Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Google provides the following claim chart demonstrating how claims 1-4, 7, 9-12, 14, and 15 of U.S. Patent No. 9,632,748 (the '748 patent") are infringed by at least the following products (collectively, the "'748 Accused Products"):

Table 1: '748 Accused Products

Sonos Move, Sonos Roam, Sonos Arc, Sonos Beam, Sonos One,

Each '748 Accused Product infringes claims 1-4, 7, 9-12, 14, and 15 as described below.[2]

[1] In its November 23, 2022 Supplemental Response to Interrogatory No. 1, Sonos identified

Each of the following limitations is met literally under each of the claim constructions proposed by the Parties. To the extent that any limitation is not met literally, it is met under the doctrine of equivalents in at least the manner set forth herein.

Although Google has, where appropriate, presented evidence demonstrating that the following limitations are met under Sonos's proposed constructions and apparent claim interpretations, nothing in this chart should be construed as signifying or suggesting Google's adoption of or acquiescence to any claim scope and/or claim construction positions taken by Sonos in this or any other matter or that Sonos has fully articulated its position regarding the scope and meaning of the asserted claims. Sonos has advocated that certain terms are indefinite, which Google disputes. For those terms that Sonos has proposed are indefinite, Google has applied the plain and ordinary meaning to a person of ordinary skill in the art (as reflected in Google's proposed constructions).

As of the date of these contentions, particular aspects of fact discovery have either only recently begun or not begun at all. For example, the parties have only recently begun producing ESI discovery, and no depositions have been taken to date. Further, to date, Sonos has not provided the information raised in Google discovery correspondence,[3] impeding Google's ability to fully assess Sonos's source code with respect to infringement.

Google reserves the right to supplement, amend, and/or modify these contentions as discovery in this Investigation progresses, or if the ALJ adopts or the Parties propose one or more claim constructions that differ from the constructions that have already been proposed by the Parties.

[3] *See, e.g.*, Jan. 26, 2023 Letter from C. Adickman to B. de Blank regarding Interrogatory Nos. 101-107 and RFP Nos. 139-142, to which Sonos has yet to satisfactorily respond.

Claims	Evidence of Practice by the '748 Accused Products
[1.pre] A method comprising:	The '748 Accused Products perform the method of claim 1. For example, as shown below, the Sonos One is a device that supports Sonos Voice Control and includes a processor to perform elements [1.a] through [1.g].  Sonos One

Claims	Evidence of Practice by the '748 Accused Products

Details	
IP Rating	IP67 (speaker can be submerged in 1m of water for up to 30 minutes)
Dimensions (H x W x D)	6.61 x 2.44 x 2.36 in (168 x 62x 60 mm)
Weight	.95 lb. (.43 kg)
Memory	1GB SDRAM; 4GB NV
CPU	Quad Core; 1.3 GHz A-53
Operating Temperature	41° to 95° F (5° to 35° C)
Storage Temperature	-4° to 145° F (-20° to 63° C)

SONOS-ITC13xx-00002231 (Sonos User Guide) at 2251, 2268 (describing specifications for Sonos devices, including the Sonos One); *see also* SONOS-ITC13xx-00002231 at 2246 (describing the Sonos Roam), 2261 (describing the Sonos Move), 2283 (describing the Sonos Arc), 2309 (describing the Sonos Beam (Gen 2)), 2325 (describing the Sonos Beam).

Voice services

Use your voice to control your Sonos system with any voice-enabled Sonos product—play and control content, turn the volume up or down, and more.

- **Sonos Voice Control:** control your whole Sonos system with hands-free ease and unmatched privacy. Sonos Voice Control comes ready to use—it only takes a few seconds to add when you set up your speakers. **More information**

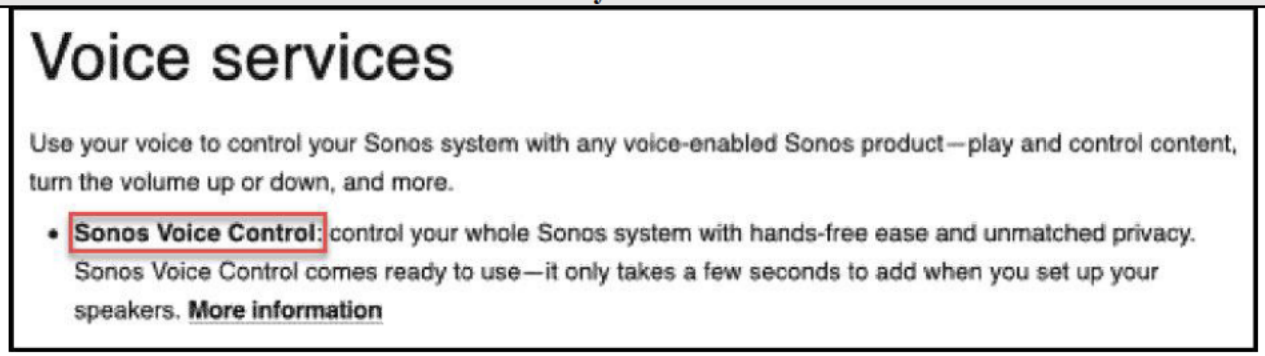
SONOS-ITC13xx-00002153 at 00002157 (Sonos One User Guide, describing features of the Sonos One); *see also* SONOS-ITC13xx-00002171 at 00002176 (Sonos Roam User Guide); SONOS-ITC13xx-00002130 at

Claims	Evidence of Practice by the '748 Accused Products
	00002135 (Sonos Move User Guide); SONOS-ITC13xx-00002066 at 00002070 (Sonos Arc User Guide); SONOS-ITC13xx-00002085 at 00002089 (Sonos Beam User Guide).
[1.a] receiving, by a first computing device of a plurality of computing devices in physical proximity to one another, a spoken audio input that is also received by one or more additional computing devices of the plurality of computing devices	A '748 Accused Product, operating as a first computing device of a plurality of computing devices in physical proximity to one another, is capable of receiving and does receive a spoken audio input that is also received by one or more additional computing devices (e.g., other '748 Accused Products) of the plurality of computing devices. For example, each of the '748 Accused Products is a "computing device" that is designed to operate in a multi-device configuration wherein the devices are in physical proximity to one another, where the devices are equipped with a microphone and associated circuitry that enables them to receive audio input spoken by a user. The spoken audio input may consist of a wakeword (i.e., a hotword) and one or more spoken commands, including follow-up requests from the user after the device has responded to the user's initial request. Each of the '748 Accused Products is a "computing device" as each contains a processor and memory.

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products are computing devices designed to operate in a multi-device configuration wherein the devices are in physical proximity with one another. For example, the '748 Accused Products are designed to operate on an individual local area network, such as an 802.11 network, such that multiple '748 Accused Products (including one operating as a "first electronic device") operate on that network. Each of the '748 Accused Products on a local area network incorporates executable software (e.g., the Sonos operating system for use with the Sonos S1 or S2 application) for implementing Sonos Voice Control, and therefore supports this feature/functionality on its own. For example, the Sonos user guide for the representative Sonos One explains that the Sonos One incorporates Sonos Voice Control functionality.

4

Claims	Evidence of Practice by the '748 Accused Products



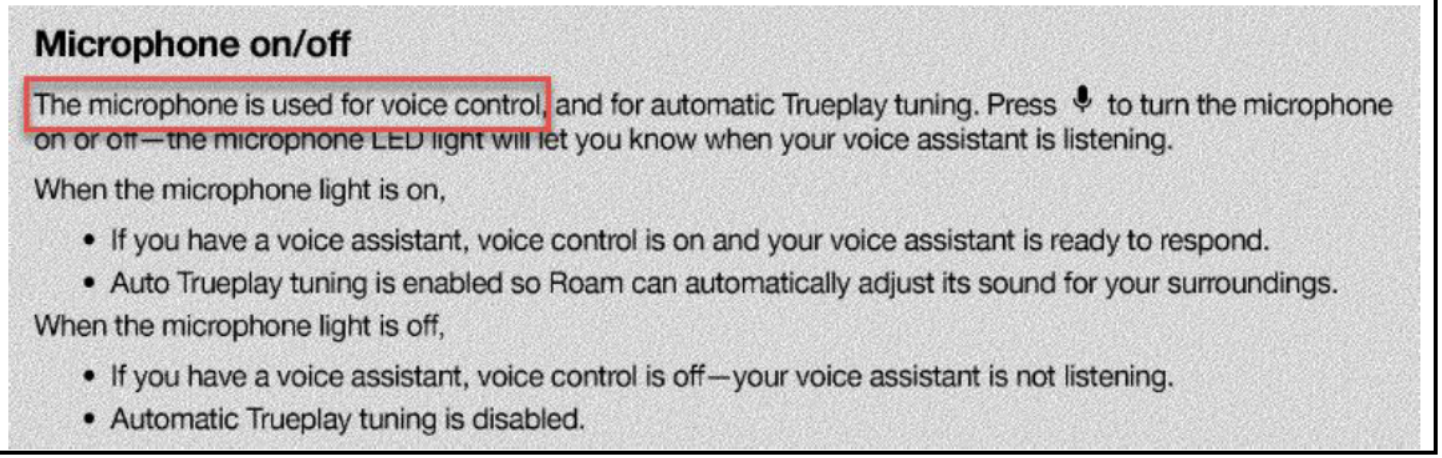
Voice services

Use your voice to control your Sonos system with any voice-enabled Sonos product—play and control content, turn the volume up or down, and more.

- **Sonos Voice Control:** control your whole Sonos system with hands-free ease and unmatched privacy. Sonos Voice Control comes ready to use—it only takes a few seconds to add when you set up your speakers. **More information**

SONOS-ITC13xx-00002153 at 00002157 (Sonos One User Guide, describing features of the Sonos One); *see also* SONOS-ITC13xx-00002171 at 00002176 (Sonos Roam User Guide); SONOS-ITC13xx-00002130 at 00002135 (Sonos Move User Guide); SONOS-ITC13xx-00002066 at 00002070 (Sonos Arc User Guide); SONOS-ITC13xx-00002085 at 00002089 (Sonos Beam User Guide).

Each of the '748 Accused Products is designed to receive and does receive audio using a microphone as part of its incorporation of Sonos Voice Control functionality. For example, the microphones in the '748 Accused Products are operable to receive audio input, including spoken audio input.



Microphone on/off

The microphone is used for voice control, and for automatic Trueplay tuning. Press to turn the microphone on or off—the microphone LED light will let you know when your voice assistant is listening.

