

DENON[®]

DENON HOME 150

WIRELESS SPEAKER

Owner's Manual



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Thank you for purchasing this Denon product. To ensure proper operation, please read this owner's manual carefully before using the product.

NOTE

- This document contains information that is subject to change without notice.

Introduction

The speaker is part of the HEOS system that enables you to enjoy your favorite music anywhere and everywhere around your home. By utilizing your existing home network and the HEOS app on your iOS or Android™ device, you can explore, browse, and play music from your own music library or from many online streaming music services.

- True multi-room audio - play different songs in different rooms or the same song in every room
- Utilizes your existing home wireless network for quick and easy setup
- Industry leading microsecond audio synchronization between speaker
- Legendary Denon audio quality
- If you are in a hurry, you can be enjoying great sounding music in no time by following the steps outlined in the Quick Start Guide (packaged with your speaker).



Please continue reading this Owner's Manual for more detailed information about the features and benefits of your speaker.



Before your begin

NOTE

- If you have already installed at least one speaker, please skip to the section “Adding more speakers” (🔍 p. 15).

System requirements

Before you begin installing your first speaker, please make sure you understand and meet a few basic requirements.

■ Network requirements

Wireless Router - In order to use your HEOS system, you must have a working wireless (Wi-Fi) or ethernet network in your home. Even when connected to an Ethernet network, a Wi-Fi connection to the router is required to control the system using the HEOS app. If you do not have a wireless network, please contact your local Denon dealer or electronics retailer to assist you with purchasing and installing a wireless network in your home.

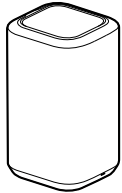
High Speed Internet Connection - HEOS system accesses the Internet to stream music to your home from many popular online music services. HEOS system is also designed to provide you with software updates, which are delivered via your home Internet connection. DSL, Cable, and Fiber services will provide the best experience and reliability. You may experience performance issues with slower Internet connections like satellite based services.



Getting to know your speaker

Unpack your speaker from the box and verify that the following items are included:

① Speaker



② Quick Start Guide



③ Safety Instructions



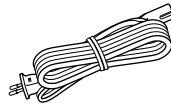
④ Notes on Radio



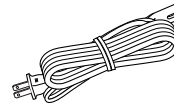
⑤ Warranty
(North America model only)



⑥ Power cord
(for Europe model)



⑦ Power cord
(for North America model)

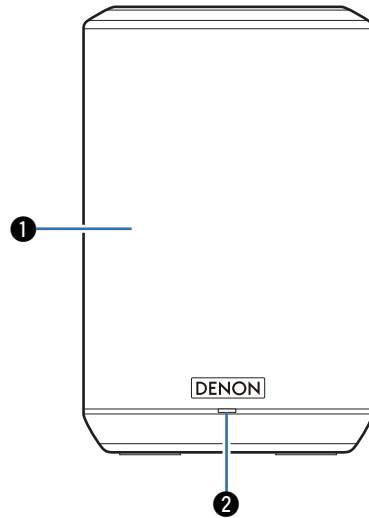


NOTE

- Please use the power cord included in the box for your device.



■ Front panel



① Speakers

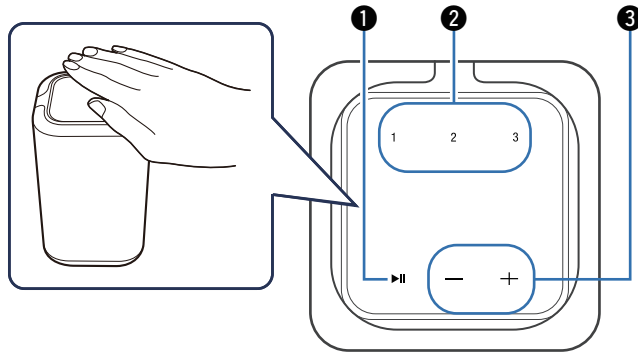
② Status LED

Please refer to the “Status LED table” for LED color and state meaning. (☞ p. 55)



■ Top panel

Hold your hand over the top of the speaker to show the operation panel buttons. Touch these buttons to perform operations. Moving your hand away from the area hides the buttons.



① Play/pause button (▶||)

- Press this button to pause during playback. If pressed while paused or stopped, resumes playback from the last track played.
- Press and hold the button for 5 seconds to enter Deep Standby mode. (👉 p. 49)

② Quick select buttons (1 - 3)

Register input source settings to these buttons or recall those settings. (👉 p. 17)

③ Volume buttons (+, -)

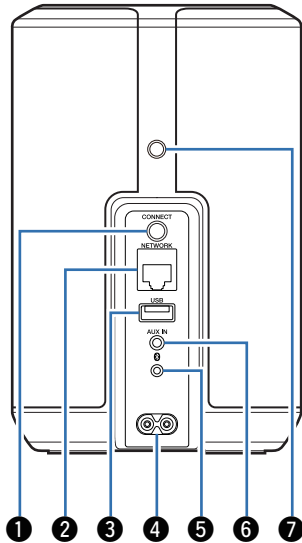
These adjusts the volume level.

NOTE

- Do not put anything on top of the speaker. Doing so may lead accidental operations.



■ Rear panel



- 1 CONNECT button**
Used for Wi-Fi setup. (👉 p. 53)
- 2 NETWORK connector**
Used to connect this unit to a wired Ethernet network. (👉 p. 15)
- 3 USB port**
Used to connect USB memory devices. (👉 p. 21)
- 4 AC inlet**
Used to connect the power cord. (👉 p. 12)
- 5 Bluetooth button (📶)**
Used in the Bluetooth pairing settings. (👉 p. 22)
- 6 AUX input connector (AUX IN)**
Used to connect audio devices. (👉 p. 20)
- 7 Mounting screw hole**
Used when mounting this unit to the wall or ceiling. (👉 p. 11)



Placing your speaker

You can place your speaker anywhere you want to enjoy great sounding music. Please follow these simple guidelines when determining where to place your speaker...

- The speaker must be within range of your wireless network.
- The speaker is designed to sound best when placed 3 to 12 inches (8 - 30 cm) from a wall.
- Locate the speaker at least 12 inches (30 cm) from a television, computer, or other display device to avoid the possibility of interference.
- Place the speaker across the room from where you will be listening, as close to ear level as possible.
- The speaker is not waterproof. Do not place it near any water source and do not leave it outside in the rain or snow.

■ Wall or ceiling mounting

This speaker can be mounted on a wall or ceiling using a standard speaker or camera mount/attachment (1/4 inches / 6.35 mm diameter) that supports at least 14 lbs 16 oz / 6.8 kg. For more information, contact the store you purchased the speaker.

