMI Control function is disabled, connect the TV's audio output jack to the sound bar's TV jack (digital optical) via a digital optical audio cable.

- "Enabling/disabling the HDMI Control function" (p.44)
- "Connecting a TV using an HDMI cable (sold separately)" (p.23)
- The audio output destination of an HDMI Control-enabled TV is set to the TV's built-in speakers.

In the TV's HDMI settings, set the audio output destination to an option other than the TV's built-in speakers.

No sound is coming from the subwoofer

● The playback source does not contain subwoofer channel signals or low-frequency signals.

Try to play content containing subwoofer channel signals, to see if any sound can be heard from the subwoofer.

• The volume of the subwoofer is too low.

Turn up the volume of the subwoofer.

• "Adjusting the volume of the subwoofer" (p.34)

The volume decreases when the sound bar is turned on

■ The Automatic Volume Adjustment function is activated.

To prevent unexpected excessive loudness, if the sound bar was turned off with the volume set high, the volume is automatically adjusted the next time the sound bar is turned on. Turn up the volume if necessary.

• "Basic control during playback" (p.29)

No surround effect

Stereo playback is selected.

Select surround playback.

· "Surround playback" (p.32)

• The volume is too low.

Turn up the volume.

· "Basic control during playback" (p.29)

● The TV or AV device is set to output 2-channel audio (such as PCM) only.

Change the audio output setting on the TV or AV device to output Bitstream audio signals.

Sound is also heard from the TV's built-in speakers.

Turn the TV's volume all the way down.

• You are listening from a position that's extremely close to the sound bar.

You should listen at some distance from the sound bar.

Noise is heard

● The sound bar is too close to another digital or high-frequency device.

Move those devices away from the sound bar.

When a problem occurs: Bluetooth®

The sound bar cannot be connected to a Bluetooth® device

Bluetooth is not selected as the input source of the sound bar.

Select Bluetooth as the input source.

- "Listening to audio from a Bluetooth® device" (p.37)
- The sound bar is too far away from the Bluetooth device.

Move the Bluetooth device closer to the sound bar.

 A device emitting electromagnetic waves (such as a microwave oven or a wireless device) is located nearby.

Do not use the sound bar near devices that emit electromagnetic waves.

The Bluetooth device you are using does not support the A2DP profile.

Use a Bluetooth device that supports the A2DP profile.

The connection profile registered in the Bluetooth device is not functioning correctly.

Delete the connection profile in the Bluetooth device, and then connect the Bluetooth device to the sound bar.

The passkey for devices such as a Bluetooth adapter is not "0000".

Use a Bluetooth device with a passkey of "0000".

The sound bar is already connected to another Bluetooth device (when connecting a Bluetooth device for the first time).

Terminate the current Bluetooth connection, and then connect to the new device.

The sound bar is already connected to two Bluetooth devices (when these devices have been connected to the sound bar before).

Disconnect one of the currently connected Bluetooth devices, and then connect to another device.

• The Bluetooth function of the sound bar is disabled.

Enable the Bluetooth function.

"Enabling/disabling the Bluetooth function" (p.48)

No sound can be heard or the sound cuts off intermittently from a Bluetooth® device

The volume on the Bluetooth device is too low.

Raise the volume on the Bluetooth device.

Bluetooth is not selected as the input source of the sound bar.

Select Bluetooth as the input source.

- "Listening to audio from a Bluetooth® device" (p.37)
- Playback is not being performed on the Bluetooth device.

Perform playback on the Bluetooth device.

The audio output destination on the Bluetooth device is not set to the sound bar.

Select the sound bar as the audio output destination on the Bluetooth device.

● The connection to the Bluetooth device was terminated.

Connect to the Bluetooth device again.

The sound bar is too far away from the Bluetooth device.

Move the Bluetooth device near the sound bar.

 A device emitting electromagnetic waves (such as a microwave oven or a wireless device) is located nearby.

Do not use the sound bar near devices that emit electromagnetic waves.

Playback is being performed on another Bluetooth device.

Stop the current playback, and perform playback on the other Bluetooth device.

When a problem occurs: App

The app cannot detect the sound bar

An app not supported by the sound bar is being used.

The sound bar supports Sound Bar Remote only. Sound Bar Controller, Home Theater Controller, and MusicCast Controller cannot be used.

■ The Bluetooth function on the mobile device is disabled.

Enable the Bluetooth function on the mobile device.

• On an Android device, the function for obtaining location information is disabled.

To detect Sound Bar Remote, configure the settings to allow obtaining of location information on the Android device.