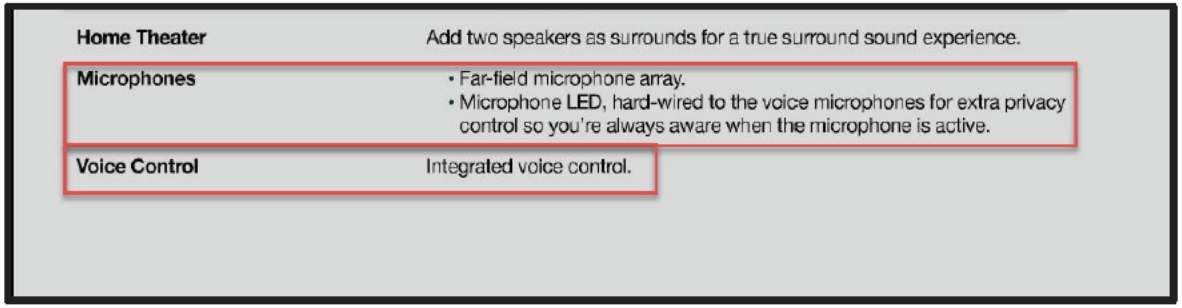
When the microphone light is on,

- If you have a voice assistant, voice control is on and your voice assistant is ready to respond.
- Auto Trueplay tuning is enabled so Roam can automatically adjust its sound for your surroundings.

When the microphone light is off,

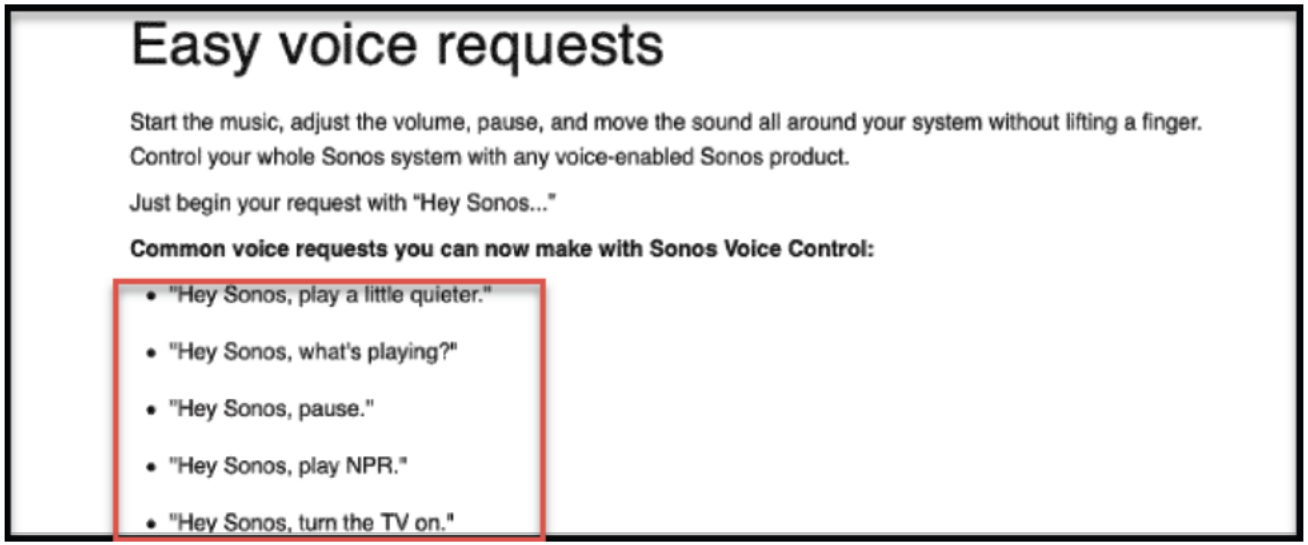
- If you have a voice assistant, voice control is off—your voice assistant is not listening.
- Automatic Trueplay tuning is disabled.

Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00002231 (Sonos User Guide) at 2250; SONOS-ITC13xx-00002066 (Sonos Arc Guide) at 2070; SONOS-ITC13xx-00002130 (Sonos Move Guide) at 2135; SONOS-ITC13xx-00002171 (Sonos Roam Guide) at 2176; SONOS-ITC13xx-00002085 (Sonos Beam Guide) at 2089-90; SONOS-ITC13xx-00002153 (Sonos One Guide) at 2157.



SONOS-ITC13xx-00002231 at 268, 270 (Sonos User Guide, describing specifications for Sonos devices including the Sonos One); *see also id.* at 261, 265 (Sonos Move); *id.* at 246, 251 (Sonos Roam); *id.* at 283, 294 (Sonos Arc); *id.* at 310, 323 (Sonos Beam); *see generally* SONOS-ITC13xx-00000001; SONOS-ITC13xx-00001918; SONOS-ITC13xx-00002045; SONOS-ITC13xx-00002053; SONOS-ITC13xx-00002066; SONOS-ITC13xx-00002080; SONOS-ITC13xx-00002085; SONOS-ITC13xx-00002100; SONOS-ITC13xx-00002107; SONOS-ITC13xx-00002124; SONOS-ITC13xx-00002130; SONOS-ITC13xx-00002140; SONOS-ITC13xx-00002153; SONOS-ITC13xx-00002171; SONOS-ITC13xx-00002182; SONOS-ITC13xx-00002191; SONOS-ITC13xx-00002200; SONOS-ITC13xx-00002209; SONOS-ITC13xx-00002213; SONOS-ITC13xx-00002216; SONOS-ITC13xx-00002218; SONOS-ITC13xx-00002224; SONOS-ITC13xx-00002231; SONOS-ITC13xx-00003436; SONOS-ITC13xx-00003550; SONOS-ITC1330-00000035; SONOS-ITC13xx-00000244; SONOS-ITC13xx-00023282; SONOS-ITC13xx-00023298;

A spoken audio input includes a wakeword and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user. Each of the '748 Accused Products is capable of receiving, and does receive, spoken audio inputs via their respective hardware—e.g., microphone(s) and associated

Claims	Evidence of Practice by the '748 Accused Products
	circuitry—as part of its Sonos Voice Control functionality. Multiple '748 Accused Products configured to operate on a local area network are capable of receiving the same spoken audio input via their associated hardware. This spoken audio input includes a wakeword (e.g., "Hey Sonos") and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user.  SONOS-ITC13xx-00002216 at 00002216 (Sonos Voice Control User Guide).

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	Sonos Voice Control also supports use cases in which the spoken audio input includes the "Hey Sonos" wakeword and an initial command, but also one or more follow-up requests. For example, if the user utters, "Hey Sonos, play some music," and then, without repeating the "Hey Sonos" wakeword, the user says "louder," the Accused Products will increase the volume notwithstanding that the user did not repeat the wakeword. **Follow-up requests** With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume. **Example requests** • *Play some music. Louder.* • *Skip this track. Again. Volume up.* • *Fast forward. More.* GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[1.b] determining, by the first computing device and based at least in part on information received from the one or more additional computing devices, whether the first computing device should perform speech recognition on the spoken audio input; and	A '748 Accused Product operating as the first computing device is capable of determining and does determine, based at least in part on information received from the one or more additional computing devices (*e.g.*, other '748 Accused Products), whether the first computing device should perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products is capable of determining whether to perform speech recognition on spoken audio input consisting of a wakeword (i.e., a hotword), an initial spoken request, and a follow-on command. Each of the '748 Accused Products employs an arbitration algorithm by which it receives information from one or more other '748 Accused Products that detect the same wakeword in the form of a message," determines whether it is the appropriate device to respond to the user's spoken audio input, and responds to the user. When the user utters a follow-up request after the '748 Accused Product serving as the first computing device responds to the user, only the first computing device will perform speech recognition on the speech containing the follow-up request.

Claims	Evidence of Practice by the '748 Accused Products
	When a '748 Accused Product operates in proximity to additional '748 Accused Products and receives a spoken audio input that includes a wakeword, each '748 Accused Product that received the spoken audio input will generate associated that spoken audio input.

Claims	Evidence of Practice by the '748 Accused Products
	Speech recognition on any follow-up requests does not begin until after the following arbitration process completes and the first computing device responds to the user and/or fulfills the request (e.g., by providing a synthesized speech response or playing music).

[5] The '748 Accused Products infringe this limitation under either Sonos's or Google's proposed construction of "perform speech recognition," as explained in further detail in limitation [1.f].

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Product from one or more other '748 Accused Products configured on the network that also detect a wakeword invocation to determine whether it should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)):

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	For each the '748 Accused Products serving as the first computing device receives from one or more other '748 Accused Products on the network that detected the wakeword, the '748 Accused Product operating as the first computing device then to determine whether it or another '748 Accused Product that sent that should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00006609 at 00006609-10. As noted above, the '748 Accused Product operating as the first computing device performs it receives from another '748 Accused Product. If, after it performs the above it receives, the first electronic device determines that it has won the arbitration for a given wakeword, that first electronic device becomes and responds to the user. 

Claims	Evidence of Practice by the '748 Accused Products
	In use cases where the user's utterance includes a wakeword and one or more commands after which the user provides a follow-on request,

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[1.c] responsive to determining that the first computing device should perform speech	When a '748 Accused Product, operating as the first computing device, determines that it should perform speech recognition on the spoken audio input, steps [1.d] through [g] are performed by that '748 Accused Product in the manner described below responsive to that determination.

Claims	Evidence of Practice by the '748 Accused Products
recognition on the spoken audio input:	
[1.d] sending, by the first computing device and to at least a second computing device from the plurality of computing devices, a command to temporarily refrain from performing speech recognition;	A '748 Accused Product operating as the first computing device is capable of sending, and does send, to at least a second computing device (one or more other '748 Accused Products) from the plurality of computing devices, a command to temporarily refrain from performing speech recognition.[7]

[7] Sonos's proposed constructions, including its construction for this term, contain within them other terms that Sonos proposed for construction. Google has addressed Sonos's constructions to the extent it understands them, but reserves the right to address any such constructions further in light of Sonos's final non-burden contentions and/or any claim construction order entered by the ALJ.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products, upon losing arbitration, will refrain from performing speech recognition on a follow-on request when the concludes.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	Accordingly, if a '748 Accused Product that is detects a second wakeword uttered after the first wakeword in a subsequent spoken audio input, and determines it should perform speech recognition on the subsequent wakeword arbitration too because , the , associated with the second wakeword occurrence, sent by the '748 Accused Product serving as the first computing device to the other '748 Accused Products that detected the second wakeword is a "command to temporarily

Claims	Evidence of Practice by the '748 Accused Products
	refrain from performing speech recognition."
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "a command to temporarily refrain." Sonos's proposed construction is "a message instructing the second computing device

Claims	Evidence of Practice by the '748 Accused Products
	to temporarily cease performing any and all speech recognition." Any '748 Accused Product that receives will cease performing any and all speech recognition until the next time it detects a wakeword, as described above.

