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13	Attorneys for Plaintiff Koss Corporation		
14	UNITED STATES DISTRICT COURT		
15	NORTHERN DISTRICT OF CALIFORNIA		
16	KOSS CORPORATION,	Case No. 21-cv-03854-JST	
17	Plaintiff,	SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT	
18	V.		
19	PLANTRONICS, INC. and POLYCOM, INC.,	DEMAND FOR JURY TRIAL	
20	Defendants.		
21			
22	SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT		
23	Plaintiff, Koss Corporation ("Koss"), files this second amended complaint for patent		
24	infringement against Plantronics, Inc. and Polycom, Inc. ("Plantronics" or "Defendants") alleging,		
25	based on its own knowledge as to itself and its own actions, and based on information and belief as		
26	to all other matters, as follows:		
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NATURE OF THE ACTION

1. This is a civil action arising under the patent laws of the United States, 35 U.S.C. § 1 et seq., including specifically 35 U.S.C. § 271, based on Plantronics's willful infringement of U.S. Patent Nos. 10,206,025 (the "'025 Patent"), 10,469,934 (the "'934 Patent"), 10,506,325 (the "'325 Patent"), 10,757,498 (the "'498 Patent"), and 10,848,852 (the "852 Patent") (collectively the "Patents-in-Suit").

#### THE PARTIES

- 2. Plaintiff Koss Corporation is a corporation existing under the laws of the State of Delaware having its principal place of business located at 4129 North Port Washington Avenue, Milwaukee, Wisconsin 53212.
- 3. Koss markets a complete line of high-fidelity headphones and audio accessories. Koss's products, branded under the Koss brand name or private label brands, are sold at various retail chains throughout the United States and the world, including Walmart stores and other large brick-and-mortar establishments, as well as direct to customers in at least the following cities in this District: San Jose, San Leandro, Richmond, Mountain View, San Ramon, Milpitas, Livermore, and Union City.
- 4. Koss also serves as an Original Equipment Manufacturer ("OEM") for a customer in this Judicial District. In this role, Koss manufactures OEM headphones sold under its customer's brand.
- 5. On information and belief, Plantronics, Inc. is a Delaware Corporation with its principal place of business at 345 Encinal St., Santa Cruz, California 95060. Plantronics may be served through its registered agent CT Corporation System, 818 Seventh Street, Ste. 930 Los Angeles, CA 90017. On information and belief, Plantronics, Inc. is registered to do business in the State of California and has been since at least May 24, 1989.
- 6. On information and belief, Polycom, Inc. is a Delaware Corporation with its principal place of business at 345 Encinal Street, Santa Cruz, California 95060. Polycom, Inc. may be served through its registered agent CT Corporation System, 818 Seventh Street, Ste. 930 Los

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27 28 Angeles, CA 90017. On information and belief, Polycom, Inc. is registered to do business in the State of California and has been since at least May 17, 1991.

- 7. On information and belief, on or about March 28, 2018, Plantronics, Inc. acquired Polycom, Inc. On information and belief, by March 2019, Plantronics, Inc. and Polycom, Inc. integrated their business operations, management, facilities, and product offerings. On information and belief, the combined businesses of Plantronics, Inc. and its wholly-owned subsidiary Polycom, Inc. conducts their combined business operations under the name "Poly." On March 18, 2019, "Plantronics, Inc. . . . announced that the company will transform into Poly, a technology company focused on the human experience of communications and collaboration, aiming to make communication as rich and natural as in-person. Poly, which means, 'many' leverages the legendary audio and video expertise of Plantronics and Polycom . . . . " Meet Poly: Plantronics + Polycom Relaunches To Focus On Driving The Power Of Many, POLY WEBSITE, available at: https://www.poly.com/us/en/about/newsroom/plantronics-and-polycom-nowtogether-as-poly.
- 8. On information and belief, product development and marketing for the alleged infringing Plantronics and/or Polycom products takes place in Santa Cruz, California.
- 9. Plantronics has transacted business in this District and has committed acts of direct and indirect infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the asserted patents.

### **JURISDICTION AND VENUE**

- 10. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the claims herein arise under the patent laws of the United States, 35 U.S.C. § 1 et seq., including 35 U.S.C. § 271.
- 11. This Court has personal jurisdiction over Plantronics in this action because Plantronics has committed acts of infringement within the State of California and within this District through, for example, the sale of Plantronics headphones, such as BackBeat-branded headphones, both online and from the retail locations of its partners in this District. Plantronics regularly transacts business in the State of California and within this District. Plantronics engages in other persistent courses of conduct and derives substantial revenue from products and/or services

provided in this District and in California, and has purposefully established substantial, systematic, and continuous contacts within this District and should reasonably expect to be sued in a court in this District. For example, Plantronics's principal place of business is in this District and it has a California registered agent for service. Plantronics operates a website and various advertising campaigns that solicit sales of the infringing products by consumers in California and this District. Plantronics has entered into partnerships with numerous resellers and distributors to sell and offer for sale the various at-issue headphone or earphone products to consumers in this District, both online and in stores, and offers support service to customers in this District. Given these contacts, the Court's exercise of jurisdiction over Plantronics will not offend traditional notions of fair play and substantial justice.

- 12. Venue in the Northern District of California is proper pursuant to 28 U.S.C. §§ 1391(b), (c) and 1400(b). Plantronics has at least one regular and established place of business in this District, including, at 345 Encinal St., Santa Cruz, California 95060.
- 13. Plantronics has committed acts within this judicial district giving rise to this action. Plantronics continues to conduct business in this judicial district, including one or more acts of making, selling, using, importing and/or offering for sale infringing products or providing support service to Plantronics's customers in this District.

# KOSS'S LEGACY OF AUDIO INNOVATION

- 14. Koss was founded in 1953 as a television rental company in Milwaukee, Wisconsin.
- 15. In 1958, John C. Koss invented the world's first SP/3 Stereophone as part of a "private listening system" that would enable the wearer to listen to a phonograph without disturbing others in the vicinity:

16. The SP/3 Stereophone provided, for the first time, a high-quality stereophonic headphone that approximated the sounds of a concert hall.

17. John C. Koss demonstrated the SP/3 Stereophone at a Wisconsin audio show in 1958. Initially designed to demonstrate the high-fidelity stereo sound that a portable phonograph player delivered, these revolutionary SP/3 Stereophones became the hit of the show.

18. The SP/3 Stereophone has since been enshrined in the Smithsonian Museum's collection in Washington, DC, with John C. Koss delivering the SP/3 for enshrinement along with an explanation of the story of the SP/3 in 1972:



19. Koss's commitment to headphone development continued into the 1960s and beyond. In 1962, Koss developed and brought to market the PRO/4 Stereophone, which was bestowed with Consumer Union Magazine's #1 choice award in 1963:



20. Due to the success and quality of the Pro/4, the United States government awarded Koss with a contract to install fifty (50) Pro/4 units in the staff, press, and presidential quarters of Air Force One. Passengers accessing the aircraft's state-of-the-art entertainment system listened to the system using the Pro/4:



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21. In 1970, Koss moved its World Headquarters to the current location at 4129 North Port Washington Ave., Milwaukee, Wisconsin:



22. Also in 1970, Koss set the standard for full-size professional headphones with its Pro/4AA:



- 23. At the time of introduction, the Pro/4AA was regarded as the first dynamic headphones to deliver true full frequency and high-fidelity performance with noise-isolating capabilities.
- 24. Koss continued improving its Stereophone product line throughout the 1970s and into the 1980s. In 1984, Koss introduced the Porta Pro, an acclaimed product that set performance and comfort standards for on-the-go listening:



- 25. The Porta Pro continues to be one of the most popular headphone products around the world, particularly because of its exceptional audio fidelity and performance capabilities. In fact, as recently as 2008, CNET awarded the Porta Pros a four-star rating of 8.3 (out of 10), with a performance score of 9 (out of 10), stating that "there's no denying the sound quality here: they're the ideal companion for mobile audiophiles and home theater enthusiasts." (https://www.cnet.com/reviews/koss-portapro-with-case-review/).
- 26. In 1965, Koss introduced the award-winning speaker, the Acoustech X, which was heralded as a breakthrough product by Billboard Magazine, touting its concert hall quality and ability to accurately amplify an acoustic guitar to large concert halls. *Acoustic System Succeeds In Classical Guitar Concert*, BILLBOARD, May 27, 1967, at 71.
- 27. Following on Acoustech X, Koss went on to develop a number of additional products: the world's first computer maximized loudspeaker in 1976; the Kossfire speaker line in the 1980s; the dynamic audio/video Dynamite bookshelf series speaker line; a line of portable/desktop computer speakers that employed a unique magnetic shield to protect nearby computer video and data equipment; and an amplified portable loudspeaker, the M/100, in early 1987.

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28. In 1987, Koss pioneered one of the earliest completely wireless infrared speaker systems: the JCK 5000. In 1986, Koss also unveiled a portable speaker, the KSC/50, which was utilized by thousands of members of the United States military during the Gulf War in 1990. Related to the KSC/50, Koss's KSC/5000 included a built-in amplifier. Those products were profiled in a Newsweek feature on October 12, 1987:

# Newsweek



A little light music: Michael Koss (left) and father John with new cordless speakers

# **Koss Corp.'s Audio Advantage**

A Midwestern firm innovates in stereo

- 29. Over the following years, Koss continued to expand its portable speaker offerings, including by expanding into speakerphones for teleconferencing systems with the Speakeasy line, followed by various additional wireless models for portable use.
- 30. Elite musicians including Tony Bennett, Les Brown, and Frank Sinatra Jr., have used Koss headphones, including the Pro/4, while recording and/or performing. Koss's official

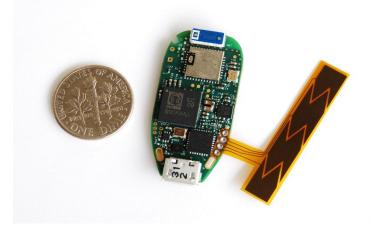
spokespeople have included music legends Mel Tormé and Doc Severinsen, the trumpet-playing bandleader for Johnny Carson's Tonight Show band.

- 31. In 1979, John C. Koss was inducted into the Audio Hall of Fame.
- 32. In 2000, John C. Koss was inducted into the inaugural class of the Consumer Electronics Hall of Fame.
  - 33. In 2004, John C. Koss was inducted into the Wisconsin Business Hall of Fame.

# KOSS DEVELOPS THE FIRST EVER TRUE WIRELESS HEADPHONES

- 34. Continuing its culture of innovation in high-fidelity audio equipment, in the early 2000s, Koss began developing what became known as the "Striva" project. The vision for the Striva project was borne out of Koss's recognition that wireless headphones were going to be an integral part of peoples' audio consumption. In particular, Koss recognized that as radios were needing progressive less power and as batteries and other power sources became smaller and more efficient, people would eventually consume audio content through headphones wirelessly connected to some kind of a source, be it a handheld computing device or in the cloud.
- 35. In the early 2000s, Koss began making substantial monetary investments in the Striva project, with the goal of bringing "True Wireless" listening to its loyal customers as the next in a long series of headphone innovations.
- 36. Koss recognized that the future was a wireless world, complete with mobile internet connectivity that went beyond traditional hardwired, or computer-based, network topologies. It recognized that wireless ubiquity was coming, and would extend to wearable devices, including Koss's area of expertise: the headphone.
- 37. With these recognitions in mind, Koss made a substantial commitment to investing in what it saw as the future of headphone technology. This work eventually became the Striva project, and over the course of its work, Koss invested tens of millions of dollars developing chips, fabrication techniques, prototype headphones, and other related technology to bring the Striva vision to life.

