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Attorneys for Plaintiff Apple Inc.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

APPLE INC., Plaintiff, v. ALIVECOR, INC. Defendant.	CASE NO. **COMPLAINT FOR PATENT INFRINGEMENT** DEMAND FOR JURY TRIAL

AliveCor, Inc. Exhibit 1016
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COMPLAINT

1. This is an action about innovation and the opportunism and profiteering that threatens it. Apple Inc. ("Apple") is a global technology company that has, for decades, introduced cutting-edge, life-changing advancements in electronic healthcare that are relied upon by millions on a daily basis to better their lives.

2. Since its founding almost 50 years ago, Apple has held its place as an American and worldwide leader by developing innovative technology, investing billions in domestic research and development of technologies in a wide variety of industries, and producing devices and applications that are at the core of today's society. In particular, Apple has long been an industry leader in cutting-edge electronic healthcare solutions and has invested its considerable expertise and creativity in developing such systems and bringing them to the public.

3. Among such advances, Apple has developed and patented a wide array of novel health and fitness technologies, each of which provides users with accurate and highly accessible technology-powered insights empowering them to live a healthier life.[1] These include numerous critical, ground-breaking ECG technologies provided by the Apple Watch and watchOS. Apple began developing and patenting these technologies over a decade ago. For example, in 2008, Apple had already developed and filed for patent protection on specific and foundational technologies pertaining to embedded heart rate and electric cardiac activity monitors. Apple's massive commitments to innovation in the healthcare industry led to critical developments in key technologies, including those related to sensing irregular heart rhythms that may be suggestive of atrial fibrillation (AFib), capturing an electrocardiogram ("ECG" or "EKG"),[2] cycle tracking features for women (watchOS 6),[3] blood oxygen saturation

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[1] *See* Exhibit 1, "How Apple Is Empowering People With Their Health Information," (July 20, 2022), https://www.apple.com/newsroom/2022/07/how-apple-is-empowering-people-with-their-health-information.

[2] *See* Exhibit 2, "Apple Watch Series 4: Beautifully redesigned with breakthrough communication, fitness and health capabilities," (Sept. 12, 2018), https://www.apple.com/newsroom/2018/09/redesigned-apple-watch-series-4-revolutionizes-communication-fitness-and-health; *see also* Exhibit 3, "ECG app and irregular heart rhythm notification available today on Apple Watch," (Dec. 6, 2018), *available at* https://www.apple.com/newsroom/2018/12/ecg-app-and-irregular-heart-rhythm-notification-available-today-on-apple-watch/.

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measurement (watchOS 7),[4] respiratory tracking during sleep, and fall detection (watchOS 8),[5] to name just a few. These advancements also include an integrated sensor in an electronic device that can measure a user's heartbeat, heartrate, and other signals generated by the user's heart, which are the subjects of the '257 patent-in-suit. Apple also improved upon this design with sealed button systems, which are the subjects of the '619 patent-in-suit, as well as user interfaces for monitoring such health data, which are the subjects of the '533 patent-in-suit. Apple also developed the ability to aggregate such data for a user's healthcare providers to review, which is the subject of the '898 patent-in-suit. It is innovations such as these and the millions of dollars Apple invested in the research and development of these innovations—including the many features surrounding the Apple Watch and Apple's Health App—that have bettered the lives of millions who use Apple's healthcare devices and pioneered the personal health advancements that AliveCor attempts to co-opt through its litigation campaign against Apple.

4. This case is about a far different story involving AliveCor, Inc. ("AliveCor") and its brazen infringement of Apple's technology—technology that Apple developed years before AliveCor even came into existence. Founded in 2010, AliveCor's business has focused on the sale of portable ECG devices which rely on numerous technologies in Apple's iPhone and/or Watch to provide ECG information to AliveCor's customers. Rather than develop its technology from scratch, however, AliveCor resorted to including the very technology that Apple created and patented. This was no accident: AliveCor has long known of Apple's patented technology, as many of AliveCor's own patents cite to many of Apple's patented innovations.

5. But AliveCor's business has not been commercially successful, and has instead been propped up by funding from private investors. AliveCor has responded to its own failures in the market

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[3] *See* Exhibit 4, "WatchOS 6 Advances Health And Fitness Capabilities for Apple Watch," (June 3, 2019), https://www.apple.com/newsroom/2019/06/watchos-6-advances-health-and-fitness-capabilities-for-apple-watch.

[4] *See* Exhibit 5, "Apple Watch Series 6 Delivers Breakthrough Wellness And Fitness Capabilities," (Sept. 15, 2020), https://www.apple.com/newsroom/2020/09/apple-watch-series-6-delivers-breakthrough-wellness-and-fitness-capabilities.

[5] *See* Exhibit 6, "WatchOS 8 Is Available Today," (Sept. 20, 2021), https://www.apple.com/newsroom/2021/09/watchos-8-is-available-today.

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through opportunistic assertions of its patents against Apple. For example, AliveCor filed a complaint before the International Trade Commission ("Commission"), seeking to stop Apple from importing its products into the United States based on its assertion of patents covering unimportant alleged improvements to ECG devices.[6] And while an Administrative Law Judge issued an Initial Determination in that action finding a violation—a finding that Apple is presently contesting before the Commission—Apple now brings this action to set the record straight as to who is the real pioneer and to stop AliveCor's rampant infringement that unlawfully appropriates Apple's intellectual property. Apple is the pioneering innovator, having researched, developed, and patented core, foundational technologies before AliveCor came into existence. AliveCor's litigation campaign is nothing more than an attempt to siphon from the success of Apple technologies it did not invent, all the while selling products that rely on foundational ECG innovations that Apple patented years before AliveCor came to be.

NATURE OF THE CASE

6. Apple brings claims under the patent laws of the United States, 35 U.S.C. § 1, *et seq.*, for the infringement of the following United States patents: U.S. Patent Nos. 10,076,257 (the "'257 Patent"); 10,270,898 (the "'898 Patent"); 10,866,619 (the "'619 Patent"); and 10,568,533 (the "533 Patent") (collectively, the "Asserted Patents").

PARTIES

7. Apple is an American technology company organized under the laws of California, having its principal place of business at One Apple Park Way, Cupertino, CA 95014. From its founding in 1976, Apple has been the renowned global leader in consumer electronics products, including being among the first manufacturers of personal computers, and later expanding into other technologies, pioneering smart mobile communication devices, digital music players, notebooks, and wearables, as well as related software, services, accessories, and networking solutions.

8. AliveCor is a company organized and existing under the laws of Delaware with its principal place of business at 444 Castro Street, Suite 600, Mountain View, CA 94041.

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[6] *In re Certain Wearable Elec. Devices with ECG Functionality and Components Thereof*, Inv. No. 337-TA-1266 (USITC). AliveCor also initiated a district court suit against Apple, *AliveCor, Inc. v. Apple, Inc.*, C.A. No. 6:20-cv-1112 (W.D. Tex. 2021), which is currently stayed.

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JURISDICTION AND VENUE

9. This civil action asserts claims arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq*. This Court therefore has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. The Court has personal jurisdiction over AliveCor because AliveCor maintains its principal place of business in this District at 444 Castro Street, Suite 600, Mountain View, CA 94041, and from that location conducts and/or directs the acts accused of infringement in this action. Moreover, AliveCor conducts business in this District by shipping, distributing, offering for sale, selling, and advertising (including the provision of an interactive web page) its products and services in both the State of California and in this District. AliveCor has, either directly or through intermediaries, purposefully and voluntarily placed one or more of its infringing products and/or services into the stream of commerce with the intention and expectation that they will be purchased and used by customers in this District.

11. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391 and 1400(b) because AliveCor regularly conducts business within this District, has a regular and established place of business in this District, and has committed acts of infringement within this District.

APPLE'S PATENTED TECHNOLOGIES

The '257 Patent

12. The '257 Patent is titled "Seamlessly Embedded Heart Rate Monitor" and duly and legally issued on September 18. 2018. The '257 Patent issued from U.S. Patent Application Serial No. 14/136,658 filed on December 20, 2013. A true and accurate copy of the '257 Patent is attached hereto as Exhibit 7.

13. Apple is the owner, by valid assignment, of the entire right, title, and interest in and to the '257 Patent. Prior to issuance, the '257 Patent inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 14/136,658 to Apple. This assignment is recorded at the United States Patent and Trademark Office ("USPTO") at Reel/Frame 022149/0581 and a true and accurate copy is attached hereto as Exhibit 8.

14. The '257 Patent is valid, enforceable, and is currently in full force and effect.

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The ’898 Patent

15. The ’898 Patent is titled “Wellness Aggregator” and duly and legally issued on April 23, 2019. The ’898 Patent issued from U.S. Patent Application Serial No. 14/599,424 filed on January 16, 2015. A true and accurate copy of the ’898 Patent is attached hereto as Exhibit 9.

16. Apple is the owner, by valid assignment, of the entire right, title, and interest in and to the ’898 Patent. Prior to issuance, the ’898 Patent inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 14/599,424 to Apple. This assignment is recorded at the USPTO at Reel/Frame 036850/0376 and a true and accurate copy is attached hereto as Exhibit 10.

17. The ’898 Patent is valid, enforceable, and is currently in full force and effect.

The ’619 Patent

18. The ’619 Patent is titled “Electronic Device Having Sealed Button Biometric Sensing System” and duly and legally issued on December 15, 2020. The ’619 Patent issued from U.S. Patent Application Serial No. 15/627,336 filed on June 19, 2017. A true and accurate copy of the ’619 Patent is attached hereto as Exhibit 11.

19. Apple is the owner, by valid assignment, of the entire right, title, and interest in and to the ’619 Patent. Prior to issuance, the ’619 Patent inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 15/627,336 to Apple. This assignment is recorded at the USPTO at Reel/Frame 042766/0554 and a true and accurate copy is attached hereto as Exhibit 12.

20. The ’619 Patent is valid, enforceable, and is currently in full force and effect.

The ’533 Patent

21. The ’533 Patent is titled “User Interfaces For Health Monitoring” and duly and legally issued on February 25, 2020. The ’533 Patent issued from U.S. Patent Application Serial No. 16/143,959 filed on September 27, 2018. A true and accurate copy of the ’533 Patent is attached hereto as Exhibit 13.

22. Apple is the owner, by valid assignment, of the entire right, title, and interest in and to the ’533 Patent. Prior to issuance, the ’533 Patent inventors assigned all right, title, and interest in U.S. Patent Application Serial No. 16/143,959 to Apple. This assignment is recorded at the USPTO at Reel/Frame 048113/0343 and a true and accurate copy is attached hereto as Exhibit 14.