Claims	Evidence of Practice by the '748 Accused Products
[1.e] performing, by the first computing device, speech recognition on the spoken audio input;	A '748 Accused Product operating as the first computing device that determines it has won an arbitration will perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products performs speech recognition on spoken audio input associated with the wakeword, including any follow-on commands that may be issued. A '748 Accused Product operating as the first computing device that is the "winning" device in the arbitration processes described above in limitation [1.b] performs speech recognition on the spoken audio input using automated speech recognition (ASR) and continues performing speech recognition on follow-on voice commands in the spoken audio input during a session. Overview Control your whole Sonos system with hands-free ease and unmatched privacy— • Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora. • All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone. • Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Claims	Evidence of Practice by the '748 Accused Products
	# Easy voice requests Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product. Just begin your request with "Hey Sonos..." **Common voice requests you can now make with Sonos Voice Control:** • "Hey Sonos, play a little quieter." • "Hey Sonos, what's playing?" • "Hey Sonos, pause." • "Hey Sonos, play NPR." • "Hey Sonos, turn the TV on." SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	As described in limitation [1.b], the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	After the '748 Accused Product responds to the user's query, the '748 Accused Product serving as the first computing device will then monitor for additional follow-on commands in the spoken audio input without requiring a new hotword utterance (e.g., in response to the device turning the volume louder, the user may utter "louder" without repeating the hotword) and continue to perform speech recognition on the "continued conversation" follow-on speech. The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "[perform/performing] speech recognition." Sonos's proposed construction is "processing spoken audio to determine whether it includes a predetermined audio command." As explained in limitation [1.f], the '748 Accused Products process spoken audio to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
[1.f] determining, by the first computing device, based on	A '748 Accused Product operating as a first computing device is capable of performing and does perform speech recognition on the spoken audio input to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
performing speech recognition on the spoken audio input, whether the spoken audio input includes a predetermined spoken audio command; and	A '748 Accused Product operating as the first computing device that determines it is the arbitration winner is capable of performing and will operate to perform speech recognition on spoken audio inputs to determine whether the spoken audio input includes a predetermined command. Examples of predetermined commands include requests or directives to, e.g., play a specific song, or adjust the volume on the '748 Accused Product.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

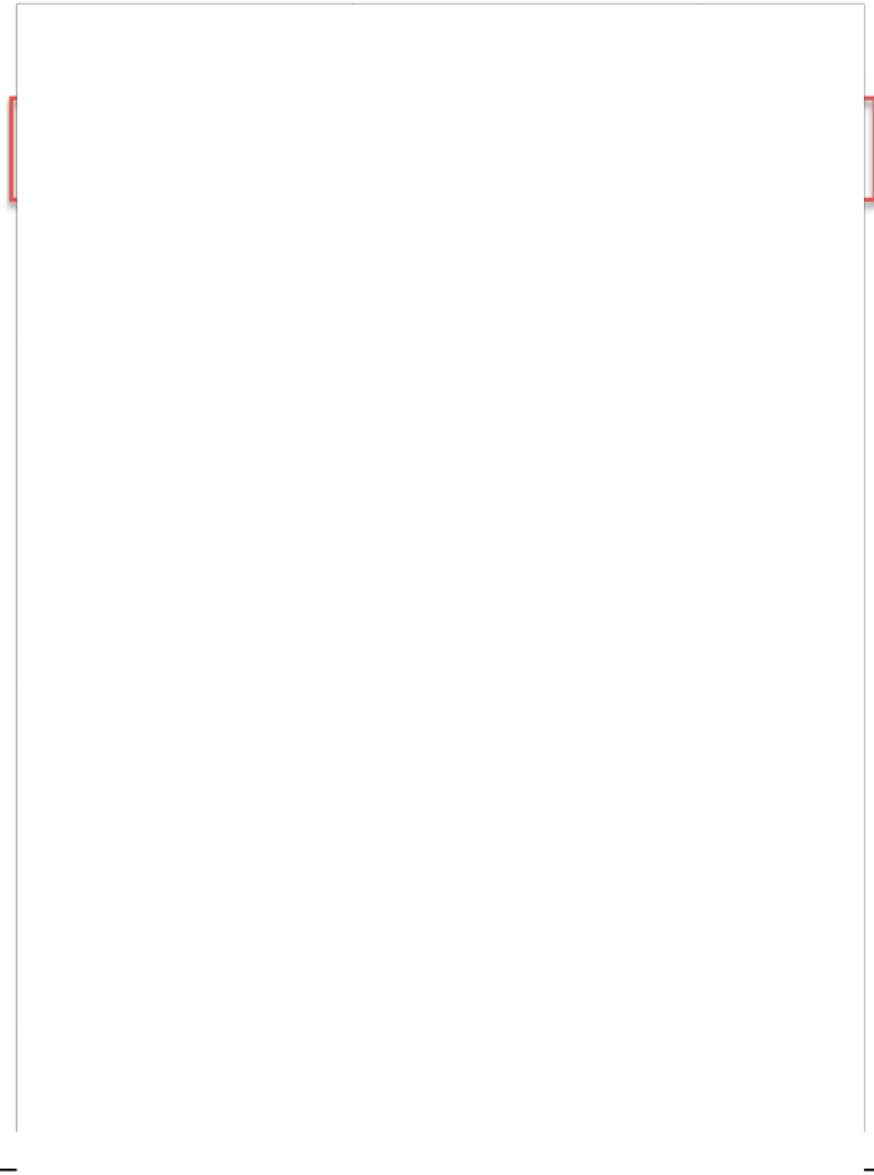
Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products
	

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
- Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "predetermined spoken audio command." Sonos's proposed construction is "any audio input usable to initiate interaction with a computing device, such as a spoken hotword." Spoken hotwords are usable to initiate conversations with a computing device, while other audio inputs, such as "play music," are usable to initiate other types of interactions with a computing device (i.e., a music-playing session). Accordingly, commands can be in any portion of a spoken audio input, including a follow-on request, the '748 Accused Products are capable of determining whether audio inputs usable initiate interaction with a computing device are present in the spoken audio input, responsive to determining whether to perform speech recognition on such follow-on audio.
[1.g] responsive to determining that the spoken audio input includes the predetermined spoken audio command, executing, by the first computing	A '748 Accused Product operating as the first computing device that determines that the spoken audio input includes the predetermined spoken audio command is capable of executing, and will execute, an action associated with the predetermined spoken audio command. For example, if the spoken audio input includes a predetermined audio command and a '748 Accused Product operating as the first computing device determines it is the arbitration winner, it will execute one or more actions associated with the command.

Claims	Evidence of Practice by the '748 Accused Products
device, an action associated with the predetermined spoken audio command.	For example, such actions may include initiating music or radio, or controlling volume, as well as navigating tracks, targeting or grouping Sonos speakers, or managing the user's music library.

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
- Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	•
[2.pre] The method of claim 1, further comprising:	A '748 Accused Product operating as the first computing device is capable of performing, and does perform, the method of claim 1. *See supra* claim 1.
[2.a] determining, by the first computing device, a current context of the first computing device,	A '748 Accused Product operating as the first computing device is capable of determining, and does determine, a current context of the first computing device. A '748 Accused Product operating as the first computing device is capable of determining, and does determine, current contextual information about the '748 Accused Products involved in the arbitration.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products
[7.pre] A first computing device comprising:	The '748 Accused Products are computing devices. For example, the Sonos One is a computing device:

Claims	Evidence of Practice by the '748 Accused Products
	 Sonos One

Claims	Evidence of Practice by the '748 Accused Products

Details	
IP Rating	IP67 (speaker can be submerged in 1m of water for up to 30 minutes)
Dimensions (H x W x D)	6.61 x 2.44 x 2.36 in (168 x 62x 60 mm)
Weight	.95 lb. (.43 kg)
Memory	1GB SDRAM; 4GB NV
CPU	Quad Core; 1.3 GHz A-53
Operating Temperature	41° to 95° F (5° to 35° C)
Storage Temperature	-4° to 145° F (-20° to 63° C)

SONOS-ITC13xx-00002231 (Sonos User Guide) at 2251, 2268 (describing specifications for Sonos devices, including the Sonos One); *see also* SONOS-ITC13xx-00002231 at 2246 (describing the Sonos Roam), 2261 (describing the Sonos Move), 2283 (describing the Sonos Arc), 2309 (describing the Sonos Beam (Gen 2)), 2325 (describing the Sonos Beam).

Voice services

Use your voice to control your Sonos system with any voice-enabled Sonos product—play and control content, turn the volume up or down, and more.

- **Sonos Voice Control:** control your whole Sonos system with hands-free ease and unmatched privacy. Sonos Voice Control comes ready to use—it only takes a few seconds to add when you set up your speakers. **More information**

SONOS-ITC13xx-00002153 at 00002157 (Sonos One User Guide, describing features of the Sonos One); *see also* SONOS-ITC13xx-00002171 at 00002176 (Sonos Roam User Guide); SONOS-ITC13xx-00002130 at

Claims	Evidence of Practice by the '748 Accused Products
	00002135 (Sonos Move User Guide); SONOS-ITC13xx-00002066 at 00002070 (Sonos Arc User Guide); SONOS-ITC13xx-00002085 at 00002089 (Sonos Beam User Guide). [redacted]
[7.a] at least one processor; and	The '748 Accused Products include at least one processor. For example, the Sonos One contains a quad core CPU. **Details** **IP Rating** — IP67 (speaker can be submerged in 1m of water for up to 30 minutes) **Dimensions (H x W x D)** — 6.61 x 2.44 x 2.36 in (168 x 62x 60 mm) **Weight** — .95 lb. (.43 kg) **Memory** — 1GB SDRAM; 4GB NV **CPU** — Quad Core; 1.3 GHz A-53 **Operating Temperature** — 41° to 95° F (5° to 35° C) **Storage Temperature** — -4° to 145° F (-20° to 63° C)

Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00002231 (Sonos User Guide) at 2251, 2268 (describing specifications for Sonos devices, including the Sonos One); *see also* SONOS-ITC13xx-00002231 at 2246 (describing the Sonos Roam), 2261 (describing the Sonos Move), 2283 (describing the Sonos Arc), 2309 (describing the Sonos Beam (Gen 2)), 2325 (describing the Sonos Beam).
	[redacted]
[7.b] at least one module operable by the at least one processor to:	The '748 Accused Products include at least one module operable by the at least one processor to perform elements [1.c] through [1.i].

Claims	Evidence of Practice by the '748 Accused Products
	 Sonos One

Claims	Evidence of Practice by the '748 Accused Products

Details	
IP Rating	IP67 (speaker can be submerged in 1m of water for up to 30 minutes)
Dimensions (H x W x D)	6.61 x 2.44 x 2.36 in (168 x 62x 60 mm)
Weight	.95 lb. (.43 kg)
Memory	1GB SDRAM; 4GB NV
CPU	Quad Core; 1.3 GHz A-53
Operating Temperature	41° to 95° F (5° to 35° C)
Storage Temperature	-4° to 145° F (-20° to 63° C)

SONOS-ITC13xx-00002231 (Sonos User Guide) at 00002251, 00002268 (describing specifications for Sonos devices, including the Sonos One, Roam, Move, Arc, and Beam).

Voice services

Use your voice to control your Sonos system with any voice-enabled Sonos product—play and control content, turn the volume up or down, and more.

- **Sonos Voice Control**: control your whole Sonos system with hands-free ease and unmatched privacy. Sonos Voice Control comes ready to use—it only takes a few seconds to add when you set up your speakers. **More information**

SONOS-ITC13xx-00002153 (One) at 00002157 (describing features of the Sonos One, Roam, Move, Arc, and Beam).