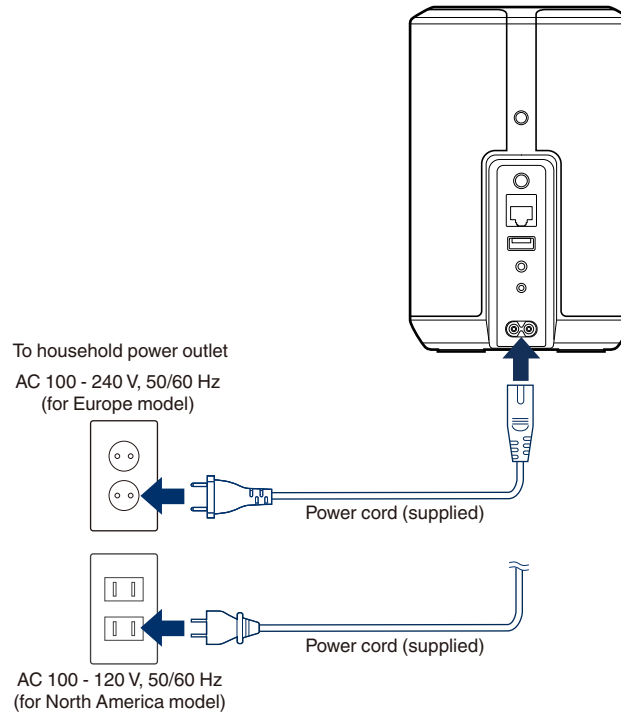
Caution

- Use a commercial bracket (sold separately) to attach this unit to the wall or ceiling. Do not attach it directly to the wall or ceiling.
- If attaching this unit to the wall or ceiling, check that it is attached securely. Please be aware that Denon accepts no responsibility for any damage if the unit falls.



Powering your speaker

Connect the power cord included in the box to the rear panel of the speaker and the plug to a wall outlet. The speaker is capable of automatically switching between 100 - 240 V.



Getting the HEOS app

The HEOS app is the heart of the HEOS system experience. Using your mobile device and the HEOS app, you can setup, browse, explore, and control your HEOS system right in the palm of your hand, from anywhere in your home.

Download the HEOS app for iOS or Android by searching App Store®, Google Play™ store or Amazon App Store for “HEOS”.



For the purpose of improvement, the specifications and design are subject to change without notice.



Setting up your first speaker

Once you have placed your speaker in your listening room and have downloaded the HEOS app, you are ready to configure your speaker for music playback. This involves following a few simple steps to get the speaker connected to your existing home network:

Caution

- Do not connect the Ethernet cable if you are connecting your speaker to a wireless network. If you are connecting the speaker to a wired network, use an Ethernet cable sold separately to connect the speaker to your network or router.

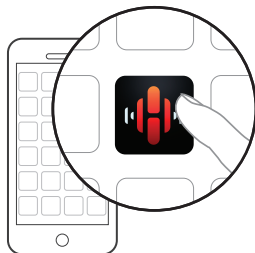
1 Make sure your mobile device is connected to your wireless network (the same network you want your speakers connected to).

You can check this in the “Settings” - “Wi-Fi” menu of your iOS or Android device.

NOTE

- Activate the Bluetooth setting on your mobile device.
- If your wireless network is secure, make sure you know the password to join your network.

2 Launch the HEOS app on your mobile device.



3 Tap the “Setup Now” button at the top of the screen.

4 Follow the instructions to add the speaker to your wireless network.

NOTE

- If you have any problems connecting your speaker, jump to the Troubleshooting section (🔍 p. 50).



Adding more speakers

The HEOS system is a true multiroom audio system that automatically synchronizes audio playback between multiple speakers so that the audio coming from different rooms is perfectly in sync and always sounds amazing! You can easily add up to 32 speakers to your HEOS system.

Adding wired speakers

Just connect the speaker to your home network using an Ethernet cable and the speaker will appear on your HEOS app as a new room in the “Rooms” screen.

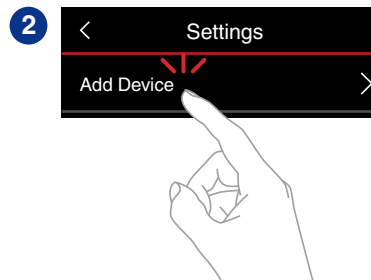
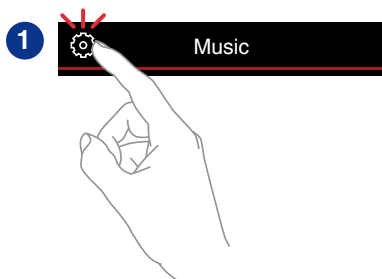
At your convenience, you can assign a name to the speaker to indicate which room you have it placed in.



- Use only a shielded STP or ScTP LAN cable which is easily available at electronics stores (CAT-5 or greater recommended).
- Do not connect a NETWORK connector directly to the LAN port/Ethernet connector on your computer.

Adding wireless speakers

You can add additional speakers to your HEOS system by selecting “Add Device” from the HEOS app’s settings menu and follow the instructions:



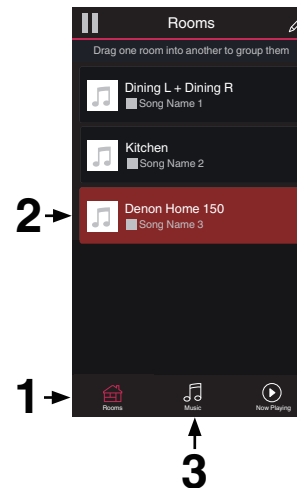
Using your speaker

Once you have your speaker connected to your network and the HEOS app installed on your mobile device, it's easy to start enjoying your favorite music. You can listen to something different on every speaker or the same music perfectly synchronized on all speakers. It's up to you!

Selecting a room/speaker

If you have more than one speaker, you must tell the HEOS system which speaker you want to control:

- 1 Tap the “Rooms” tab.
- 2 Select the Room/Speaker you want to control.
- 3 Select the “Music” tab to select a music source or the “Now Playing” tab to control what is currently playing in the selected room.



Quick Select function

Input source settings can be registered to the Quick select buttons (1 - 3).

- 1 To register the current settings, press and hold down one of the Quick Select buttons (1 - 3) on the top panel for 3 seconds.**



- The status LED blinks once when registration is complete.
- To recall the registered settings, press the Quick Select button on the top panel.

[Default settings]

Button	Input source
Quick Select 1	AUX In
Quick Select 2	—
Quick Select 3	—



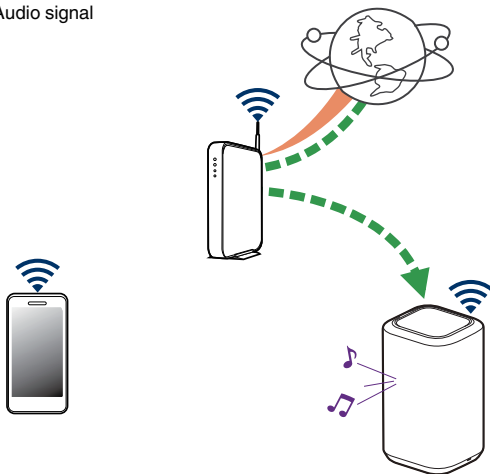
Listening to radio

The HEOS system includes access to more than 100,000 free internet radio streams from all corners of the globe via the Tuneln radio service. Just select the Tuneln logo from the main “Music” menu and browse among the 100,000 stations neatly organized into popular categories and select a station that appeals to your mood.

NOTE

- If you have a Tuneln account, you can sign into the Tuneln service under “Settings” - “Music Sources” - “Tuneln”, and access all of your “My Favorites” Tuneln stations.