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23. The ’533 Patent is valid, enforceable, and is currently in full force and effect.

ACCUSED PRODUCTS

24. The accused products in this case include, but are not limited to, AliveCor’s KardiaMobile Card, KardiaMobile, KardiaMobile 6L, Kardia App, KardiaPro (including devices and servers, and mobile applications), and KardiaCare products (collectively, the “Accused Products”).

FIRST CAUSE OF ACTION

Infringement of the ’257 Patent by AliveCor

25. Apple realleges and incorporates each of the allegations in Paragraphs 1–24 above as though fully set forth herein.

26. The ’257 Patent, titled “Seamlessly Embedded Heart Rate Monitor,” discloses a novel device that detects a user heartbeat or heart rhythm to provide electrocardiogram (EKG) data with specific and concrete advantages over prior biometric devices. Exhibit 7 (’257 Patent), 1:52–63. The ’257 Patent explains that prior-art systems were not aesthetically pleasing and were difficult to use, because they required additional actions beyond biometric reading. *Id.*, 1:58–2:3. Accordingly, the ’257 Patent claims a specific structure of an electronic device comprising an enclosure and heart sensor, where the heart sensor includes “a first lead comprising a first pad that is embedded in a first portion of the enclosure, wherein an exterior surface of the enclosure comprises an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion” and “a second lead comprising a second pad that is embedded in a second portion of the enclosure.” *Id.*, cl. 1. Further, “the first pad is configured to detect a first electrical signal of the user’s cardiac signal via the user’s skin’s contact with the exterior surface of the first portion of the enclosure,” and “the second pad is configured to detect a second electrical signal of the user’s cardiac signal via the user’s skin’s contact with at least one of the second pad and the second portion of the enclosure.” *Id.* The enclosure further contains a processor configured to receive electrical signals detected by the first and second pads. *Id.*

27. AliveCor’s products and/or services that infringe the ’257 Patent include, but are not limited to, the KardiaMobile, KardiaMobile 6L, KardiaMobile Card, the Kardia App, and use thereof.

28. AliveCor makes, uses, sells, offers for sale, and/or imports the Accused Products and components thereof in the United States.

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29. AliveCor directly infringes—literally and/or under the doctrine of equivalents—at least Claim 1 of the ’257 Patent by making, using, selling, offering for sale, and/or importing into the United States its Accused Products and components thereof.

30. For example, Claim 1 of the ’257 Patent recites:

> 1. An electronic device for detecting a user’s cardiac signal, comprising:
>
> an enclosure;
>
> a heart sensor configured to detect the user’s cardiac signal, the heart sensor comprising:
>
> a first lead comprising a first pad that is embedded in a first portion of the enclosure, wherein an exterior surface of the enclosure comprises an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user’s cardiac signal via the user’s skin’s contact with the exterior surface of the first portion of the enclosure; and
>
> a second lead comprising a second pad that is embedded in a second portion of the enclosure, wherein the second pad is configured to detect a second electrical signal of the user’s cardiac signal via the user’s skin’s contact with at least one of the second pad and the second portion of the enclosure; and
>
> a processor coupled to the heart sensor and configured to receive and process the detected cardiac signal, wherein the first lead further comprises a first connector coupled to the first pad and configured to provide the first electrical signal detected by the first pad to the processor, and wherein the second lead further comprises a second connector coupled to the second pad and configured to provide the second electrical signal detected by the second pad to the processor.

31. The Accused Products practice each limitation of Claim 1 of the ’257 Patent.

32. To the extent the preamble is construed to be limiting, AliveCor, at least when using the Accused Products, practices “an electronic device for detecting a user’s cardiac signal.” *See, e.g.*, Exhibit 15 (KardiaMobile 6L IFU, https://www.kardia.com/assets/old/ifus/kardiamobile6l/19LB65.02-en.pdf); Exhibit 16 (KardiaMobile IFU, https://www.kardia.com/assets/old/ifus/kardiamobile/02LB49.6-en.pdf); Exhibit 17 (KardiaMobile Card IFU, https://www.alivecor.com/ifus/kardiamobile-card/21LB01.2-en.pdf).

AliveCor, Inc. Exhibit 1016
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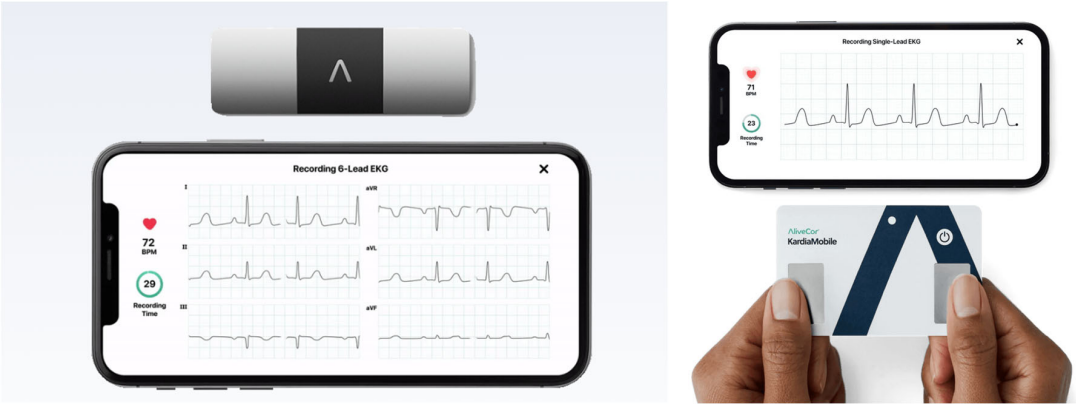

INTENDED USE

The KardiaMobile System is intended to record, store and transfer single-channel electrocardiogram (ECG) rhythms. The KardiaMobile System also displays ECG rhythms and output of ECG analysis from AliveCor's KardiaAI platform including detecting the presence of normal sinus rhythm, atrial fibrillation, bradycardia, tachycardia, and others. The KardiaMobile System is intended for use by healthcare professionals, patients with known or suspected heart conditions and health conscious individuals. The device has not been tested and is not intended for pediatric use.

33. AliveCor, at least when using the Accused Products, practices "an enclosure" as required by Claim 1 of the '257 Patent. This component is depicted in the images below. *See* Exhibit 18 (KardiaMobile 6L Store Front, https://store.kardia.com/products/kardiamobile6l); Exhibit 19 (KardiaMobile Store Front, https://store.kardia.com/products/kardiamobile); Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card).

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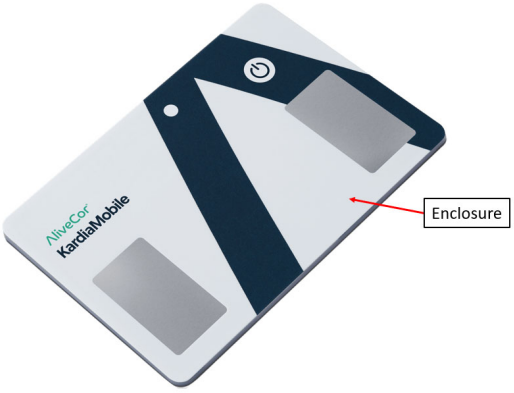

34. AliveCor, at least when using the Accused Products, practices "a heart sensor configured to detect the user's cardiac signal." The Accused Products record a user's EKG (*i.e.*, the electrical signal from the user's heart). *See, e.g.*, Exhibit 15 (KardiaMobile 6L IFU); Exhibit 16 (KardiaMobile IFU); Exhibit 17 (KardiaMobile Card IFU).

Introduction

1. **KardiaMobile 6L** is a 3-electrode personal EKG device that records your EKG and wirelessly transmits the data to your smartphone or tablet.
   a. Contains two electrodes on the top surface, for use with the left and right hands, and one on the bottom surface, for use with the bare skin of the left leg.
   b. Powered by a replaceable battery located under the bottom electrode.
   c. Bluetooth wirelessly transmits EKG data to your smartphone or tablet.

2. KardiaMobile 6L is capable of recording two EKG types:
   a. A **Single-Lead EKG**: provides a single view of the heart's electrical activity (EKG taken with top two electrodes)
   b. A **Six-Lead EKG**: provides six views of the heart's electrical activity (EKG taken using all three electrodes).

3. An instant algorithmic analysis ("**Instant Analysis**") of your heart rhythm is provided upon completion of your EKG recording.
   a. Instant Analysis indicates normal sinus rhythm, atrial fibrillation, bradycardia, tachycardia, or an unclassified result for both Single-Lead and Six-Lead EKGs.
   b. Instant Analysis with Advanced Determinations include sinus rhythm with wide QRS, sinus rhythm with premature ventricular contractions (PVC), and sinus rhythm with supraventricular ectopy.

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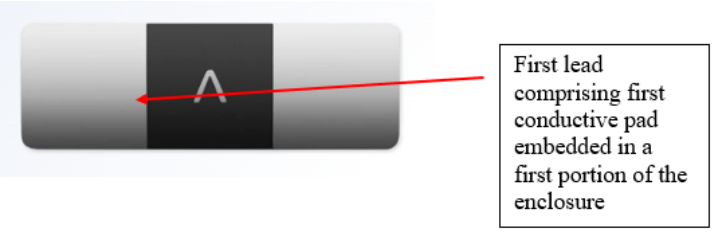
INTENDED USE

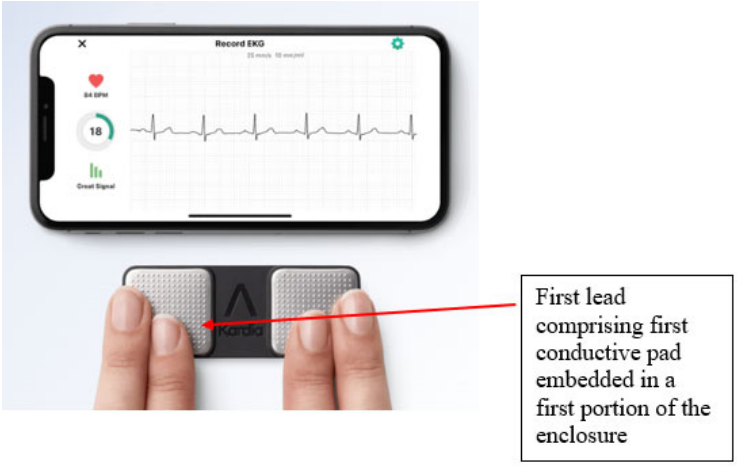
The KardiaMobile System is intended to record, store and transfer single-channel electrocardiogram (ECG) rhythms. The KardiaMobile System also displays ECG rhythms and output of ECG analysis from AliveCor's KardiaAI platform including detecting the presence of normal sinus rhythm, atrial fibrillation, bradycardia, tachycardia, and others. The KardiaMobile System is intended for use by healthcare professionals, patients with known or suspected heart conditions and health conscious individuals. The device has not been tested and is not intended for pediatric use.