[7.c] receive a spoken audio input	A '748 Accused Product, operating as a first computing device of a plurality of computing devices in physical proximity to one another, includes at least one module operable to receive a spoken audio input that is also

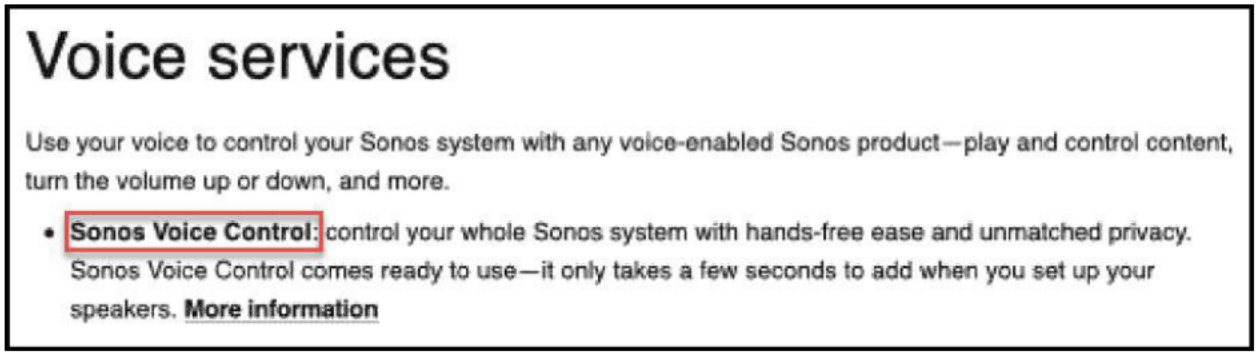
Claims	Evidence of Practice by the '748 Accused Products
that is also received by one or more additional computing devices in physical proximity to the first computing device;	received by one or more additional computing devices (*e.g.*, other '748 Accused Products) of the plurality of computing devices. For example, each of the '748 Accused Products is a "computing device" that is designed to operate in a multi-device configuration wherein the devices are in physical proximity to one another, where the devices are equipped with a microphone and associated circuitry that enables them to receive audio input spoken by a user. The spoken audio input may consist of a wakeword (i.e., a hotword) and one or more spoken commands, including follow-up requests from the user after the device has responded to the user's initial request. Each of the '748 Accused Products is a "computing device" as each contains a processor and memory.

Product Name(s)	Model String	Production Run	Build Arch	App Support	SoC	CPU Core	CPU Speed (MHz)	RAM (MB)	NVRAM	Linux Kernel Version	Linux Arch	Bootloader	Primary WiFi Device
Sonos One	S13	2017-07 - 2018-12	bootLeg	S1 & S2	NXP i MX6 Quad	4x ARM v7 Cortex A9	396/792/996	1 GB	1 GB NAND	3.10	arm	U-Boot 2016.11	AR9580 2.4/5GHz 11n 3x3

[10]

The '748 Accused Products are computing devices designed to operate in a multi-device configuration wherein the devices are in physical proximity with one another. For example, the '748 Accused Products are

[10]

Claims	Evidence of Practice by the '748 Accused Products
	designed to operate on an individual local area network, such as an 802.11 network, such that multiple '748 Accused Products (including one operating as a "first electronic device") operate on that network. Each of the '748 Accused Products on a local area network incorporates executable software (e.g., the Sonos operating system for use with the Sonos S1 or S2 application) for implementing Sonos Voice Control, and therefore supports this feature/functionality on its own. For example, the Sonos user guide for the representative Sonos One explains that the Sonos One incorporates Sonos Voice Control functionality.  SONOS-ITC13xx-00002153 at 00002157 (Sonos One User Guide, describing features of the Sonos One); *see also* SONOS-ITC13xx-00002171 at 00002176 (Sonos Roam User Guide); SONOS-ITC13xx-00002130 at 00002135 (Sonos Move User Guide); SONOS-ITC13xx-00002066 at 00002070 (Sonos Arc User Guide); SONOS-ITC13xx-00002085 at 00002089 (Sonos Beam User Guide).

Claims	Evidence of Practice by the '748 Accused Products
	Each of the '748 Accused Products is designed to receive and does receive audio using a microphone as part of its incorporation of Sonos Voice Control functionality. For example, the microphones in the '748 Accused Products are operable to receive audio input, including spoken audio input.

Microphone on/off

The microphone is used for voice control, and for automatic Trueplay tuning. Press to turn the microphone on or off—the microphone LED light will let you know when your voice assistant is listening.

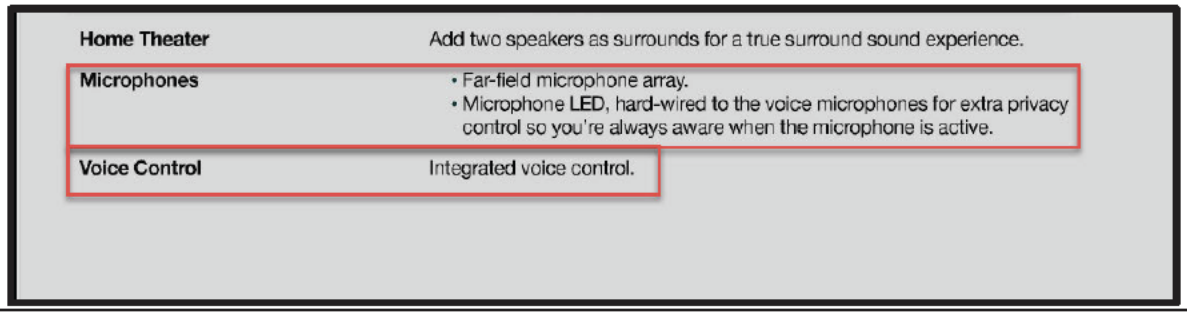
When the microphone light is on,

- If you have a voice assistant, voice control is on and your voice assistant is ready to respond.
- Auto Trueplay tuning is enabled so Roam can automatically adjust its sound for your surroundings.

When the microphone light is off,

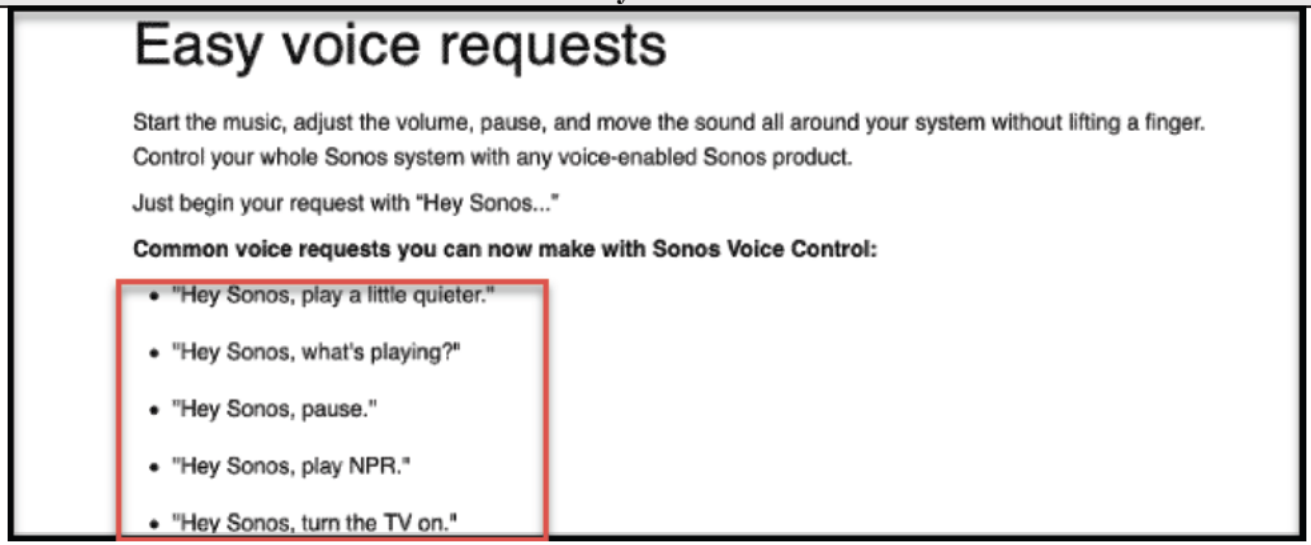
- If you have a voice assistant, voice control is off—your voice assistant is not listening.
- Automatic Trueplay tuning is disabled.

SONOS-ITC13xx-00002231 (Sonos User Guide) at 2250; SONOS-ITC13xx-00002066 (Sonos Arc Guide) at 2070; SONOS-ITC13xx-00002130 (Sonos Move Guide) at 2135; SONOS-ITC13xx-00002171 (Sonos Roam Guide) at 2176; SONOS-ITC13xx-00002085 (Sonos Beam Guide) at 2089-90; SONOS-ITC13xx-00002153 (Sonos One Guide) at 2157.



Home Theater	Add two speakers as surrounds for a true surround sound experience.
Microphones	• Far-field microphone array. • Microphone LED, hard-wired to the voice microphones for extra privacy control so you're always aware when the microphone is active.
Voice Control	Integrated voice control.

Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00002231 at 268, 270 (Sonos User Guide, describing specifications for Sonos devices including the Sonos One); *see also id.* at 261, 265 (Sonos Move); *id.* at 246, 251 (Sonos Roam); *id.* at 283, 294 (Sonos Arc); *id.* at 310, 323 (Sonos Beam); *see generally* SONOS-ITC13xx-00000001; SONOS-ITC13xx-00001918; SONOS-ITC13xx-00002045; SONOS-ITC13xx-00002053; SONOS-ITC13xx-00002066; SONOS-ITC13xx-00002080; SONOS-ITC13xx-00002085; SONOS-ITC13xx-00002100; SONOS-ITC13xx-00002107; SONOS-ITC13xx-00002124; SONOS-ITC13xx-00002130; SONOS-ITC13xx-00002140; SONOS-ITC13xx-00002153; SONOS-ITC13xx-00002171; SONOS-ITC13xx-00002182; SONOS-ITC13xx-00002191; SONOS-ITC13xx-00002200; SONOS-ITC13xx-00002209; SONOS-ITC13xx-00002213; SONOS-ITC13xx-00002216; SONOS-ITC13xx-00002218; SONOS-ITC13xx-00002224; SONOS-ITC13xx-00002231; SONOS-ITC13xx-00003436; SONOS-ITC13xx-00003550; SONOS-ITC1330-00000035; SONOS-ITC13xx-00000244; SONOS-ITC13xx-00023282; SONOS-ITC13xx-00023298; A spoken audio input includes a wakeword and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user. Each of the '748 Accused Products is capable of receiving, and does receive, spoken audio inputs via their respective hardware—e.g., microphone(s) and associated circuitry—as part of its Sonos Voice Control functionality. Multiple '748 Accused Products configured to operate on a local area network are capable of receiving the same spoken audio input via their associated hardware. This spoken audio input includes a wakeword (e.g., "Hey Sonos") and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user.

Claims	Evidence of Practice by the '748 Accused Products
	 SONOS-ITC13xx-00002216 at 00002216 (Sonos Voice Control User Guide).

