

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

STATON TECHIYA, LLC,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD and
SAMSUNG ELECTRONICS AMERICA,
INC.,

Defendants.

Civil Action No. 2:23-cv-00319

JURY TRIAL DEMANDED

**STATON TECHIYA, LLC'S FIRST AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

1. Staton Techiya, LLC (“Techiya”) (“Plaintiff”) brings this action for patent infringement under 35 U.S.C. § 271 against Defendants Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., (collectively, “Samsung” or “Defendants”) and alleges as follows:

THE PARTIES

2. Plaintiff Staton Techiya is a Delaware limited liability company having a place of business at 9501 Jagged Creek Ct., Delray Beach, FL, 33446. It was founded in June 2017.

3. Defendant Samsung Electronics Co., Ltd. (“SEC”) is a Korean corporation having a principal place of business at 129, Samsung-Ro, Yeongtong-Gu, Suwon-si, Gyeonggi-do, 16677, Republic of Korea.

4. Defendant Samsung Electronics America, Inc. (“SEA”) is a New York corporation having a principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660.

5. On information and belief, SEA is a wholly owned subsidiary of SEC.

THE ASSERTED PATENTS

6. United States Patent No. 11,610,587 (“the ’587 Patent”), entitled “Personalized Sound Management and Method,” issued on Mar. 21, 2023, to inventors Steven Goldstein, and John P. Keady. The ’587 Patent issued from U.S. Patent App. Ser. No. 17/736,180, filed on May 4, 2022, and was previously published as U.S. Patent Pub. No. 2022/0262361 on August 18, 2022. A true and correct copy of the ’587 Patent is attached as Exhibit A.

7. United States Patent No. 11,659,315 (“the ’315 Patent”), entitled “Methods and Mechanisms for Inflation,” issued on May 23, 2023, to inventors Moises Perez and Steven W. Goldstein. The ’315 Patent issued from U.S. Patent App. Ser. No. 17/211,814, filed on March 24, 2021, and was previously published as U.S. Patent Pub. No. 2021/0211801 on June 8, 2021. A true and correct copy of the ’315 Patent is attached as Exhibit B.

8. United States Patent No. 11,665,493 (“the ’493 Patent”), entitled “Acoustic Sealing Analysis System,” issued on May 30, 2023, to inventors John Usher and John P. Keady. The ’493 Patent issued from U.S. Patent App. Ser. No. 17,182,570, filed on February 23, 2021, and was previously published as U.S. Patent Pub. No. 2021/0176576 on June 10, 2021. A true and correct copy of the ’493 Patent is attached as Exhibit C.

9. United States Patent No. 11,683,643 (“the ’643 Patent”), entitled “Method and Device for in Ear Canal Echo Suppression,” issued on June 20, 2023, to inventors Steven W. Goldstein, Marc Andre Boillot, John Usher, and Jason McIntosh. The ’643 Patent issued from U.S. Patent App. Ser. No. 17/215,804, filed on March 29, 2021, and was previously published as U.S. Patent Pub. No. 2021/0219051 on July 15, 2021. A true and correct copy of the ’643 Patent is attached as Exhibit D.

10. United States Patent No. 11,750,965 (“the ’965 Patent”), entitled “Acoustic Dampening Compensation System,” issued on September 5, 2023, to inventors Steve Goldstein,

John Usher, and John P. Keady. The '965 Patent issued from U.S. Patent App. Ser. No. 17/353,810, filed on June 22, 2021, and was previously published as U.S. Patent Pub. No. 2021/0345034 on November 4, 2021. A true and correct copy of the '965 Patent is attached as Exhibit E.

11. United States Patent No. 11,710,473 (“the '473 Patent”), entitled “Method And Device For Acute Sound Detection And Reproduction,” issued on July 25, 2023, to inventors Steven Wayne Goldstein, John Usher, and Marc Andre Boillot. The '473 Patent issued from U.S. Patent App. Ser. No. 17/592,143, filed on February 3, 2022, and was previously published as U.S. Patent Pub. No. 2022/0230616 on July 21, 2022. A true and correct copy of the '473 Patent is attached as Exhibit F.

12. By way of assignment, Techiya is the owner of the '587, '315, '493, '643, '965, and '473 Patents (collectively, the “Asserted Patents”).

13. The Asserted Patents are each valid and enforceable.

14. Plaintiff has not practiced or licensed any of the claims of the Asserted Patents and therefore has no obligation to mark under 35 U.S.C. §287.

JURISDICTION AND VENUE

15. This action arises under the Patent Act, 35 U.S.C. § 1 et seq.

16. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338(a).

17. Venue in this District is proper under 28 U.S.C. § 1391(c)(1)-(3) and 28 U.S.C. §1400(b). SEC is not a resident of the United States and may be sued in this District, as suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction. SEA has regular and established places of business in this District at 6625 Excellence Way, Plano, TX, at 2800 Technology Drive, Suite 200, Plano, TX, and at 1100 Klein Road, Plano, TX. On information and belief, SEA employs full-term personnel such as sales personnel and engineers in

this District. Further, SEA is registered to conduct business in the State of Texas and has a Texas Taxpayer Number of 11329511536. SEC and SEA have conducted and continue to conduct business in this District, and both have committed and continue to commit acts of patent infringement in this District.

18. This Court has personal jurisdiction over Samsung. Samsung has conducted and continues to conduct business within this District. Samsung, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), ships, distributes, makes, uses, offers for sale, sells, imports, and/or advertises (including by providing interactive web pages) its products and/or services in the United States and this District and/or contributes to and actively induces its customers to ship, distribute, make, use, offer for sale, sell, import, and/or advertise (including the provision of interactive web pages) infringing products and/or services in the United States and this District.

19. Samsung, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in this District. These infringing products and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in this District.

20. On information and belief, Samsung has also placed the Samsung Galaxy S23 and other similar smartphones, the Samsung Galaxy Buds2 Pro and other similar earphones, the Samsung Galaxy Tab S8 and other similar tablets, the Samsung Galaxy Watch 5 and other similar watches, the Samsung Neo QLED 8K Smart TV and other similar televisions, the Samsung Family Hub™ refrigerator and other similar home appliances, and the Bixby Personal Assistant app (the “Accused Products”) into the stream of commerce by shipping Accused Products into this District

and shipping Accused Products into the United States knowing that those products would be shipped into this District.

JOINDER

21. Joinder of Defendants is proper under 35 U.S.C. § 299. The allegations of patent infringement contained herein arise out of the same series of transactions or occurrences relating to the importing (or having imported) into the United States and/or making (or having made), using (or inducing the use of), selling, or offering for sale within the United States, the same Accused Products. Nonlimiting examples of these products include, but are not limited to Samsung Galaxy S23, Samsung Galaxy Tab S8 tablet, Samsung Galaxy Buds2 Pro, Samsung Galaxy Watch 5, Samsung Neo QLED 8K TV, and Samsung Family Hub™ refrigerator imported, sold, offered for sale, and/or used in this District.

ALLEGATIONS OF PATENT INFRINGEMENT

22. Plaintiff incorporates the allegations of the foregoing paragraphs as if fully restated herein.

23. As set forth below, the Accused Products incorporate, without any license or permission from Plaintiff, technology protected by the Asserted Patents. Plaintiff respectfully seeks relief from this Court for Defendants' infringement.

24. Samsung has and continues to make, have made, use, sell, offer for sale, import, have imported, test, design, and/or market in the United States smartphones, tablets, watches, earphones and other Accused Products that infringe the Asserted Patents.

25. Samsung has directly infringed, and continues to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) and (g) by making, using, selling and/or offering to sell, in this District and elsewhere in the United States, and/or importing into this District and elsewhere in the United States, the Accused Products including certain smartphones, tablets, watches, earphones,

televisions, and appliances, including Bixby enabled smartphones, tablets, watches, earphones, televisions, and appliances which infringe the Asserted Patents, as further described in detail in Counts I-IV infra.