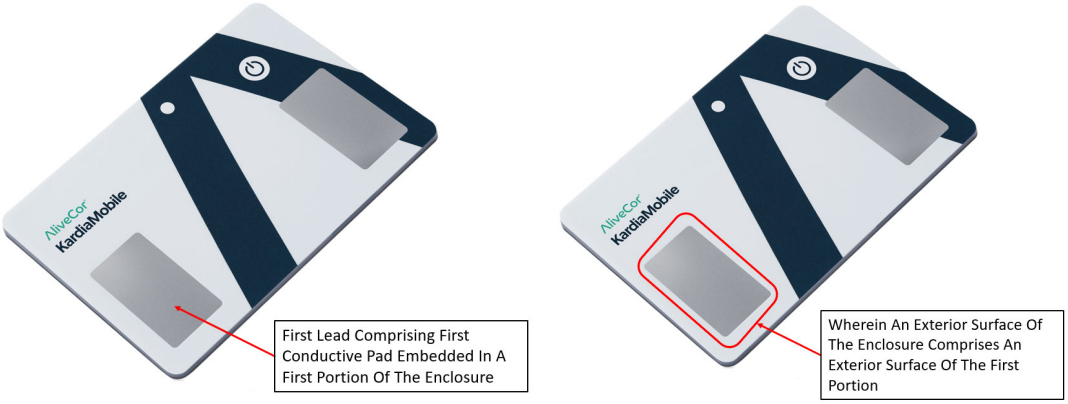
Features & Functionality

KardiaMobile Card is a personal EKG device that is capable of recording a Single-Lead EKG. It has two electrodes on the top surface and is powered by a non-replaceable battery. Bluetooth is used to wirelessly transmit EKG data from the device to your smartphone or tablet.

35. AliveCor, at least when using the Accused Products, practices a heart sensor comprising "a first lead comprising a first pad that is embedded in a first portion of the enclosure, wherein an exterior surface of the enclosure comprises an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user's cardiac signal via the user's skin's contact with the exterior surface of the first portion of the enclosure." These components are depicted in the images below. *See* Exhibit 18 (KardiaMobile 6L Store Front); Exhibit 19 (KardiaMobile Store Front); Exhibit 20 (KardiaMobile Card Store Front).







36. AliveCor, at least when using the Accused Products, practices a heart sensor comprising "a second lead comprising a second pad that is embedded in a second portion of the enclosure, wherein

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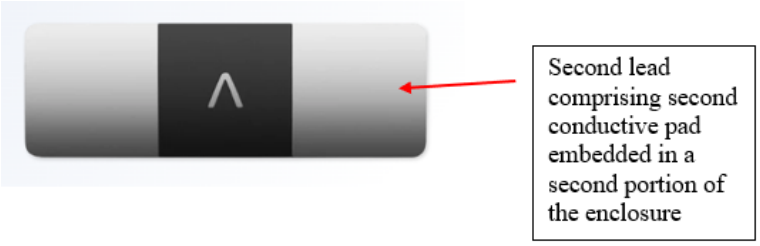
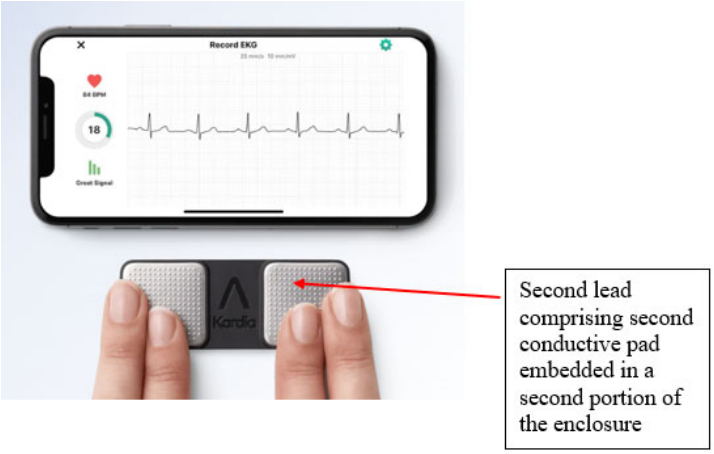
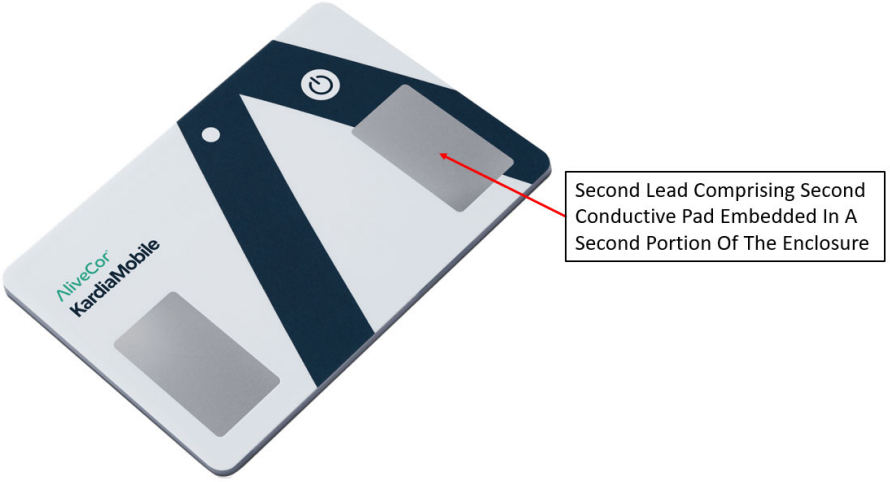
the second pad is configured to detect a second electrical signal of the user's cardiac signal via the user's skin's contact with at least one of the second pad and the second portion of the enclosure." These components are depicted in the images below. *See* Exhibit 18 (KardiaMobile 6L Store Front); Exhibit 19 (KardiaMobile Store Front); Exhibit 20 (KardiaMobile Card Store Front).







37. AliveCor, at least when using the Accused Products, practices "a processor coupled to the heart sensor and configured to receive and process the detected cardiac signal, wherein the first lead

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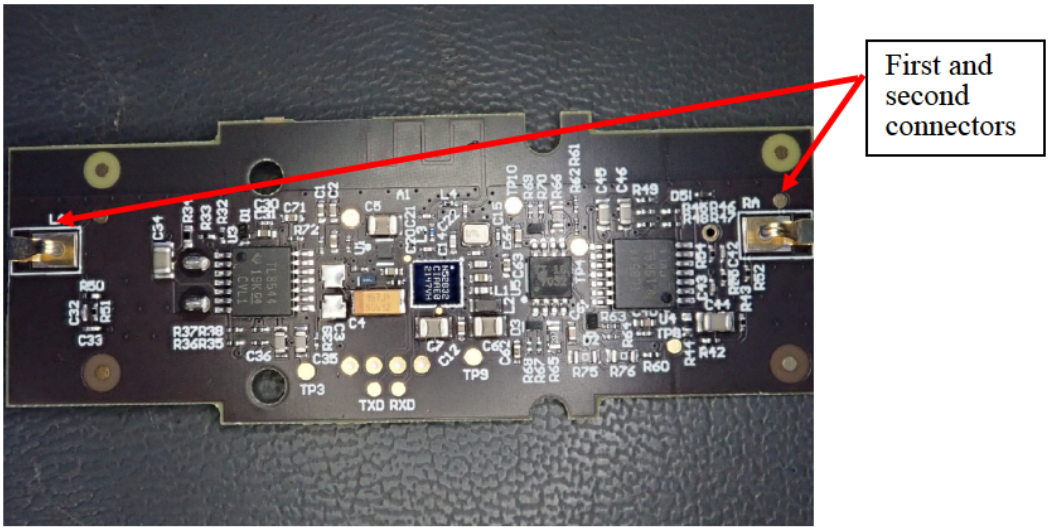
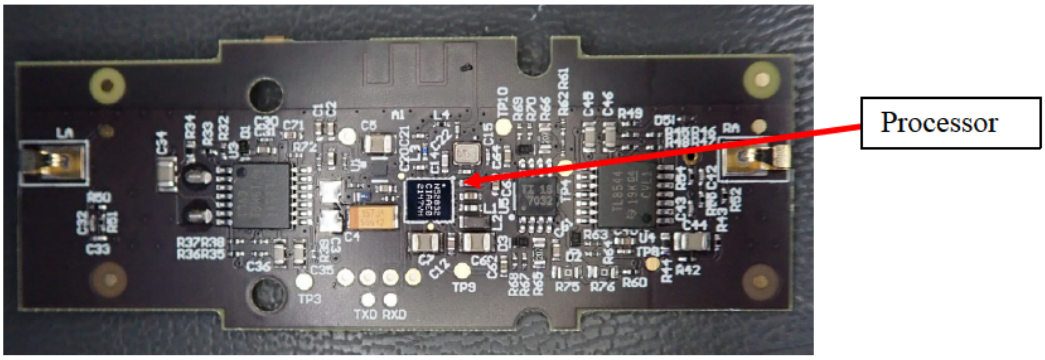
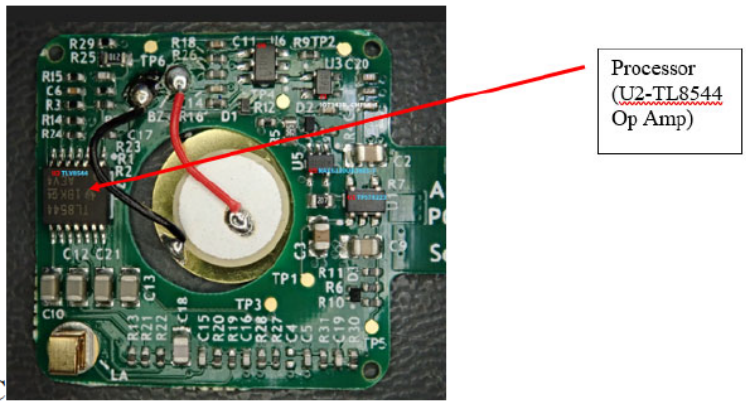
further comprises a first connector coupled to the first pad and configured to provide the first electrical signal detected by the first pad to the processor, and wherein the second lead further comprises a second connector coupled to the second pad and configured to provide the second electrical signal detected by the second pad to the processor." This component is depicted in the images below. *See* Exhibit 21 (circuitry images).