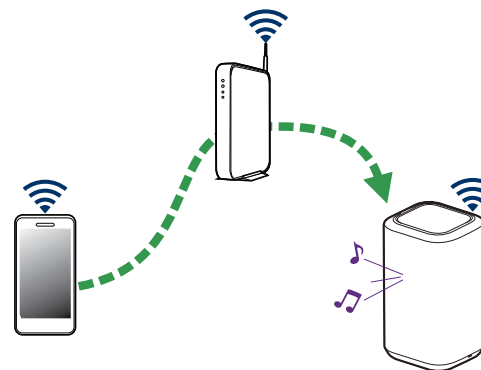
■ ■ ■ Audio signal



Playing music stored on your mobile device

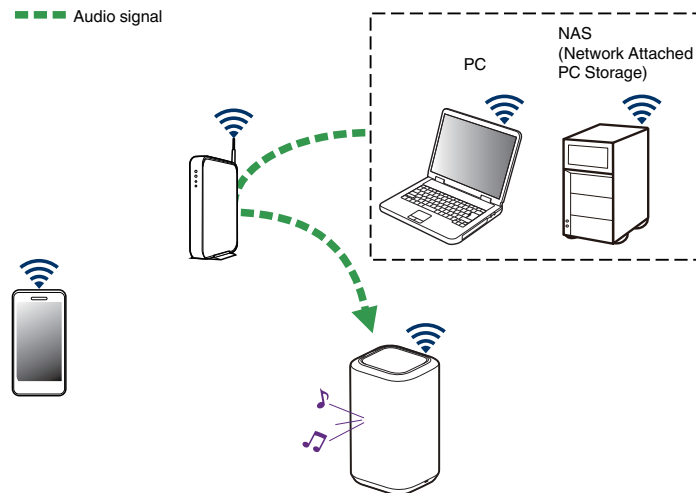
- 1 Tap the “Music” tab.
- 2 Select “This iPhone/iPod/iPad/Phone”.
- 3 Browse the local music on your phone and select something to play.

■ ■ ■ Audio signal



Playing music from your networked PC or NAS

- 1 Select “Music Servers” from the “Music” tab.
- 2 Select the name of your networked PC or NAS (Network Attached Storage) server.
- 3 Browse the music on your PC/NAS and select something to play.



Playing music from the AUX input

1 Connect an audio device with a 3.5 mm stereo audio output to the AUX input on your speaker using a 3.5 mm stereo audio cable sold separately.

When a 3.5 mm stereo audio cable is connected to “AUX IN”, the source automatically switches to Inputs.

NOTE

- When there is a cable connected to AUX IN, select “Inputs” from the “Music” tab.

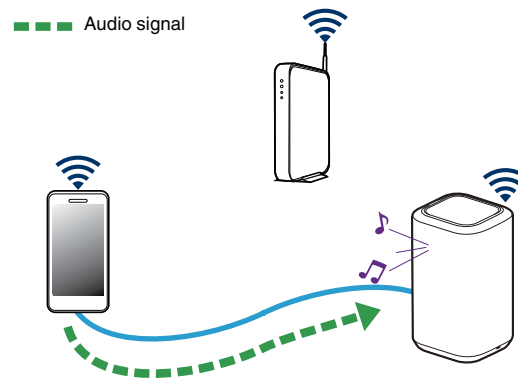
2 Initiate playback on the audio device.



- The sound from the audio device can be played directly on the selected speaker or digitized and sent over your network to other speakers.

NOTE

- The analog output signals from some sources can be fairly strong. If the input level of the source device is turned up high, it could overload the inputs of the speaker. This is unlikely to cause damage, but can cause distorted sound. Initially, set the volume of the source to a medium – low level, then turn it up as needed. If you hear distortion, turn down the device's volume control.

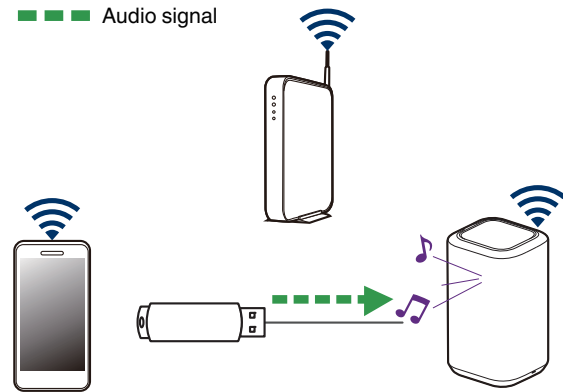


Playing music from a USB memory device

- 1** Insert a FAT32 or NTFS formatted USB memory device into the USB port on the rear panel of the speaker.
- 2** Select “USB Music” from the “Music” tab.
- 3** Select the name of your speaker.
- 4** Browse the music on your USB memory device and select something to play.

NOTE

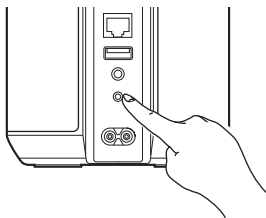
- It may take several minutes for the name of your speaker to appear in the “USB Music” list if you have a large number of files on your USB memory device.
- It is not possible to connect and use a computer via the USB port of this unit using a USB cable.



Playing music from Bluetooth device

■ Pairing the speaker with your Bluetooth devices

- 1 Activate the Bluetooth setting on your mobile device.
- 2 Press and hold the Bluetooth button (📶) located on the rear panel of the speaker for 3 seconds and release the button when you see a pattern of two green flashes on the status LED.



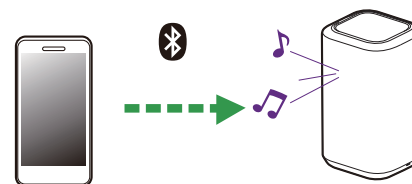
- 3 Select “Denon Home 150” from the list of available Bluetooth devices.

In a few seconds your mobile device will indicate that it is connected to your speaker.

- 4 Play music using any app on your device.

The sound will now play from the speaker.

■ ■ ■ Audio signal



NOTE

- Disconnect and reconnect Bluetooth connections from your Bluetooth device.



HEOS account

■ What is a HEOS account?

A HEOS account is master account or “keychain” for managing all of your music services with one single username and password.


■ Why do I need a HEOS account?

With the HEOS account you just have to enter your music services login names and passwords one time. This allows you to easily and quickly use multiple controller apps on different devices. You just log into your HEOS account on any device and you will have access to all of your associated music services, play history and custom playlists, even if you are at a friend’s house listening to music on their HEOS system.

■ Signing up for a HEOS account

You will be instructed to signup for a HEOS account the first time you try to access any music service from the main “Music” menu of the HEOS app.

■ Changing your HEOS account

- 1 Tap the “Music” tab.
- 2 Select the Settings  icon in the upper left corner of the screen.
- 3 Select “HEOS Account”.
- 4 Change your location, change your password, delete your account or sign out of your account.



Playing from streaming music services

A music service is an online music company that provides access to vast music collections via free and/or paid subscriptions. Depending upon your geographical location, there are several options to choose from.