38. In particular, Koss's work on Striva resulted in the development of a system-on-chip smaller than a human fingertip that could provide audio and wireless communications processing on a low power budget for incorporation into headphones of various form factors:



- 39. Koss's work to develop Striva also predicted some of the interactions that modern headphone users take for granted today. In particular, Koss recognized early on that the inclusion of a microphone (with appropriate voice recognition software and circuitry) could provide a convenient, hands-free way to interact with wireless headphones. Koss developed technology that could react to such voice prompts, and in fact implemented prototypes that reacted to users saying "Striva" into a headphone-mounted microphone to begin a voice-based interaction to, for example, switch tracks or adjust headphone volume.
- 40. Koss also recognized a headphone concept that users today take for granted: different headphones for different applications. In particular, as part of the Striva project, Koss developed different form factors with different performance capabilities depending on anticipated use. Over-ear headphones provided users with higher-quality sound, ambient noise dampening capabilities, and better battery life (due to additional battery real estate), while in-ear headphones provided portability and capability in a smaller, less-intrusive package.
- 41. Koss developed prototype in-ear headphones that relied on its chip development efforts, with working prototypes from the mid-2000s looking very much like commonly-known consumer products that flood the market a decade-and-a-half later:

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42. In 2012, Koss introduced Wi-Fi enabled headphones, the result of its Striva project, which BizTimes hailed as the first wireless headphones to use Wi-Fi transmission and credited Koss with "introducing personal listening to the Internet." (https://biztimes.com/koss-createswireless-headphones-for-wi-fi-music-access/).

43. In April 2012, Koss brought to market both an in-ear and over-ear embodiment of the Striva vision, with the Striva Pro model being the first true Wi-Fi over the ear headphones (and mirroring many features and aesthetics modern-day users expect in wireless, over-ear headphones):



44. The Striva Tap, a smaller, in-ear version of the Striva Pro Wi-Fi headphone, provided users with some of the features that modern-day consumers take for granted in in-ear headphones, like independent wireless earphones with touch gestures to control listening preferences by manipulating the surface of the headphones:



45. Koss also developed (though ultimately did not market) a smart speaker that incorporated many of the Striva features, albeit in a non-wearable form factor. The Striva-based speaker product had a capacitive touch interface to mimic the features of the Striva headphones, and also included a microphone for voice control. In addition, the Striva-based speaker had the capability to be included in a distributed network as part of a precursor to the presently-understood Internet of Things, such that the input devices (e.g., the microphone) could be used to control other items in the distributed network (e.g., light switches). The speaker therefore allowed, for example, a user to say "Striva, turn on the lights," and the lights would turn on.

46. The Striva-based speaker product, referred to as the LS2, exists as a working prototype:



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Second Amended Complaint for Patent Infringement and Demand for Jury Trial

21-cv-03854-JST

- 47. Unfortunately, the economic reality of Koss's market position did not permit it to bring its Striva-based product vision to the masses. In particular, due to events abroad (and Koss's reliance on sales into those foreign countries), Koss's supply chain and customer base were thrown into upheaval in the late-2000's and early-2010's.
- 48. Moreover, Koss conducted market research during the mid-2000's, and concluded that given the market that was likely to develop for wireless headphones, larger companies with more manufacturing capability would become a substantial threat to bringing Striva fully to market. As a result, Koss invested substantially on part-purchasing, machinery, fabrication, and the like.
- 49. The circumstances above, and other circumstances outside of Koss's control, meant that the advanced features first developed for Striva were not able to be fully experienced by the majority of the purchasing public.
- 50. Koss brings the instant lawsuit because the industry has caught up to Koss's early-2000s vision: the technology Koss developed as part of its substantial Striva investment has become standardized, with whole listening ecosystems having been built around the techniques Koss conceived of over a decade ago.
- 51. More fundamentally, Koss is responsible for creating an entire headphone industry beginning from its release of the pioneering Stereophone as a ubiquitous way to consume information in 1958 has led to an entire headphone industry. Plantronics and others are reaping enormous benefits due to John C. Koss's vision, and Koss Corporation's commitment to that vision, for more than six decades.
- 52. Reflective of the industry's acknowledgement of Koss' substantial contributions in headphone technology, several headphone manufacturers have taken licenses to Koss' patents, rather than fighting with Koss in court.
- 53. One headphone manufacturer in particular approached Koss and took a license to Koss' patents without even having been sued for infringement of any Koss patent.

# THE PATENTS-IN-SUIT

54. On February 12, 2019, U.S. Patent No. 10,206,025, entitled "System with Wireless Earphones," was duly and legally issued by the United States Patent and Trademark Office. A true

and accurate copy of the '025 Patent is attached hereto as Exhibit A.

- 55. On November 5, 2019, U.S. Patent No. 10,469,934, entitled "System with Wireless Earphones," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '934 Patent is attached hereto as Exhibit B.
- 56. On December 10, 2019, U.S. Patent No. 10,506,325, entitled "System with Wireless Earphones," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '325 Patent is attached hereto as Exhibit C.
- 57. On August 25, 2020, U.S. Patent No. 10,757,498, entitled "System with Wireless Earphones," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '498 Patent is attached hereto as Exhibit D.
- 58. On November 24, 2020, U.S. Patent No. 10,848,852, entitled "System with Wireless Earphones," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '852 Patent is attached hereto as Exhibit E.
- 59. Collectively, the '025 Patent, the '934 Patent, the '325 Patent, the '498 Patent, and the '852 Patent are referred to herein as the "Patents-in-Suit."
- 60. The Patents-in-Suit represent Koss's significant investment into the wireless headphone and wearable technology space, including its commitment in the form of decades of research and millions of dollars.

#### **DEFENDANTS' KNOWLEDGE OF THE PATENTS-IN-SUIT**

- 61. On July 10, 2020, Defendants were notified of their infringement of the '025 Patent, the '934 Patent, and the '325 Patent by way of the letter attached hereto as Exhibit F.
- 62. On September 30, 2021, Defendants were notified of their infringement of the '498 Patent and the 852 Patent by way of the letter attached hereto as Exhibit G.
- 63. On October 1, 2021, Koss filed and served a First Amended Complaint asserting each of the Patents-in-Suit against Defendants.
- 64. October 5, 2021, Koss served amended infringement contentions on Defendants detailing why Defendants infringe each of the presently Patents-in-Suit.

- 65. The October 5, 2021 amended infringement contentions contain, among other charts, a chart mapping each of the claims of each of the Patents-in-Suit identified in this Second Amended Complaint.
- 66. On information and belief, Plantronics is aware of certain *inter partes* review proceedings that have occurred with regard to the Patents-in-Suit.
- 67. The statutory bar date for Plantronics to file further *inter partes* review petitions on the Patents-in-Suit has passed.

# FIRST CAUSE OF ACTION

# (Infringement of the '025 Patent)

- 68. Koss incorporates by reference and realleges each and every allegation of Paragraphs 1 through 67 as if set forth herein.
- 69. Koss owns all substantial rights, interest, and title in and to the '025 Patent, including the sole and exclusive right to prosecute this action and enforce the '025 Patent against infringers, and to collect damages for all relevant times.
- 70. The '025 Patent generally describes wireless earphones that comprise a transceiver circuit for receiving streaming audio from a data source, such as a digital audio player or a computer, over a wireless network. The '025 Patent also describes and claims how these wireless earphones use the claimed microphone to pick up utterances of a user and how, upon activation of a user-control of the headphone assembly, a request is initiated to a remote server. Various additional functional and hardware limitations are described and claimed in the dependent claims of the '025 Patent.
- 71. The written description of the '025 Patent describes in technical detail each of the limitations of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.
- 72. The claims of the '025 Patent are directed to statutorily eligible subject matter, as they do not recite an abstract idea and are also directed to an inventive concept.

- 73. The Patent Trial and Appeal Board (the "PTAB" or "Board") has already confirmed the patentability of the asserted claims of the '025 Patent, and thus has already confirmed at least that they are directed to an inventive concept.
- 74. The '025 Patent has been challenged at the PTAB in *inter partes* review on four (4) different occasions.
- 75. In particular, Apple Inc. ("Apple") filed three (3) IPR petitions against the '025 Patent.
- 76. All three of Apple's IPR petitions—IPR2021-00546, IPR2021-00626, and IPR2022-000053—were denied institution on the basis that Apple did not demonstrate a reasonable likelihood that one or more of the claims of the '025 Patent was unpatentable.
- 77. Bose Corporation ("Bose") filed one (1) IPR petition as to the '025 Patent—IPR2021-00612.
- 78. In the Final Written Decision on Bose's IPR, the PTAB found that certain claims of the '025 Patent, including those claims identified in this Second Amended Complaint, are not unpatentable. The Final Written Decision is attached hereto as Exhibit H.
- 79. In particular, the Board held that "Claim 4 is representative" of the so-called "Signal Strength" claims.
- 80. In finding that the Signal Strength claims (including Claim 4) are not unpatentable, the Board found that "We are not persuaded by Petitioner's arguments and evidence. Petitioner does not show that Harada [a prior art reference] teaches playing digital audio content received from multiple sources."
- 81. The Board ultimately found that the Signal Strength claims (including Claim 4) are not unpatentable because "[t]his claimed feature is missing from the combination of Rezvani-446, Rezvani-875, and Skulley and is not found in Harada."
- 82. Considering alternative arguments, the Board found that "even under a more generous reading of Petitioner's combination, Harada still does not teach the transitioning that is missing from the combination of Rezvani-446, Rezvani-875, and Skulley."