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AliveCor, Inc. Exhibit 1016
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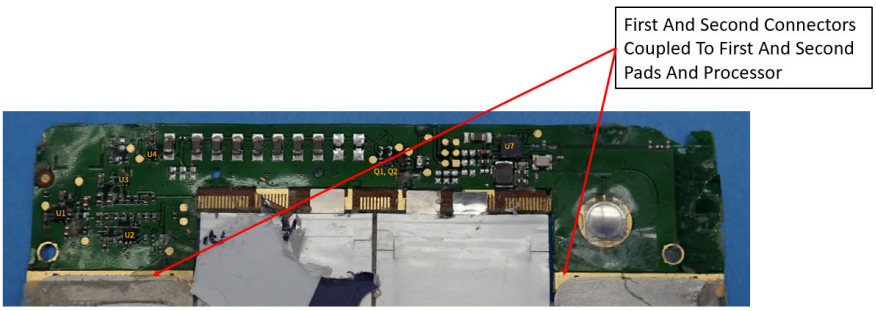

38. Each claim in the ’257 Patent recites an independent invention. Neither Claim 1, described above, nor any other individual claim is representative of all claims in the ’257 Patent.

39. AliveCor has been aware of the ’257 Patent since at least the filing date of this Complaint.

40. AliveCor has actively induced infringement of at least Claim 1 of the ’257 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b).

41. AliveCor’s customers and end-users of the Accused Products directly infringe Claim 1 of the ’257 Patent, at least by using the Accused Products, as described above in Paragraphs 32–39.

42. Since at least the filing date of this Complaint AliveCor knowingly induces infringement of at least Claim 1 of the ’257 Patent by customers and end-users of the Accused Products with specific intent to induce infringement, and/or with willful blindness to the possibility that its acts induce infringement, through activities relating to selling, marketing, advertising, promotion, support, and distribution of the Accused Products in the United States.

43. AliveCor instructs customers and end-users, at least through its marketing, promotional, and instructional materials, to use the infringing Accused Products, as described in detail above in Paragraphs 32–39. AliveCor creates and distributes promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the user of the Accused Products in a manner that directly infringes the Asserted Patents. In particular, AliveCor instructs end users on how to use its products to sense heart conditions by using the first and second leads to detect electrical signals using the processor of the devices. *See, e.g.*, Exhibit 15 (KardiaMobile 6L IFU); Exhibit 16 (KardiaMobile System IFU); Exhibit 17 (KardiaMobile Card IFU); Exhibit 23 (“Setting up your Kardia account,” (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000111761); Exhibit 24 (“Setting

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up your KardiaMobile," (2020), https://alivecor.zendesk.com/hc/en-us/articles/360001941227); Exhibit 25 ("Setting up your KardiaMobile 6L," (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000113821); Exhibit 20 (KardiaMobile Card, https://store.kardia.com/products/kardiamobile-card); Exhibit 18 (KardiaMobile 6L, https://store.kardia.com/products/kardiamobile6l); Exhibit 19 (KardiaMobile, https://store.kardia.com/products/kardiamobile).

44. AliveCor provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Such instructions include, for example, data sheets, technical specifications, customer support services, product sheets, and technical support services.

45. AliveCor contributed and is contributing to infringement of at least Claim 1 of the '257 Patent, in violation of 35 U.S.C. § 271(c).

46. AliveCor's customers and end-users of the Accused Products directly infringe Claim 1 of the '257 Patent, at least by using the Accused Products, as described in detail above in Paragraphs 32–39.

47. AliveCor contributes to infringement of the '257 Patent by offering to sell, selling, and importing into the United States the Accused Products and components thereof, including, for example, the Accused Products and associated software applications, firmware, and other services. Such components are substantial, material parts of the claimed inventions of the '257 Patent and have no substantial non-infringing use. The only use of AliveCor's Accused Products is using the first and second leads of the devices to detect electrical signals to determine if a user has any heart conditions.

48. The Accused Products and associated software applications, firmware, and other services supplied by AliveCor are especially made and especially adapted for use in infringing the '257 Patent and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

49. AliveCor's infringement of the '257 Patent is without license or other authorization.

50. AliveCor's continued infringement of the '257 Patent has damaged and will continue to damage Apple.

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51. Unless and until enjoined by this Court, AliveCor will continue to directly infringe as well as induce and contribute to infringement of the '257 Patent. AliveCor's infringing acts are causing and will continue to cause Apple at least irreparable harm, for which there is no adequate remedy at law. Under 35 U.S.C. § 283, Apple is entitled to a permanent injunction against further infringement.

52. This case is exceptional, entitling Apple to an award of attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

SECOND CAUSE OF ACTION

Infringement of the '619 Patent by AliveCor

53. Apple realleges and incorporates each of the allegations in Paragraphs 1–52 above as though fully set forth herein.

54. The '619 Patent discloses a novel device with specific and concrete manufacturing improvements to prevent liquid or other contaminants from damaging the internal electronics, including the use of a seal and a flexible conduit to transmit electrical signals from the biometric sensors to the processor. Exhibit 11 ('619 Patent), 1:14–22, 1:26–40.

55. AliveCor's products and/or services that infringe the '619 Patent include, but are not limited to, the KardiaMobile Card, the Kardia App, and use thereof.

56. AliveCor makes, uses, sells, offers for sale, and/or imports the Accused Products and components thereof in the United States.

57. AliveCor directly infringes—literally and/or under the doctrine of equivalents—at least Claim 1 of the '619 Patent at least by making, using, selling, offering for sale, and/or importing its Accused Products and components thereof in the United States.

58. For example, Claim 1 of the '619 patent recites:

1. An electronic device comprising:

an enclosure having an enclosed volume and an opening formed in a sidewall;

a processor positioned in the enclosed volume;

a button assembly within the opening, the button assembly comprising:

an input member having an input surface; and

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a biometric sensor positioned below the input member and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to a biometric characteristic;

a seal positioned between a sealing surface of the button assembly and the enclosure; and

a flexible conduit coupled to the biometric sensor and configured to transmit the output signal to the processor; wherein:

a portion of the flexible conduit is sandwiched between the seal and the sealing surface or between the seal and the enclosure.

59. The Accused Products practice each limitation of Claim 1 of the '619 Patent.

60. To the extent the preamble is construed to be limiting, AliveCor, at least when using the Accused Products, practices "an electronic device." *See, e.g.*, Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card); Exhibit 17 (KardiaMobile Card Instructions For Use, https://www.alivecor.com/ifus/kardiamobile-card/21LB01.2-en.pdf).

Features & Functionality

KardiaMobile Card is a personal EKG device that is capable of recording a Single-Lead EKG. It has two electrodes on the top surface and is powered by a non-replaceable battery. Bluetooth is used to wirelessly transmit EKG data from the device to your smartphone or tablet.

61. AliveCor, at least when using the Accused Products, practices "an enclosure having an enclosed volume and an opening formed in a sidewall" as required by Claim 1 of the '619 Patent. This

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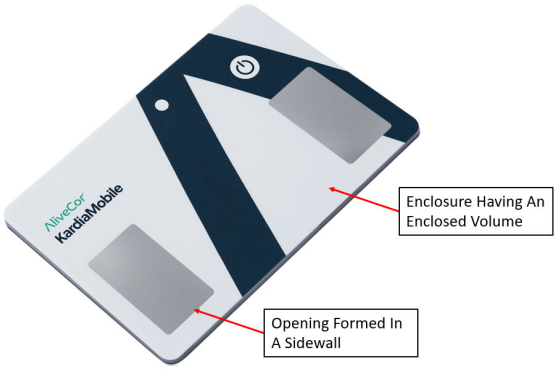
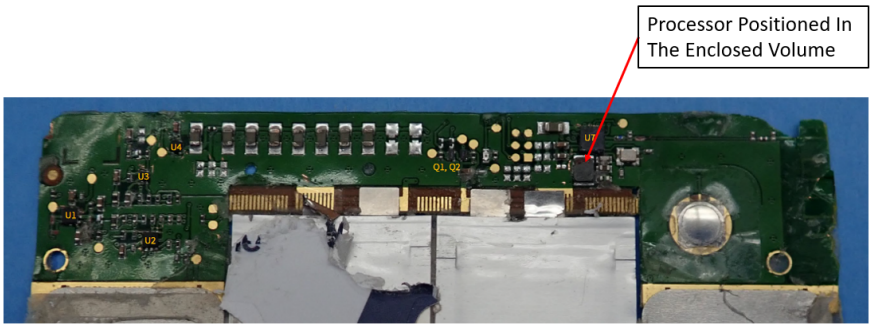
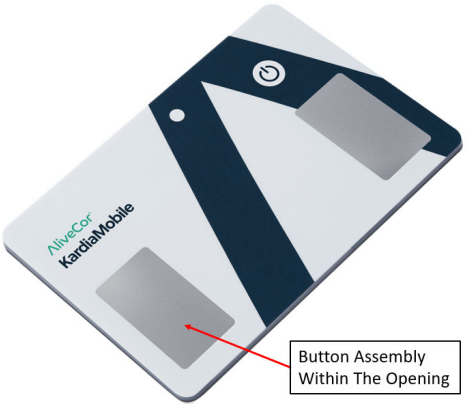
component is depicted in the images below. *See, e.g.*, Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card); Exhibit 21 (circuitry images).



62. AliveCor, at least when using the Accused Products, practices "a processor positioned in the enclosed volume" as required by Claim 1 of the '619 Patent. This component is depicted in the image below showing the KardiaMobile Card. Exhibit 21 (circuitry images).