Other actions

How to minimize standby power consumption

Change the settings as follows:

- HDMI Control: Disabled
- Bluetooth Standby: Disabled

Related links

- "Enabling/disabling the HDMI Control function" (p.44)
- "Enabling/disabling the Bluetooth Standby function" (p.47)

Precautions for remote control batteries

Before replacing the remote control battery with a new one, be sure to read the following precautions. Be sure to follow the precautions.



WARNING

- The remote control supplied with this product contains a coin/button cell battery. Do not ingest the coin/button battery. Keep
 new and used batteries away from children. If the battery compartment does not close securely, keep it away from children. If
 the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. If you think
 batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- Do not dispose of a battery in fire. Do not expose a battery to high temperatures, such as direct sunlight or a fire. Do not charge the supplied battery. The battery could burst or leak, causing a fire or injury.
- Do not disassemble a battery. If the battery leaks, avoid contact with the leaked fluid. If the contents of the battery get on your hands or in your eyes, it can cause blindness or chemical burns. If the battery fluid should come in contact with your eyes, mouth, or skin, wash immediately with water and consult a doctor.



CAUTION

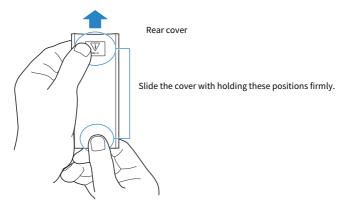
- Do not use a battery other than the specified one. Doing so may cause fire or burns, or result in fluid leakage that may cause skin inflammation.
- Always make sure the battery is inserted in conformity with the +/- polarity markings. Failure to do so might result in a fire, burns, or inflammation due to fluid leaks.
- When the battery runs out, or if the sound bar is not to be used for a long time, remove the battery from the remote control to prevent possible leakage of the battery fluid.
- Do not put in a pocket or bag, carry, or store batteries together with pieces of metal. The battery could short, burst, or leak, causing a fire or injury.
- When storing or discarding batteries, insulate the terminal area by applying tape, or some other protection. Mixing them with other batteries or metal objects can cause a fire, burns, or inflammation due to fluid.

How to replace the remote control battery

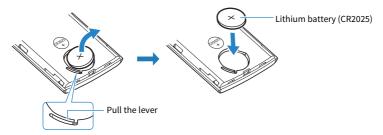
- Before replacing the battery with a new one, be sure to read the following precautions.
 - "Precautions for remote control batteries" (p.70)

When the battery runs out, the sound bar can no longer be controlled with the remote control. Replace the battery with a new one.

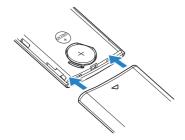
1 Slide the cover in the direction of the arrow to remove it.



2 Remove the old battery and insert a new one.



3 Slide the cover back into its position in the direction of the arrow.



How to reset the sound bar

Reset the sound bar by performing the following operations.

Force the sound bar to turn off

Press the Reset button on the rear of the sound bar for at least 10 seconds. The sound bar is forced to turn off.

■ To initialize the sound bar

Refer to the following explanation and reset the settings of the sound bar to the factory presets. "Initializing the sound bar" (p.51)

APPENDIX

Specifications of the Sound Bar

The specifications of the Sound Bar are as follows.

Amplifier section

Maximum rated output power

• Front L/R 30 W × 2 channels

• Subwoofer 60 W

Speaker section

Front L/R

Type
 Acoustic suspension type (non-magnetic shielding)

• Driver 5.5 cm (2-1/8") cone × 2

• Frequency response 160 Hz to 22 kHz

ullet Impedance $ullet \Omega$

Tweeter

Type
 Acoustic suspension type (magnetic shielding)

Driver
 2.5 cm (1") dome × 2
 Frequency response
 7 kHz to 23 kHz

• Impedance $6\,\Omega$

Subwoofer

Type
 Bass reflex type (non magnetic shielding)

• Driver 7.5 cm (3") cone × 2

• Frequency response 55 Hz to 160 Hz

• Impedance $3 \Omega (6 \Omega \times 2)$

Decoder

Supported audio signalPCM (up to 2 channels)(HDMI (ARC)/optical input)Dolby Digital (up to 5.1 channels)

DTS Digital Surround (up to 5.1 channels)

Input jacks

Digital (optical) 2 (TV, OPTICAL)