26. On information and belief, since prior to the filing of this complaint, Samsung has monitored the prosecution of the Techiya patent portfolio, including monitoring the portfolio for issuance of the Asserted Patents and studying and analyzing the scope of the Asserted Patents. As a result, on information and belief, Samsung had actual notice of the issuance of the Asserted Patents prior to the filing of this complaint, and Samsung had actual notice of the scope of the Asserted Patents and its infringement prior to the filing of this complaint.

27. At the very least, Samsung has had actual knowledge of the Asserted Patents and notice of its infringement since service of this complaint.

28. With actual notice of the Asserted Patents, Samsung has proceeded to directly infringe by making, using, testing, designing, selling, offering to sell, and/or importing in this District and elsewhere in the United States the Bixby platform, smartphones, tablets, watches, and earphones that infringe the Asserted Patents.

29. Samsung has also indirectly infringed, and continues to indirectly infringe, the Asserted Patents under 35 U.S.C. § 271(b). Samsung contributes to and induces direct infringement by Samsung's distributors, customers, and end-users. For example, on information and belief, retailers such as the Walmart Supercenter at 1701 E End Blvd N, Marshall, TX 75670 offer Accused Products for sale. Such sale and later use by purchasers results in induced infringement of the Asserted Patents by Samsung.

30. Samsung knew and had specific intent to induce and encourage this direct infringement of the Asserted Patents by Samsung's customers, including the customers' importation, sales, use, and offer for sale of articles that are covered by the Asserted Patents.

31. Further, after receiving actual notice of the Asserted Patents, Samsung has proceeded to actively induce infringement of the Asserted Patents under 35 U.S.C. § 271(b) by:

inducing customers and/or other third parties to make, use, sell, offer for sale, market, advertise, and/or import Accused Products that infringe the Asserted Patents; and
inducing customers and/or other third parties to use Accused Products that infringe the Asserted Patents in combination with the Bixby platform.

32. Samsung's acts of infringement have caused damage to Plaintiff. Plaintiff is entitled to recover from Samsung the damages caused by Samsung's wrongful acts.

REPRESENTATIVE ACCUSED PRODUCTS

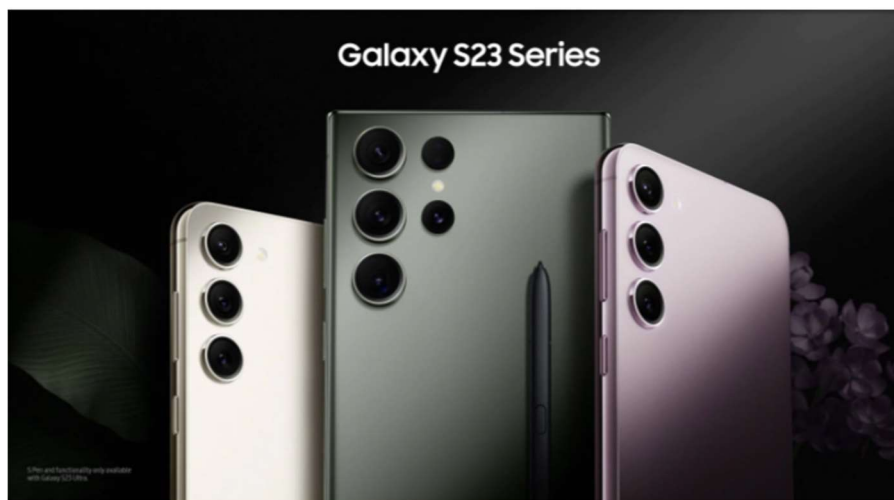
33. Representative accused products include, but are not limited to, the Samsung Galaxy S23 smartphone and similar smartphones (“Accused Smartphone Products”), the Samsung Galaxy Tab S8 tablet and similar tablets” (“Accused Tablet Products”), the Samsung Galaxy Watch 5 and similar watches (“Accused Watch Products”), the Samsung Neo QLED 8K TV and similar televisions (“Accused Television Products”), the Family Hub™ refrigerator and similar appliances and devices (“Accused Appliance Products”), and the Samsung Galaxy Buds2 Pro earphones and similar earphones, including the Samsung Galaxy Buds Pro and Buds+ (“Accused Earphone Products”). These products are designed and configured to be used with Samsung’s Bixby voice-driven user interface.

34. Samsung marketing materials indicate that Bixby is available with at least the following products: Galaxy S23, S23+, S23 Ultra, S22, S22+, S22 Ultra, S21, S21+, S21 Ultra, S21 FE, S20, S20+, S20 Ultra, S20 FE, S10, S10+, S10e, S10 Lite, S8, S8+, S8 Active, A73 5G, A53, A33 5G, A71, A72, A54 5G, A53x, A52, A52 5G, A52s, A51, A51 5G, A90, A80, A82, A71 5G, A70, A70s, A60, A50, A50s, A8s, A9 2018, A9 Pro A8 Star, A34 5G, A33 5G, A Star, F52, F62, M52, M54 5G, M62, Note20, Note20+, Note20 Ultra, Note10, Note10+, Note10 Lite, Note9, S9,

S9+, Note8, Xcover Pro, Xcover Pro2, Fold, Z Fold 2, Z Fold 3, Z Fold 4, Z Flip, Z Flip 5G, Z Flip 3, Z Flip 4, Tab S8, Tab S8+, Tab S8 Ultra, Tab S7, Tab S7+, Tab S7 Lite, Tab S6, Tab S6 Lite, Tab S5e, Tab S4, Tab A 10.5", Tab Active Pro, Tab A2, Tab A4, Tab Active3, Tab Active Pro, Tab Active, Gear S3, Gear S4, Gear Sport, Watch, Watch Active, Watch Active2, Watch 3, Watch 4, Watch 4 Classic, Watch 5, Watch 5 Pro, Buds, Buds+, Buds Pro, Buds Live, Buds 2, Buds 2 Pro, Book2 HDD, Book2, Book2 360, Book2 Pro 15, Book2 Pro13, Book2 Pro 360, Book, Book Biz, Book Pro, Book Pro 360, Book Odyssey, Book Go, Book Go 5G, Book Flex 2 α , Book Flex 2, Book Flex 2 5G, Book Ion 2, Book Flex, Book Ion, Book Flex α , Book S, Notebook+, Notebook+2, Notebook Pen, Notebook 9 Pro, Notebook 9, Notebook 7 Spin, Notebook 7 Pro, Notebook 7, Notebook 5, Notebook 3, and Notebook Odyssey. (See, e.g., <https://www.samsung.com/us/apps/bixby/>, Fn. 4.).

35. On information and belief, Bixby also runs on Samsung's Smart Appliances, including its Family Hub™ refrigerators, and its Smart TVs, including the Neo QLED 8K TV. (See, e.g., <https://www.androidauthority.com/bixby-879091/>; <https://www.samsung.com/levant/support/tv-audio-video/how-to-use-bixby-on-a-samsung-smart-tv/>).

36. The Samsung Galaxy S23 is an example of an infringing Samsung smartphone.



37. On information and belief, the Samsung Galaxy S23 is Bixby enabled and includes a Snapdragon 8 Gen 2 processor, 8 GB of RAM, 128 GB of flash storage, and four cameras.

Source: https://www.gsmarena.com/samsung_galaxy_s23-12082.php.

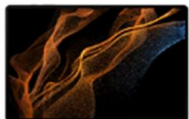
38. The Samsung Galaxy Tab S8 is an example of an infringing Samsung tablet.