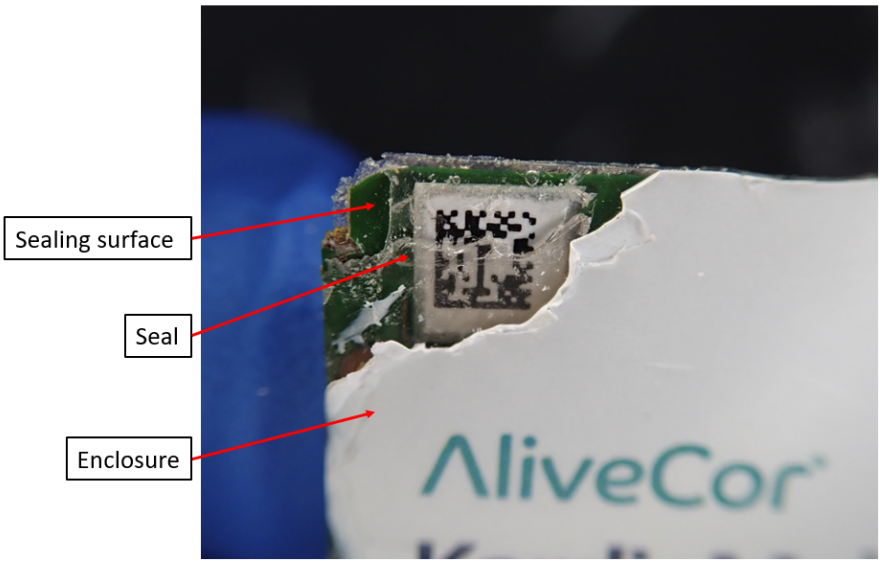
63. AliveCor, at least when using the Accused Products, practices "a button assembly within the opening, the button assembly comprising: an input member having an input surface; and a biometric sensor positioned below the input member and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to a biometric characteristic" as required by Claim 1 of the '619 Patent. For instance, the '619 Patent indicates that the claimed "button assembly" may be "stationary" and/or a "touch sensor to detect user input." *See* Exhibit 11 ('619 Patent), 2:23–24, 4:29–38, 5:14–22, 6:49–59. These components are depicted in the images below. *See, e.g.*, Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card).



64. AliveCor, at least when using the Accused Products, practices "a seal positioned between a sealing surface of the button assembly and the enclosure" as required by Claim 1 of the '619 Patent. *See, e.g.*, Exhibit 17 (KardiaMobile Card IFU) at 12.

Ingress Protection Marking

KardiaMobile Card is IPX8 rated. KardiaMobile Card is protected against immersion in water up to 2 meters for 1 hour. KardiaMobile Card has been tested with relevant requirement standard IEC 60601-1-11:2015.



65. AliveCor, at least when using the Accused Products, practices "a flexible conduit coupled to the biometric sensor and configured to transmit the output signal to the processor" as required by Claim 1 of the '619 Patent. These components are depicted in the images of the KardiaMobile Card below.

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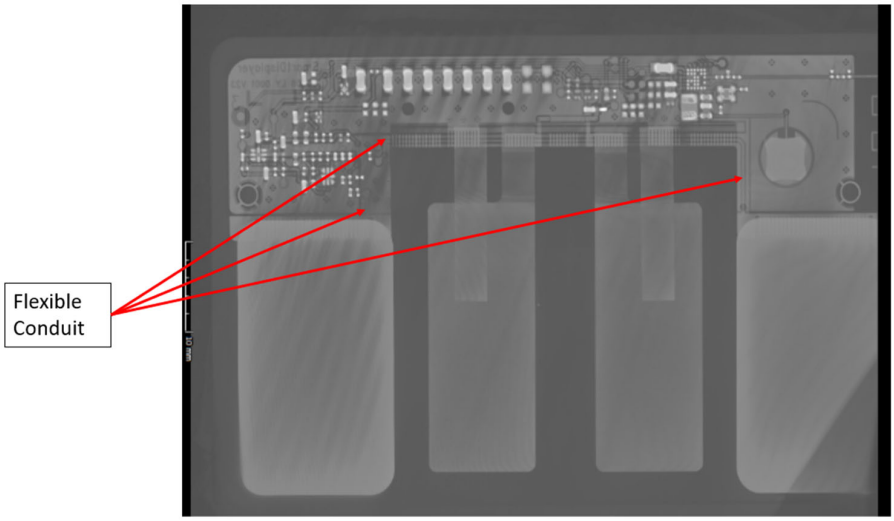

66. AliveCor, at least when using the Accused Products, practices "a portion of the flexible conduit is sandwiched between the seal and the sealing surface or between the seal and the enclosure" as required by Claim 1 of the '619 Patent. These components are depicted in the KardiaMobile Card images below.

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67. Each claim in the ’619 Patent recites an independent invention. Neither Claim 1, described above, nor any other individual claim is representative of all claims in the ’619 Patent.

68. AliveCor has been aware of the ’619 Patent since at least the filing date of this Complaint.

69. AliveCor has actively induced infringement of at least Claim 1 of the ’619 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b).

70. AliveCor’s customers and end-users of the Accused Products directly infringe Claim 1 of the ’619 Patent, at least by using the Accused Products, as described above in Paragraphs 60–68.

71. Since at least the filing date of this Complaint AliveCor knowingly induces infringement of at least Claim 1 of the ’619 Patent by customers and end-users of the Accused Products with specific intent to induce infringement, and/or with willful blindness to the possibility that its acts induce infringement, through activities relating to selling, marketing, advertising, promotion, support, and distribution of the Accused Products in the United States.

72. AliveCor instructs customers and end-users, at least through its marketing, promotional, and instructional materials, to use the infringing Accused Products, as described in detail above in Paragraphs 60–68. AliveCor creates and distributes promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the user of the Accused Products. *See, e.g.*, Exhibit 17 (KardiaMobile Card IFU); Exhibit 23 (“Setting up your Kardia account,” (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000111761); Exhibit 20 (KardiaMobile Card, https://store.kardia.com/products/kardiamobile-card).

73. AliveCor provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Such instructions include, for example, data sheets, technical specifications, customer support services, product sheets, and technical support services.

74. AliveCor contributed and is contributing to infringement of at least Claim 1 of the ’619 Patent, in violation of 35 U.S.C. § 271(c).

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75. AliveCor's customers and end-users of the Accused Products directly infringe Claim 1 of the '619 Patent, at least by using the Accused Products, as described in detail above in Paragraphs 60–68.

76. AliveCor contributes to infringement of the '619 Patent by offering to sell, selling, and importing into the United States the Accused Products and components thereof, including, for example, the Accused Products and associated software applications, firmware, and other services. Such components are substantial, material parts of the claimed inventions of the '619 Patent and have no substantial non-infringing use.

77. The Accused Products and associated software applications, firmware, and other services supplied by AliveCor are especially made and especially adapted for use in infringing the '619 Patent and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

78. AliveCor's infringement of the '619 Patent is without license or other authorization.

79. AliveCor's continued infringement of the '619 Patent has damaged and will continue to damage Apple.

80. Unless and until enjoined by this Court, AliveCor will continue to directly infringe as well as induce and contribute to infringement of the '619 Patent. AliveCor's infringing acts are causing and will continue to cause Apple at least irreparable harm, for which there is no adequate remedy at law. Under 35 U.S.C. § 283, Apple is entitled to a permanent injunction against further infringement.

81. This case is exceptional, entitling Apple to an award of attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

THIRD CAUSE OF ACTION

Infringement of the '898 Patent by AliveCor

82. Apple realleges and incorporates each of the allegations in Paragraphs 1–81 above as though fully set forth herein.

83. The '898 Patent discloses a novel method for securely measuring, storing, and sharing wellness data through unique hardware and software—namely, that prior art systems did not allow the analysis of multiple pieces of wellness data to be viewed and analyzed on one device. Exhibit 9 ('898 Patent), 1:40–47. The '898 patent is thus directed at novel ways for aggregating wellness data by

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granularly approving sources of healthcare data and approving destinations of that data. *Id.*, 2:57–3:17. The inventions disclosed in the '898 Patent specifically improve prior-art health applications by providing new ways for users or healthcare providers to view and analyze wellness data collected from a variety of sources. *Id.*, 1:28–47. The specification provides exemplary embodiments providing novel means to aggregate and display data based on user input. *Id.*, 1:50–5:12. The claims are directed to specific and concrete methods of operating a healthcare-management system, including limitations on how data is communicated—only between "approved sources" and "approved destinations"—and novel ways to view wellness data that were unavailable before the '898 patent. For example, the claims describe "display[ing] a detailed view of a sub-category of wellness data," where that detailed view includes "a graph representation of the sub-category of wellness data that includes aggregated values of the sub-category of wellness data." *Id.*, cl. 1. Other claims describe specific techniques for analyzing sources of wellness data with respect to each other, how access to the wellness information is restricted, and how subcategories of data are created and analyzed.

84. AliveCor's products and/or services that infringe the '898 Patent include, but are not limited to, the KardiaPro service, including the AliveCor server(s) hosting the service and devices running the service, in conjunction with the KardiaMobile, KardiaMobile 6L, KardiaMobile Card, and/or Kardia App; and use thereof.

85. AliveCor makes, uses, sells, offers for sale, and/or imports the Accused Products and components thereof in the United States.

86. AliveCor directly infringes—literally and/or under the doctrine of equivalents—at least Claim 1 of the '898 Patent, at least by making, using, selling, offering for sale, and/or importing its Accused Products and components thereof in the United States.

87. For example, Claim 1 of the '898 Patent recites:

> 1. A non-transitory computer-readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a display, cause the device to:
>
> > receive information identifying a plurality of approved sources of wellness data, wherein the plurality of approved sources comprise an electronic device or software application;

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receive information identifying a plurality of approved destinations of wellness data, wherein the plurality of approved destinations comprise an electronic device or software application;

display a detailed view of a sub-category of wellness data, the detailed view comprising:

a graph representation of the sub-category of wellness data that includes aggregated values of the sub-category of wellness data, wherein the sub-category of wellness data is from the plurality of approved sources for the sub-category of wellness data; and

a selectable data sharing option;

receive user selection of the selectable data sharing option; and
in response to receiving the selection of the selectable data sharing option, display:

the plurality of approved sources for the sub-category of wellness data, wherein the sub-category of wellness data is approved to be received from the plurality of approved sources and stored in a wellness database; and

the plurality of approved destinations for the sub-category of wellness data, wherein the sub-category of wellness data is approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

88. AliveCor, at least when using the Accused Products, performs every step of Claim 1 of the '898 Patent.

89. To the extent the preamble is construed to be limiting, AliveCor, at least when using the Accused Products, practices "[a] non-transitory computer-readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a display." For example, the Accused Products comprise instructions that are executed by electronic devices with a display. *See, e.g.*, Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).