• HDMI Control/Bluetooth Standby: On

Output jacks	
НДМІ	1 (HDMI OUT/TV (ARC))
Analog (RCA/monaural)	1 (SUBWOOFER OUT)
Other jacks	
USB	1 (UPDATE ONLY)
Bluetooth	
Function	Sink function (source device to this unit)
Bluetooth version	Ver 5.0
Supported profiles	A2DP
Supported codecs	Sink function: SBC, AAC
Bluetooth class	Bluetooth Class 1
Range (line-of-sight)	Approx. 10 m (33 ft)
Supported content protection method	SCMS-T (sink function)
Models for U.K. and Europe	
Radio frequency	2402 MHz to 2480 MHz
Maximum output power (EIRP)	9.7 dBm (9.3 mW)
General	
Power supply	
Models for U.S.A., Canada, Taiwan and Mexico	AC 100 to 120 V, 50/60 Hz
Models for U.K., Europe, and other areas	AC 100 to 240 V, 50/60 Hz
Power consumption	25 W (Rated)
Standby power consumption	
• [Models for U.S.A., Canada, Taiwan and Mexico]	
HDMI Control/Bluetooth Standby: Off	0.2 W
 HDMI Control/Bluetooth Standby: On 	0.5 W
• [Models for U.K., Europe, and other areas]	
 HDMI Control/Bluetooth Standby: Off 	0.2 W

0.5 W

Dimensions (W x H x D)

• Installing the Sound Bar in front of a TV, etc.

910 × 53 × 131 mm (35-7/8" × 2-1/8" × 5-1/8")

910 × 131 × 62 mm

(35-7/8" × 5-1/8" × 2-1/2")

• Mounting the Sound Bar on a wall, with spacers

Weight 3.2 kg (7.1 lbs)

NOTE

The contents of this User Guide apply to the latest specifications as of the publishing date. To obtain the latest User Guide, access the Yamaha website then download the User Guide.

Supported digital audio signal formats

The following digital audio signals are supported by this product.

TV, OPTICAL, and TV (ARC)

Audio formats	Details
2-channel Linear PCM	2 channels, 32 to 96 kHz, 16/20/24-bit
Bitstream	Dolby Digital, DTS Digital Surround

NOTE

The contents of this User Guide apply to the latest specifications as of the publishing date. The latest version of the User Guide is available to download from the Yamaha website.

List of indicator displays

The indicators of this product (the sound bar) display information primarily in the following ways:

NOTE

This document shows indicator glowing status as follows:



Off



Glowing

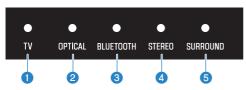


Flashing

■ Power off state



■ Normal playback state



n TV

Glowing: Playing audio from the TV

OPTICAL

Glowing: Playing audio from the OPTICAL input jack

6 BLUETOOTH

Glowing blue: Bluetooth device connection established Flashing white: Bluetooth device connection wait status

4 STEREO

Glowing: Stereo playback

SURROUND

Glowing green: Surround playback (3D surround enabled)
Glowing white: Surround playback (3D surround disabled)

Off: Stereo playback

■ Muted state



An error occurred



Flashes red

NOTE

- When the brightness of the indicators is set to "Off", the indicators glow only during control operations.
- See the description of each setting for what the indicators will show when the setting is changed.

Related links

- "Basic control during playback" (p.29)
- "Showing the type of audio signal and settings for functions" (p.42)
- "Changing the brightness of the indicators (Dimmer)" (p.40)
- "When a problem occurs: Power or overall functionality" (p.53)

Trademarks

DOLBY AUDIO

Manufactured under license from Dolby Laboratories.

Dolby, Dolby Audio, Pro Logic, and the double-D symbol are trademarks of Dolby Laboratories.





For DTS patents, see http://patents.dts.com.

Manufactured under license from DTS, Inc. DTS, the Symbol, DTS and the Symbol together, DTS Digital Surround, and DTS Virtual:X are registered trademarks or trademarks of DTS, Inc. in the United States and/or other countries.

© DTS, Inc. All Rights Reserved.



HIGH-DEFINITION MULTIMEDIA INTERFACE

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.



The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc., and any use of such marks by Yamaha Corporation is under license. Other trademarks and trade names are those of their respective owners.

About third party software programs

This sound bar uses the following third party software programs.

- CMSIS
- CMSIS Device
- STM32F4 HAL
- FatFS
- STM32_USB_Host_Library
- GNU LIBRARY

For the copyright, and license agreement terms and conditions of each software program, see the following.

NOTE

Upon request from the right holder of each program, the original text (English) is listed as is.