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	Sonos Voice Control also supports use cases in which the spoken audio input includes the "Hey Sonos" wakeword and an initial command, but also one or more follow-up requests. For example, if the user utters, "Hey Sonos, play some music," and then, without repeating the "Hey Sonos" wakeword, the user says "louder," the Accused Products will increase the volume notwithstanding that the user did not repeat the wakeword. **Follow-up requests** With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume. **Example requests** • *Play some music. Louder.* • *Skip this track. Again. Volume up.* • *Fast forward. More.* GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[7.d] determine, based at least in part on information received from the one or more additional computing devices, whether the first computing device should perform speech recognition on the spoken audio input; and	A '748 Accused Product operating as the first computing device includes at least one module operable to determine, based at least in part on information received from the one or more additional computing devices (*e.g.*, other '748 Accused Products), whether the first computing device should perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products is capable of determining whether to perform speech recognition on spoken audio input consisting of a wakeword (i.e., a hotword), an initial spoken request, and a follow-on command. Each of the '748 Accused Products employs an arbitration algorithm by which it receives information from one or more other '748 Accused Products that detect the same wakeword in the form of a message," determines whether it is the appropriate device to respond to the user's spoken audio input, and responds to the user. When the user utters a follow-up request after the '748 Accused Product serving as the first computing device responds to the user, only the first computing device will perform speech recognition on the speech containing the follow-up request.

Claims	Evidence of Practice by the '748 Accused Products
	When a '748 Accused Product operates in proximity to additional '748 Accused Products and receives a spoken audio input that includes a wakeword, each '748 Accused Product that received the spoken audio input will generate associated that spoken audio input.

Claims	Evidence of Practice by the '748 Accused Products
	[11] Speech recognition on any follow-up requests does not begin until after the following arbitration process completes and the first computing device responds to the user and/or fulfills the request (e.g., by providing a synthesized speech response or playing music).

[11] The '748 Accused Products infringe this limitation under either Sonos's or Google's proposed construction of "perform speech recognition," as explained in further detail in limitation [1.f].

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Product from one or more other '748 Accused Products configured on the network that also detect a wakeword invocation to determine whether it should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)):

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00006625 at 00006625-26. For each the '748 Accused Products serving as the first computing device receives from one or more other '748 Accused Products on the network that detected the wakeword, the '748 Accused Product operating as the first computing device then to determine whether it or another '748 Accused Product that sent that should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	As noted above, the '748 Accused Product operating as the first computing device performs it receives from another '748 Accused Product. If, after it performs the above it receives, the first electronic device determines that it has won the arbitration for a given wakeword, that first electronic device becomes and responds to the user.

Claims	Evidence of Practice by the '748 Accused Products
	In use cases where the user's utterance includes a wakeword and one or more commands after which the user provides a follow-on request,

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[7.e] responsive to determining that the first computing device should perform speech	When a '748 Accused Product, operating as the first computing device, determines that it should perform speech recognition on the spoken audio input, steps [1.f] through [i] are performed by that '748 Accused Product in the manner described below.

Claims	Evidence of Practice by the '748 Accused Products
recognition on the spoken audio input:	
[7.f] send, to at least a second computing device from a plurality of computing devices, a command to temporarily refrain from performing speech recognition;	A '748 Accused Product operating as the first computing device includes at least one module operable to send, to at least a second computing device (one or more other '748 Accused Products) from the plurality of computing devices, a command to temporarily refrain from performing speech recognition.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	 The '748 Accused Products, upon losing arbitration, will refrain from performing speech recognition on a follow-on request when the concludes.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	Accordingly, if a '748 Accused Product that is detects a second wakeword uttered after the first wakeword in a subsequent spoken audio input, and determines it should perform speech recognition on the subsequent wakeword arbitration too because , the , associated with the second wakeword occurrence, sent by the '748 Accused Product serving as the first computing device to the other '748 Accused Products that detected the second wakeword is a "command to temporarily

Claims	Evidence of Practice by the '748 Accused Products
	refrain from performing speech recognition."
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "a command to temporarily refrain." Sonos's proposed construction is "a message instructing the second computing device

Claims	Evidence of Practice by the '748 Accused Products
	to temporarily cease performing any and all speech recognition." Any '748 Accused Product that receives will cease performing any and all speech recognition until the next time it detects a wakeword, as described above.

Claims	Evidence of Practice by the '748 Accused Products
[7.g] perform speech recognition on the spoken audio input;	A '748 Accused Product operating as the first computing device that determines it has won an arbitration includes at least one module operable to perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products performs speech recognition on spoken audio input associated with the wakeword, including any follow-on commands that may be issued. A '748 Accused Product operating as the first computing device that is the "winning" device in the arbitration processes described above in limitation [7.d] performs speech recognition on the spoken audio input using automated speech recognition (ASR) and continues performing speech recognition on follow-on voice commands in the spoken audio input during a session. Overview Control your whole Sonos system with hands-free ease and unmatched privacy— • Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora. • All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone. • Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Claims	Evidence of Practice by the '748 Accused Products

Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	As described in limitation [7.d], the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	After the '748 Accused Product responds to the user's query, the '748 Accused Product serving as the first computing device will then monitor for additional follow-on commands in the spoken audio input without requiring a new hotword utterance (e.g., in response to the device turning the volume louder, the user may utter "louder" without repeating the hotword) and continue to perform speech recognition on the "continued conversation" follow-on speech. The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "[perform/performing] speech recognition." Sonos's proposed construction is "processing spoken audio to determine whether it includes a predetermined audio command." As explained in limitation [7.h], the '748 Accused Products process spoken audio to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
[7.h] determine, based on performing speech recognition on the	A '748 Accused Product operating as a first computing device includes at least one module operable to perform speech recognition on the spoken audio input to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
spoken audio input, whether the spoken audio input includes a predetermined spoken audio command; and	A '748 Accused Product operating as the first computing device that determines it is the arbitration winner is capable of performing and will operate to perform speech recognition on spoken audio inputs to determine whether the spoken audio input includes a predetermined command. Examples of predetermined commands include requests or directives to, e.g., play a specific song, or adjust the volume on the '748 Accused Product.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
- Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Easy voice requests

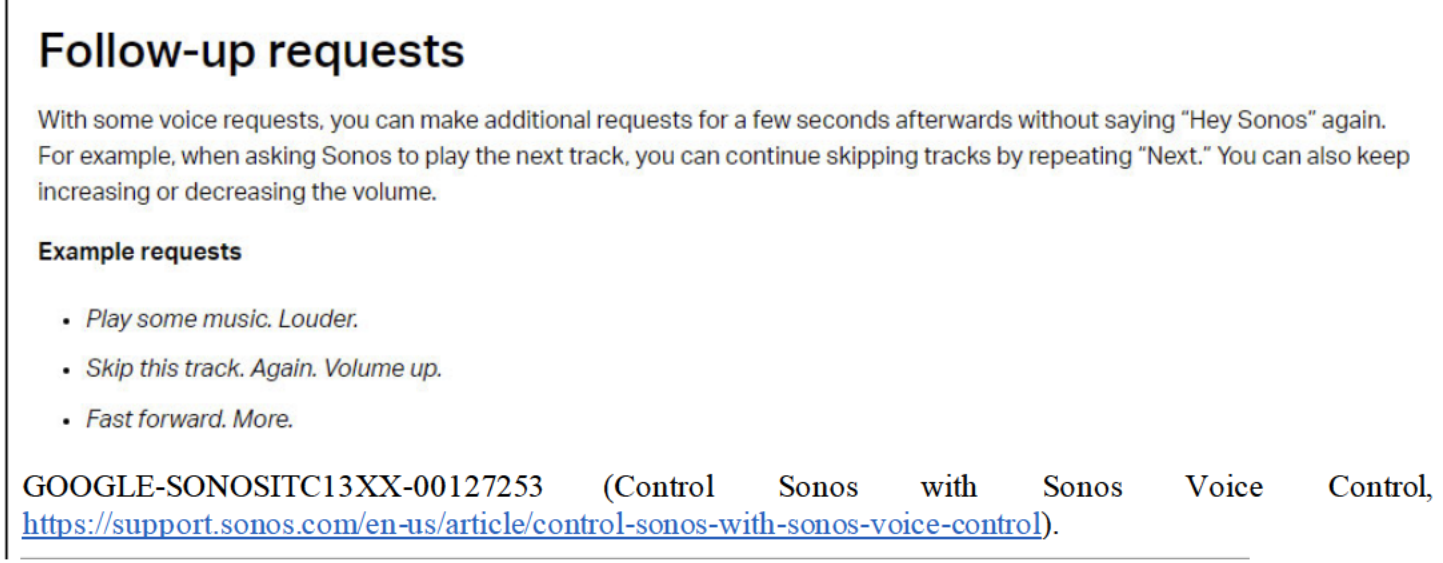
Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

Claims	Evidence of Practice by the '748 Accused Products
	 ## Follow-up requests With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume. **Example requests** • *Play some music. Louder.* • *Skip this track. Again. Volume up.* • *Fast forward. More.* GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "predetermined spoken audio command." Sonos's proposed construction is "any audio input usable to initiate interaction with a computing device, such as a spoken hotword." Spoken hotwords are usable to initiate conversations with a computing device, while other audio inputs, such as "play music," are usable to initiate other types of interactions with a computing device (i.e., a music-playing session). Accordingly, commands can be in any portion of a spoken audio input, including a follow-on request, the '748 Accused Products are capable of determining whether audio inputs usable initiate interaction with a computing device are present in the spoken audio input, responsive to determining whether to perform speech recognition on such follow-on audio.
[7.i] responsive to determining that the spoken audio input includes the predetermined spoken audio command, execute an action associated with the	A '748 Accused Product operating as the first computing device that determines that the spoken audio input includes the predetermined spoken audio command includes at least one module operable to execute an action associated with the predetermined spoken audio command. For example, if the spoken audio input includes a predetermined audio command and a '748 Accused Product operating as the first computing device determines it is the arbitration winner, it will execute one or more actions associated with the command.

Claims	Evidence of Practice by the '748 Accused Products
predetermined spoken audio command.	For example, such actions may include initiating music or radio, or controlling volume, as well as navigating tracks, targeting or grouping Sonos speakers, or managing the user's music library.

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
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Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

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- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	[redacted]
[9.pre] The computing device of claim 7,	Each of the '748 Accused Products is a first computing device according to claim 7. *See supra* claim 7.
[9.a] wherein the at least one module is further operable by the at least one processor to determine a current context of the first computing device, and	A '748 Accused Product operating as the first computing device includes at least one module operable to determine a current context of the first computing device. A '748 Accused Product operating as the first computing device is capable of determining, and does determine, current contextual information about the '748 Accused Products involved in the arbitration.