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90. AliveCor, at least when using the Accused Products, practices "receiv[ing] information identifying a plurality of approved sources of wellness data, wherein the plurality of approved sources comprise an electronic device or software application" as required by Claim 1 of the '898 Patent. For example, KardiaPro receives wellness data including the user's cardiac signature and heartrate among other things from the Accused Products and from QT analysis providers for a plurality of patients, as depicted in the images below. Patients approve sending these sources of data to clinicians by consenting to sharing the data. *See, e.g.*, Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf); Exhibit 19 (https://store.kardia.com/products/kardiamobile); Exhibit 18 (https://store.kardia.com/products/kardiamobile6l); Exhibit 20 (https://store.kardia.com/products/kardiamobile-card).

KardiaPro

Dashboard

From this homepage, you can access all the areas of KardiaPro.

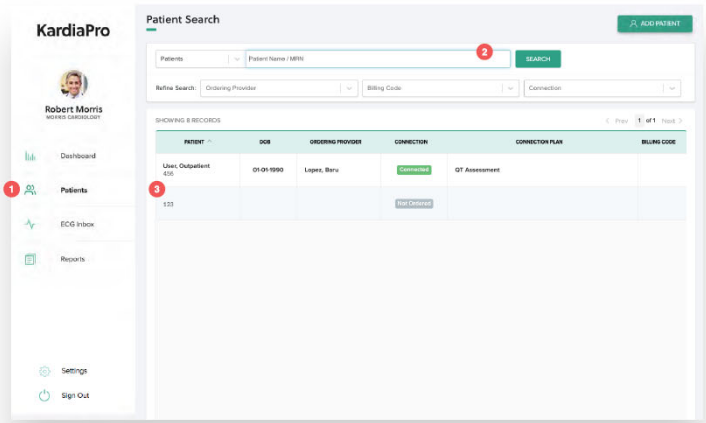
1. Patients: Access the list of patients in your hospital that have data.
2. ECG Inbox: Access both your Personal Inbox or the Hospital's Inbox. Here you will find ECGs that have been flagged* for review.
3. Reports: Automatic reports for billing are for outpatient use only and not applicable for inpatient use.
4. Connection Metrics: This function is for outpatient use only and not applicable for inpatient use.
5. Add Patient: If you choose, you can add a new patient to KardiaPro before any ECGs are recorded in KardiaStation. Otherwise, the patient record is created when the ECG is recorded, based on the MRN entered.
6. Settings: All users can update their password here. Account Administrators have access to add and delete team members, set email notification frequency, and set default inbox settings.
7. Sign Out: Sign out of KardiaPro here. If you forget to sign out, the system will automatically sign you out after 20 minutes of inactivity.

KardiaPro

Patient Directory

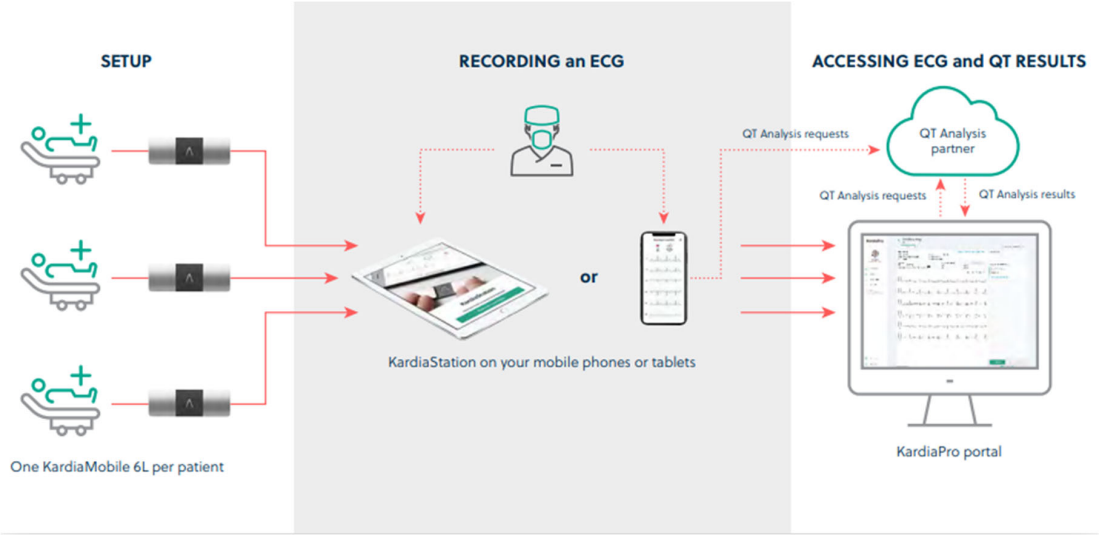
The patient directory is used to search for a specific patient. Once in a patient file, you have access to all of the ECG recordings and QT Analysis results. You can also see notes, summary reports, and blood pressure data (if entered).

1. Select "Patients."
2. To quickly find a specific patient, type the MRN (medical record number) in the search field.
   - If name was entered into the Patient Profile in KardiaPro, you can also search on patient first or last name. Otherwise, only the MRN or Patient ID that was used in KardiaStation will be listed
   - To return to the full list of patients when finished, press the "x" next to the patient's name in the search field
3. Select any row to open a patient's file.



91. AliveCor, at least when using the Accused Devices, practices "receiv[ing] information identifying a plurality of approved destinations of wellness data, wherein the plurality of approved destinations comprise an electronic device or software application," as required by Claim 1 of the '898 Patent. For example, clinicians who receive data from approved sources can share that data with approved destinations including a QT analysis partner and other clinicians. *See, e.g.*, Exhibit 26

(https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf); Exhibit 27 (https://www.kardia.com/professional/hcp).



Reviewing ECGs, continued (Interpretation Workflow)

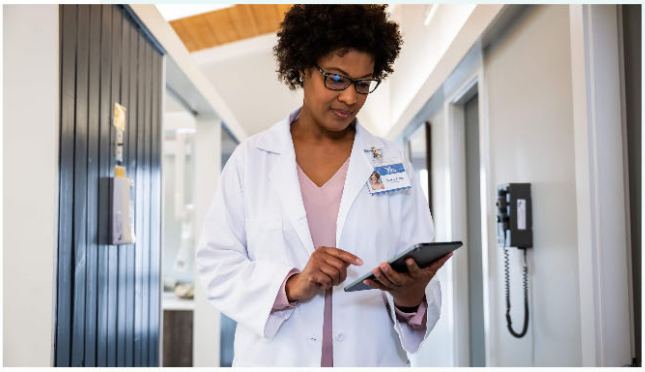
AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

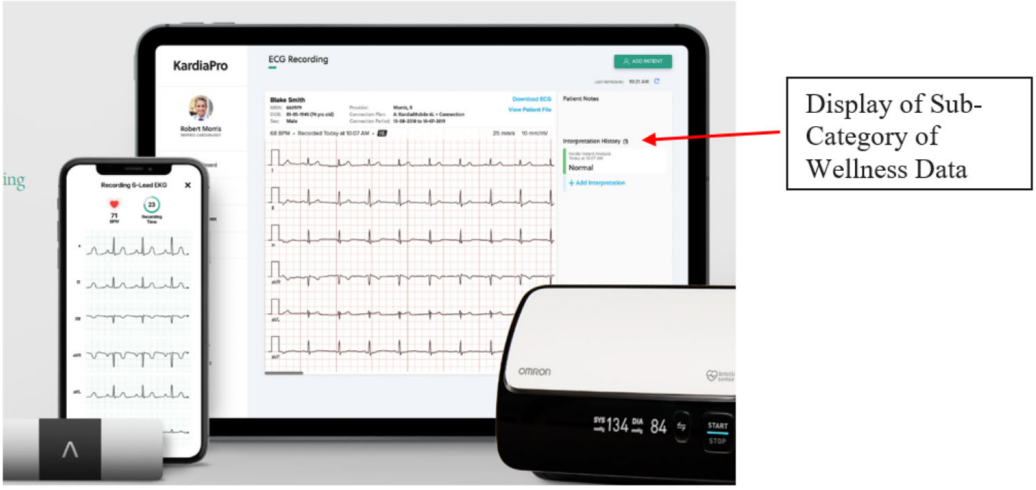
Access a comprehensive suite of devices to analyze ECG data

When you're assessing heart rhythms, simply capturing data isn't enough. You need to be able to track patient ECG readings at any time, analyze them and act on new — or urgent — cardiac data within 15 minutes.** AliveCor Labs is an independent diagnostic testing facility (IDTF) with an extensive selection of monitoring devices. Readings are sent directly to AliveCor Labs, which delivers 24/7 monitoring, real-time analysis† and reporting by certified technicians to help you diagnose the right condition or adjust treatment as needed.

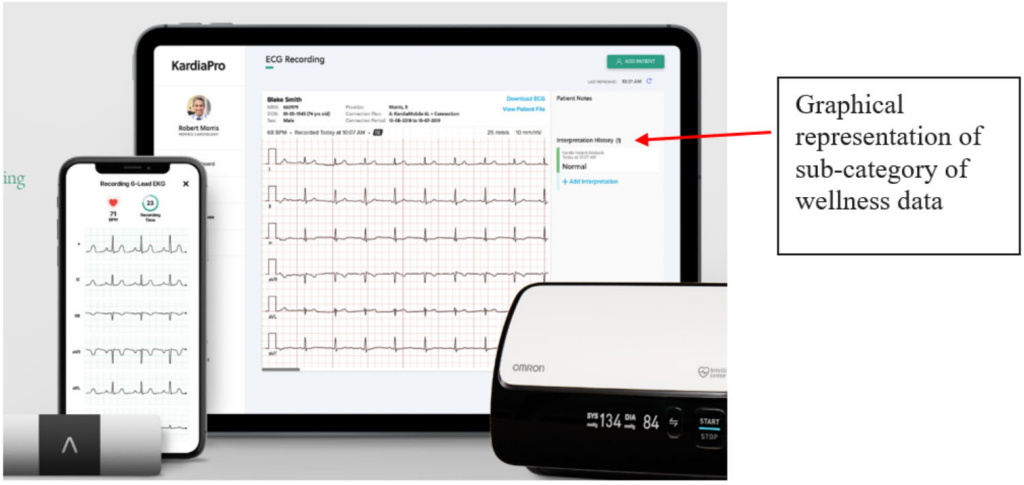
- Reimbursable options up to 30 days
- 24/7 analysis by certified technicians
- Comprehensive end of study report



92. AliveCor, at least when using the Accused Products, practices "display[ing] a detailed view of a sub-category of wellness data," as required by Claim 1 of the '898 Patent. Exhibit 28 (https://clinicians.alivecor.com/our-solution).