NOTE

- The HEOS app and brand is not affiliated with any manufacturer of any mobile device. Availability of music services may vary by region. Not all services may be available at time of purchase. Some services may be added or discontinued from time to time based on decisions of the music service providers or others.


■ Adding a music service

Once you've setup your HEOS account, you can add supported music services to your HEOS system by tapping on the music service logo in the "Music" tab.

Follow the instructions on the screen to add your username and password for the selected music service. You only have to enter your account information once as the HEOS account service will securely remember your login information so you don't have to enter it each time you want to play music from the music service.

Additional music services may be available under "Settings" - "Music Sources" - "Online Music".


■ Changing music service settings

- 1 Tap the "Music" tab.
- 2 Select the Settings  icon in the upper left corner of the screen.
- 3 Select "Music Sources".
- 4 Select "Online Music".
- 5 Select the name of the online music service you want to edit.
- 6 Sign out, then sign in again to associate your username and password with your HEOS account.
- 7 Select "Hide for Now" to prevent the service logo from appearing on the main "Music" menu.



Managing inputs

If you connected external audio source components to any of your speakers inputs, you can rename the default input names to describe the actual source or hide any inputs that are not being used.

- 1** Select the **Settings**  icon located in the upper left corner of the main “Music” menu to display the Settings menu.
- 2** Select “Music Sources”.
- 3** Select “Inputs”.
- 4** Select the speaker which you connect your external audio source device to.

■ Changing the name of the inputs

- 1** Select the name of the input you want to edit.
- 2** Select “Name”.
- 3** Select or enter a new name to describe the source that you connected.
- 4** Select the Save button to save your changes.


■ Hiding an input

- 1** Select the name of the input you want to edit.
- 2** Toggle “Hide Input” to ON to prevent this input from appearing under the Inputs tile on the main “Music” menu.



Managing your phone

Your smartphone or tablet can be hidden if it does not need to be in the “Music Sources” menu.

- 1** Select the **Settings**  icon located in the upper left corner of the main “Music” menu to display the Settings menu.
- 2** Select “Music Sources”.
- 3** Select “This iPhone/iPod/iPad/Phone”.
- 4** Toggle “This iPhone/iPod/iPad/Phone” to OFF to prevent the service logo from appearing on the main “Music” menu.



Listening to the same music in multiple rooms

The HEOS system is a true multiroom audio system that automatically synchronizes audio playback between multiple speakers so that the audio coming from different rooms is perfectly in sync and always sounds amazing!

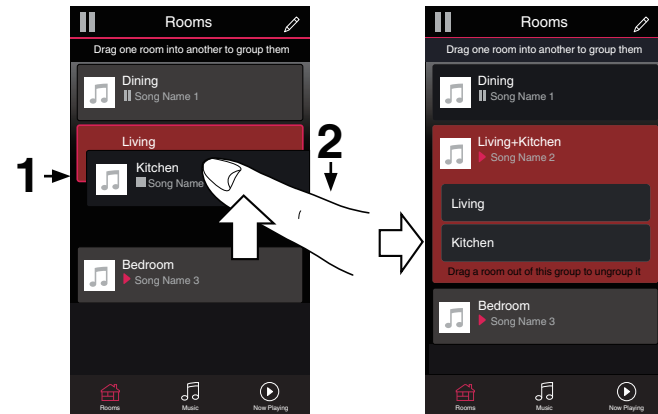
You can easily add up to 32 speakers to your HEOS system.

You can join or group up to 16 individual speakers into a group of speakers that function as if they were a single speaker.

■ Grouping rooms

- 1 Press and hold your finger on room that is not playing music.**
- 2 Drag it into the room that is playing music (indicated by the red outline) and lift your finger.**

The two rooms will be grouped together into a single device group and both rooms will be playing the same music in perfect sync.



■ Ungrouping rooms

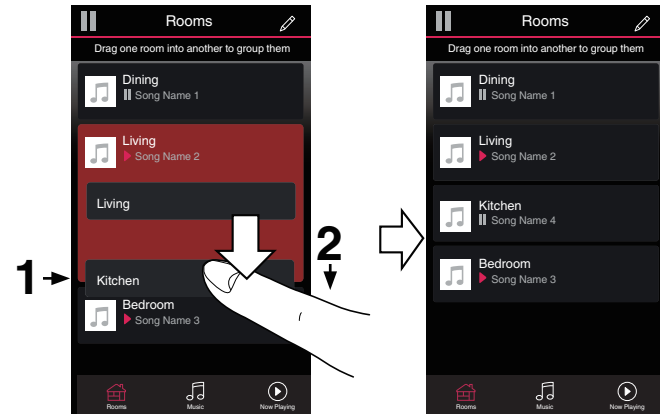
- 1 Press and hold your finger on room that you want to remove from the group.

NOTE

- You can not remove the first room that started playing the music before grouping.

- 2 Drag it out of the group and lift your finger.

Music will stop playing in the room you dragged out of the group but will continue playing in any remaining rooms.



■ Grouping all rooms (party mode)

You can easily group 16 rooms together into Party Mode by using a “pinch” gesture.

1 Place two fingers on the screen over the list of rooms.

2 Quickly pinch your two fingers together and release.

All of your rooms will be joined together and begin playing the same music in perfect sync.



■ Ungrouping all rooms

You can easily ungroup all of your rooms and exit Party Mode by using a “spread” gesture.

- 1 Place two fingers close together on the screen over list of rooms.**
- 2 Quickly spread your two fingers apart from each other and release.**


All of your rooms will be ungrouped and music will stop playing in every room (except the original “master” room that was playing before you grouped the rooms together).

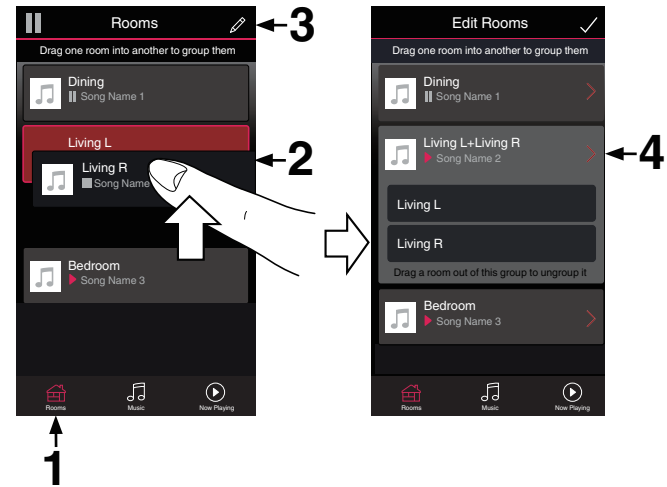


Stereo pairing

■ Creating a stereo pair

A matching pair of speakers that have been grouped together (see above) can be saved as a persistent stereo pair where one speaker outputs the left channel of audio and the other speaker outputs the right channel of audio. Paired speakers will then appear as a single room (with two speakers playing music) in the Rooms list.

- 1 Tap the “Rooms” tab.
- 2 Create a group containing ONLY two matching speakers (see “Grouping rooms” (p. 27)).
- 3 Tap the Pencil  icon to enter Edit mode.
- 4 Tap on the Group of two matching speakers to Edit the Group.