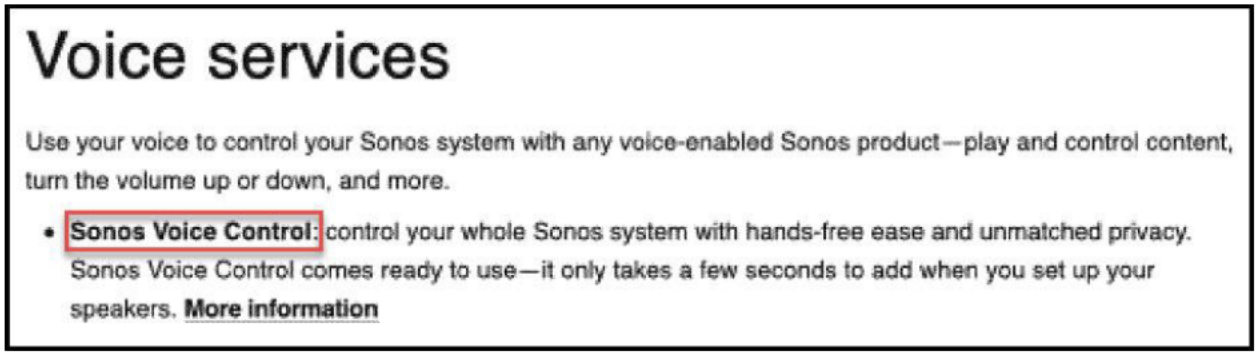
Claims	Evidence of Practice by the '748 Accused Products
or one or more social relationships of the user of the first computing device.	
[11.pre] A non-transitory computer-readable storage medium encoded with instructions that, when executed, cause at least one processor of a first computing device to:	Each '748 Accused Product includes a non-transitory computer-readable storage medium encoded with instructions, that, when executed, cause at least one processor of the '748 Accused Product to perform elements [1.a] through [g]. For example, as shown below, the Sonos One is a device that supports Sonos Voice Control and includes a processor to perform elements [1.a] through [1.g].

Claims	Evidence of Practice by the '748 Accused Products
	 Sonos One

Claims	Evidence of Practice by the '748 Accused Products

Details	
IP Rating	IP67 (speaker can be submerged in 1m of water for up to 30 minutes)
Dimensions (H x W x D)	6.61 x 2.44 x 2.36 in (168 x 62x 60 mm)
Weight	.95 lb. (.43 kg)
Memory	1GB SDRAM; 4GB NV
CPU	Quad Core; 1.3 GHz A-53
Operating Temperature	41° to 95° F (5° to 35° C)
Storage Temperature	-4° to 145° F (-20° to 63° C)

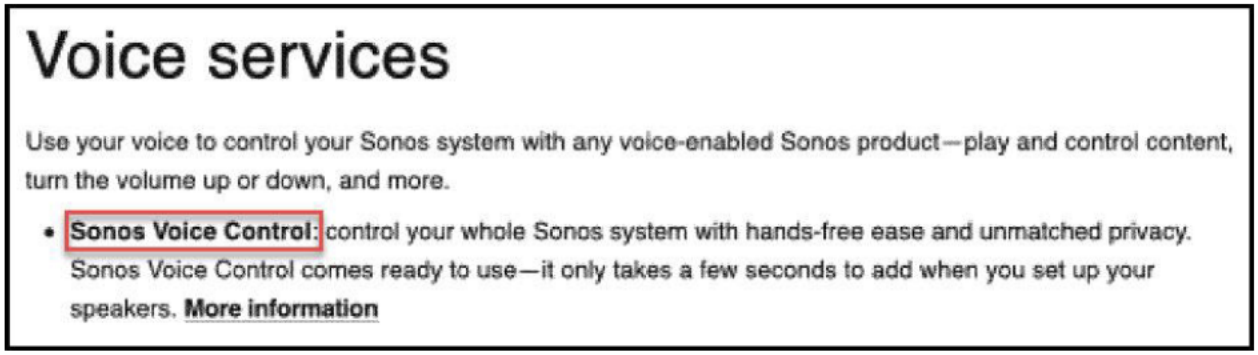
SONOS-ITC13xx-00002231 (Sonos User Guide) at 00002251, 00002268 (describing specifications for Sonos devices, including the Sonos One, Roam, Move, Arc, and Beam).



SONOS-ITC13xx-00002153 (One) at 00002157 (describing features of the Sonos One, Roam, Move, Arc, and Beam).

[11.a] receive a spoken audio input	A '748 Accused Product, operating as a first computing device of a plurality of computing devices in physical proximity to one another, is capable of receiving and does receive a spoken audio input that is also received by

Claims	Evidence of Practice by the '748 Accused Products
that is also received by one or more additional computing devices in physical proximity to the first computing device;	one or more additional computing devices (*e.g.*, other '748 Accused Products) of the plurality of computing devices. For example, each of the '748 Accused Products is a "computing device" that is designed to operate in a multi-device configuration wherein the devices are in physical proximity to one another, where the devices are equipped with a microphone and associated circuitry that enables them to receive audio input spoken by a user. The spoken audio input may consist of a wakeword (i.e., a hotword) and one or more spoken commands, including follow-up requests from the user after the device has responded to the user's initial request. Each of the '748 Accused Products is a "computing device" as each contains a processor and memory. The '748 Accused Products are computing devices designed to operate in a multi-device configuration wherein the devices are in physical proximity with one another. For example, the '748 Accused Products are designed to operate on an individual local area network, such as an 802.11 network, such that multiple '748 Accused Products (including one operating as a "first electronic device") operate on that network.

Claims	Evidence of Practice by the '748 Accused Products
	Each of the '748 Accused Products on a local area network incorporates executable software (e.g., the Sonos operating system for use with the Sonos S1 or S2 application) for implementing Sonos Voice Control, and therefore supports this feature/functionality on its own. For example, the Sonos user guide for the representative Sonos One explains that the Sonos One incorporates Sonos Voice Control functionality.  SONOS-ITC13xx-00002153 at 00002157 (Sonos One User Guide, describing features of the Sonos One); *see also* SONOS-ITC13xx-00002171 at 00002176 (Sonos Roam User Guide); SONOS-ITC13xx-00002130 at 00002135 (Sonos Move User Guide); SONOS-ITC13xx-00002066 at 00002070 (Sonos Arc User Guide); SONOS-ITC13xx-00002085 at 00002089 (Sonos Beam User Guide). Each of the '748 Accused Products is designed to receive and does receive audio using a microphone as part of its incorporation of Sonos Voice Control functionality. For example, the microphones in the '748 Accused Products are operable to receive audio input, including spoken audio input.

Claims	Evidence of Practice by the '748 Accused Products

Microphone on/off

The microphone is used for voice control, and for automatic Trueplay tuning. Press to turn the microphone on or off—the microphone LED light will let you know when your voice assistant is listening.

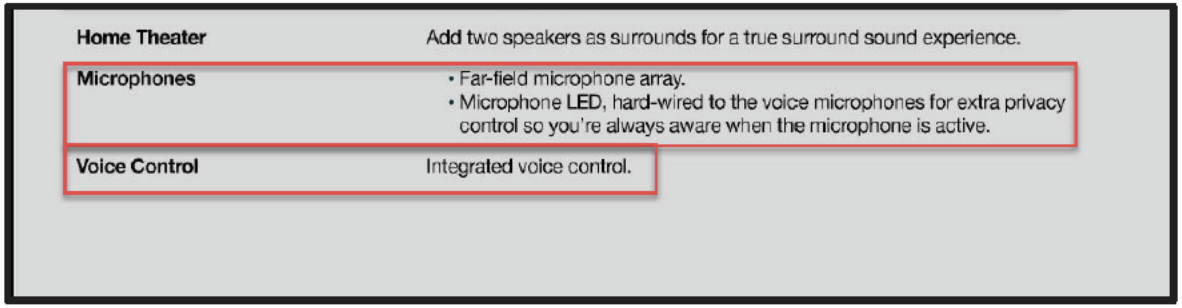
When the microphone light is on,

- If you have a voice assistant, voice control is on and your voice assistant is ready to respond.
- Auto Trueplay tuning is enabled so Roam can automatically adjust its sound for your surroundings.

When the microphone light is off,

- If you have a voice assistant, voice control is off—your voice assistant is not listening.
- Automatic Trueplay tuning is disabled.

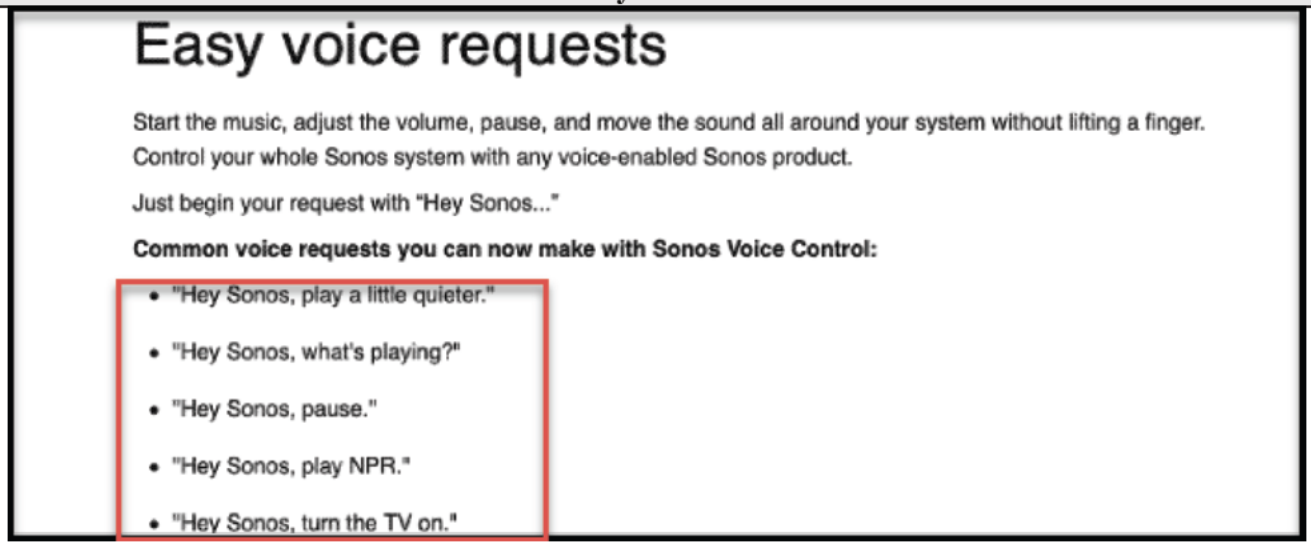
SONOS-ITC13xx-00002231 (Sonos User Guide) at 2250; SONOS-ITC13xx-00002066 (Sonos Arc Guide) at 2070; SONOS-ITC13xx-00002130 (Sonos Move Guide) at 2135; SONOS-ITC13xx-00002171 (Sonos Roam Guide) at 2176; SONOS-ITC13xx-00002085 (Sonos Beam Guide) at 2089-90; SONOS-ITC13xx-00002153 (Sonos One Guide) at 2157.



Home Theater	Add two speakers as surrounds for a true surround sound experience.
Microphones	• Far-field microphone array. • Microphone LED, hard-wired to the voice microphones for extra privacy control so you're always aware when the microphone is active.
Voice Control	Integrated voice control.