- 83. The Board ultimately found, therefore, that "[i]n sum, because Harada does not supply the limitation missing from Rezvani-446, Rezvani-875, and Skulley (either under the combination proposed in the Petition or the Dissent's broader reading of that combination) and because Petitioner has not articulated a reason, with rational underpinning, to combine Rezvani-446, Rezvani-875, and Skulley with Harada, Petitioner has not proved, by a preponderance of the evidence, that Claims 4, 5, 7, 9, 14, 15, 17, 19, 23, 24, 26, and 28 would have been obvious over Rezvani-446, Rezvani-875, Skulley, and Harada."
- 84. The only IPR filed against the '025 Patent to both be instituted and reach final written decision thus concluded that certain claims, including Claim 4 (identified herein), are not unpatentable.
- 85. Plantronics has never filed an *inter partes* review Petition with regard to the '025 Patent.
- 86. Plantronics is statutorily estopped from filing *inter partes* review petitions with regard to the '025 Patent, as it was served with an original complaint for patent infringement on the '025 Patent more than one year ago.
- 87. The claims of the '025 Patent were all prosecuted after the Supreme Court's decision in *Alice Corp. v. CLS Bank Int'l.*, 578 U.S. 208 (2014), and were thus examined against the backdrop of the Supreme Court's guidance.
  - 88. The claims of the '025 Patent were never rejected under 35 U.S.C. § 101.
- 89. In Koss' now-resolved case with Apple, Apple did not present expert testimony about, and did not plan to present at trial, the theory that the claims of the '025 Patent were directed to patent ineligible subject matter.
  - 90. Claim 4 of the '025 Patent depends from Claims 3, 2, 1 and recites as follows:
  - 1. A system comprising:

a mobile, digital audio player that stores digital audio content; and a headphone assembly, separate from and in wireless communication with the mobile digital audio player, wherein the headphone assembly comprises:

first and second earphones, wherein each of the first and second earphones comprises an acoustic transducer;

an antenna for receiving wireless signals from the mobile, digital audio player via one or more ad hoc wireless communication links;

a wireless communication circuit connected to the at least one antenna, wherein the at least one wireless communication circuit is for receiving and transmitting wireless signals to and from the headphone assembly;

a processor;

a rechargeable battery for powering the headphone assembly; and

a microphone for picking up utterances by a user of the headphone assembly; and

a remote, network-connected server that is in wireless communication with the mobile, digital audio player;

wherein the mobile, digital audio player is for transmitting digital audio content to the headphone assembly via the one or more ad hoc wireless communication links, such that the digital audio content received by the headphone assembly from the mobile, digital audio player is playable by the first and second earphones; and

wherein the processor is for, upon activation of a user-control of the headphone assembly, initiating transmission of a request to the remote, network-connected server.

## 2. The system of claim 1, wherein:

in a first audio play mode, the first and second earphones play audio content stored on the mobile, digital audio player and transmitted to the headphone assembly from the mobile, digital audio player via the one or more ad hoc wireless communication links; and

in a second audio play mode, the earphones play audio content streamed from the remote, network-connected server.

3. The system of claim 2, wherein the processor of the headphone assembly is further for:

processing audible utterances by the user picked up by the microphone in response to activation of the microphone by the user; and

transmitting a communication based on the audible utterances via the one or more ad hoc wireless communication links.

## 4. The system of claim 3, wherein:

the mobile, digital audio player is a first digital audio source;

the system further comprises a second digital audio source that is different from the first digital audio source; and

the headphone assembly transitions to play digital audio content received wirelessly from the second digital audio source via a second wireless communication link based on, at least, a signal strength level for the second wireless communication link.

91. The inventions recited in Claim 4 address technological problems and provide technological solutions that were not well-understood, routine, or conventional at the time of the invention. This is demonstrated by (1) the initial issuance of the '025 Patent and (2) the Board's

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confirmation, both through denial of certain petitions and through a final written decision, of the patentability of Claim 4 of the '025 Patent.

- 92. A person of ordinary skill in the art reading the '025 Patent and its claims (including claim 4) would understand that (a) the Asserted Patents' disclosures and claims are drawn to solving specific, technical problems and (b) the claimed subject matter represents an advancement in the technical field of the Asserted Patents. For example, as to both (a) and (b), the hardware and software included in the recited headphone assembly of Claim 4 to transition from one source of audio information to another source of audio information based, at least in part, on a determined signal strength of a second wireless communication link (i.e., the link of the source of audio information to which the headphone assembly is transitioning) contributes to solving the technical problem that wireless headphone assemblies would be improved if they could account for the situation where a user walks away from one device and near another device, both of which are sources of audio content. The hardware for handling this situation, and permitting the headphone assembly to transition to another source of information when appropriate, further contributes to solving this technical problem. See, e.g., Exhibit A, '025 Patent at col. 10:4-45.
- 93. The claims of the '025 Patent do not preempt all techniques for or approaches to accomplishing the same or a similar end to what they recite. For example, the claims do not preempt the use of the techniques taught in the prior art cited on the face of the Asserted Patents, nor the art cited in the various PTAB proceedings involving the '025 Patent, none of which, as the patent examiners found, disclose or render obvious the claimed inventions, further showing that the claims are not well-understood, routine, or conventional.
- 94. The claims of the '025 Patent do not merely recite the performance of some generic computing technique. Instead, the '025 Patent claims recite one or more inventive concepts that are rooted in headphone systems and audio technology, whose inventiveness has already been confirmed by the PTAB's final written decision and by various parties' failure to even secure institution of IPRs. Specifically, the '025 Patent addresses and provides a solution to a longstanding problem in the area of wireless headphone technology: the problem presented by the fact

that a wireless headphone user can simply walk away, and distance himself or herself from, the source of the wireless data being played back in the headphones.

- 95. With the inventive concepts recited in at least the claims the PTAB has already confirmed are patentable, systems involving wireless headphone assemblies can now seamlessly address the problem that a user may walk away from one source of audio information and toward another source of audio information. A person of ordinary skill in the art would thus understand that the claims of the Asserted Patents are directed to specific improvements in headphone assemblies and similar systems.
- 96. Nor can it be said that the major difference between the prior art and Koss's claimed invention in Claim 4 of the '025 Patent is wireless, with the attendant benefits that such a system provides. Indeed, Claim 4 of the '025 Patent demonstrates a technological improvement, and not simply a feature of wireless communication; the PTAB has confirmed this to be the case. And the PTAB's analysis confirms that the system recited in Claim 4 of the '025 Patent is not "well understood."
- 97. Moreover, Claim 4 of the '025 Patent recites physical components that improve the technology of wireless communication. The Board has confirmed that prior systems did not have the hardware and software required to perform the "signal strength" aspects of Claim 4, and thus confirmed that these features indeed improve the technology of wireless communication.
- 98. The asserted claims of the '025 Patent are not directed to wireless communication over a network generally, but rather are limited to a particular application of wireless communication over a network, in that they are limited to "earphones" with a processor that, "upon activation of a user-control ..., initiate[s] transmission of a request to a remote, network-connected server," and that transition from playing digital audio contend received wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.
- 99. A third party could communicate wirelessly over a network without practicing the asserted claims of the '025 Patent, such as by not using "earphones" for the wireless communication

over the network, not using a processor that, "upon activation of a user-control ..., initiate[s] transmission of a request to a remote, network-connected server" for the wireless communication over the network, and/or that do not transition from playing digital audio contend received wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.

- 100. In addition to wireless communication elements, the asserted claims of the '025 Patent recite components that transform one form of energy to another form of energy. The asserted claims of the '025 Patent recite that the claimed headphone assembly comprises both acoustic transducers and a microphone. In this context, an acoustic transducer converts an electrical signal to mechanical energy (i.e., sound waves), such as by vibrating a membrane in the acoustic transducer. A microphone converts mechanical energy (i.e., sound waves) to an electrical signal based on vibrations of a membrane of the microphone caused by the sound waves.
- 101. Claim 4 of the '025 Patent is therefore not directed to an abstract idea, and is patent eligible subject matter pursuant to *Alice*, step 1.
- 102. What is more, Claim 4 of the '025 Patent is an inventive concept at least because the combination of claim limitations was not well-understood, routine, or conventional. In particular, despite repeated challenges at the PTAB, the Board has consistently found (in denial of institution and in a final written decision) that Claim 4 is directed to an inventive concept.
- 103. These statements of inventiveness are not conclusory; quite to the contrary, some of the largest headphone manufacturers in the world mustered the strength of some of the most sophisticated lawyers and experts in the world and, in the one (of four) IPR petitions to reach final written decision, the PTAB nevertheless found that Claim 4 (among others) is directed to an inventive concept.
- 104. Thus, in the event *Alice*'s step 2 is reached, Claim 4 of the '025 Patent recites an inventive concept and demonstrates that that claim is directed to patent eligible subject matter.
- 105. Further confirming that the '025 Patent is directed to patent eligible subject matter, the examiner in a family member application recently issued a notice of allowance for a similar set

of claims to Claim 4 of the '025 Patent in view of considering this Court's Dkt. 88 Order dismissing Koss' First Amended Complaint.

- 106. In particular, Koss submitted this Court's Dkt. 88 Order in an IDS during examination of U.S. Application Serial No. 17/812,911, which is in the same patent family as the '025 Patent and which claims priority through several continuation applications to the '025 Patent.
- 107. The Examiner issued a "Corrected Notice of Allowance" on November 30, 2022 (Exhibit J) in which he stated that "[t]he Office carefully review [sic] IDS (Koss Corp V. Plantronics Inc) filed on 11/21/2022 Order Granting Motion Dismiss" and nevertheless allowed the pending claims.
- 108. This confirms that the Office, which issued the '025 Patent in view of the Supreme Court's *Alice* ruling without rejecting the claims under that ruling (or under 35 U.S.C. § 101 at all) views the subject matter of Koss' patent portfolio as being directed to patent eligible subject matter.
- 109. There is no reason to disturb the presumption of validity under 35 U.S.C. § 101 that the '025 Patent (and any issued patent) enjoys.
- 110. Plantronics has made, had made, used, imported, supplied, distributed, sold, and/or offered for sale products and/or systems, including systems in which its BackBeat-branded products and/or systems, including, but not limited to, the BackBeat Fit 2100 Headphones, are incorporated ("Accused '025 Headphones").
- 111. As set forth in the attached non-limiting claim chart (Exhibit I), Plantronics has infringed and is infringing at least Claim 4 of the '025 Patent by making, having made, using, importing, supplying, distributing, selling, and/or offering for sale the Accused '025 Headphones, with specific reference in the claim chart to the BackBeat Fit 2100 Product. In particular, the use of the Accused '025 Headphones by Plantronics to, for example, demonstrate those products in brick-and-mortar stores in the San Francisco Bay Area, California or to, for example, test those products, constitute acts of direct infringement of Claim 4 of the '025 Patent.
- 112. Plantronics actively induces infringement of at least Claim 4 of the '025 Patent by selling the Accused '025 Headphones with instructions as to how to use the Accused '025Headphones in a system such as that recited in the '025 Patent. Plantronics aids, instructs, or

otherwise acts with the intent to cause an end user to use the Accused '025 Headphones in an infringing manner. Plantronics knew of the '025 Patent and knew that its use and sale of the Accused '025 Headphones infringe at least Claim 4 of the '025 Patent. When a customer of Plantronics uses the Accused '025 Headphones as specifically instructed by Plantronics, the customer uses the headphones in a manner that completes the system of Claim 4, thereby infringing Claim 4 of the '025 Patent.

- Patent by providing, and by having knowingly provided, a material part of the instrumentalities, namely the Accused '025 Headphones, used to infringe Claim 4 of the '025 Patent. The Accused '025 Headphones have no substantial non-infringing uses. When an end user uses the Accused '025 Headphones in combination with, for example, a smart phone such as, for example, an Android-based smart phone and/or a peripheral device such as, for example, an Android-based tablet, the end user directly infringes Claim 4 of the '025 Patent. Plantronics knew that the Accused '025 Headphones were especially made for use in an infringing manner prior to the filing of this lawsuit. For at least the reasons set forth above, Plantronics contributes to the infringement of the '025 Patent by others.
- 114. Koss has been damaged as a result of the infringing conduct by Plantronics alleged above. Thus, Plantronics is liable to Koss in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 115. Plantronics's infringement of the '025 Patent has caused, and will continue to cause, Koss to suffer substantial and irreparable harm.
- 116. Plantronics has been aware that it infringes the '025 Patent since at least July 10, 2020, upon the receipt of the letter attached as Exhibit F. Since obtaining knowledge of its infringing activities, Plantronics has failed to cease its infringing activities. Further, Plantronics has continued its infringing activities, disregarding Koss's patent rights, since the filing of the original complaint on July 22, 2020.