39. On information and belief, the Samsung galaxy Tab S8 is Bixby enabled and includes a microphone, a Snapdragon 8 Gen 1 processor, and various types of memory. *Source:*

<https://www.samsung.com/us/tablets/galaxy-tab-s8/buy/?modelCode=SM-X800NZAGXAR;%20>; https://www.gsmarena.com/samsung_galaxy_tab_s8-11343.php.

NEW
Galaxy Tab S8 Ultra



Color
Graphite

Connectivity
Wi-Fi 6, Bluetooth v5.0

Battery
11,200mAh

RAM + Storage
8GB (RAM) + 128GB
12GB (RAM) + 256GB
16GB (RAM) + 512GB

Micro SD Card
Up to 1TB

Processor
Qualcomm Snapdragon 8 Gen 1

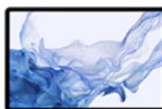
Display
14.6" Super AMOLED

Dimension
12.85" x 8.21" x 0.22"

Weight
1.60 lb.

Model Number
SM-X900

NEW
Galaxy Tab S8+



Colors
Graphite
Silver
Pink Gold

Connectivity
Wi-Fi 6 or 5G + Wi-Fi 6, Bluetooth v5.0

Battery
10,090mAh

RAM + Storage
8GB (RAM) + 128GB
8GB (RAM) + 256GB

Micro SD Card
Up to 1TB

Processor
Qualcomm Snapdragon 8 Gen 1

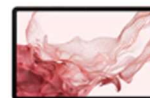
Display
12.4" Super AMOLED

Dimension
11.22" x 7.28" x 0.22"

Weight
1.27 lb

Model Number
SM-X800

NEW
Galaxy Tab S8



Colors
Graphite
Silver
Pink Gold

Connectivity
Wi-Fi 6, Bluetooth v5.0

Battery
8,000mAh

RAM + Storage
8GB (RAM) + 128GB
8GB (RAM) + 256GB

Micro SD Card
Up to 1TB

Processor
Qualcomm Snapdragon 8 Gen 1

Display
11.0" LTPS LCD

Dimension
9.99" x 6.51" x 0.25"





Weight
1.10 lb

Model Number
SM-X700

40. The Samsung Galaxy Watch 5 is an example of an infringing Samsung watch.

41. On information and belief, the Samsung Galaxy Watch 5 is Bixby enabled and includes a microphone, processor, sensors (biometric and motion), and various types of memory. *Source:* <https://www.samsung.com/us/watches/galaxy-watch5/buy/?modelCode=SM-R920NZTAXAA>.

KEY FEATURES COMPARE / SPECS WHAT'S IN THE BOX FREQUENTLY ASKED QUESTIONS [Chat with an E](#)

Smartwatch 1	Smartwatch 2	Smartwatch 3	Smartwatch 4
			
Size (L) 43.3 x 44.4 x 9.8t / 33.5g (S) 39.3 x 40.4 x 9.8t / 28.7g	Size (L) 45.4 x 45.4 x 10.5t / 46.5g	Size (L) 43.3 x 44.4 x 9.8t / 30.3g (S) 39.3 x 40.4 x 9.8t / 25.9g	Size (L) 45.5 x 45.5 x 11.0t / 52g (S) 41.5 x 41.5 x 11.2t / 46.5g
Material AL	Material Titanium	Material AL	Material SUS
Processor Exynos W920 (Dualcore, 5nm)	Processor Exynos W920 (Dualcore, 5nm)	Processor Exynos W920 (Dualcore, 5nm)	Processor Exynos W920 (Dualcore, 5nm)
Memory RAM 1.5GB + 16GB	Memory RAM 1.5GB + 16GB	Memory RAM 1.5GB + 16GB	Memory RAM 1.5GB + 16GB
Display (L) 1.36"(450x450), 330PPI (S) 1.19"(396x396), 330PPI Always-on AMOLED display	Display (L) 1.36"(450x450), 330PPI Always-on AMOLED display	Display (L) 1.36"(450x450), 330PPI (S) 1.19"(396x396), 330PPI	Display (L) 1.36"(450x450), 330PPI (S) 1.19"(396x396), 330PPI
Window Sapphire Crystal ※ 24GPa	Window Sapphire Crystal ※ 29GPa	Window Classic GG3/DXC, Watch4 GG6/DX+ (15GPa)	Window Classic GG3/DXC, Watch4 GG6/DX+ (15GPa)
Health Heart Rate Monitor, ECG, BIA, Continuous SpO2	Health Heart Rate Monitor, ECG, BIA, Continuous SpO2	Health Heart Rate Monitor, ECG, BIA, Continuous SpO2	Health Heart Rate Monitor, ECG, IA, Continuous SpO2
Sensors Accel., Gyro, Baro, Ambient Light, Compass	Sensors Accel., Gyro, Baro, Ambient Light, Compass	Sensors Accel., Gyro, Baro, Ambient Light, Compass	Sensors Accel., Gyro, Baro, Ambient Light, Compass
Battery 284mAh / 410mAh	Battery 590mAh	Battery 247mAh / 361mAh	Battery 247mAh / 361mAh
Charging WPC Charging + Faster Charging*	Charging WPC Charging + Faster Charging*	Charging WPC Wireless Charging	Charging WPC Wireless Charging
Connectivity BT 5.2 / Wi-Fi 2.4GHz & 5GHz / GPS / NFC / LTE	Connectivity BT 5.2 / Wi-Fi 2.4GHz & 5GHz / GPS / NFC / LTE	Connectivity BT 5.0 / Wi-Fi 2.4GHz & 5GHz / GPS / NFC / LTE	Connectivity BT 5.0 / Wi-Fi 2.4GHz & 5GHz / GPS / NFC / LTE
Waterproof 5ATM / IP68 / MIL-STD-810H	Waterproof 5ATM / IP68 / MIL-STD-810H	Waterproof 5ATM / IP68 / MIL-STD-810H	Waterproof 5ATM / IP68 / MIL-STD-810H
Feedback Mic., Speaker, Motor, Touch Bezel	Feedback Mic., Speaker, Motor, Touch Bezel	Feedback Mic., Speaker, Motor, Rotating Bezel(Classic)	Feedback Mic., Speaker, Motor, Rotating Bezel(Classic)

42. The Samsung Galaxy Buds Pro is a representative infringing earphone product.

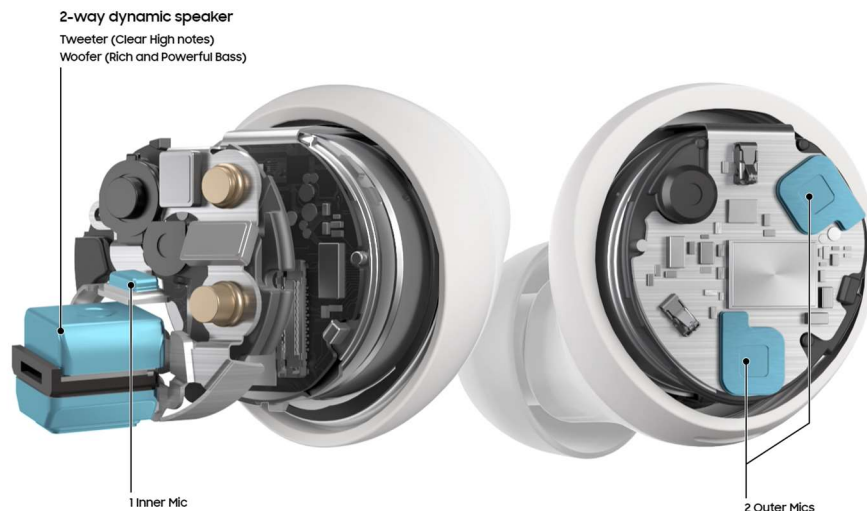
43. The Samsung Galaxy Buds Pro has one inner microphone (ECM) and two outer microphones (ASM). On information and belief, the Buds Pro includes a BCM 43015 SoC chipset which includes a digital signal processor that uses the RTOS operator system. The Buds Pro also includes a 2 way speaker, a high SNR microphone as the main microphone, a sub microphone, and an inner microphone.