SONOS-ITC13xx-00002231 at 268, 270 (Sonos User Guide, describing specifications for Sonos devices including the Sonos One); *see also id.* at 261, 265 (Sonos Move); *id.* at 246, 251 (Sonos Roam); *id.* at 283, 294 (Sonos Arc); *id.* at 310, 323 (Sonos Beam); *see generally* SONOS-ITC13xx-00000001; SONOS-ITC13xx-00001918; SONOS-ITC13xx-00002045; SONOS-ITC13xx-00002053; SONOS-ITC13xx-00002066; SONOS-ITC13xx-00002080; SONOS-ITC13xx-00002085; SONOS-ITC13xx-00002100; SONOS-ITC13xx-

Claims	Evidence of Practice by the '748 Accused Products
	00002107; SONOS-ITC13xx-00002124; SONOS-ITC13xx-00002130; SONOS-ITC13xx-00002140; SONOS-ITC13xx-00002153; SONOS-ITC13xx-00002171; SONOS-ITC13xx-00002182; SONOS-ITC13xx-00002191; SONOS-ITC13xx-00002200; SONOS-ITC13xx-00002209; SONOS-ITC13xx-00002213; SONOS-ITC13xx-00002216; SONOS-ITC13xx-00002218; SONOS-ITC13xx-00002224; SONOS-ITC13xx-00002231; SONOS-ITC13xx-00003436; SONOS-ITC13xx-00003550; SONOS-ITC1330-00000035; SONOS-ITC13xx-00000244; SONOS-ITC13xx-00023282; SONOS-ITC13xx-00023298; A spoken audio input includes a wakeword and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user. Each of the '748 Accused Products is capable of receiving, and does receive, spoken audio inputs via their respective hardware—e.g., microphone(s) and associated circuitry—as part of its Sonos Voice Control functionality. Multiple '748 Accused Products configured to operate on a local area network are capable of receiving the same spoken audio input via their associated hardware. This spoken audio input includes a wakeword (e.g., "Hey Sonos") and one or more commands, including follow-on commands uttered after a '748 Accused Product responds to the user.

Claims	Evidence of Practice by the '748 Accused Products
	 SONOS-ITC13xx-00002216 at 00002216 (Sonos Voice Control User Guide).

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	Sonos Voice Control also supports use cases in which the spoken audio input includes the "Hey Sonos" wakeword and an initial command, but also one or more follow-up requests. For example, if the user utters, "Hey Sonos, play some music," and then, without repeating the "Hey Sonos" wakeword, the user says "louder," the Accused Products will increase the volume notwithstanding that the user did not repeat the wakeword. **Follow-up requests** With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume. **Example requests** • *Play some music. Louder.* • *Skip this track. Again. Volume up.* • *Fast forward. More.* GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[11.b] determine, based at least in part on information received from the one or more additional computing devices, whether the first computing device should perform speech recognition on the spoken audio input; and	A '748 Accused Product operating as the first computing device is capable of determining and does determine, based at least in part on information received from the one or more additional computing devices (*e.g.*, other '748 Accused Products), whether the first computing device should perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products is capable of determining whether to perform speech recognition on spoken audio input consisting of a wakeword (i.e., a hotword), an initial spoken request, and a follow-on command. Each of the '748 Accused Products employs an arbitration algorithm by which it receives information from one or more other '748 Accused Products that detect the same wakeword in the form of a message," determines whether it is the appropriate device to respond to the user's spoken audio input, and responds to the user. When the user utters a follow-up request after the '748 Accused Product serving as the first computing device responds to the user, only the first computing device will perform speech recognition on the speech containing the follow-up request.

Claims	Evidence of Practice by the '748 Accused Products
	When a '748 Accused Product operates in proximity to additional '748 Accused Products and receives a spoken audio input that includes a wakeword, each '748 Accused Product that received the spoken audio input will generate associated that spoken audio input.

Claims	Evidence of Practice by the '748 Accused Products
	[14] Speech recognition on any follow-up requests does not begin until after the following arbitration process completes and the first computing device responds to the user and/or fulfills the request (e.g., by providing a synthesized speech response or playing music).

[14] The '748 Accused Products infringe this limitation under either Sonos's or Google's proposed construction of "perform speech recognition," as explained in further detail in limitation [1.f].

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products
	[redacted]

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Product from one or more other '748 Accused Products configured on the network that also detect a wakeword invocation to determine whether it should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)):

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	For each the '748 Accused Products serving as the first computing device receives from one or more other '748 Accused Products on the network that detected the wakeword, the '748 Accused Product operating as the first computing device then to determine whether it or another '748 Accused Product that sent that should perform speech recognition on the spoken audio input (i.e., the user's entire spoken utterances, including the wakeword, initial request and follow-on request(s)).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

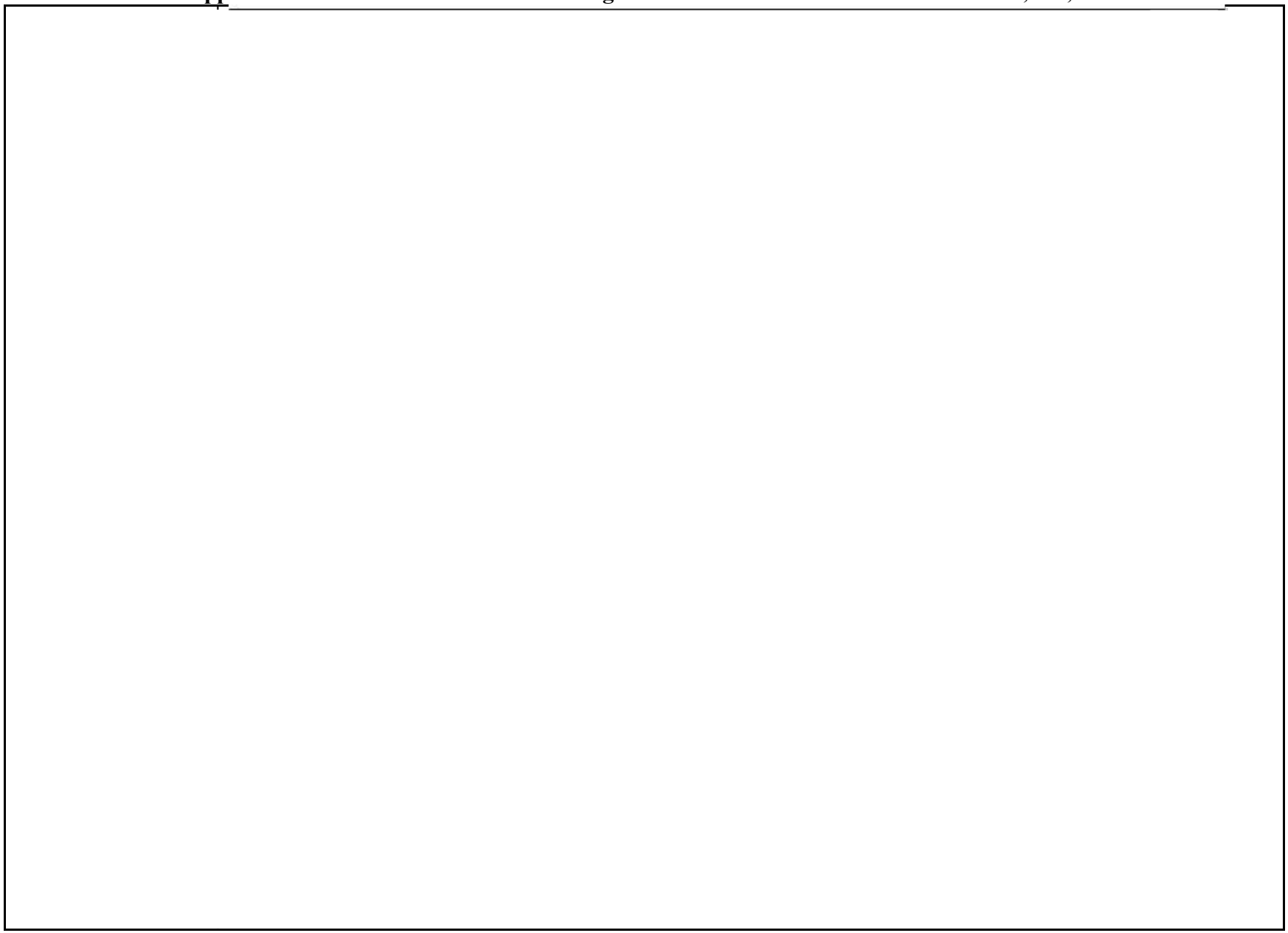
Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products



Claims	Evidence of Practice by the '748 Accused Products
	SONOS-ITC13xx-00006609 at 00006609-10. As noted above, the '748 Accused Product operating as the first computing device performs it receives from another '748 Accused Product. If, after it performs the above it receives, the first electronic device determines that it has won the arbitration for a given wakeword, that first electronic device becomes and responds to the user.

Claims	Evidence of Practice by the '748 Accused Products
	In use cases where the user's utterance includes a wakeword and one or more commands after which the user provides a follow-on request,

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
[11.c] responsive to determining that the first computing device should perform speech	When a '748 Accused Product, operating as the first computing device, determines that it should perform speech recognition on the spoken audio input, steps [1.d] through [g] are performed by that '748 Accused Product in the manner described below.

Claims	Evidence of Practice by the '748 Accused Products
recognition on the spoken audio input:	
[11.d] send, to at least a second computing device from a plurality of computing devices, a command to temporarily refrain from performing speech recognition;	A '748 Accused Product operating as the first computing device is capable of sending, and does send, to at least a second computing device (one or more other '748 Accused Products) from the plurality of computing devices, a command to temporarily refrain from performing speech recognition.

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products, upon losing arbitration, will refrain from performing speech recognition on a follow-on request when the concludes.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	Accordingly, if a '748 Accused Product that is detects a second wakeword uttered after the first wakeword in a subsequent spoken audio input, and determines it should perform speech recognition on the subsequent wakeword arbitration too because , the , associated with the second wakeword occurrence, sent by the '748 Accused Product serving as the first computing device to the other '748 Accused Products that detected the second wakeword is a "command to temporarily

Claims	Evidence of Practice by the '748 Accused Products
	refrain from performing speech recognition."
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "a command to temporarily refrain." Sonos's proposed construction is "a message instructing the second computing device

Claims	Evidence of Practice by the '748 Accused Products
	to temporarily cease performing any and all speech recognition." Any '748 Accused Product that receives will cease performing any and all speech recognition until the next time it detects a wakeword, as described above.

Claims	Evidence of Practice by the '748 Accused Products
[11.e] perform speech recognition on the spoken audio input;	A '748 Accused Product operating as the first computing device that determines it has won an arbitration will perform speech recognition on the spoken audio input. For example, each of the '748 Accused Products performs speech recognition on spoken audio input associated with the wakeword, including any follow-on commands that may be issued. A '748 Accused Product operating as the first computing device that is the "winning" device in the arbitration processes described above in limitation [11.b] performs speech recognition on the spoken audio input using automated speech recognition (ASR) and continues performing speech recognition on follow-on voice commands in the spoken audio input during a session. Overview Control your whole Sonos system with hands-free ease and unmatched privacy— • Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora. • All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone. • Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Claims	Evidence of Practice by the '748 Accused Products

Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	As described in limitation [11.b], the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products
	After the '748 Accused Product responds to the user's query, the '748 Accused Product serving as the first computing device will then monitor for additional follow-on commands in the spoken audio input without requiring a new hotword utterance (e.g., in response to the device turning the volume louder, the user may utter "louder" without repeating the hotword) and continue to perform speech recognition on the "continued conversation" follow-on speech. The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "[perform/performing] speech recognition." Sonos's proposed construction is "processing spoken audio to determine whether it includes a predetermined audio command." As explained in limitation [11.f], the '748 Accused Products process spoken audio to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
[11.f] determine, based on performing speech recognition on the	A '748 Accused Product operating as a first computing device is capable of performing and does perform speech recognition on the spoken audio input to determine whether the spoken audio input includes a predetermined spoken audio command.