- 117. Plantronics's infringement of the '025 Patent is, has been, and continues to be, willful, intentional, deliberate, and/or in conscious disregard of Koss's rights under the patent.
  - 118. Koss has complied with 35 U.S.C. § 287 with respect to the '025 Patent.

#### **SECOND CAUSE OF ACTION**

#### (Infringement of the '934 Patent)

- 119. Koss incorporates by reference and realleges each and every allegation of Paragraphs 1 through 118 as if set forth herein.
- 120. Koss owns all substantial rights, interest, and title in and to the '934 Patent, including the sole and exclusive right to prosecute this action and enforce the '934 Patent against infringers, and to collect damages for all relevant times.
- 121. The '934 Patent generally describes wireless earphones that comprise a transceiver circuit for receiving streaming audio from a data source, such as a digital audio player or a computer, over a wireless network. The '934 Patent also describes and claims how these wireless earphones use the claimed microphone to pick up utterances of a user and how, upon activation of a user-control of the headphone assembly, a request is initiated to a remote server. It further describes and claims the receipt and storage of firmware upgrades. Various additional functional and hardware limitations are described and claimed in the dependent claims of the '934 Patent.
- 122. The written description of the '934 Patent describes in technical detail each of the limitations of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.
- 123. The claims of the '934 Patent are directed to statutorily eligible subject matter, as they do not recite an abstract idea and are also directed to an inventive concept.
- 124. The PTAB has already confirmed the patentability of the asserted claims of the '934 Patent, and thus has already confirmed at least that they are directed to an inventive concept.
- 125. The '934 Patent has been challenged at the PTAB in *inter partes* review on four (4) different occasions.

- 126. In particular, Apple filed three (3) IPR petitions against the '934 Patent.
- 127. Two of Apple's IPR petitions—IPR2021-00693 and IPR2022-00168—were denied institution.
- 128. One of Apple's IPR petitions—IPR2021-592—was instituted, but dismissed prior to a final written decision by agreement of the parties.
  - 129. Bose filed one (1) IPR petition as to the '934 Patent—IPR2021-00680.
- 130. In the Final Written Decision on Bose's IPR, the PTAB found that certain claims of the '934 Patent, including those claims identified in this Amended Complaint, are not unpatentable. The Final Written Decision is attached hereto as Exhibit K.
- 131. In particular, the Board held that "Claim 4 is representative" of the so-called "Signal Strength" claims.
- 132. In finding that the Signal Strength claims (including Claim 4) are not unpatentable, the Board found that "We are not persuaded by Petitioner's arguments and evidence. Petitioner does not show that Harada [a prior art reference] teaches playing digital audio content received from multiple sources."
- 133. The Board ultimately found that the Signal Strength claims (including Claim 4) are not unpatentable because "This claimed feature is missing from the Schrager-Goldstein combination and is not found in Harada."
- 134. Considering alternative arguments, the Board found that "even under a more generous reading of Petitioner's combination, Harada still does not teach the transitioning that is missing from the combination of Goldstein and Schrager."
- 135. The Board ultimately found, therefore, that "[i]n sum, because Harada does not supply the limitation missing from Goldstein and Schrager (either under the combination proposed in the Petition or the Dissent's broader reading of that combination) and because Petitioner has not articulated a reason, with rational underpinning, to combine Goldstein and Schrager with Harada, Petitioner has not proved, by a preponderance of the evidence, that Claims 4, 6, 8, 12, 13, 38, 40, 41, and 58–62 would have been obvious over Goldstein, Schrager, and Harada, or that Claims 17, 18, 20, and 22 would have been obvious over Goldstein, Schrager, Skulley, and Harada."

player; and wherein the headphone assembly is for receiving firmware upgrades transmitted from the remote, network-connected server.

2. The headphone assembly of claim 1, wherein:

in a first audio play mode, the first and second earphones play audio content stored on a mobile, digital audio player and transmitted to the headphone assembly from the mobile, digital audio player via the one or more ad hoc wireless communication links; and

in a second audio play mode, the earphones play audio content streamed from the remote, network-connected server.

3. The headphone assembly of claim 2, wherein the processor is for: processing audible utterances by the user picked up by the microphone in response to activation of the microphone by the user; and

transmitting a communication based on the audible utterances via the one or more ad hoc wireless communication links.

4. The headphone assembly of claim 3, wherein: the mobile, digital audio player is a first digital audio source;

the headphone assembly transitions to play digital audio content received wirelessly from a second digital audio source via a second wireless communication link based on, at least, a signal strength level for the second wireless communication link, wherein the second digital audio source is different from the first digital audio source.

- 143. The inventions recited in Claim 4 address technological problems and provide technological solutions that were not well-understood, routine, or conventional at the time of the invention. This is demonstrated by (1) the initial issuance of the '934 Patent and (2) the Board's confirmation, both through denial of certain petitions and through a final written decision, of the patentability of Claim 4 of the '934 Patent.
- 144. In particular, the inventions recited in Claim 4 address the following technological problems and provide technological solutions that were not well understood, routine, or conventional at the time of the invention:
  - a. First and second audio play modes whereby the source of audio varies from one mode to the other
  - b. Detecting, processing, and reacting to audible utterances by the user
  - c. Transitioning to play digital audio content from a second digital audio source based on at least a signal strength level of a second wireless communication link

- 145. At least these features confine the claim to a series of particular solutions to a series of identified problems.
- 146. The physical components required to perform these technical innovations (e.g., a microphone to detect audible utterances) are the focus of the '934 Patent and in particular asserted claim 4.
- 147. These features, which drove the PTAB to find that Claim 4 is not unpatentable, demonstrate some of the differences between the claim and the prior art, and demonstrate that it is not true that "the major difference between the prior art and Koss's claimed invention is that the claimed invention is wireless…"
- 148. A person of ordinary skill in the art reading the '934 Patent and its claims (including Claim 4) would understand that (a) the Asserted Patents' disclosures and claims are drawn to solving specific, technical problems and (b) the claimed subject matter represents an advancement in the technical field of the Asserted Patents. For example, as to both (a) and (b), the hardware and software included in the recited headphone assembly of Claim 4 to transition from one source of audio information to another source of audio information based, at least in part, on a determined signal strength of a second wireless communication link (i.e., the link of the source of audio information to which the headphone assembly is transitioning) contributes to solving the technical problem that wireless headphone assemblies would be improved if they could account for the situation where a user walks away from one device and near another device, both of which are sources of audio content. The hardware for handling this situation, and permitting the headphone assembly to transition to another source of information when appropriate, further contributes to solving this technical problem. See, e.g., Exhibit B, '934 Patent at col. 10:7-48.
- 149. The claims of the '934 Patent do not preempt all techniques for or approaches to accomplishing the same or a similar end to what they recite. For example, the claims do not preempt the use of the techniques taught in the prior art cited on the face of the Asserted Patents, nor the art cited in the various PTAB proceedings regarding the '934 Patent, none of which, as the patent examiners found, disclose or render obvious the claimed inventions, further showing that the claims are not well-understood, routine, or conventional.

- 150. The claims of the '934 Patent do not merely recite the performance of some generic computing technique. Instead, the '934 Patent claims recite one or more inventive concepts that are rooted in headphone systems and audio technology, whose inventiveness has already been confirmed by the PTAB's final written decision and by various parties' failure to even secure institution of IPRs. Specifically, the '934 Patent addresses and provides a solution to a long-standing problem in the area of wireless headphone technology: the problem presented by the fact that a wireless headphone user can simply walk away, and distance himself or herself from, the source of the wireless data being played back in the headphones.
- 151. With the inventive concepts recited in at least the claims the PTAB has already confirmed are patentable, systems involving wireless headphone assemblies can now seamlessly address the problem that a user may walk away from one source of audio information and toward another source of audio information. A person of ordinary skill in the art would thus understand that the claims of the Asserted Patents are directed to specific improvements in headphone assemblies and similar systems.
- 152. Nor can it be said that the major difference between the prior art and Koss's claimed invention in Claim 4 of the '934 Patent is wireless, with the attendant benefits that such a system provides. Indeed, Claim 4 of the '934 Patent demonstrates a technological improvement, and not simply a feature of wireless communication; the PTAB has confirmed this to be the case. And the PTAB's analysis confirms that the system recited in Claim 4 of the '934 Patent is not "well understood."
- 153. Moreover, Claim 4 of the '934 Patent recites physical components that improve the technology of wireless communication. The Board has confirmed that prior systems did not have the hardware and software required to perform the "signal strength" aspects of Claim 4, and thus confirmed that these features indeed improve the technology of wireless communication.
- 154. The asserted claims of the '934 Patent are not directed to wireless communication over a network generally, but rather are limited to a particular application of wireless communication over a network, in that they are limited to "earphones" with a processor that, "upon activation of a user-control ..., initiate[s] transmission of a request to a remote, network-connected

server," that are for "receiving firmware upgrades transmitted from the emote, network-connected server," and that transition from playing digital audio contend received wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.

- 155. A third party could communicate wirelessly over a network without practicing the asserted claims of the '934 Patent, such as by not using "earphones" for the wireless communication over the network, not using a processor that, "upon activation of a user-control ..., initiate[s] transmission of a request to a remote, network-connected server" for the wireless communication over the network, that do not "receiv[e] firmware upgrades transmitted from the emote, network-connected server," and/or that do not transition from playing digital audio contend received wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.
- 156. In addition to the wireless communication elements, the asserted claims of the '934 Patent recite components that transform one form of energy to another form of energy. The asserted claims of the '934 Patent recite that the claimed headphone assembly comprises both acoustic transducers and a microphone. In this context, an acoustic transducer converts an electrical signal to mechanical energy (i.e., sound waves), such as by vibrating a membrane in the acoustic transducer. A microphone converts mechanical energy (i.e., sound waves) to an electrical signal based on vibrations of a membrane of the microphone caused by the sound waves.
- 157. Claim 4 of the '934 Patent is therefore not directed to an abstract idea, and is patent eligible subject matter pursuant to *Alice*, step 1.
- 158. What is more, Claim 4 of the '934 Patent is an inventive concept at least because the combination of claim limitations was not well-understood, routine, or conventional. In particular, despite repeated challenges at the PTAB, the Board has consistently found (in denial of institution and in a final written decision) that Claim 4 is directed to an inventive concept.