93. For example, the electronic device previously identified displays wellness data from the patients' devices' sensors. *See, e.g.*, Exhibit 28 (https://clinicians.alivecor.com/our-solution); Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).



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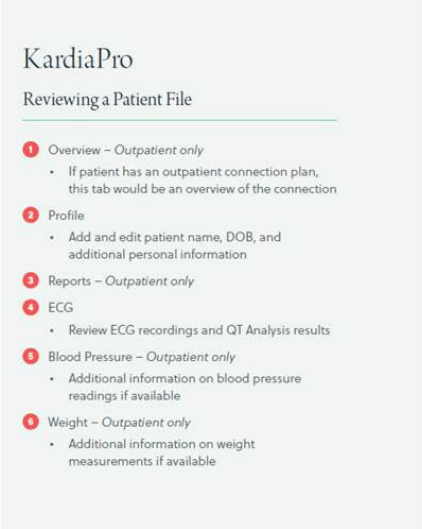
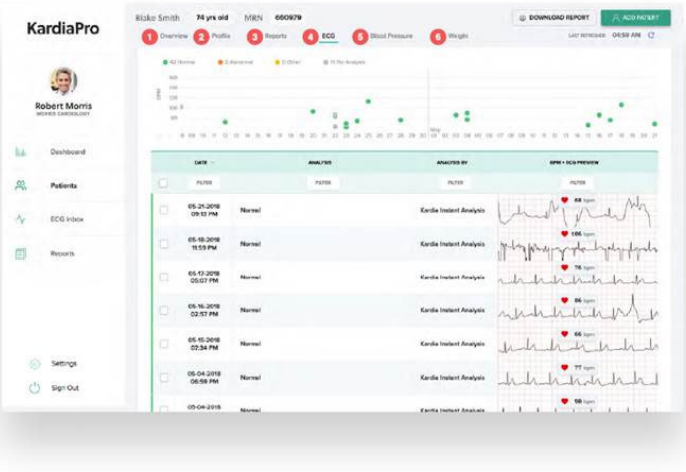
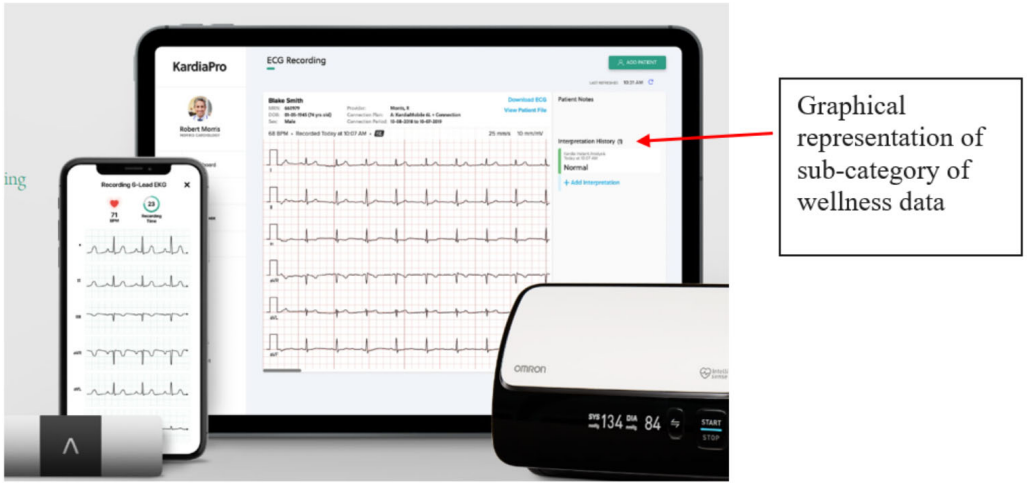




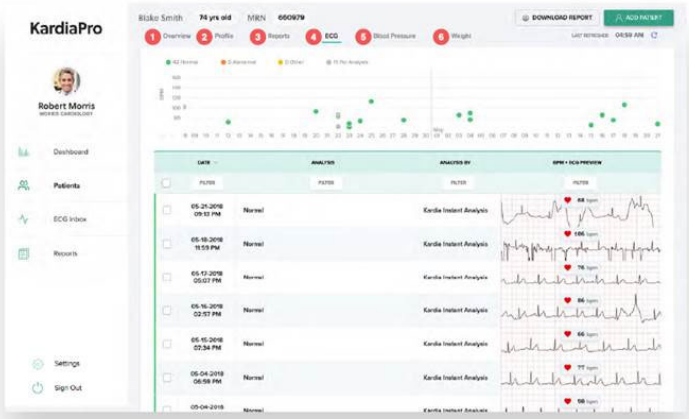
94. AliveCor, at least when using the Accused Products, practices displaying "a graph representation of the sub-category of wellness data that includes aggregated values of the sub-category of wellness data, wherein the sub-category of wellness data is from the plurality of approved sources for the sub-category of wellness data" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting the user's data, display a graphical representation of the user's heart signature. *See, e.g.*, Exhibit 28 (https://clinicians.alivecor.com/our-solution); Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).



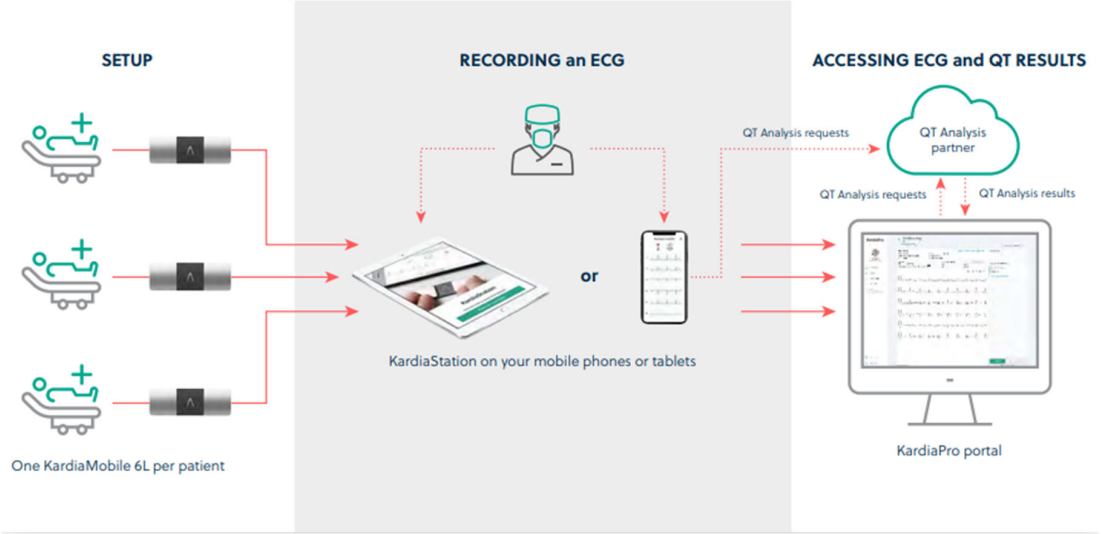
KardiaPro

Reviewing a Patient File

1. Overview – *Outpatient only*
   - If patient has an outpatient connection plan, this tab would be an overview of the connection
2. Profile
   - Add and edit patient name, DOB, and additional personal information
3. Reports – *Outpatient only*
4. ECG
   - Review ECG recordings and QT Analysis results
5. Blood Pressure – *Outpatient only*
   - Additional information on blood pressure readings if available
6. Weight – *Outpatient only*
   - Additional information on weight measurements if available



95. AliveCor, at least when using the Accused Products, practices "a selectable data sharing option" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting patients' data, allow a clinician to share the data with approved destinations. Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).

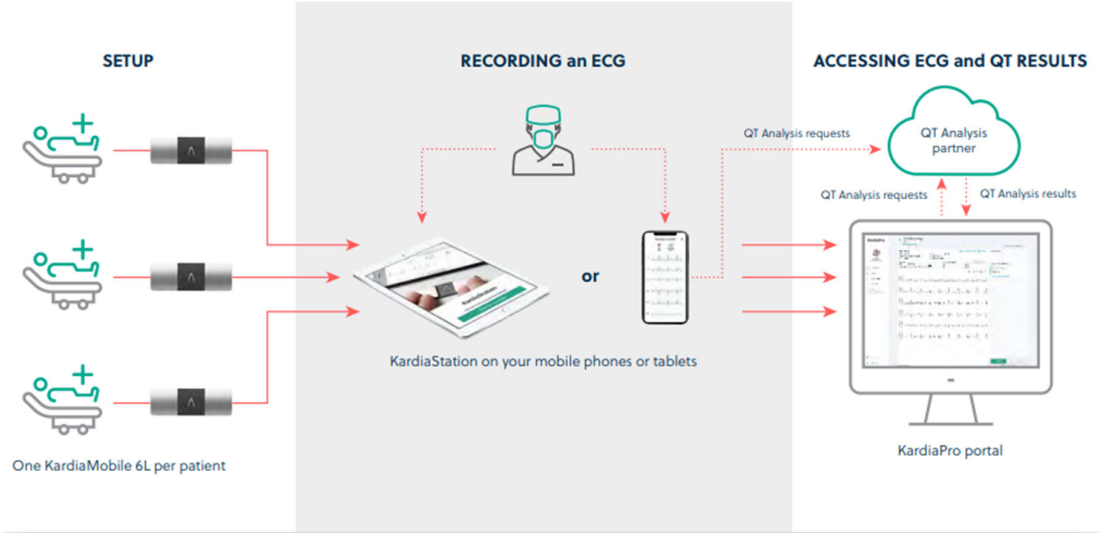


Reviewing ECGs, continued
(Interpretation Workflow)

AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

96. AliveCor, at least when using the Accused Products, practices "receiv[ing] user selection of the selectable data sharing option" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting patients' data, allow a clinician to share the data with approved destinations. *See, e.g.*, Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).