■ CMSIS

Copyright © 2009 - 2017 ARM LIMITED All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of ARM nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL COPYRIGHT HOLDERS AND CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

■ CMSIS Device

Copyright © 2017 STMicroelectronics.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of STMicroelectronics nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

■ STM32F4 HAL

Copyright © 2017 STMicroelectronics. All rights reserved.

This software component is licensed by ST under BSD 3-Clause license, the "License"; You may not use this file except in compliance with the License. You may obtain a copy of the License at:

https://opensource.org/licenses/BSD-3-Clause

■ FatFS

Copyright © 2017, ChaN, all right reserved.

FatFs module is an open source software. Redistribution and use of FatFs in source and binary forms, with or without modification, are permitted provided that the following condition is met:

1 . Redistributions of source code must retain the above copyright notice, this condition and the following disclaimer.

This software is provided by the copyright holder and contributors "AS IS" and any warranties related to this software are DISCLAIMED.

The copyright owner or contributors be NOT LIABLE for any damages caused by use of this software.

■ STM32_USB_Host_Library

Copyright © 2015 STMicroelectronics. All rights reserved.

This software component is licensed by ST under Ultimate Liberty license SLA0044, the "License"; You may not use this file except in compliance with the License. You may obtain a copy of the License at:

http://www.st.com/SLA0044

■ GNU LIBRARY

Version 2, June 1991

Copyright © 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such

programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- * a) The modified work must itself be a software library.
- * b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- * c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- * d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- * a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- * b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- * c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- * d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
- * a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- * b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Mounting the sound bar on a wall

Precautions for mounting the sound bar on a wall

Before mounting the sound bar on a wall, be sure to read the following precautions for safe installation. Be sure to follow the precautions.



CAUTION

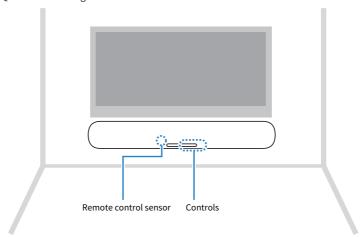
- For proper installation of the sound bar on a wall, make sure to have it done by the dealer from where you purchased the unit or by qualified service personnel. Some skills and experience are required for safe installation.
- Be sure to follow the precautions when mounting the sound bar on a wall. The sound bar may fall, resulting in injury.
 - Do not attach it to a wall constructed of weak materials such as drywall or plasterboard.
 - Use screws that are of the size specified in this document and that can support the weight of the installation. Do not use nails, two-sided tape, screws other than the size specified, or screws that are worn out or damaged.
 - Fix the cables in place so nothing will accidentally catch on them.
- Check that the sound bar is securely fixed in place after the installation. Yamaha will bear no responsibility for any accidents caused by improper installations.
- Do not lean on the sound bar or apply excessive force to its top. Doing so may cause the sound bar to fall.

Mounting the sound bar on a wall (for qualified service personnel)

- Before mounting the sound bar on a wall, be sure to read the following precautions.
 - "Precautions for mounting the sound bar on a wall" (p.88)

Use the screw-hanging holes on the sound bar to mount the sound bar on a wall.

[Search tag]#Q01 Wall mounting

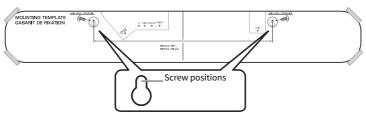


1 Attach the mounting template (supplied) on a wall.



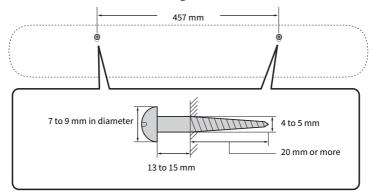
Tape or thumbtacks

2 Mark the positions for the screws.

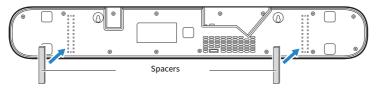


- 3 Remove the mounting template from the wall.
- 4 Install screws (sold separately) at the points marked on the wall.

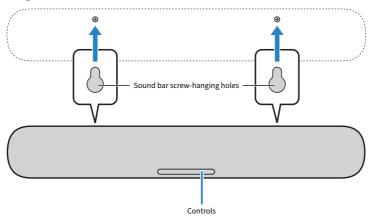
Be sure to use screws of the following size.



Peel off the backing paper from the spacers (supplied), and attach the adhesive face of each spacer to the bottom of the sound bar.



- 6 Connect cables to the sound bar.
- 7 Hang the sound bar on the screws.



Yamaha Global Site https://www.yamaha.com/

Yamaha Downloads https://download.yamaha.com/

Manual Development Group © 2021 Yamaha Corporation

Published 02/2022 NV-C0

AV19-0317