- 159. These statements of inventiveness are not conclusory; quite to the contrary, some of the largest headphone manufacturers in the world mustered the strength of some of the most sophisticated lawyers and experts in the world and, in the one (of four) IPR petitions to reach final written decision, the PTAB nevertheless found that Claim 4 (among others) is directed to an inventive concept.
- 160. Thus, in the event *Alice*'s step 2 is reached, Claim 4 of the '934 Patent recites an inventive concept and demonstrates that that claim is directed to patent eligible subject matter.
- 161. Further confirming that the '934 Patent is directed to patent eligible subject matter, the examiner in a family member application recently issued a notice of allowance for a similar set of claims to Claim 4 of the '934 Patent in view of considering this Court's Dkt. 88 Order dismissing Koss' First Amended Complaint.
- 162. In particular, Koss submitted this Court's Dkt. 88 Order in an IDS during examination of U.S. Application Serial No. 17/812,911, which is in the same patent family as the '934 Patent and which claims priority through several continuation applications to the '934 Patent.
- 163. The Examiner issued a "Corrected Notice of Allowance" on November 30, 2022 (Exhibit J) in which he stated that "[t]he Office carefully review [sic] IDS (Koss Corp V. Plantronics Inc) filed on 11/21/2022 Order Granting Motion Dismiss" and nevertheless allowed the pending claims.
- 164. This confirms that the Office, which issued the '934 Patent in view of the Supreme Court's *Alice* ruling without rejecting the claims, under that ruling (or under 35 U.S.C. § 101 at all) views the subject matter of Koss' patent portfolio as being directed to patent eligible subject matter.
- 165. There is no reason to disturb the presumption of validity under 35 U.S.C. § 101 that the '934 Patent (and any issued patent) enjoys.
- 166. Plantronics has made, had made, used, imported, supplied, distributed, sold, and/or offered for sale products and/or systems, including systems in which its BackBeat-branded products and/or systems, including, but not limited to, the BackBeat Fit 300 Headphones are incorporated ("Accused '934 Headphones").

167. As set forth in the attached non-limiting claim chart (Exhibit L), Plantronics has infringed and is infringing at least Claim 4 of the '934 Patent by making, having made, using, importing, supplying, distributing, selling, and/or offering for sale the Accused '934 Headphones, with specific reference in the claim chart to the BackBeat Fit 300 product. In particular, the use of the Accused '934 Headphones by Plantronics to, for example, demonstrate those products in brick-and-mortar stores in San Francisco Bay Area, California or to, for example, test those products, constitute acts of direct infringement of Claim 4 of the '934 Patent.

168. Plantronics actively induces infringement of at least Claim 4 of the '934 Patent by selling the Accused '934 Headphones with instructions as to how to use the Accused '934 Headphones in a system such as that recited in the '934 Patent. Plantronics aids, instructs, or otherwise acts with the intent to cause an end user to use the Accused '934 Headphones in an infringing manner. Plantronics knew of the '934 Patent and knew that its use and sale of the Accused '934 Headphones infringe at least Claim 4 of the '934 Patent. When a customer of Plantronics uses the Accused '934 Headphones as specifically instructed by Plantronics, the customer uses the headphones in a manner that infringes at least Claim 4 of the '934 Patent.

- Patent by providing, and by having knowingly provided, a material part of the instrumentalities, namely the Accused '934 Headphones, used to infringe Claim 4 of the '934 Patent. The Accused '934 Headphones have no substantial non-infringing uses. When an end user uses the Accused '934 Headphones in combination with, for example, a smart phone such as, for example, an Android-based smart phone and/or a peripheral device such as, for example, an Android-based tablet, the end user directly infringes Claim 4 of the '934 Patent. Plantronics knew that the Accused '934 Headphones were especially made for use in an infringing manner prior to the filing of this lawsuit. For at least the reasons set forth above, Plantronics contributes to the infringement of the '934 Patent by others.
- 170. Koss has been damaged as a result of the infringing conduct by Plantronics alleged above. Thus, Plantronics is liable to Koss in an amount that compensates it for such infringement,

which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

- 171. Plantronics's infringement of the '934 Patent has caused, and will continue to cause, Koss to suffer substantial and irreparable harm.
- 172. Plantronics has been aware that it infringes the '934 Patent since at least July 10, 2020, upon the receipt of the letter attached as Exhibit F. Since obtaining knowledge of its infringing activities, Plantronics has failed to cease its infringing activities. Further, Plantronics has continued its infringing activities, disregarding Koss's patent rights, since the filing of the original complaint on July 22, 2020.
- 173. Plantronics's infringement of the '934 Patent is, has been, and continues to be, willful, intentional, deliberate, and/or in conscious disregard of Koss's rights under the patent.
  - 174. Koss has complied with 35 U.S.C. § 287 with respect to the '934 Patent.

#### THIRD CAUSE OF ACTION

# (Infringement of the '325 Patent)

- 175. Koss incorporates by reference and realleges each and every allegation of Paragraphs 1 through 174 as if set forth herein.
- 176. Koss owns all substantial rights, interest, and title in and to the '325 Patent, including the sole and exclusive right to prosecute this action and enforce the '325 Patent against infringers, and to collect damages for all relevant times.
- 177. The '325 Patent generally describes wireless earphones that comprise a transceiver circuit for receiving streaming audio from a data source, such as a digital audio player or a computer, over a wireless network. The '325 Patent also describes and claims how these wireless earphones use the claimed microphone to pick up utterances of a user and specific limitations as to the curved hanger bar with a portion that rests upon the user's ear. It further describes and claims a docking station for charging the earphones. Various additional functional and hardware limitations are described and claimed in the dependent claims of the '325 Patent. Importantly, Claim 18 of the '325 Patent describes and claims a digital signal processor and a baseband processor to further improve the headphone assemblies over the prior art.

- 178. The written description of the '325 Patent describes in technical detail each of the limitations of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.
- 179. The claims of the '325 Patent are directed to statutorily eligible subject matter, as they do not recite an abstract idea and are also directed to an inventive concept.
- 180. The PTAB has already confirmed the patentability of the asserted claims of the '325 Patent, and thus has already confirmed at least that they are directed to an inventive concept.
- 181. The '325 Patent has been challenged at the PTAB in *inter partes* review on two (2) different occasions.
  - 182. In particular, Apple filed two (2) IPR Petitions against the '325 Patent.
  - 183. One of Apple's IPR petitions—IPR2021-00579—was denied institution.
- 184. One of Apple's IPR petitions—IPR2021-00305—was instituted, and resulted in a final written decision that at least Claim 18 of the '325 Patent was not unpatentable. The Final Written Decision is attached hereto as Exhibit M.
- 185. In particular, the Board held that "Petitioner has not shown, by a preponderance of the evidence, that the combination of Rosener and Huddart teaches 'wherein the processor circuit of each of the first and second earphones comprises: a digital signal processor that provides a sound quality enhancement for the audio content played by the at least one acoustic transducers of the earphone,' as recited in claim 18."
- 186. The only IPR filed against the '325 Patent to both be instituted and reach final written decision thus concluded that Claim 18 is not unpatentable.
- 187. There will be no appeal of the Board's finding that Claim 18 is not unpatentable, as Apple and Koss have resolved their disputes.
- 188. Plantronics has never filed an *inter partes* review Petition with regard to the '325 Patent.

1	189. Plantronics is statutorily estopped from filing inter partes review petitions with	
2	regard to the '325 Patent, as it was served with an original complaint for patent infringement on the	
3	'325 Patent more than one year ago.	
4	190. The claims of the '325 Patent were all prosecuted after the Supreme Court's	
5	decision in Alice Corp. v. CLS Bank Int'l., 578 U.S. 208 (2014), and were thus examined against	
6	the backdrop of the Supreme Court's guidance.	
7	191. The claims of the '325 Patent were never rejected under 35 U.S.C. § 101.	
8	192. Claim 18 of the '325 Patent depends from Claim 1 and recites as follows:	
9	1. Headphones comprising:	
10	a pair of first and second wireless earphones to be worn simultaneously by a user, wherein the first and second earphones are separate such that when the	
11	headphones are worn by the user, the first and second earphones are not physically connected, wherein each of the first and second earphones comprises:  a body portion;  an earbud extending from the body portion that is inserted into an	
12		
13	ear of the user when worn by the user;	
14	a curved hanger bar connected to the body portion, wherein the curved hanger bar comprises a portion that rests upon an upper external	
15	curvature of an ear of the user behind an upper portion of an auricula of the ear of the user;	
16	a wireless communication circuit for receiving and transmitting wireless signals;	
17 18	a processor circuit connected to the wireless communication circuit; at least one acoustic transducer for producing audible sound from	
19	the earbud; a microphone for picking up utterances of a user of the headphones;	
20	an antenna connected to the wireless communication circuit; and a rechargeable power source; and	
21	a docking station for holding at least the first wireless earphone, wherein	
22	the docking station comprises a power cable for connecting to an external device to power the docking station, and wherein the docking station is for	
23	charging at least the first wireless earphone when the first wireless earphone is placed in the docking station.	
24	18. The headphones of claim 1, wherein the processor circuit of each of the	
25	first and second earphones comprises:  a digital signal processor that provides a sound quality enhancement for the	
26	audio content played by the at least one acoustic transducers of the earphone; and a baseband processor circuit that is in communication with the wireless	
27	communication circuit of the earphone.	
28		

- 193. The inventions recited in Claim 18 address technological problems and provide technological solutions that were not well-understood, routine, or conventional at the time of the invention. This is demonstrated by (1) the initial issuance of the '325 Patent and (2) the Board's confirmation, both through denial of one petition and through a final written decision, of the patentability of claim 18 of the '325 Patent.
- 194. In particular, the inventions recited in Claim 18 address the following technological problems and provide technological solutions that were not well understood, routine, or conventional at the time of the invention:
  - a. A digital signal processor that provides a sound quality enhancement for audio content played back through the earphones and
  - b. A baseband processor in communication with the wireless circuit.
- 195. At least these features confine the claim to a series of particular solutions to a series of identified problems.
- 196. The physical components required to perform these technical innovations (e.g., a digital signal processor and a baseband circuit) are the focus of Claim 18 of the '325 Patent.
- 197. These features, which drove the PTAB to find that Claim 18 is not unpatentable, demonstrate some of the differences between the claim and the prior art, and demonstrate that it is not true that "the major difference between the prior art and Koss's claimed invention is that the claimed invention is wireless..."
- 198. A person of ordinary skill in the art reading the '325 Patent and its claims (including claim 18) would understand that (a) the Asserted Patents' disclosures and claims are drawn to solving specific, technical problems and (b) the claimed subject matter represents an advancement in the technical field of the Asserted Patents. For example, as to both (a) and (b), the hardware and software included in the recited headphone assembly of Claim 18 to provide sound quality enhancements with certain digital signal processors and to implement a saleable headphone assembly using a baseband processor contributes to solving the technical problem of how to make a relatively small wireless device sound good and provide adequate battery life. The hardware for

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handling this situation, and recited specifically in Claim 18, contributes to the solution of this technical problem.