Source: <https://www.samsung.com/global/galaxy/galaxy-buds-pro/specs/>

44. On information and belief, the same or similar processor and operating system is present in the Samsung Galaxy Buds2 Pro, Samsung Galaxy Buds 2, Samsung Galaxy Buds+, Samsung Galaxy Buds Live, Samsung Galaxy Buds 2, and other Samsung Galaxy earphones.

45. The Samsung Galaxy Buds+ (<https://www.samsung.com/global/galaxy/galaxy-buds-plus/>) is a further representative product evidencing Samsung's infringement. The Samsung Galaxy Buds+ includes an ear canal (inner) microphone, an ear canal speaker, and two exterior ambient microphones.



46. On information and belief, the Samsung Galaxy Buds+ includes a Broadcom BCM43015 chipset that includes a memory storing instructions for the processor to execute. (<https://www.samsung.com/global/galaxy/galaxy-buds-plus/specs/>)

47. The Samsung Galaxy Buds+ also implement Ambient Sound Mode, which enables the surrounding (ambient) sound to flow into the earbuds and which can also be used during calls so that the user can hear her own voice as well as the other's voice as the outer microphones and the inner microphone are controlled to diminish or block out surrounding sounds during the duration of the call. (<https://www.samsung.com/global/galaxy/galaxy-buds-plus/>). On information and belief, the Samsung Galaxy Buds Pro, Samsung Buds 2 Pro, Samsung Galaxy Buds Live, Samsung Galaxy Buds2, and other Samsung Galaxy earphones have similar functionality.

48. The Samsung Neo QLED 8K Smart TV is an example of a Samsung infringing smart TV.

49. On information and belief, the Neo QLED 8K smart TV includes a Neural Quantum Processor 8K and related memory. Specifications for the Samsung Neo QLED 8K Smart TV can be viewed at: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qlcd-8k/85-class-qn800b-samsung-neo-qlcd-8k-qn85qn800bfxa/>.



50. On information and belief, other Samsung Smart TVs that are Bixby-enabled include but are not limited to: Samsung Crystal UHD 4K TV, Samsung QLED 4K TV, Samsung OLED 4K TV, and Samsung Neo QLED 4K TV.

51. The Samsung Family Hub™ refrigerator is an example of a Samsung infringing smart appliance. On information and belief, the Family Hub™ refrigerator uses a Hawk-M Quad Core (1.3 GHz) processor with 8GB onboard memory. <https://www.choice.com.au/home-and-living/kitchen/fridges/articles/samsung-family-hub-review>.

52. Features of the Samsung Family Hub™ refrigerator are described at: <https://www.samsung.com/us/explore/family-hub-refrigerator/features/>.

53. The Bixby platform is a software application which resides on Samsung smartphones, tablets, watches, earphones, smart TVs, appliances, and other devices to provide voice assistant functionality. (See, for example, <https://www.samsung.com/global/galaxy/what-is/bixby/>; and https://downloadcenter.samsung.com/content/UM/202112/20211229231847590/SAM_G991_G996_G998_EN_UM_OS12_121721_FINAL.pdf)

54. The Bixby Platform allows a user to interact with various Samsung devices, such as the Samsung Galaxy S23, directly or via earphones, such as the Samsung Galaxy Buds2 Pro, to control various actions of the devices. For example, the Bixby platform can be used for voice activation and control of audio and video recording and playback operations by the Samsung Galaxy S23 and other Bixby-enabled Samsung devices, including tablets, earphones, smart TVs, and appliances.

55. Bixby can also be used to identify information about a song, e.g., title, artist, or album, by transmitting a portion of the song as captured by the microphone of a Samsung Galaxy smartphone to the Bixby server. See <https://www.sammobile.com/2019/03/14/bixby-identify-music-shazam>, and <https://www.samsung.com/au/support/mobile-devices/detect-song-titles-using-bixby/>.

56. The Bixby platform can be voice-activated by the user speaking a command or phrase such as “Hi, Bixby.” The Bixby server(s) include at least a processor and processor readable memory where a digital vocabulary database of acoustic characteristics, e.g., temporal or spectral patterns, of verbal words which are sufficient to recognize many commands, such as the commands in the examples below:

“Hi Bixby take a selfie with a sticker.”	“Turn on Bluetooth.”
“Set media volume to 5.”	“Find Jane’s number.”
“Start recording in interview mode.”	“Change TV channel to 7.”

Source: <https://www.samsung.com/us/explore/bixby/>.

57. In order for the Bixby platform to detect and understand a user’s voice commands, the Bixby platform performs speech recognition and natural language analysis. The speech recognition requires comparing known information, i.e., the stored acoustic characteristics of words, with unknown information, i.e., characteristics of an acoustic signal from the microphone of the Samsung Galaxy S23 or Samsung Galaxy Buds Live.

Bixby, Samsung Electronics' intelligent voice assistant, is available in nine languages and on more than 160 million devices globally. Earlier this year, Samsung Electronics developed a new end-to-end (E2E) automatic speech recognition (ASR) engine for Bixby. The new ASR engine, based on the Transformer neural network architecture, simplified the training process, but also required more training data. Rapid training for the machine learning model became critical to maintaining Bixby as more languages were introduced to the service. To address this, Samsung Electronics chose to adopt Cloud TPUs to meet and exceed performance requirements for Bixby.

Source: <https://www.finchannel.com/technology/79646-google-s-cloud-tpus-increase-samsung-electronics-bixby-s-ai-model-training-speed-by-18x>.

58. The Bixby platform can find and initiate calls to phone numbers in the address book of the Samsung Galaxy S23 and other similar Samsung smartphones.

Source: <https://www.samsung.com/us/explore/bixby/>.

COUNT I

Defendants' Infringement of the '587 Patent

59. Plaintiff incorporates the allegations of the foregoing paragraphs as if fully restated herein.

60. Plaintiff Techiya is the assignee and lawful owner of the '587 Patent, and Plaintiff holds all right, title and interest in and to the '587 Patent.

61. The '587 Patent is valid and enforceable.

62. Defendants have directly infringed, and continue to directly infringe, the '587 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '587 Patent including, but not limited to, the Accused Products. Further discovery may reveal additional infringing products and/or models.

63. For example, and without limitation, the Accused Products infringe at least claim 1 of the '587 Patent. The Accused Products fall within the scope of and include, either literally or under the doctrine of equivalents, all of the elements of the asserted claim of the '587 Patent.

64. Samsung Galaxy S23, Tablet S8, Galaxy Buds2 Pro, Galaxy Buds Pro, Galaxy Buds+, Neo QLED 8K TV, and Family Hub™ refrigerator are exemplary products covered by at least claim 1 of the '587 Patent. On information and belief, many other products provided by, and to be provided by, Samsung infringe the '587 Patent.

65. The '587 Patent claims: 1. A system comprising: a user interface; and an audio device comprising: a microphone configured to measure ambient sound and generate a microphone signal; a speaker configured to emit an audio signal; a memory configured to store instructions; an audio buffer configured to store at least a portion of the microphone signal; a data buffer; a processor operatively coupled to the memory, the processor operatively coupled to the audio buffer, the processor operatively coupled to the data buffer, wherein the processor is configured to execute the instructions to perform operations comprising: receiving the microphone signal; sending a portion of the audio signal to the audio buffer; analyzing the audio buffer for detecting a sonic signature; notifying a user when the sonic signature is detected; sending a modified microphone signal to the data buffer replacing or adding to previous data stored in the data buffer; and sending a portion of the data stored in the data buffer, spanning a time period, to the speaker in response to a user request, wherein the user request is one of the sonic signature that is a voice command or a manual input from the user interface.