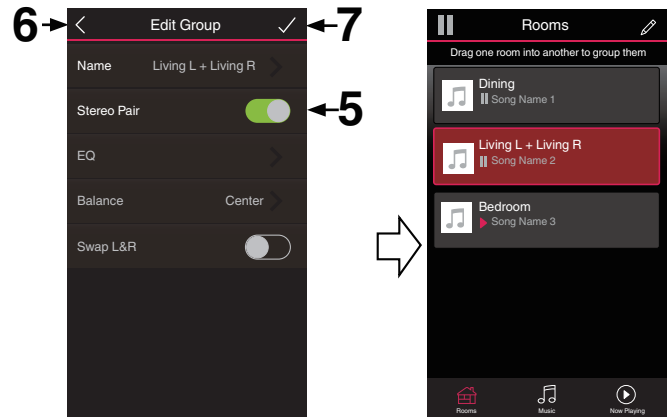


5 Tap on the Stereo Pair switch to pair the two speakers.



6 Tap the Back arrow  to return to the list of Rooms.

7 Tap the Check Mark  icon to exit Edit mode.



The group of two matching speakers will now appear as a single room. You can change the name of the stereo paired room at any time.



■ Changing the name of a stereo pair




- 1 Tap the “Rooms” tab.
- 2 Tap the Pencil  icon to enter Edit mode.
- 3 Tap a Stereo Pair (a room which contains two matching speakers) to edit the group.
- 4 Tap “Name”.
- 5 Select or enter a new name for your pair of speakers.
- 6 Tap the Save  button to save your changes.

■ Adjusting the balance




- 1 Tap the “Rooms” tab.
- 2 Tap the Pencil  icon to enter Edit mode.
- 3 Tap a Stereo Pair (a room which contains two matching speakers) to edit the group.
- 4 Select “Balance”.
- 5 Adjust the Balance to the left or right.
- 6 Tap the Check Mark  icon to exit Edit mode.



■ Swapping left and right channels in a stereo pair

- 1 Tap the “Rooms” tab.
- 2 Tap the Pencil  icon to enter Edit mode.
- 3 Tap a Stereo Pair (a room which contains two matching speakers) to edit the group.
- 4 Tap on the Swap L&R switch to swap the left and right channels of the two speakers.
- 5 Tap the Back arrow  to return to the list of Rooms.
- 6 Tap the Check Mark  icon to exit Edit mode.

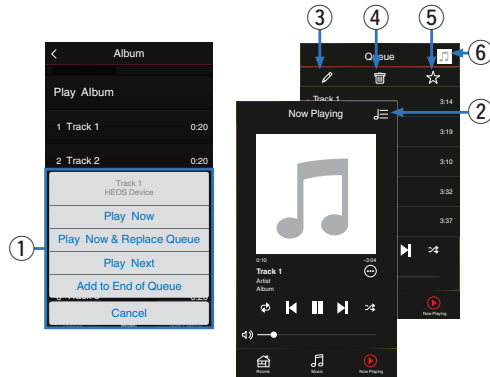
■ Removing a stereo pair

- 1 Tap the “Rooms” tab.
- 2 Tap the Pencil  icon to enter Edit mode.
- 3 Tap a Stereo Pair (a room which contains two matching speakers) to edit the group.
- 4 Tap on the Stereo Pair switch to return the paired speakers to two individual speakers.
- 5 Tap the Back arrow  to return to the list of Rooms.
- 6 Tap the Check Mark  icon to exit Edit mode.



Using the now playing queue

HEOS system uses a Now Playing “Queue” to line up music that you want to listen to. Music can be selected from any of your local or online music sources (as long as they are not preprogrammed “radio” or “station” type streams). This feature works similarly to how a jukebox works. You select something to play (a song, album, playlist or even your entire music collection) and add it to the “Queue”. When you select something to play you will be asked how you want to queue up your music.



1 Queue Menu

When you select something to play you will be asked how you want to queue up your music.

2 Queue icon

3 Pencil icon

4 Delete icon

5 Save icon

6 Cover art or HEOS icon

You can return to the “Now Playing” screen display by tapping the cover art or the HEOS icon.

■ Play Now

Inserts the item into the queue after the currently playing track and plays the selected item immediately.

■ Play Now & Replace Queue

Clears the queue and plays the selected item immediately.

■ Play Next

Inserts the item into the queue after the current song and plays it when the current song ends.




■ Add to End of Queue

Adds the item to the end of the queue.






Rearranging the now playing queue

Once you have songs lined up in your queue, you might want to rearrange the order or remove some songs:

- 1 Tap the “Now Playing” tab.
- 2 Tap the Queue  icon in the upper right corner of the screen.
- 3 Tap the Pencil  icon to enter Edit mode.
- 4 Rearrange the order of your queue by dragging the list  icon (on the right side of each track row) up or down.

Deleting songs from the play queue



You can remove songs one at a time from the Now Playing Queue:

- 1 Tap the “Now Playing” tab.
- 2 Tap the Queue  icon in the upper right corner of the screen.
- 3 Tap the Pencil  icon to enter Edit mode.
- 4 Tap the track(s) that you want to delete.
- 5 Tap the Delete  icon to delete all of the selected tracks from the play queue.






Deleting all songs from the play queue

You can remove all of the songs from the Now Playing Queue:

- 1 Tap the “Now Playing” tab.
- 2 Tap the Queue  icon in the upper right corner of the screen.
- 3 Tap the Delete  icon to confirm that you want to delete all songs from the queue.



Saving playlists

You can save the Now Playing Queue as a HEOS Playlist that you can recall later. The new playlist will be available from the Playlists button on the “Music” tab on every controller app connected to your HEOS system.

- 1 Tap the “Now Playing” tab.
- 2 Tap the Queue  icon in the upper right corner of the screen.
- 3 Tap on the Save  icon.
- 4 Enter a name for your Playlist and tap the  icon.

Performing repeat and shuffle playback

The playback controls are visible on the “Now Playing” screen.

- 1 Tap the “Now Playing” tab.
- 2 Tap the repeat  and shuffle  controls.



Using the favorite

HEOS system uses a "HEOS Favorites" to line up station you want to start play quickly the favorite stations.

Station can be selected from online music sources such as "Radio" or "Station" type streams. "HEOS Favorites" will display a list of the stations of various services.


■ Adding to HEOS favorite

Select a station of an online music source. When the action menu screen is displayed, select "Add Station to HEOS Favorites".

NOTE

- This can also be done by selecting "Add Station to HEOS Favorites" from the station menu of the station being played.

■ Deleting station from the HEOS favorite

- 1 Tap the "Music" tab.
- 2 Select "Favorites".
- 3 Tap the Pencil  icon to enter Edit mode.
- 4 Tap the "Delete" that you want to delete station.



AirPlay function

Music files stored on your iPhone, iPod touch, iPad or iTunes can be played on this unit via the network.

NOTE

- The screen may differ depending on the OS and software versions.