- 199. The claims of the '325 Patent do not preempt all techniques for or approaches to accomplishing the same or a similar end to what they recite. For example, the claims do not preempt the use of the techniques taught in the prior art cited on the face of the Asserted Patents, nor the art cited in the various PTAB proceedings regarding the '325 Patent, none of which, as the patent examiners found, disclose or render obvious the claimed inventions, further showing that the claims are not well-understood, routine, or conventional.
- 200. The claims of the '325 Patent do not merely recite the performance of some generic computing technique. Instead, the '325 Patent claims recite one or more inventive concepts that are rooted in headphone systems and audio technology, whose inventiveness has already been confirmed by the PTAB's final written decision and by various parties' failure to even secure institution of IPRs. Specifically, the '325 Patent addresses and provides a solution to a longstanding problem in the area of wireless headphone technology: the problem of providing acceptable quality audio in a battery operated device for an acceptable amount of time between charging.
- 201. With the inventive concepts recited in at least the claims the PTAB has already confirmed are patentable, systems involving wireless headphone assemblies can now seamlessly address the problem of low quality audio in a device with short battery life. A person of ordinary skill in the art would thus understand that the claims of the Asserted Patents are directed to specific improvements in headphone assemblies and similar systems.
- 202. Nor can it be said that the major difference between the prior art and Koss's claimed invention in Claim 18 of the '325 Patent is focused on the wireless capability, and not any of the recited physical components in the claim. Indeed, Claim 18 of the '325 Patent demonstrates a technological improvement, and not simply a feature of wireless communication; the PTAB has confirmed this to be the case. And the PTAB's analysis confirms that the system recited in Claim 18 of the '325 Patent merely contains "generic physical elements of the prior art."

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203. Moreover, Claim 18 of the '325 Patent recites physical components that improve the technology of wireless headphones. The Board has confirmed that prior systems did not have the hardware and software required by Claim 18, and thus confirmed that these features indeed improve the technology of wireless communication.

- 204. The asserted claims of the '325 Patent are not directed to wireless communication over a network generally, but rather are limited to a particular application of wireless communication over a network, in that they are limited to "earphones" with "a digital signal processor that provides a sound quality enhancement for the audio content played by the at least one acoustic transducers of the earphone; and a baseband processor circuit that is in communication with the wireless communication circuit of the earphone.
- 205. A third party could communicate wirelessly over a network without practicing the asserted claims of the '325 Patent, such as by not using "earphones" for wireless communication over the network, not using earphones that have a baseband processor and a digital signal processor, or not using earphones with a docking station.
- 206. In addition to the wireless communication elements, the asserted claims of the '325 Patent therefore recite components that transform one form of energy to another form of energy. The asserted claims of the '325 Patent recite that the claimed headphone assembly comprises both acoustic transducers and a microphone. In this context, an acoustic transducer converts an electrical signal to mechanical energy (i.e., sound waves), such as by vibrating a membrane in the acoustic transducer. A microphone converts mechanical energy (i.e., sound waves) to an electrical signal based on vibrations of a membrane of the microphone caused by the sound waves.
- 207. Claim 18 of the '325 Patent is therefore not directed to an abstract idea, and is patent eligible subject matter pursuant to *Alice*, step 1.
- What is more, Claim 18 of the '325 Patent is an inventive concept at least because 208. the combination of claim limitations was not well-understood, routine, or conventional. In particular, despite repeated challenges at the PTAB, the Board has consistently found (in denial of institution and in a final written decision) that Claim 18 is directed to an inventive concept.

- 209. These statements of inventiveness are not conclusory; quite to the contrary, some of the largest headphone manufacturers in the world mustered the strength of some of the most sophisticated lawyers and experts in the world and, in the one (of two) IPR petitions to reach final written decision, the PTAB nevertheless found that Claim 18 is directed to an inventive concept.
- 210. Thus, in the event *Alice*'s step 2 is reached, Claim 18 of the '325 Patent recites an inventive concept and demonstrates that that claim is directed to patent eligible subject matter.
- 211. Further confirming that the '325 Patent is directed to patent eligible subject matter, the examiner in a family member application recently issued a notice of allowance for a similar set of claims to Claim 18 of the '325 Patent in view of considering this Court's Dkt. 88 Order dismissing Koss' First Amended Complaint.
- 212. In particular, Koss submitted this Court's Dkt. 88 Order in an IDS during examination of U.S. Application Serial No. 17/812,911, which is in the same patent family as the '325 Patent and which claims priority through several continuation applications to the '325 Patent.
- 213. The Examiner issued a "Corrected Notice of Allowance" on November 30, 2022 (Exhibit J) in which he stated that "[t]he Office carefully review [sic] IDS (Koss Corp V. Plantronics Inc) filed on 11/21/2022 Order Granting Motion Dismiss" and nevertheless allowed the pending claims.
- 214. This confirms that the Office, which issued the '325 Patent in view of the Supreme Court's *Alice* ruling without rejecting the claims, under that ruling (or under 35 U.S.C. § 101 at all) views the subject matter of Koss' patent portfolio as being directed to patent eligible subject matter.
- 215. There is no reason to disturb the presumption of validity under 35 U.S.C. § 101 that the '325 Patent (and any issued patent) enjoys.
- 216. Plantronics has made, had made, used, imported, supplied, distributed, sold, and/or offered for sale products and/or systems, including systems in which certain BackBeat branded products and/or systems, including, but not limited to, the BackBeat Fit 3100 Headphones, are incorporated ("Accused '325 Headphones").
- 217. As set forth in the attached non-limiting claim chart (Exhibit N), Plantronics has infringed and is infringing at least Claim 18 of the '325 Patent by making, having made, using,

importing, supplying, distributing, selling, and/or offering for sale the Accused '325 Headphones, with specific reference in the claim chart to the BackBeat Fit 3100 product. In particular, the use of the Accused '325 Headphones by Plantronics to, for example, demonstrate those products in brick-and-mortar stores in San Francisco Bay Area, California or to, for example, test those products, constitute acts of direct infringement of Claim 18 of the '325 Patent.

- 218. Plantronics actively induces infringement of at least Claim 18 of the '325 Patent by selling the Accused '325 Headphones with instructions as to how to use the Accused '325 Headphones in a system such as that recited in the '325 Patent. Plantronics aids, instructs, or otherwise acts with the intent to cause an end user to use the Accused '325 Headphones in an infringing manner. Plantronics knew of the '325 Patent and knew that its use and sale of the Accused '325 Headphones infringe at least Claim 18 of the '325 Patent. When a customer of Plantronics uses the Accused '325 Headphones as specifically instructed by Plantronics, the customer uses the headphones in a manner that infringes at least Claim 18 of the '325 Patent.
- 219. Plantronics is also liable for contributory infringement of at least Claim 18 of the '325 Patent by providing, and by having knowingly provided, a material part of the instrumentalities, namely the Accused '325 Headphones, used to infringe Claim 18 of the '325 Patent. The Accused '325 Headphones, have no substantial non-infringing uses. When an end user uses the Accused '325 Headphones in combination with, for example, a smart phone such as, for example, an Apple iPhone and/or an Apple Watch, the end user directly infringes Claim 18 of the '325 Patent. Plantronics knew that the Accused '325 Headphones were especially made for use in an infringing manner prior to the filing of this lawsuit. For at least the reasons set forth above, Plantronics contributes to the infringement of the '325 Patent by others.
- 220. Koss has been damaged as a result of the infringing conduct by Plantronics alleged above. Thus, Plantronics is liable to Koss in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 221. Plantronics's infringement of the '325 Patent has caused, and will continue to cause, Koss to suffer substantial and irreparable harm.

- 222. Plantronics has been aware that it infringes the '325 Patent since at least July 10, 2020, upon the receipt of the letter attached as Exhibit I. Since obtaining knowledge of its infringing activities, Plantronics has failed to cease its infringing activities. Further, Plantronics has continued its infringing activities, disregarding Koss's patent rights, since the filing of the original complaint on July 22, 2020.
- 223. Plantronics's infringement of the '325 Patent is, has been, and continues to be, willful, intentional, deliberate, and/or in conscious disregard of Koss's rights under the patent.
  - 224. Koss has complied with 35 U.S.C. § 287 with respect to the '325 Patent.

#### **FOURTH CAUSE OF ACTION**

#### (Infringement of the '498 Patent)

- 225. Koss incorporates by reference and realleges each and every allegation of Paragraphs 1 through 224 as if set forth herein.
- 226. Koss owns all substantial rights, interest, and title in and to the '498 Patent, including the sole and exclusive right to prosecute this action and enforce the '498 Patent against infringers, and to collect damages for all relevant times.
- 227. The '498 Patent generally describes wireless earphones that comprise a transceiver circuit for receiving streaming audio from a data source, such as a digital audio player or a computer, over a wireless network. The '498 Patent describes and claims a system-on-chip that mutes audio content streamed to the headphone in response to detecting an incoming wireless communication to the headphone, a specific improvement to the art. Various additional functional and hardware limitations are described and claimed in the dependent claims of the '498 Patent.
- 228. The written description of the '498 Patent describes in technical detail each of the limitations of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.
- 229. The claims of the '498 Patent are directed to statutorily eligible subject matter, as they do not recite an abstract idea and are also directed to an inventive concept.

such that the first and second wireless earphones play the audio content streamed wirelessly to the headphones; and

wherein the first processor circuit is configured to, in response to detecting an incoming wireless communication to the headphones:

- mute the audio content streamed wirelessly to the headphone being played by the headphones; and
- output audio of the incoming wireless communication circuit via the first and second wireless earphones.
- 23. The headphones of claim 1, wherein the processor circuit for each earphone is configured to transition from playing the audio content streamed wirelessly to the headphones from the first digital audio source via a first wireless communication link to playing the audio content streamed wirelessly to the headphones from a second digital audio source via a second wireless communication link automatically based on, at least in part, a signal strength for the second wireless communication link.
- 237. The inventions recited in Claim 23 address technological problems and provide technological solutions that were not well-understood, routine, or conventional at the time of the invention. This is demonstrated by (1) the initial issuance of the '498 Patent and (2) the Board's repeated confirmation, in IPR petitions filed by Apple and Bose, that claims reciting the "Signal Strength" concept are not unpatentable.
- 238. In particular, the inventions recited in Claim 23 address the following technological problems and provide technological solutions that were not well understood, routine, or conventional at the time of the invention:
  - a. Selectively muting and unmuting headphones in a headphone assembly
  - b. Transitioning to play digital audio content from a second digital audio source based on at least a signal strength level of a second wireless communication link
- 239. At least these features confine the claim to a series of particular solutions to a series of identified problems.
- 240. These features, which have driven the PTAB to find that claims reciting similar features are not unpatentable, demonstrate some of the differences between the claim and the prior art, and demonstrate that it is not true that "the major difference between the prior art and Koss's claimed invention is that the claimed invention is wireless..."

241. A person of ordinary skill in the art reading the '498 Patent and its claims (including Claim 23) would understand that (a) the Asserted Patents' disclosures and claims are drawn to solving specific, technical problems and (b) the claimed subject matter represents an advancement in the technical field of the Asserted Patents. For example, as to both (a) and (b), the hardware and software included in the recited headphone assembly of Claim 23 to transition from one source of audio information to another source of audio information based, at least in part, on a determined signal strength of a second wireless communication link (i.e., the link of the source of audio information to which the headphone assembly is transitioning) contributes to solving the technical problem that wireless headphone assemblies would be improved if they could account for the situation where a user walks away from one device and near another device, both of which are sources of audio content. The hardware for handling this situation, and permitting the headphone assembly to transition to another source of information when appropriate, further contributes to solving this technical problem.