Claims	Evidence of Practice by the '748 Accused Products
spoken audio input, whether the first audio input includes a predetermined spoken audio command; and	A '748 Accused Product operating as the first computing device that determines it is the arbitration winner is capable of performing and will operate to perform speech recognition on spoken audio inputs to determine whether the spoken audio input includes a predetermined command. Examples of predetermined commands include requests or directives to, e.g., play a specific song, or adjust the volume on the '748 Accused Product.

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Supplemental Exhibit C: 1/31/2023 Infringement Claim Chart for U.S. Patent No. 9,632,748

Claims	Evidence of Practice by the '748 Accused Products

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Claims	Evidence of Practice by the '748 Accused Products

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
- Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Easy voice requests

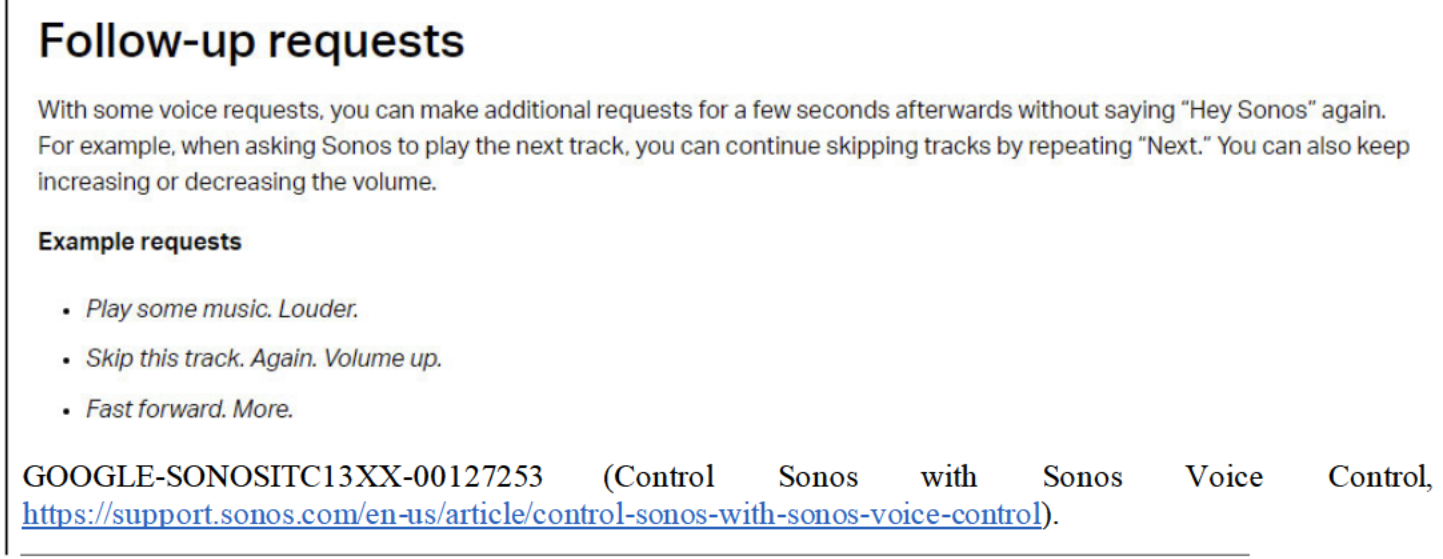
Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

Claims	Evidence of Practice by the '748 Accused Products
	 Follow-up requests With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume. **Example requests** • *Play some music. Louder.* • *Skip this track. Again. Volume up.* • *Fast forward. More.* GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
	The '748 Accused Products also infringe this limitation under Sonos's proposed construction of "predetermined spoken audio command." Sonos's proposed construction is "any audio input usable to initiate interaction with a computing device, such as a spoken hotword." Spoken hotwords are usable to initiate conversations with a computing device, while other audio inputs, such as "play music," are usable to initiate other types of interactions with a computing device (i.e., a music-playing session). Accordingly, commands can be in any portion of a spoken audio input, including a follow-on request, the '748 Accused Products are capable of determining whether audio inputs usable initiate interaction with a computing device are present in the spoken audio input, responsive to determining whether to perform speech recognition on such follow-on audio.
[11.g] responsive to determining that the spoken audio input includes the predetermined spoken audio command, execute an action associated with the	A '748 Accused Product operating as the first computing device that determines that the spoken audio input includes the predetermined spoken audio command is capable of executing, and will execute, an action associated with the predetermined spoken audio command. For example, if the spoken audio input includes a predetermined audio command and a '748 Accused Product operating as the first computing device determines it is the arbitration winner, it will execute one or more actions associated with the command.

Claims	Evidence of Practice by the '748 Accused Products
predetermined spoken audio command.	For example, such actions may include initiating music or radio, or controlling volume, as well as navigating tracks, targeting or grouping Sonos speakers, or managing the user's music library.

Claims	Evidence of Practice by the '748 Accused Products

Overview

Control your whole Sonos system with hands-free ease and unmatched privacy—

- Say it to play it. Request music from Sonos Radio, Amazon Music, Apple Music, Deezer, and Pandora.
- All requests are processed entirely on your speaker. Nothing you say is recorded, sent to the cloud, stored, transcribed, or listened to by anyone.
- Works on Bluetooth too. Enjoy essential controls with Move and Roam on Bluetooth.

Easy voice requests

Start the music, adjust the volume, pause, and move the sound all around your system without lifting a finger. Control your whole Sonos system with any voice-enabled Sonos product.

Just begin your request with "Hey Sonos..."

Common voice requests you can now make with Sonos Voice Control:

- "Hey Sonos, play a little quieter."
- "Hey Sonos, what's playing?"
- "Hey Sonos, pause."
- "Hey Sonos, play NPR."
- "Hey Sonos, turn the TV on."

SONOS-ITC13xx-00002216 at 00002216.

List of voice requests for Sonos Voice Control

This article contains a list of the types of voice requests you can make with Sonos Voice Control. You can start a request by saying "Hey Sonos."

You can ask Sonos for multiple things at once as well as direct each request to any product in your Sonos system. For some actions, you can make follow-up requests without saying "Hey Sonos" again. Learn more in our article on using Sonos Voice Control.

Note that the examples below are not comprehensive – there are many ways to ask Sonos Voice Control to do a particular action.

Playing music

You can start some music right away by asking Sonos to play music from your supported music services. You can also ask for specific tracks, albums, playlists, and more.

Action	Example requests with "Hey Sonos"
Play music	"Play some music" "Play something"
Switch the music to something else	"Change the music" "Play something different"
Play a specific song, artist, or album	"Play the song Borderline" "Play Tame Impala" "Play the album The Slow Rush"
Play music from a genre or mood	"Play some jazz" "Play something relaxing"
Play music from a certain era or decade	"Play 80s music"
Play a radio station by name, callsign, or frequency	"Play Sunset Fuzz on Sonos Radio" "Play KTYD" "Play 99.9"
Play from a specific music service	"Play Tame Impala on Apple Music"
Play in another room or on a saved group	"Play some jazz in the kitchen" "Play Tame Impala downstairs"

Product controls

You can ask Sonos to adjust the volume, skip tracks, and pause the music.

Action	Example requests with "Hey Sonos"
Start or stop the music	"Pause" "Stop the music" "Resume"
Fast forward or rewind	"Fast forward" "Skip ahead" "Go back a bit"
Skip to the next track or go to the previous track	"Next track" "Play the previous track" "Go back"
Restart music	"Restart this song" "Play this song from the beginning"
Adjust the volume	"Volume up" "Turn it down" "Set volume to 50%"
Mute and unmute	"Mute" "Set volume to zero"
Turn playback modes on or off	"Turn shuffle on" "Repeat this album"

Grouping, ungrouping, and moving music

Group products and Rooms together or move music from one place to another.

Action	Example requests with "Hey Sonos"
Group and ungroup products or Rooms	"Group the kitchen and living room" "Remove this room from the group" "Play here too"
Move the music from one place to another	"Move the music from the living room to the kitchen" "Move the music upstairs" "Stop the music in the office and play it in the backyard"

Claims	Evidence of Practice by the '748 Accused Products

Manage your library

Some music services allow you to like tracks, save them to playlists, or add them to your library with a voice request.

Action	Example requests with "Hey Sonos"
Like or unlike tracks	"Like this track" "I don't like this track"
Add or remove tracks from your library	"Add this track to my library" "Save this album" "Remove this song from my collection"
Add a track to a playlist	"Add this song to my morning playlist"

Home Theater

You can control some functions that are specific to your Sonos home theater products using Sonos Voice Control.

Action	Example requests with "Hey Sonos"
Turn your TV on or off[1]	"Turn the TV on" "Turn off the TV in the living room"
Toggle Night Sound or Speech Enhancement	"Turn on Night Sound" "Turn Speech Enhancement off"
Play TV audio	"Switch to TV mode" "Go back to TV audio"

[1] Requires your Sonos home theater product to be connected to your TV with HDMI-ARC

Get information

Ask Sonos for some basic information about your products or your music.

Action	Example requests with "Hey Sonos"
Ask what's playing	"What song is this?" "What's playing?"
Check the battery level on portable Sonos products	"What's the battery level?" "How much battery is left on Roam?"
Ask for the time	"What time is it?"

GOOGLE-SONOSITC13XX-00127247 (List of Voice Requests for Sonos Voice Control, https://support.sonos.com/en-us/article/list-of-voice-requests-for-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products

Follow-up requests

With some voice requests, you can make additional requests for a few seconds afterwards without saying "Hey Sonos" again. For example, when asking Sonos to play the next track, you can continue skipping tracks by repeating "Next." You can also keep increasing or decreasing the volume.

Example requests

- *Play some music. Louder.*
- *Skip this track. Again. Volume up.*
- *Fast forward. More.*

GOOGLE-SONOSITC13XX-00127253 (Control Sonos with Sonos Voice Control, https://support.sonos.com/en-us/article/control-sonos-with-sonos-voice-control).

Claims	Evidence of Practice by the '748 Accused Products
[12.pre] The non-transitory computer-readable storage medium of claim 11, further encoded with instructions that, when executed, cause the at least one processor to:	Each '748 Accused Product includes the non-transitory computer-readable storage medium of claim 11 and is further encoded with instructions, that, when executed, cause at least one processor of the '748 Accused Product to perform elements [12.a] through [12.b]. *See supra* claim 11.
[12.a] determine a current context of the first computing device,	A '748 Accused Product operating as the first computing device is capable of determining, and does determine, a current context of the first computing device. A '748 Accused Product operating as the first computing device is capable of determining, and does determine, current contextual information about the '748 Accused Products involved in the arbitration.