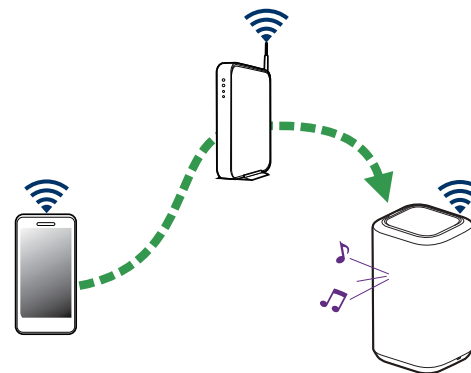
This device supports AirPlay 2®.

Sync multiple AirPlay 2 compatible devices/speakers for simultaneous playback.



- This unit supports AirPlay 2 and requires iOS 11.4 or later.

■ ■ ■ Audio signal



Playing songs from your iPhone, iPod touch or iPad

If you update your “iPhone/iPod touch/iPad” to iOS 4.2.1 or later, you can stream music stored in your “iPhone/iPod touch/iPad” directly to this unit.

1 Connect your iPhone, iPod touch or iPad Wi-Fi to the same network as this unit.

- For details, see your device’s manual.

2 Play the song on your iPhone, iPod touch or iPad.

AirPlay icon is displayed on the iPhone, iPod touch or iPad screen.

3 Tap the AirPlay icon and select this unit.

[Example] iOS 12



[Example] iOS 9

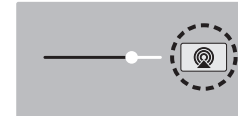


Playing iTunes music with your speaker

1 Install iTunes 10, or later, on a Mac or Windows PC that is connected to the same network as this unit.

2 Start iTunes and click the AirPlay icon to select this unit.

[Example] iTunes



3 Choose a song and click play in iTunes.

The music will stream to this unit.

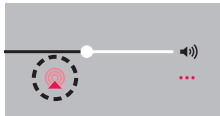


Play a song from your iPhone, iPod touch or iPad on multiple synced devices (AirPlay 2)

Songs from an iPhone, iPod touch or iPad operating iOS 11.4 or later can be synced with multiple AirPlay 2 supported devices for simultaneous playback.

1 Play the song on your iPhone, iPod touch or iPad.

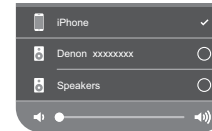
AirPlay icon is displayed on the iPhone, iPod touch or iPad screen.



2 Tap the AirPlay icon.

Displays a list of devices/speakers that can be played back on the same network.

- A circle is displayed to the right of AirPlay 2 compatible devices.




3 Tap the devices/speakers you want to use.

- Multiple AirPlay 2 compatible devices can be selected.
- Volume can be adjusted for each device individually or for all synced devices simultaneously.




Making speaker adjustments

You can adjust specific settings for each of your speakers in your system:

- 1** Select the **Settings**  icon located in the upper left corner of the main “Music” menu to display the **Settings** menu.
- 2** Select “**My Devices**” to display a list of your speakers.
- 3** Select the speaker you want to adjust.

Changing the name of a speaker

- 1** Select “**Name**”.
- 2** Select or enter a new name for your speaker.
- 3** Tap the  icon to save your changes.

Changing the wireless network connection

- 1** Select “**Network**”.
A list of wireless networks that your speaker can access is displayed.
- 2** Select the network you want your speaker to join.
Wait as the speaker’s network connection is changed.

NOTE

- Wired networking is automatically selected when the speaker is connected to a wired Ethernet network. To switch back to using a wireless network you must remove the Ethernet cable from the rear panel of the speaker.



Changing the speaker's equalizer

- 1 Select "EQ".
- 2 Adjust the "Treble" or "Bass" up or down.

NOTE

- Select the Reset button to restore the default settings.

Adjusting the audio quality

Selects the transcoding option for rebroadcasting audio from one speaker to another speaker (or group of devices) across the network. When set to high bit rate audio sources originating from the first device (such as analog input, WAV, FLAC and PCM) will be transcoded to ensure the highest level of reliability for the audio stream.

- 1 Select "Quality".
- 2 Select "Normal" (default) or "High".



- If you have selected "High" and you experience audio dropouts when streaming sources from one device to other devices, please select "Normal" (default).

Adjusting the status light brightness

- 1 Select "Status Light".
- 2 Adjust the brightness up or down or set the slider to the OFF position to completely disable the status light.



Advanced speaker settings

Caution

- Adjusting these settings may disconnect your speaker from your network and possibly render your speaker unusable. Do not use these features unless you are comfortable making advanced adjustments to your speaker.

■ Network settings

- Select “Advanced”.
- Select “NETWORK SETTINGS” tab.
- Scroll down to see all of the options for
 - Network Interface (Ethernet or Wireless)
 - Wireless Settings
 - IP Address Settings (Automatic or Manual)
 - Wireless Power Saving
- Select “Save Settings” to apply the new settings or “Cancel Changes” to revert to the previous settings.

■ About wireless power saving

The Wireless Power Savings feature saves power by turning off power to the wireless radio inside the speaker when the device is connected to an Ethernet network. If you disconnect the Ethernet cable from the speaker, Wireless Power Saving will automatically turn off and the wireless radio will turn on so that the speaker can be discovered over your wireless network.

NOTE

- If Wireless Power Savings is ON, Wi-Fi power will be temporarily turned on when accessing the “My Devices” - (“Device Name”) - “Network” screen in the HEOS app or whenever the CONNECT button on the device is pressed.



■ Firmware upgrade

- 1 Select “Advanced”.
- 2 Select “FIRMWARE UPDATE” tab.
 - Update status

 - Manually check for a firmware upgrade.

 - Allow updates

 - ON
(Default): Allows updates

 - OFF: Does not allow updates

- 3 Select “Save Settings” to apply the new settings or “Cancel Changes” to revert to the previous settings.

■ About

Viewing technical details about the speaker.

- 1 Select “Advanced”.
- 2 Select “ABOUT” tab.
- 3 Scroll down to see information about the speaker’s.
 - a. Hardware
 - b. Software
 - c. Device



Updating your system

HEOS system has the ability to add enhancements and updated functionality via your high speed Internet connection. Follow the instructions on the screen to update the speaker and/or your controller app.

- 1** Select the **Settings**  icon located in the upper left corner of the main “Music” menu to display the **Settings** menu.

- 2** Select “**Software Update**”.

Check for Update

Follow the instructions on screen to install any available updates to your HEOS system.

Auto-Update

ON
(Default):

Valid updates are performed automatically.


OFF:

You will be notified of valid updates on the HEOS app.



Advanced features

There are a few advanced features of the HEOS system that you may want to explore once you become familiar with the basic operations. You can access the advanced features of the HEOS system by following these steps:

- 1** Select the **Settings**  icon located in the upper left corner of the main “Music” menu to display the **Settings** menu.
- 2** Select “**Advanced Settings**” to display a list the available settings.

Sharing music from your mobile device

The HEOS app has a feature called “Music Sharing” which can share the local music stored on your mobile device to other HEOS app users on your local network. To enable this feature, select “Music Sharing”, and set it on “ON”.

The name of the device you are sharing from will appear as a music server allowing other HEOS apps to browse and play music from the your device.