- 242. The claims of the '498 Patent do not preempt all techniques for or approaches to accomplishing the same or a similar end to what they recite. For example, the claims do not preempt the use of the techniques taught in the prior art cited on the face of the Asserted Patents, none of which, as the patent examiners found, disclose or render obvious the claimed inventions, further showing that the claims are not well-understood, routine, or conventional.
- 243. The claims of the '498 Patent do not merely recite the performance of some generic computing technique. Instead, the '498 Patent claims recite one or more inventive concepts that are rooted in headphone systems and audio technology, whose inventiveness has already been confirmed by the PTAB's final written decisions on similar claim scope. Specifically, the '498 Patent addresses and provides a solution to a long-standing problem in the area of wireless headphone technology: the problem presented by the fact that a wireless headphone user can simply walk away, and distance himself or herself from, the source of the wireless data being played back in the headphones.
- 244. With the inventive concepts recited in at least similar claims the PTAB has already confirmed are patentable, systems involving wireless headphone assemblies can now seamlessly

address the problem that a user may walk away from one source of audio information and toward another source of audio information. A person of ordinary skill in the art would thus understand that the claims of the Asserted Patents are directed to specific improvements in headphone assemblies and similar systems.

- 245. Nor can it be said that the major difference between the prior art and Koss's claimed invention in Claim 23 of the '498 Patent is wireless, with the attendant benefits that such a system provides. Indeed, Claim 23 of the '498 Patent demonstrates a technological improvement, and not simply a feature of wireless communication; the PTAB has confirmed this to be the case. And the PTAB's analysis of similar claim scope confirms that the system recited in Claim 23 of the '498 Patent is not "well understood."
- 246. Moreover, Claim 23 of the '498 Patent recites physical components that improve the technology of wireless communication. The Board has confirmed that prior systems did not have the hardware and software required to perform the "signal strength" aspects of Claim 23, and thus confirmed that these features indeed improve the technology of wireless communication.
- 247. In addition to wireless communication elements, the asserted claims of the '498 Patent are not directed to wireless communication over a network generally, but rather are limited to a particular application of wireless communication over a network, in that they are limited to "earphones" with an "SOC" that, "mute the audio content streamed wirelessly to the headphone being played by the headphones" and "output audio of the incoming wireless communication circuit via the first and second wireless earphones" and that transition from playing digital audio contend received wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.
- 248. A third party could communicate wirelessly over a network without practicing the asserted claims of the '498 Patent, such as by not using "earphones" for the wireless communication over the network, not implementing the earphones with an SOC, not using an SOC that performs the mute/output required, and/or not transitioning from playing digital audio contend received

wireless from a first digital audio source received via a first wireless communication link to playing digital audio contend received wireless from a second digital audio source received via a second wireless communication link, based on the signal strength for the second wireless communication link.

- 249. The asserted claims of the '498 Patent recite components that transform one form of energy to another form of energy. The asserted claims of the '498 Patent recite that the claimed headphone assembly comprises both acoustic transducers and a microphone. In this context, an acoustic transducer converts an electrical signal to mechanical energy (i.e., sound waves), such as by vibrating a membrane in the acoustic transducer. A microphone converts mechanical energy (i.e., sound waves) to an electrical signal based on vibrations of a membrane of the microphone caused by the sound waves.
- 250. Claim 23 of the '498 Patent is therefore not directed to an abstract idea, and is patent eligible subject matter pursuant to *Alice*, step 1.
- 251. What is more, Claim 23 of the '498 Patent is an inventive concept at least because the combination of claim limitations was not well-understood, routine, or conventional. In particular, despite repeated challenges at the PTAB, the Board has consistently found (in denial of institution and in a final written decision) that claim 23 is directed to an inventive concept.
- 252. These statements of inventiveness are not conclusory; quite to the contrary, some of the largest headphone manufacturers in the world mustered the strength of some of the most sophisticated lawyers and experts in the world and the PTAB nevertheless repeatedly found that scope like that recited in Claim 23 of the '498 is patent eligible.
- 253. Thus, in the event *Alice*'s step 2 is reached, Claim 23 of the '498 Patent recites an inventive concept and demonstrates that that claim is directed to patent eligible subject matter.
- 254. Further confirming that the '498 Patent is directed to patent eligible subject matter, the examiner in a family member application recently issued a notice of allowance for a similar set of claims to Claim 23 of the '498 Patent in view of considering this Court's Dkt. 88 Order dismissing Koss' First Amended Complaint.

- 255. In particular, Koss submitted this Court's Dkt. 88 Order in an IDS during examination of U.S. Application Serial No. 17/812,911, which is in the same patent family as the '498 Patent and which claims priority through several continuation applications to the '498 Patent.
- 256. The Examiner issued a "Corrected Notice of Allowance" on November 30, 2022 (Exhibit J) in which he stated that "[t]he Office carefully review [sic] IDS (Koss Corp V. Plantronics Inc) filed on 11/21/2022 Order Granting Motion Dismiss" and nevertheless allowed the pending claims.
- 257. This confirms that the Office, which issued the '498 Patent in view of the Supreme Court's *Alice* ruling without rejecting the claims, under that ruling (or under 35 U.S.C. § 101 at all) views the subject matter of Koss' patent portfolio as being directed to patent eligible subject matter.
- 258. There is no reason to disturb the presumption of validity under 35 U.S.C. § 101 that the '498 Patent (and any issued patent) enjoys.
- 259. Plantronics has made, had made, used, imported, supplied, distributed, sold, and/or offered for sale products and/or systems, including systems in which its BackBeat-branded products and/or systems, including, but not limited to, the BackBeat FIT 300 Headphones, as well as certain Voyager branded headphones are incorporated ("Accused '498 Headphones"). On information and belief, the BackBeat Fit 300 headphones were offered for sale and actually sold by Plantronics as of August 26, 2020.
- 260. As set forth in the attached non-limiting claim chart (Exhibit O), Plantronics has infringed and is infringing at least Claim 23 of the '498 Patent by making, having made, using, importing, supplying, distributing, selling, and/or offering for sale the Accused '498 Headphones, with specific reference in the claim chart to the BackBeat Fit 300 product. In particular, the use of the Accused '498 Headphones by Plantronics to, for example, demonstrate those products in brick-and-mortar stores in San Francisco Bay Area, California or to, for example, test those products, constitute acts of direct infringement of Claim 23 of the '498 Patent.
- 261. Plantronics actively induces infringement of at least Claim 23 of the '498 Patent by selling the Accused '498 Headphones with instructions as to how to use the Accused '498 Headphones in a system such as that recited in the '498 Patent. Plantronics aids, instructs, or

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otherwise acts with the intent to cause an end user to use the Accused '498 Headphones in an infringing manner. Plantronics knew of the '498 Patent and knew that its use and sale of the Accused '498 Headphones infringe at least Claim 23 of the '498 Patent. When a customer of Plantronics uses the Accused '498 Headphones as specifically instructed by Plantronics, the customer uses the headphones in a manner that infringes at least Claim 23 of the '498 Patent.

- 262. Plantronics is also liable for contributory infringement of at least Claim 23 of the '498 Patent by providing, and by having knowingly provided, a material part of the instrumentalities, namely the Accused '498 Headphones, used to infringe Claim 23 of the '498 Patent. The Accused '498 Headphones have no substantial non-infringing uses. When an end user uses the Accused '498 Headphones in combination with, for example, a smart phone such as, for example, an Android-based smart phone and/or a peripheral device such as, for example, an Android-based tablet, the end user directly infringes Claim 23 of the '498 Patent. Plantronics knew that the Accused '498 Headphones were especially made for use in an infringing manner prior to the filing of this lawsuit. For at least the reasons set forth above, Plantronics contributes to the infringement of the '498 Patent by others.
- 263. Koss has been damaged as a result of the infringing conduct by Plantronics alleged above. Thus, Plantronics is liable to Koss in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 264. Plantronics's infringement of the '498 Patent has caused, and will continue to cause, Koss to suffer substantial and irreparable harm.
- 265. Plantronics has been aware that it infringes the '498 Patent since at least September 30, 2021, upon the receipt of the letter attached as Exhibit G. Since obtaining knowledge of its infringing activities, Plantronics has failed to cease its infringing activities.
- 266. Plantronics's infringement of the '498 Patent is, has been, and continues to be, willful, intentional, deliberate, and/or in conscious disregard of Koss's rights under the patent.
  - Koss has complied with 35 U.S.C. § 287 with respect to the '498 Patent. 267.

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### **FIFTH CAUSE OF ACTION**

### (Infringement of the '852 Patent)

- 268. Koss incorporates by reference and realleges each and every allegation of Paragraphs 1 through 267 as if set forth herein.
- 269. Koss owns all substantial rights, interest, and title in and to the '852 Patent, including the sole and exclusive right to prosecute this action and enforce the '852 Patent against infringers, and to collect damages for all relevant times.
- 270. The '852 Patent generally describes wireless earphones that comprise a transceiver circuit for receiving streaming audio from a data source, such as a digital audio player or a computer, over a wireless network. The '852 Patent describes and claims a system that includes a mobile computing device with a graphical user interface thereon to allow the user to select an audio control setting for the wireless headphones. Various additional functional and hardware limitations are described and claimed in the dependent claims of the '852 Patent.
- 271. The written description of the '852 Patent describes in technical detail each of the limitations of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.
- 272. The claims of the '852 Patent are directed to statutorily eligible subject matter, as they do not recite an abstract idea and are also directed to an inventive concept.
- 273. The '852 Patent has been challenged at the PTAB in *inter partes* review on only one (1) occasion.
- 274. In particular, on the second-to-last day of its statutory one-year period to file, Plantronics filed an IPR petition against the '852 Patent. An institution decision is expected by early May, 2023.
- 275. Plantronics' IPR petition as to the '852 Patent includes a single ground addressing claim 15; that ground relies on six (6) different prior art references in purported combination. Indeed, Plantronics' sole ground for purported invalidity of independent claim 1 (from which claim

15 ultimately depends) relies on four (4) different prior art references. This alone demonstrates that the claims of the '852 patent are directed to an inventive concept; Plantronics, even with the benefit of all of Apple's and Bose's prior IPR work, needs to resort to four-, five-, or six-reference combinations for purposes of demonstrating what Plantronics believes to be obviousness.

- 276. Claim 15 of the '852 Patent contains a similar "digital signal processor" limitation to the one that the Board has found not to be unpatentable with regard to the '325 Patent.
- 277. The claims of the '852 Patent were all prosecuted after the Supreme Court's decision in *Alice Corp. v. CLS Bank Int'l.*, 578 U.S. 208 (2014), and were thus examined against the backdrop of the Supreme Court's guidance.
  - 278. The claims of the '852 Patent were never rejected under 35 U.S.C. § 101.
- 279. Claim 15 of the '852 Patent depends from Claim 9, Claim 8, and ultimately Claim 1 and recites as follows:

### 1. A system comprising:

wireless headphones comprising first and second earphones; and

a mobile computer device that is in wireless communication with, and untethered to, the wireless headphones, wherein the mobile computer device is for wirelessly pairing with the wireless headphones such that the wireless headphones play audio content transmitted wirelessly to the wireless headphones from the mobile computer device, wherein the mobile computer device is for wirelessly pairing with the wireless headphones via an ad hoc wireless communication link between the mobile computer device and the wireless headphones, and wherein the ad hoc wireless communication link comprises a Bluetooth wireless communication link; and

wherein the mobile computer device comprises a screen that is configured to display a graphical user interface through which a user of the wireless headphones selects an audio control setting for the wireless headphones to be applied to the wireless headphones when the wireless headphones play the audio content, and wherein the wireless headphones receive the audio control setting via a wireless data communication link.