66. Bixby enabled devices, such as the Samsung Galaxy S3, are systems that include the Bixby voice-based user interface. The Bixby interface can control Samsung phones, tablets, books, watches, speakers, earphones, refrigerators, Smart TVs, and other devices. (*See, e.g., <https://www.samsung.com/us/apps/bixby/>, Fn. 4, for an exemplary list of devices that “pair well” with Bixby.*) All Bixby-enabled devices are audio devices that receive audio voice commands and provide

audio responses. The devices include a microphone to measure ambient sound and generate microphone signals, and they include a speaker configured to emit audio sounds. The Bixby-enabled devices include memory for storing instructions and processors, operatively coupled to the memory, that execute the stored instructions. On information and belief, the memory includes at least one audio buffer and at least one data buffer, both of which are operatively coupled to the processor. The processors of Bixby-enabled devices are configured to receive microphone signals, to send at least a portion of those signals to the audio buffer, and to analyze the audio buffer to detect a sonic signature, for example, to detect when a user says “Hi Bixby” to initiate function of the Bixby app. The processors of Bixby-enabled devices are configured to notify the user when a sonic signature, such as “Hi Bixby,” is detected, for example, by providing voice or other audio feedback. Bixby-enabled devices filter incoming microphone signals, and the Bixby voice app has a “voice filter” such that modified microphone signals are provided to the data buffer replacing or adding to data stored in that buffer. Filtering is done, for example, to improve speech recognition in noisy environments. The processors of Bixby-enabled devices are configured to send data stored in the data buffer to the device speaker in response to a user request. Bixby-enabled devices are configured to receive speech commands prompting, for example, playback from the data buffer of voice recordings, video recordings, stored music, voice responses, and notification tones.

67. Defendants have had notice of their infringement of the '587 Patent at least since the date of filing of the complaint in this action.

68. Defendants have indirectly infringed and continue to indirectly infringe the '587 Patent by actively inducing infringement of the '587 Patent by others, such as users of the Samsung Galaxy S23 enabled with Bixby, Samsung Galaxy Tab S8 Tablet enabled with Bixby, Samsung Galaxy Watch 5 enabled with Bixby, Samsung Neo QLED 8K smart TV enabled with Bixby, Samsung Family Hub™

refrigerator enabled with Bixby, and Samsung Galaxy Buds2 Pro enabled with Bixby, including within this District.

69. Defendants continued direct and indirect infringement of the '587 Patent has damaged and will continue to damage Plaintiff.

70. Plaintiff is entitled to recover damages adequate to compensate for Defendants' infringement.

71. After notice of their infringement of the of the '587 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the Accused Products. Further, Defendants by disseminating marketing materials, providing user and technical manuals relating to the Accused Products, and by other acts have actively induced infringement by encouraging others to directly infringe the Asserted Patents such as by retailers offering and selling Accused Products in this District and elsewhere in the United States and by users of Accused Products using such products in this District and elsewhere in the United States in ways that directly infringe the Asserted Patents. Defendants knew or should have known that the acts they induced constituted patent infringement.

72. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement of valid patents, including the '587 Patent. Defendants knew and should have known that their actions would cause direct and indirect infringement of the '587 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '587 patent.

73. Defendants have willfully infringed and continue to willfully infringe the '587 Patent.

COUNT II

Defendants' Infringement of the '315 Patent

74. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

75. Plaintiff Techiya is the assignee and lawful owner of the '315 Patent, and Plaintiff holds all right, title and interest in and to the '315 Patent. The '315 Patent is valid and enforceable.

76. Defendants have directly infringed, and continue to directly infringe, the '315 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '315 Patent including, but not limited to, the Accused Earphone Products. Further discovery may reveal additional infringing products and/or models.

77. For example, and without limitation, the Samsung Accused Earphone Products, including the Samsung Galaxy Buds2 Pro and similar earphone products, infringe at least claim 1 of the '315 Patent.

78. Defendants have had notice of their infringement of the '315 Patent at least since the date of filing of the complaint in this action.

79. The Samsung Galaxy Buds, Buds2, Buds2 Pro, and Buds Live are exemplary products that practices at least claim 1 of the '315 Patent. On information and belief, many other products provided by Samsung infringe claim 1 of the '315 Patent.

80. The '315 Patent claims: 1 An earpiece comprising: a first ambient microphone configured to generate a first microphone signal; a second ambient microphone configured to generate a second microphone signal; an ear canal microphone configured to generate a third microphone signal; a speaker; a memory that stores instructions; a logic circuit, where the logic circuit is configured to the instructions to perform operations comprising: generating a noise reduction signal using at least one of the first microphone signal or the second microphone signal or the third microphone signal or a

combination of the microphone signals; receiving an audio signal; generating a mixed audio signal by mixing the noise reduction signal with the audio signal; and sending a modified audio signal to the speaker, where the modified audio signal includes the mixed audio signal.

81. Samsung Galaxy Buds, Buds2, Buds2 Pro, and Buds Live are earpieces that have three microphones: 2 outer microphones and 1 inner microphone. Those microphones are used, in part, to track and to eliminate outside sounds. Two of the microphones are used to generate signals based on ambient sounds and the inner microphone generates signals based on inner ear sounds. On information and belief, the three microphones generate first, second, and third microphone signals, wherein the first and second microphone signals represent ambient sounds, and the third microphone signal represents inner ear sounds. The Samsung Galaxy Buds, Buds2, Buds2 Pro, and Buds Live earpieces include a speaker, specifically a two-way dynamic speaker. On information and belief, the Samsung Galaxy Buds, Buds plus, Buds2 and Buds2 Pro use Broadcom's chipsets BCM43014 and BCM43015, or similar chipsets, that include memory (e.g., RAM/ROM) for storing instructions. The Samsung Galaxy Buds, Buds+, Buds2 and Buds2 Pro use Broadcom's chipsets BCM43014 and BCM43015, or similar chipsets. They include a logic circuit to execute the instructions stored in the memory. On information and belief, Broadcom's chipsets BCM43014 and BCM43015, or similar chipsets, process the microphone signals and audio signals generated from the three microphones and send a processed signal ("mixed audio signal" or "modified audio signal") to the speaker. Samsung Galaxy earbuds (e.g., Buds, Buds2, Buds2 Pro, and Buds Live) support active noise cancellation (ANC). The ANC feature tracks and eliminates outside sounds by using the onboard microphones to detect ambient noise frequencies and then electronically generate opposite sound frequencies (based on "the first microphone signal or the second microphone signal or the third microphone signal or a combination of microphone signals") to create a noise reduction signal. On information and belief, when the ANC feature is turned on, the earbuds are configured to generate a mixed

audio signal by mixing a voice or music signal with the noise reduction signal. Samsung Galaxy earbuds (e.g., Galaxy Buds plus, Buds2, Buds2 Pro, and Buds Live) include a 2-way speaker with wide frequency response. On information and belief, the modified audio signal is sent to the 2-way speaker after mixing the noise reduction signal with the audio signal.

82. Defendants have indirectly infringed and continue to indirectly infringe the '315 Patent by actively inducing infringement of the '315 Patent by others, such as users of the Samsung Galaxy Buds, Buds plus, Buds2, Buds2 Pro, and Buds Live within this District.

83. Defendants direct and indirect infringement of the '315 Patent has damaged and will continue to damage Plaintiff.

84. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement.

85. After receiving actual notice of the '315 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the Accused Earphone Products.

86. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement and inducement of infringement of the '315 Patent. Defendants knew and should have known that their actions would cause direct and induced infringement of the '315 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '315 patent.

87. Defendants have willfully infringed and continue to willfully infringe the '315 Patent.

COUNT III

Defendants' Infringement of the '493 Patent

88. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

89. Plaintiff Techiya is the assignee and lawful owner of the '493 Patent, and Plaintiff holds all right, title and interest in and to the '493 Patent. The '493 Patent is valid and enforceable.

90. Defendants have directly infringed, and continue to directly infringe, the '493 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '493 Patent including, but not limited to, the Accused Smartphone Products and Accused Tablet Products that work with Accused Earphone Products to test the fit of Accused Earphone Products. Further discovery may reveal additional infringing products and/or models.

91. The Accused Smartphone Products and Accused Tablet Products infringe at least claim 1 of the '493 Patent. The Accused Smartphone Products and Accused Tablet Products fall within the scope of and include, either literally or under the doctrine of equivalents, all of the elements of the asserted claims of the '493 Patent.

92. The Samsung Galaxy S23 smartphone and the Samsung Galaxy Tab S8 are exemplary products covered by at least claim 1 of the '493 Patent. On information and belief, many other products provided by, and to be provided by, Samsung infringe the '493 Patent.

93. The '493 Patent claims: 1. An audio device configured to test the seal of an earphone comprising: a memory that stores instructions; and a processor, wherein the processor is configured to execute the instructions to perform operations, the operations comprising: generating a test signal, wherein the test signal includes multiple frequency components, wherein at least one component lies between the range of 30Hz and 200Hz; sending the test signal to a speaker of an earphone, wherein the earphone includes a first microphone, the speaker, and a sealing section, and wherein the sealing section is configured to form an acoustic barrier between a first side of the earphone and a second side of the earphone when the earphone is worn by a user; receiving a first microphone signal from the first microphone; calculating a value, using a first signal and a second signal, wherein the value is the result of a non-phase calculation of at least one of a coherence, a correlation, a cross-correlation, a difference,

or a combination; comparing the value to a threshold to determine a seal quality between the first side and the second side; generating a message to convey the seal quality; and sending the message to the user.

94. On information and belief, the Samsung Galaxy S23 phone, the Samsung Galaxy Tab S8, and other infringing products can be used to test an ear seal of a linked Samsung Galaxy Buds 2 Pro or similar Accused Earphone Product.

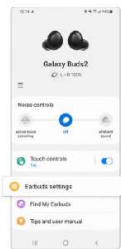
95. The Accused Smartphone Products and Accused Tablet Products, including the Samsung Galaxy S23 smartphone and Galaxy Tab S8 and similar devices, are audio devices configured to test a seal of an earphone (specifically, the seal of an Accused Earphone Product). The Accused Smartphone Products and Accused Tablet Products include memory that stores instructions that are executed by a processor to perform operations. On information and belief, the operations include sending a test signal that includes multiple frequency components, with at least one component that lies within the frequency range of 30Hz and 200Hz, to a speaker of an Accused Earphone Product (e.g., Samsung Galaxy Buds, Buds 2, Buds 2 Pro, and Buds Live). On information and belief, the generated test signal is a chime, chirp, or musical signal with a frequency sweep or components from approximately 20Hz to 1KHz. The Accused Earphone Products include a sealing section, i.e., an ear tip, that is configured to form an acoustic barrier between a first side of an earphone (i.e., an ambient sound side) and a second side of the earphone (i.e., an internal ear canal side), when the earphone is worn by a user. The processors of the Accused Smartphone Products and Accused Tablet Products are configured to receive a microphone signal from a microphone in the earphone, to calculate a value using a first signal and second signal, where the value is the result of non-phase based calculations. On information and belief, the non-phase calculations are one of a coherence, a correlation, a cross-correlation, a difference, or a combination. On information and belief, the Accused Smartphone Products and Accused Tablet Products use the difference between a first signal (e.g., a signal

representing the chime or test signal) and a second signal (e.g., a signal representing sound that escapes the ear canal) to calculate a value. The processors of the Accused Smartphone Products and Accused Tablet products are configured to compare the calculated value to a threshold value and to generate and send a message to a user to convey seal quality (e.g., good or not good).

96. In this way, the fit of the Accused Earphone Products in the ear of a user can be evaluated, and the results can be provided to a user.

If you're not sure about the fit, try the Galaxy Earbud fit test

You can use the Galaxy **Earbud fit test** if you're not sure that you're getting the best possible sound quality and active noise cancelling. In the Galaxy **Earbud fit test**, while wearing the Galaxy Buds2, speakers in the earbuds emit a chime sound into the ear to detect and calculate bouncing sound that escapes through your earbuds for any sound loss. An ear tip showing the least sound loss would be recommended as best fit. Follow the steps below to test your ear buds.



Step 1. Launch the **Galaxy Wearable** app on your mobile device and tap **Earbuds settings**.



Step 2. Tap **Earbud fit test**.



Step 3. Wear both earbuds in your ears, and then tap **Start**. The earbuds will emit a sound and the test will begin.



Step 4. If the results on the screen say you need to adjust your earbuds, try adjusting your earbuds or changing the ear tips, and tap **Retry** to start the test again.

Source: <https://www.samsung.com/sg/support/mobile-devices/find-the-best-fit-for-your-ears-with-the-galaxy-earbud-fit-test/>.

97. Defendants have, and continue to, infringe the '493 Patent by actively inducing infringement of the '493 Patent by others, such as retailers and users of the Accused Smartphone Products and Accused Tablet Products within this District.

98. Defendants have had actual knowledge of the '493 Patent since at least the filing of this complaint.

99. Defendants' continued direct and indirect infringement of the '493 Patent has damaged and will continue to damage Plaintiff.

100. Plaintiff is entitled to recover damages adequate to compensate for Defendants' infringement.

101. Despite receiving actual notice of their infringement of the '493 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the Accused Products.

102. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement of the '493 Patent. Defendants knew and should have known that their actions would cause direct and indirect infringement of the '493 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '493 patent.

103. Defendants have willfully infringed and continue to willfully infringe the '493 Patent.

COUNT IV

Defendants' Infringement of the '643 Patent

104. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

105. Plaintiff Techiya is the assignee and lawful owner of the '643 Patent, and Plaintiff holds all right, title, and interest in and to the '643 Patent. The '643 Patent is valid and enforceable.

106. Defendants have directly infringed, and continue to directly infringe, the '643 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '643 Patent including, but not limited to, the Samsung Galaxy Buds+ and other Accused Earphone Products. Further discovery may reveal additional infringing products and/or models.

107. For example, and without limitation, the Galaxy Buds, Buds2, Buds2 Pro, and Buds Live infringe at least claim 1 of the '643 Patent. The Galaxy Buds, Buds2, Buds2 Pro, and Buds Live fall within the scope of and includes, either literally or under the doctrine of equivalents, all of the elements of at least claim 1 of the '643 Patent.

108. The Samsung Galaxy Buds, Buds2, Buds2 Pro, and Buds Live are exemplary products covered by at least claim 1 of the '643 Patent. On information and belief, many other products provided by Samsung infringe the '643 Patent.