Wireless performance

You can check the wireless connection status of your speaker.

Quality

Excellent / Good / Poor

NOTE

- If the quality level of your speaker is “Poor”, make sure your speakers are not located near other electronic devices that could interfere with it’s wireless connectivity (like microwave ovens, cordless phones, TVs, etc...)

Signal

Excellent / Good / Poor

NOTE

- If the signal level of your speaker is “Poor”, make sure your speakers are within range of your wireless network.



Submit diagnostics

If you are having trouble with your network or HEOS system, you may be asked by Denon technical support personnel to select this option. This feature will automatically send Denon technical support diagnostic information about your HEOS system.

NOTE

- No personal information is sent and your information will never be shared with anyone.

Resetting your controller app

This feature will reset the control app to its original state when you first installed it on your mobile device without requiring you to remove, download, and reinstall it from the app store.



Power management

Power modes

■ Quick Start Mode

This speaker automatically enters "Quick Start Mode" to save power in the following cases. During "Quick Start Mode", speaker operations cause the power to turn on.

During "Quick Start Mode", the status LED lights in dim blue.

□ Ethernet

After around 20 minutes of no operation and no network access after playing music via Ethernet.

□ Wi-Fi

After around 20 minutes of no operation and no network access after playing music via Wi-Fi.

□ USB

After around 20 minutes of no operation and no network access after playing music from a USB memory device.

□ Bluetooth

After the Bluetooth connection is disconnected and there is around 20 minutes of no operation and no network access after playing music via Bluetooth.

□ AUX IN

After around 20 minutes of no audio.

■ Deep Standby

The device also has the ability to automatically enter "Deep Standby" whenever the wired or wireless network connection is removed for more than 60 minutes in "Quick Start Mode". The front panel LED will turn off during Deep Standby.

Press any button to turn the power on.



- You also press the ►|| button for 5 seconds, the device enters the Deep Standby.

■ Off

To completely turn off the power to the device you must remove the mains plug from the power outlet.



Basic troubleshooting

Cannot connect the speaker to the network

Solution	Refer to Page
<ul style="list-style-type: none">• Make sure your mobile device is connected to your wireless network before setting up your speaker.	14
<ul style="list-style-type: none">• Alternatively, you can connect your speaker to your network router using an Ethernet cable sold separately. Once connected via Ethernet, the HEOS app should recognize the speaker and you can manually move it to your wireless network using “Settings” - “My Devices” - (“Device Name”) - “Advanced” - “Network Settings”.	15

Cannot pair a Bluetooth mobile device with the speaker

Solution	Refer to Page
<ul style="list-style-type: none">• The connection from the Bluetooth mobile device is malfunctioning. Power cycle the mobile device, remove the pairing information and re-pair the speaker to the mobile device.	–



Cannot hear Bluetooth music

Solution	Refer to Page
• Your Bluetooth mobile device is not paired with speaker. Re-pair the speaker to the mobile device.	—
• The speaker is Wi-Fi mode or Aux-in mode etc. Pair and connect Bluetooth device to speaker.	—
• The Bluetooth mobile device is connected to another audio device. Make sure your Bluetooth device is connected to speaker.	—
• The volume on Bluetooth mobile device is too low. Check the volume on the Bluetooth mobile device. Check the volume on the speaker.	—

Music cuts out or delays sometimes

Solution	Refer to Page
• Make sure your Internet connection is operating correctly. If you are sharing your network with other users or devices, they may be using most of your bandwidth (especially if they are streaming video).	6
• Make sure your speakers are within range of your wireless network.	47
• Make sure your speakers are not located near other electronic devices that could interfere with it's wireless connectivity (like microwave ovens, cordless phones, TVs, etc...).	47



I hear a delay when using the AUX input with my TV

Solution	Refer to Page
<ul style="list-style-type: none"> If you are connecting the AUX input with your cable or satellite box for enjoying TV audio through multiple speakers, you may hear a delay between when you see someone speak and when you hear the audio. This is because the HEOS system must buffer the audio before it sends it out to the speakers so that it arrives at all speakers at the same time. 	20
<ul style="list-style-type: none"> You can avoid this delay by listening only to the speaker which is directly connected to the set top box. 	—

Connecting to a network using an iOS device

Solution	Refer to Page
<p>This speaker supports Apple's "WAC (Wireless Accessory Configuration)" setup mode. WAC setup mode allows you to connect your speaker to your network without requiring you to type in the network name and password.</p> <ol style="list-style-type: none"> Press and hold - and ► buttons for 3 seconds. Go to the Wi-Fi menu under Settings on your iOS device. Select "Denon Home 150" under "SET UP NEW AIRPLAY SPEAKER..." at the bottom of the list. Select the network you want your speaker to connect to and select "Next". Follow the instructions on the screen to complete setup. <p>HEOS system will stay in WAC setup mode for 15 minutes. If the device is not setup within 15 minutes, it will revert back to its previous network connection. Press the ► button if you want to cancel WAC setup mode.</p> <p>The status LED will quickly blink 5 times.</p>	—



I hear distortion when using the AUX input

Solution	Refer to Page
<ul style="list-style-type: none"> The analog output signals from some sources can be fairly strong. If the input level of the source device is turned up high, it could overload the inputs of the speaker. This is unlikely to cause damage, but can cause distorted sound. Initially, set the volume of the source to a medium – low level, then turn it up as needed. If you hear distortion, turn down the device's volume control. 	—

Connecting to a WPS network

Solution	Refer to Page
<p>If your wireless router support WPS (Wi-Fi Protected Setup™) your speaker can optionally connect to your network using the "Push Button" method by following these steps:</p> <p>Wi-Fi Protected Setup™ is trademarks of Wi-Fi Alliance.</p> <ol style="list-style-type: none"> 1. Press the WPS button on your router. 2. Within 2 minutes, press and hold the CONNECT button on the rear panel of the speaker for 3 seconds. 3. The LED on the front of the speaker will flash green for several seconds as it connects to your WPS router. 4. When the connection is complete, the LED on the front of the speaker will turn solid blue. 	6



Resetting your speaker

Solution	Refer to Page
<p>Resetting your speaker will clear out the wireless network info, EQ, and name but retain it's current software. You will have to use "Settings" - "Add Device" to reconnect the speaker to your home network before it can be used.</p> <p>To reset your speaker, press and hold the CONNECT and Bluetooth (📶) buttons located on the rear panel of the speaker for 5 seconds until the front LED begins to flash amber.</p>	-






Buttons do not operate correctly

Solution	Refer to Page
<ul style="list-style-type: none"> Do not put anything on top of the speaker. 	-
<ul style="list-style-type: none"> Items near the top of the speaker (curtains, steel racks, etc.) may cause unintended button activation. 	-
<ul style="list-style-type: none"> Set up the speaker where there is nothing nearby. 	-
<ul style="list-style-type: none"> Unplug the power cord before cleaning the top panel. 	-






Status LED table






The LEDs on the front panel change to indicate the current speaker status.