- 8. The system of claim 1, wherein the first and second earphones are physically separate such that when the wireless headphones are worn by the user, the first and second earphones are not physically connected.
- 9. The system of claim 8, wherein each of the first and second earphone comprises: an acoustic transducer; a processor circuit; a wireless communication circuit; a microphone; and a rechargeable battery.

- 15. The system of claim 9, wherein the processor circuit of each of the first and second earphones comprises a digital signal processor circuit that provides a sound quality enhancement for the audio content played by the acoustic transducer of the earphone.
- 280. The inventions recited in Claim 15 address technological problems and provide technological solutions that were not well-understood, routine, or conventional at the time of the invention. This is demonstrated by (1) the initial issuance of the '852 Patent and (2) the Board's confirmation, in an IPR filed by Apple that claims reciting a "digital signal processor" are not unpatentable.
- 281. In particular, the inventions recited in Claim 15 address the following technological problems and provide technological solutions that were not well understood, routine, or conventional at the time of the invention:
  - a. A digital signal processor that provides a sound quality enhancement for audio content played back through the earphones and
  - b. A separate mobile computer device that provides users with
- 282. At least these features confine the claim to a series of particular solutions to a series of identified problems.
- 283. The physical components required to perform these technical innovations (e.g., a digital signal processor) are the focus of Claim 15 of the '852 Patent.
- 284. These features, which drove the PTAB to find that a claim with features similar to Claim 15 is not unpatentable, demonstrate some of the differences between the claim and the prior art, and demonstrate that it is not true that "the major difference between the prior art and Koss's claimed invention is that the claimed invention is wireless..."
- 285. A person of ordinary skill in the art reading the '852 Patent and its claims (including Claim 15) would understand that (a) the Asserted Patents' disclosures and claims are drawn to solving specific, technical problems and (b) the claimed subject matter represents an advancement in the technical field of the Asserted Patents. For example, as to both (a) and (b), the hardware and software included in the recited headphone assembly of Claim 15 to provide sound quality enhancements with certain digital signal processors contributes to solving the technical problem of

how to make a relatively small wireless device sound good and provide adequate battery life. The hardware for handling this situation, and recited specifically in Claim 15, contributes to the solution of this technical problem.

- 286. The claims of the '852 Patent do not preempt all techniques for or approaches to accomplishing the same or a similar end to what they recite. For example, the claims do not preempt the use of the techniques taught in the prior art cited on the face of the Asserted Patents, nor the art cited in the various PTAB proceedings regarding the '325 Patent, none of which, as the patent examiners found, disclose or render obvious the claimed inventions, further showing that the claims are not well-understood, routine, or conventional.
- 287. The claims of the '852 Patent do not merely recite the performance of some generic computing technique. Instead, the '852 Patent claims recite one or more inventive concepts that are rooted in headphone systems and audio technology, whose inventiveness has already been confirmed by the PTAB's final written decision as to the '325 Patent and by various parties' failure to even secure institution of IPRs on the '325 Patent. Specifically, the '852 Patent addresses and provides a solution to a long-standing problem in the area of wireless headphone technology: the problem of providing acceptable quality audio in a battery operated device for an acceptable amount of time between charging.
- 288. With the inventive concepts recited in at least claims that contain limitations the PTAB has already confirmed are patentable, systems involving wireless headphone assemblies can now seamlessly address the problem of low quality audio in a device with short battery life. A person of ordinary skill in the art would thus understand that the claims of the Asserted Patents are directed to specific improvements in headphone assemblies and similar systems.
- 289. Nor can it be said that the major difference between the prior art and Koss's claimed invention in Claim 15 of the '852 Patent is focused on the wireless capability, and not any of the recited physical components in the claim. Indeed, Claim 15 of the '852 Patent demonstrates a technological improvement, and not simply a feature of wireless communication; the PTAB has confirmed this to be the case. And the PTAB's analysis of the '325 Patent confirms that the system recited in Claim 15 of the '852 Patent merely contains "generic physical elements of the prior art."

- 290. Moreover, Claim 15 of the '852 Patent recites physical components that improve the technology of wireless headphones. The Board has confirmed, in connection with the '325 Patent, that prior systems did not have the hardware and software required by Claim 15, and thus confirmed that these features indeed improve the technology of wireless communication.
- 291. In addition to wireless communication elements, the asserted claims of the '852 Patent are not directed to wireless communication over a network generally, but rather are limited to a particular application of wireless communication over a network, in that they are limited to "earphones" with "a digital signal processor circuit that provides a sound quality enhancement for the audio content played by the acoustic transducer of the earphone."
- 292. A third party could communicate wirelessly over a network without practicing the asserted claims of the '852 Patent, such as by not using "earphones" for wireless communication over the network, not using earphones that have a digital signal processor, or not using earphones that rely on a user interface for configuration.
- 293. The asserted claims of the '852 Patent therefore recite components that transform one form of energy to another form of energy. The asserted claims of the '852 Patent recite that the claimed headphone assembly comprises both acoustic transducers and a microphone. In this context, an acoustic transducer converts an electrical signal to mechanical energy (i.e., sound waves), such as by vibrating a membrane in the acoustic transducer. A microphone converts mechanical energy (i.e., sound waves) to an electrical signal based on vibrations of a membrane of the microphone caused by the sound waves.
- 294. Claim 15 of the '852 Patent is therefore not directed to an abstract idea, and is patent eligible subject matter pursuant to *Alice*, step 1.
- 295. What is more, Claim 15 of the '852 Patent is an inventive concept at least because the combination of claim limitations was not well-understood, routine, or conventional. In particular, despite repeated challenges at the PTAB, the Board has consistently found (in denial of institution and in a final written decision) that claims with similar subject matter are directed to an inventive concept.

- 296. These statements of inventiveness are not conclusory; quite to the contrary, some of the largest headphone manufacturers in the world mustered the strength of some of the most sophisticated lawyers and experts in the world and, in the one (of two) IPR petitions to reach final written decision, the PTAB nevertheless found that claims with similar scope to Claim 15 of the '852 Patent are directed to an inventive concept.
- 297. Thus, in the event *Alice*'s step 2 is reached, Claim 15 of the '852 Patent recites an inventive concept and demonstrates that that claim is directed to patent eligible subject matter.
- 298. Further confirming that the '852 Patent is directed to patent eligible subject matter, the examiner in a family member application recently issued a notice of allowance for a similar set of claims to Claim 15 of the '852 Patent in view of considering this Court's Dkt. 88 Order dismissing Koss' First Amended Complaint.
- 299. In particular, Koss submitted this Court's Dkt. 88 Order in an IDS during examination of U.S. Application Serial No. 17/812,911, which is in the same patent family as the '852 Patent and which claims priority through several continuation applications to the '852 Patent.
- 300. The Examiner issued a "Corrected Notice of Allowance" on November 30, 2022 (Exhibit J) in which he stated that "[t]he Office carefully review [sic] IDS (Koss Corp V. Plantronics Inc) filed on 11/21/2022 Order Granting Motion Dismiss" and nevertheless allowed the pending claims.
- 301. This confirms that the Office, which issued the '852 Patent in view of the Supreme Court's *Alice* ruling without rejecting the claims, under that ruling (or under 35 U.S.C. § 101 at all) views the subject matter of Koss' patent portfolio as being directed to patent eligible subject matter.
- 302. There is no reason to disturb the presumption of validity under 35 U.S.C. § 101 that the '852 Patent (and any issued patent) enjoys.
- 303. Plantronics has made, had made, used, imported, supplied, distributed, sold, and/or offered for sale products and/or systems, including systems in which its BackBeat-branded products and/or systems, including, but not limited to, the BackBeat FIT 3100 Headphones, as well as other BackBeat Fit, BackBeat Go, and BackBeat Pro headphones are incorporated ("Accused '852 Headphones"). On information and belief, the BackBeat Fit 3100 headphones were offered for sale

and actually sold by Plantronics for use with its BackBeat Mobile Application as of November 25, 2020. On information and belief, the BackBeat mobile application is still supported by Plantronics and the mobile application is still available for its customers to download as of October 1, 2021.

304. As set forth in the attached non-limiting claim chart (Exhibit N), Plantronics has infringed and is infringing at least Claim 15 of the '852 Patent by making, having made, using, importing, supplying, distributing, selling, and/or offering for sale the Accused '852 Headphones along with its BackBeat branded mobile application, with specific reference in the claim chart to the BackBeat Fit 3100 product. In particular, the use of the Accused '852 Headphones by Plantronics to, for example, demonstrate those products in brick-and-mortar stores in San Francisco Bay Area, California or to, for example, test those products, constitute acts of direct infringement of Claim 15 of the '852 Patent.

305. Plantronics actively induces infringement of at least Claim 15 of the '852 Patent by selling the Accused '852 Headphones with instructions as to how to use the Accused '852 Headphones in a system such as that recited in the '852 Patent. Plantronics aids, instructs, or otherwise acts with the intent to cause an end user to use the Accused '852 Headphones along with the BackBeat mobile application in an infringing manner. Plantronics knew of the '852 Patent and knew that its use and sale of the Accused '852 Headphones infringe at least Claim 15 of the '852 Patent. When a customer of Plantronics uses the Accused '852 Headphones as specifically instructed by Plantronics, the customer uses the headphones in a manner that completes the system of Claim 15, thereby infringing Claim 15 of the '852 Patent.

306. Plantronics is also liable for contributory infringement of at least Claim 15 of the '852 Patent by providing, and by having knowingly provided, a material part of the instrumentalities, namely the Accused '852 Headphones along with the BackBeat mobile application, used to infringe Claim 15 of the '852 Patent. The Accused '852 Headphones have no substantial non-infringing uses. When an end user uses the Accused '852 Headphones in combination with, for example, a smart phone such as, for example, an Apple iPhone and/or a peripheral device such as, for example, an Apple Watch, the end user directly infringes Claim 15 of the '852 Patent. Plantronics knew that the Accused '852 Headphones were especially made for

1	D.	D. The Court award damages pursuant to 35 U.S.C. § 284 adequate to compensate Koss		
2	for Plantronics's past infringement of the Patents-in-Suit, including both pre- and post-judgment			
3	interest and costs as fixed by the Court;			
4	E.	E. The Court increase the damages to be awarded to Koss by three times the amount		
5	found by the jury or assessed by the Court;			
6	F.	The Court declare that this is an exceptional case entitling Koss to its reasonable		
7	attorneys' fees under 35 U.S.C. § 285; and			
8	G.	The Court award such other relief as the Court may deem just and proper.		
9				
10	Dated: Decei	ember 7, 2022 Res	spectfully submitted,	
11		By:	/s/ Peter E. Soskin Peter E. Soskin	
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