109. The '643 Patent claims: 1. A device comprising: a first ambient microphone configured to generate a first ambient signal, wherein the first ambient microphone is part of an earpiece; a second ambient microphone configured to generate a second ambient signal, wherein the second ambient microphone is part of the earpiece; an ear canal microphone configured to generate an ear canal signal, wherein the ear canal microphone is part of the earpiece; a speaker, wherein the speaker is part of the earpiece; an eartip, configured to seal the earpiece between a first side and a second side of the earpiece; a memory that stores instructions; and a processor, wherein the processor is part of the earpiece, wherein the processor is operatively connected to the first ambient microphone, wherein the processor is operatively connected to the second ambient microphone, wherein the processor is operatively connected to the ear canal microphone, wherein the processor is operatively connected to the speaker, wherein the processor is operatively connected to the memory, wherein the processor is configured to execute the instructions to perform operations, the operations comprising: receiving a first microphone signal, wherein the

first microphone signal is at least one of the first ambient signal or a modified first ambient signal; receiving a second microphone signal, wherein the second microphone signal is at least one of the ear canal signal or a modified ear canal signal; receiving a third microphone signal, wherein the third microphone signal is at least one of the second ambient signal or a modified second ambient signal; generating a background noise reduction signal using either the first and second microphone signals or the second and third microphone signals; mixing an audio content signal and the background noise reduction signal generating a mixed signal; and sending a modified mixed signal to the speaker.

110. The Samsung Accused Earphone Products, including Galaxy Buds, Buds2, Buds2 Pro, and Buds Live, are earphones having at least a first ambient microphone, a second ambient microphone, an ear canal microphone, a processor, memory, and an eartip. On information and belief, the Samsung Galaxy Buds, Buds2, Buds2 Pro, and Buds Live and other infringing products, generate a background noise reduction signal for use in Active Noise Cancelling (ANC). On further information and belief, the background noise reduction signal is generated using a combination of an ambient microphone signal and an inner ear microphone signal. The noise reduction signal is mixed with an audio content signal to generate a mixed signal, and the processor causes the mixed signal to be sent to the speaker.

Turn on Active noise canceling on the earbuds themselves

Maybe you're trying to listen to music and focus on some work, but there is a lot of background noise distracting you. If you enable Active noise canceling on your earbuds, less noise will get through and you'll be able to concentrate.

To enable Active noise canceling on the Buds themselves, simply touch and hold one of the earbuds while you're wearing both of them. You will hear a beep, indicating that Active noise canceling has been turned on. To turn it off, touch and hold one of the earbuds again. You'll hear a different sound when Active noise canceling is disabled.



Source: <https://www.samsung.com/us/support/answer/ANS00087243/>.

111. Defendants have had notice of their infringement of the '643 Patent at least since the date of filing of the complaint in this action.

112. Defendants have indirectly infringed and continue to indirectly infringe the '643 Patent by actively inducing infringement of the '643 Patent by others, such as retailers and users of the Samsung Galaxy Buds 2 Pro including within this District.

113. Defendants' continued direct and indirect infringement of the '643 Patent has damaged and will continue to damage Plaintiff.

114. Plaintiff are entitled to recover damages adequate to compensate for Defendants' infringement.

115. After notice of their infringement of the '643 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the Accused Products. Further, Defendants by disseminating marketing materials, providing user and technical manuals relating to the Accused Products, and by other acts have actively induced infringement by encouraging others to directly infringe the Asserted Patents such as by retailers selling Accused Products in this District and elsewhere in the United

States and by users of Accused Products using such products in this District and elsewhere in the United States in ways that directly infringe the Asserted Patents. Defendants knew or should have known that the acts they induced constituted patent infringement.

116. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement of valid patents, including the '643 Patent. Defendants knew and should have known that their actions would cause direct and indirect infringement of the '643 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '643 patent.

117. Defendants have willfully infringed and continue to willfully infringe the '643 Patent.

COUNT V

Defendants' Infringement of the '965 Patent

118. Plaintiff incorporates the allegations of the foregoing paragraphs as if fully restated herein.

119. Plaintiff Techiya is the assignee and lawful owner of the '965 Patent, and Plaintiff holds all right, title and interest in and to the '965 Patent.

120. The '965 Patent is valid and enforceable.

121. Defendants have directly infringed, and continue to directly infringe, the '965 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '965 Patent including, but not limited to, the accused earpiece products. Further discovery may reveal additional infringing products and/or models.

122. For example, and without limitation, the accused earpiece products infringe at least claim 1 of the '965 Patent. The accused earpiece products fall within the scope of and include, either literally or under the doctrine of equivalents, all of the elements of the asserted claim of the '965 Patent.

123. Galaxy Buds2 Pro, Galaxy Buds Pro, and Galaxy Buds+ are exemplary products covered by at least claim 1 of the '965 Patent. On information and belief, many other products provided by, and to be provided by, Samsung infringe the '965 Patent.

124. The '965 Patent claims: 1. An earbud comprising: a first Ambient Sound Microphone (ASM), wherein the first ASM generates a first ASM signal; a second ASM, wherein the second ASM generates a second ASM signal; an ear canal microphone (ECM), wherein the ECM generates an ECM signal; a speaker; a memory that is configured to store instructions; and a processor that executes the instructions to perform operations, wherein the processor is coupled to the first ASM, wherein the processor is coupled to the second ASM, wherein the processor is coupled to the ECM, wherein the processor is coupled to the speaker, and the operations comprising: receiving the first ASM signal; receiving the second ASM signal; receiving the ECM signal; generating a first signal from at least one of the first ASM signal, or the second ASM signal, or both; generating an ambient sound signal from the first signal or a modified first signal; detecting if the user is speaking by analyzing at least one of the first signal, or the first ASM signal, or the second ASM signal, or the ECM signal, or by analyzing the first signal and the ECM signal; and adjusting at least one of the ambient sound signal, an audio content signal, a mixed ambient sound signal and audio content signal, a noise signal or a combination thereof, when it is detected that the user is speaking.

125. Samsung earpieces, such as the Galaxy Buds2 Pro, include at least two microphones that are used to generate ambient sound signals. These earpieces also include an ear canal microphone that generates a third microphone signal from the ear canal. Each earbud also contains a dynamic speaker, a memory to store instructions, and a processor that executes those instructions. For example, the Galaxy Buds2 Pro include a 2-way dynamic speaker with a tweeter and woofer. Additionally, Samsung earpieces such as the Galaxy Buds2 Pro are Bixby-enabled devices. All Bixby-enabled devices are audio devices that receive audio voice commands and provide audio responses. The

processors of Bixby-enabled devices are configured to receive microphone signals and to generate ambient sound signals based on detecting, for example, when a user says “Hi Bixby” to initiate function of the Bixby app. The processors of Bixby-enabled devices are configured to adjust the ambient sound signal whenever a phrase, such as “Hi Bixby,” is detected. In this way, the accused earpiece products such as the Galaxy Buds2 Pro generate an ambient sound signal from one or both of the ambient sound signals and detect if the user says a phrase, such as “Hi Bixby!” Upon detecting that a user is speaking the ambient sound signal is adjusted. Adjusting the ambient sound signal is done, for example, to allow the user to hear his or her own voice and improve natural vocal effort in noisy environments.

126. Defendants have had notice of their infringement of the '965 Patent at least since the date of filing of the complaint in this action.

127. Defendants have indirectly infringed and continue to indirectly infringe the '965 Patent by actively inducing infringement of the '965 Patent by others, such as users of Samsung Galaxy Buds2 Pro enabled with Bixby, including within this District.

128. Defendants continued direct and indirect infringement of the '965 Patent has damaged and will continue to damage Plaintiff.

129. Plaintiff is entitled to recover damages adequate to compensate for Defendants' infringement.

130. After notice of their infringement of the of the '965 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the accused earpiece products. Further, Defendants by disseminating marketing materials, providing user and technical manuals relating to the accused earpiece products, and by other acts have actively induced infringement by encouraging others to directly infringe the Asserted Patents such as by retailers offering and selling accused earpiece products in this District and elsewhere in the United States and by users of accused earpiece

products using such products in this District and elsewhere in the United States in ways that directly infringe the Asserted Patents. Defendants knew or should have known that the acts they induced constituted patent infringement.

131. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement of valid patents, including the '965 Patent. Defendants knew and should have known that their actions would cause direct and indirect infringement of the '965 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '965 patent.

132. Defendants have willfully infringed and continue to willfully infringe the '965 Patent.

COUNT VI

Defendants' Infringement of the '473 Patent

133. Plaintiff incorporates the allegations of the foregoing paragraphs as if fully restated herein.

134. Plaintiff Techiya is the assignee and lawful owner of the '473 Patent, and Plaintiff holds all right, title and interest in and to the '473 Patent.

135. The '473 Patent is valid and enforceable.

136. Defendants have directly infringed, and continue to directly infringe, the '473 Patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '473 Patent including, but not limited to, the accused Samsung phones, watches, and tablets. Further discovery may reveal additional infringing products and/or models.

137. For example, and without limitation, the accused Samsung phones, watches, and tablets infringe at least claim 1 of the '473 Patent. The accused Samsung phones, watches, and tablets fall within the scope of and include, either literally or under the doctrine of equivalents, all of the elements of the asserted claim of the '473 Patent.

138. Samsung Galaxy S23, Tablet S8, and Watch 5 are exemplary products covered by at least claim 1 of the '473 Patent. On information and belief, many other products provided by, and to be provided by, Samsung infringe the '473 Patent.

139. The '473 Patent claims: 1. A device that can control ambient passthrough in an earpiece comprising: a first memory that stores instructions; and a processor that executes the instructions to perform operations, the operations comprising: communicatively connecting to an earpiece, wherein the earpiece includes a first microphone, a second microphone, a speaker, a second memory and an earpiece processor; sending an audio content gain value and an ambient sound gain value to the earpiece; and sending an audio content signal to the earpiece, wherein the earpiece processor applies the audio content gain value to the audio content signal to generate a modified audio content signal, wherein the earpiece processor applies the ambient sound gain value to an ambient sound signal to generate a modified ambient sound signal, and wherein the earpiece processor mixes the modified ambient sound signal with the modified audio content signal to generate a mixed signal.

140. As an example, the Galaxy S23 is a phone that can control ambient passthrough in an earpiece such as the Galaxy Bud. The phone contains memory that stores instructions and a processor configured to perform those instructions. The phone can communicatively connect to the earpiece through a Bluetooth interface in order to control the operation of the earpiece such as its volume of audio content (music, etc.). The earpiece includes at least two microphones, a speaker, and its own memory and processor. The phone sends audio content such as a song or an audio podcast to the earpiece and can adjust the gain value sent to the processors of the earpiece. When a user activates Ambient sound to, for example, hear his or her voice more clearly during a voice call, upon information and belief the earpiece processor generates a modified ambient sound signal and a modified audio content signal. These two signals are mixed and presented to the user as the ambient sound, allowing the user to hear

what is going on around him or her or if someone is speaking to him or her. On information and belief, the Samsung Galaxy Table S8 and Watch 5 provide the same functionality.

141. Defendants have had notice of their infringement of the '473 Patent at least since the date of filing of the complaint in this action.

142. Defendants have indirectly infringed and continue to indirectly infringe the '473 Patent by actively inducing infringement of the '473 Patent by others, such as users of the Samsung Galaxy S23, Samsung Galaxy Tab S8 Tablet, Samsung Galaxy Watch 5 including within this District.

143. Defendants continued direct and indirect infringement of the '473 Patent has damaged and will continue to damage Plaintiff.

144. Plaintiff is entitled to recover damages adequate to compensate for Defendants' infringement.

145. After notice of their infringement of the of the '473 Patent, Defendants proceeded to make, use, test, sell, and/or offer to sell in this District and elsewhere in the United States, and import into this District and elsewhere in the United States, the accused Samsung phones, watches, and tablets. Further, Defendants by disseminating marketing materials, providing user and technical manuals relating to the accused Samsung phones, watches, and tablets, and by other acts have actively induced infringement by encouraging others to directly infringe the Asserted Patents such as by retailers offering and selling accused Samsung phones, watches, and tablets in this District and elsewhere in the United States and by users of accused Samsung phones, watches, and tablets using such products in this District and elsewhere in the United States in ways that directly infringe the Asserted Patents. Defendants knew or should have known that the acts they induced constituted patent infringement.

146. On information and belief, Defendants engaged in such activities despite an objectively high likelihood that their actions constituted infringement of valid patents, including the '473 Patent.

Defendants knew and should have known that their actions would cause direct and indirect infringement of the '473 Patent, and on information and belief, Defendants have monitored the substantial prior art submissions made prior to issuance of the '473 patent.

147. Defendants have willfully infringed and continue to willfully infringe the '473 Patent.

DEMAND FOR JURY TRIAL

148. Pursuant to Fed. R. Civ. P. 38, Plaintiff hereby demands trial by jury on all claims and issues so triable.

PRAYER FOR RELIEF

149. WHEREFORE, Plaintiff respectfully requests the following relief:

- a) A judgment that the Asserted Patents are valid and enforceable;
- b) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '587 Patent;
- c) A judgment that the Defendants' infringement of the '587 Patent was willful, and that the Defendants' continued infringement of the '587 Patent is willful;
- d) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '315 Patent;
- e) A judgment that the Defendants' infringement of the '315 Patent was willful, and that the Defendants' continued infringement of the '315 Patent is willful;
- f) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '493 Patent;

- g) A judgment that the Defendants' infringement of the '493 Patent was willful, and that the Defendants' continued infringement of the '493 Patent is willful;
- h) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '643 Patent;
- i) A judgment that the Defendants' infringement of the '643 Patent was willful, and that the Defendants' continued infringement of the '643 Patent is willful;
- j) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '965 Patent;
- k) A judgment that the Defendants' infringement of the '965 Patent was willful, and that the Defendants' continued infringement of the '965 Patent is willful;
- l) A judgment that Defendants have infringed, directly and indirectly, either literally or under the Doctrine of Equivalents, one or more claims of the '473 Patent;
- m) A judgment that the Defendants' infringement of the '473 Patent was willful, and that the Defendants' continued infringement of the '473 Patent is willful;
- n) A judgment that awards Plaintiff all appropriate damages under 35 U.S.C. § 284 for Defendants' past infringement, and any continuing or future infringement of the Asserted Patents, including pre or post judgment interest, costs, and disbursements as justified under 35 U.S.C. § 284 and, if necessary to adequately compensate Plaintiff for Defendants' infringement, an accounting;

- i. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '587 Patent;
 - ii. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '315 Patent;
 - iii. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '493 Patent;
 - iv. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '643 Patent;
 - v. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '965 Patent;
 - vi. That Plaintiff be awarded enhanced damages by reason of the Defendants' willful infringement of the '473 Patent;
 - vii. That this case be declared exceptional within the meaning of 35 U.S.C. § 285 and that Plaintiff be awarded its reasonable attorneys' fees against the Defendants incurred in prosecuting this action; and
 - viii. That Plaintiff be awarded costs and expenses incurred in prosecuting this action.
- o) A preliminary and permanent injunction against Defendants, their subsidiaries, or anyone acting on their behalf from making, using, selling, offering to sell, or importing any products that infringe the Asserted Patents, and any other injunctive relief the Court deems just and equitable; and
 - p) A judgment that Plaintiff be awarded such further relief at law or in equity as the Court deems just and proper.

DATED: October 11, 2023

By: /s/ Thomas J. Friel, Jr.
Thomas J. Friel, Jr.

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CERTIFICATE OF SERVICE

A true and correct copy of the foregoing was served or delivered electronically via the U.S. District Court ECF filing system to all counsel of record on this 11th day of October 2023.

/s/ Thomas J. Friel, Jr.
Thomas J. Friel, Jr.