Speaker status	LED action	Description
Deep Standby mode	 (off)	Power is off, or the speaker is in Deep Standby mode. (👉 p. 49)
Quick Start mode	 (dimmed solid)	Speaker is in Quick Start mode. (👉 p. 49)
Power on	 (blink)	Speaker is starting up or connecting to the network.
	 (solid)	Speaker is connected to the network.
	 (solid)	Speaker is unable to connect to the network. Try to connect the speaker again.








Speaker status	LED action	Description
WPS	 (fast blink)	Speaker is connecting to the network via WPS.
	 (for 3 sec. solid)	Speaker is connected to the network via WPS.
	 (for 3 sec. solid)	WPS has timed out.



Speaker status	LED action	Description
Bluetooth	 (two blinks)	Speaker is pairing via Bluetooth.
	 (one blink)	Speaker is paired via Bluetooth.
	 (for 3 sec. solid)	Speaker failed to pair to the Bluetooth device. Try to pair again. (👉 p. 22)
Volume setting	 (quick blink)	Volume is being adjusted.
	 (slow blink)	Speaker is muted.



Speaker status	LED action	Description
Firmware update	 (blink)	Firmware is being updated.
	 (slow blink (Not fade))	There is a firmware error. Check your usage environment, relaunch the app, then try to update the firmware again. (☞ p. 45)
Error	 (solid)	There was a setup error. Check your usage environment, then follow the correct procedure to try setup again. If the error occurs again, restore factory settings and try setup again. (☞ p. 54)
	 (fast blink)	There is a hardware error. Unplug the power cord, wait a little while, then plug the power cord back in.
Reset	 (blink)	Factory settings have been restored.



Supported file types and codecs

Frequency	Sample Rate	File Extension	Codec	Bit Rates
32/44.1/48 88.2/96/176.4 192 kHz	16/24 bit	wav	PCM	---
32 kHz 44.1 kHz 48 kHz	16 bit	mp3	MPEG-1 Audio Layer 3 CBR/VBR	32 - 320 kbps
32 kHz 44.1 kHz 48 kHz	16 bit	m4a aac	AAC-LC	48 - 320 kbps
32 kHz 44.1 kHz 48 kHz	16 bit	wma	wma9 CBR	CBR:48 - 192 kbps
44.1/48 88.2/96/176.4 192 kHz	16/24 bit	flac	flac	---
44.1/48 88.2/96/176.4 192 kHz	16/24 bit	m4a	ALAC	---
2.8/5.6 MHz	1 bit	dff dsf	DSDIFF DSF	---

NOTE

- Files protected by DRM such as Apple's Fairplay DRM, are not supported.
- If you select a music source with a high bit rate or high resolution, it is set to the appropriate level by codec before being output.
- The ALAC decoder is distributed under the Apache License, Version 2.0 (<http://www.apache.org/licenses/LICENSE-2.0>)



Specifications

Wireless LAN

Network type:	Conforming to IEEE 802.11a/b/g/n/ac
Used frequency range:	2.4 GHz, 5 GHz

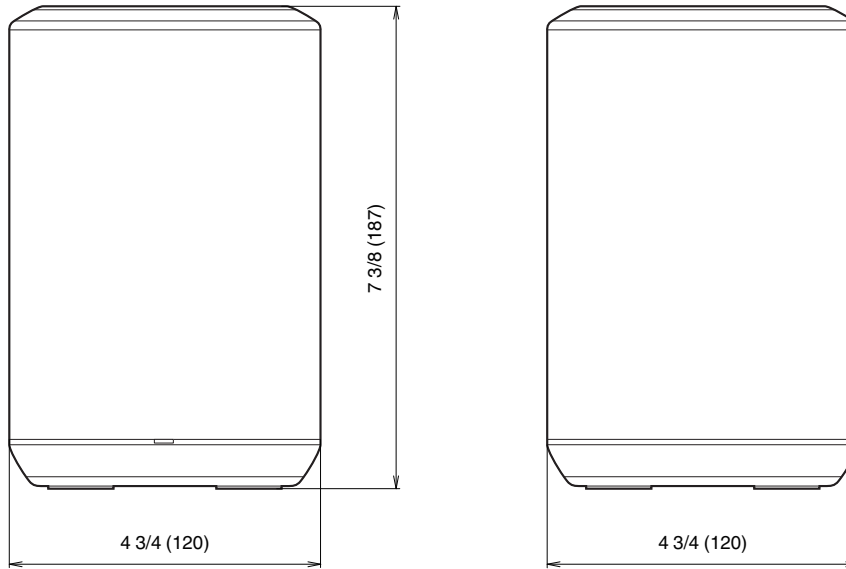
General

Operating temperature:	41 °F - 95 °F (5 °C - 35 °C)
Power supply:	AC 100 – 240 V, 50/60 Hz (for Europe model) AC 100 – 120 V, 50/60 Hz (for North America model)
Power consumption:	20 W
Power consumption in Quick Start Mode:	2.2 W (Wi-Fi 2.4 GHz) 2.2 W (Wi-Fi 5 GHz) 1.8 W (Ethernet) 2.2 W (USB with Wi-Fi) 1.6 W (Bluetooth)
Power consumption in Deep Standby Mode:	0.3 W
Max Analog Input:	2 Vrms



Dimensions

Unit : in. (mm)



Weight : 3 lbs 12 oz (1.7 kg)

For the purpose of improvement, the specifications and design are subject to change without notice.



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Open Source Used	Version
bridge-utils	1.6
busybox	1.27.2
ebtables	2.0.10-4
Linux kernel	4.4.22
mtd-utils	2.0.2
ntfs-3g_ntfsprogs	2017.3.23
u-boot	2018.07
cifs-utils	6.7
wireless-tools	2.9
ffmpeg	3.4.4

□ LGPL

Open Source Used	Version
ffmpeg	3.4.4
libmms	0.6.4
taglib	1.11.1
libglib2	2.54.2
libnl	3.4.0
glibc	2.28
glib	2-2.54.2
ntfs-3g_ntfsprogs	2017.3.23



❑ Mbed TLS-2.7.5

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❑ hostapd-2.6 wpa_supplicant-2.6

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Source code files were moved around in v0.6.x releases and compared to earlier releases, the programs are now built by first going to a subdirectory (wpa_supplicant or hostapd) and creating build configuration (.config) and running 'make' there (for Linux/BSD/cygwin builds).

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❑ PCRE-8.41

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Written by: Philip Hazel

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❑ libcurl-7.61.1

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curve25519-donna: Curve25519 elliptic curve, public key function

<http://code.google.com/p/curve25519-donna/>

Adam Langley <agl@imperialviolet.org>

Derived from public domain C code by Daniel J. Bernstein <djb@cr.yp.to>

More information about curve25519 can be found here

<http://cr.yp.to/ecdh.html>

djb's sample implementation of curve25519 is written in a special assembly language called qhasm and uses the floating point registers.

This is, almost, a clean room reimplementation from the curve25519 paper. It uses many of the tricks described therein. Only the crecip function is taken from the sample implementation.



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❑ zlib-1.2.11

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❑ e2fsprogs-libs-1.45.4/lib/uuid

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❑ getopt-1.29

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❑ LK embedded kernel

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❑ mongoose-2.5

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❑ portmap-6.0

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❑ strlcpy-1.5

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❑ tinyxml-1.0.6

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