Reviewing ECGs, continued
(Interpretation Workflow)

AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

97. AliveCor, at least when using the Accused Products, practices "in response to receiving the selection of the selectable data sharing option, display[ing]: the plurality of approved sources for the

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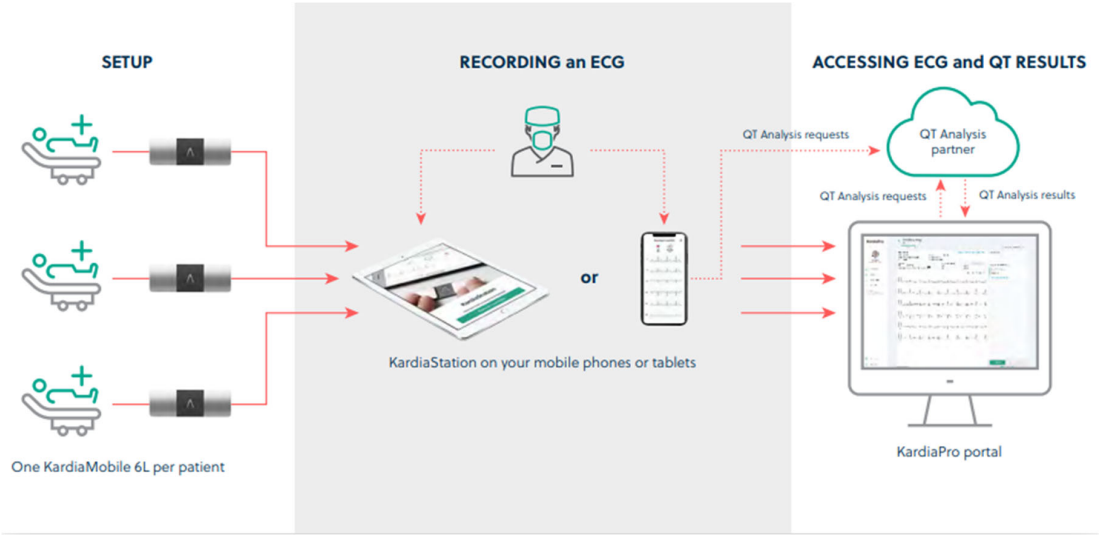
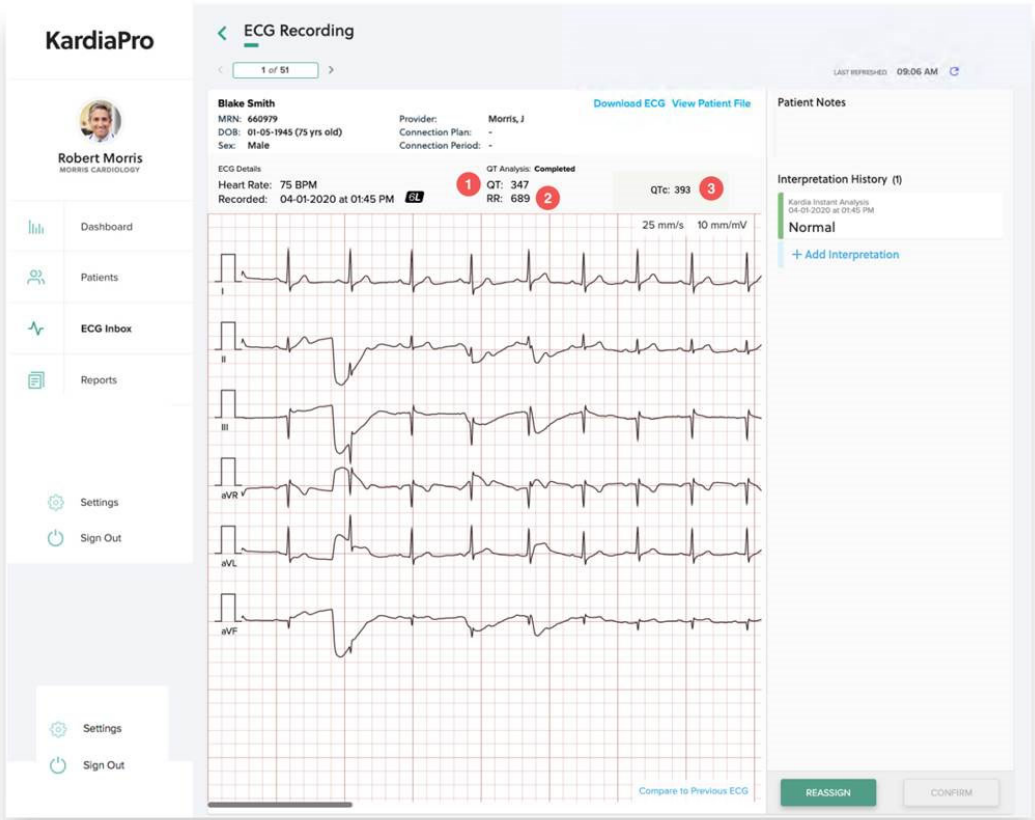
sub-category of wellness data, wherein the sub-category of wellness data is approved to be received from the plurality of approved sources and stored in a wellness database" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting patients' data, display a plurality of approved sources of patients' data for a clinician to share with approved destinations. *See, e.g.*, Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).





Reviewing ECGs, continued (Interpretation Workflow)

AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

98. AliveCor, at least when using the Accused Products, practices "the plurality of approved sources for the sub-category of wellness data, wherein the sub-category of wellness data is approved to be received from the plurality of approved sources and stored in a wellness database" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting patients' data, display a plurality of approved sources of patients' data and allow a clinician to share a patient's particular sub-category of approved wellness data with approved destinations. *See, e.g.*, Exhibit 26 (https://clinicians.alivecor.com/documents/AliveCor%20Inpatient%20User%20Guide.pdf).

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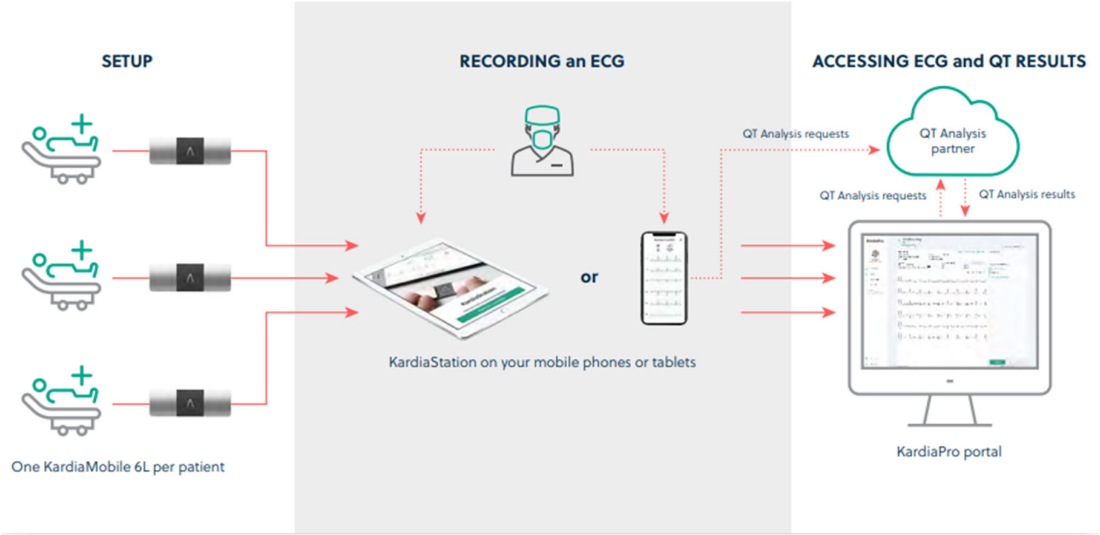
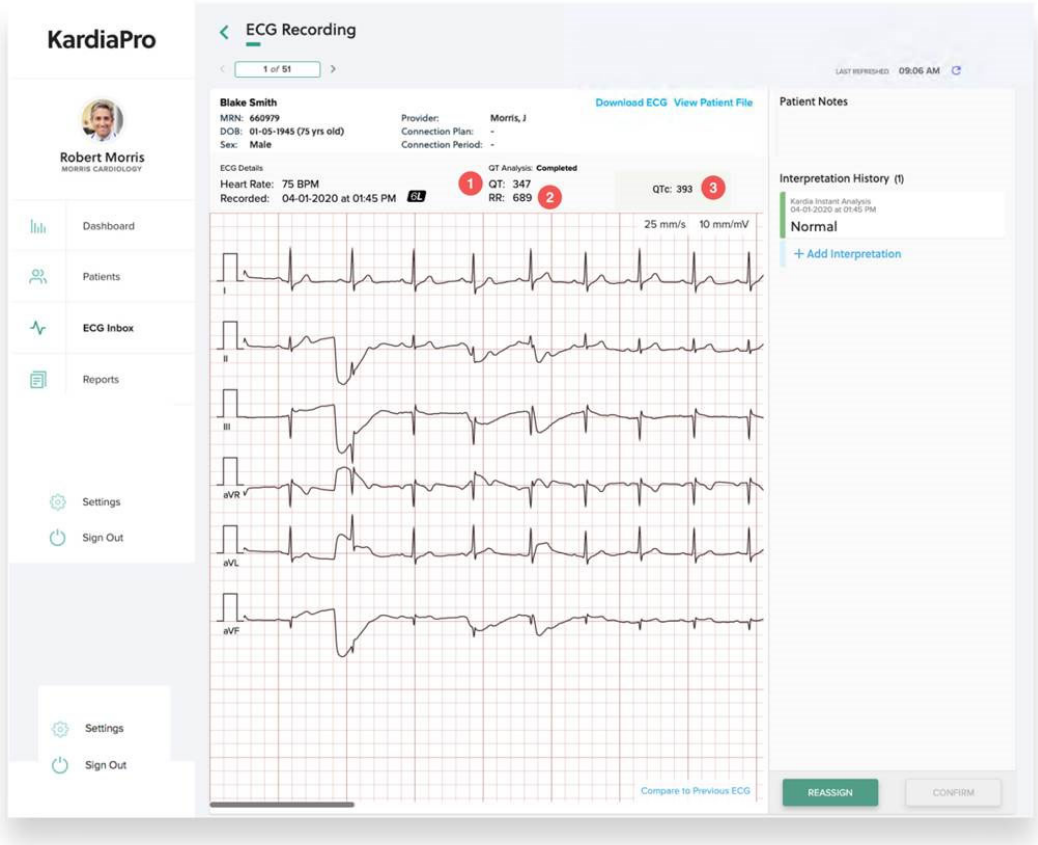

SETUP
RECORDING an ECG
ACCESSING ECG and QT RESULTS
QT Analysis requests
QT Analysis partner
QT Analysis requests
QT Analysis results
or
KardiaStation on your mobile phones or tablets
One KardiaMobile 6L per patient
KardiaPro portal

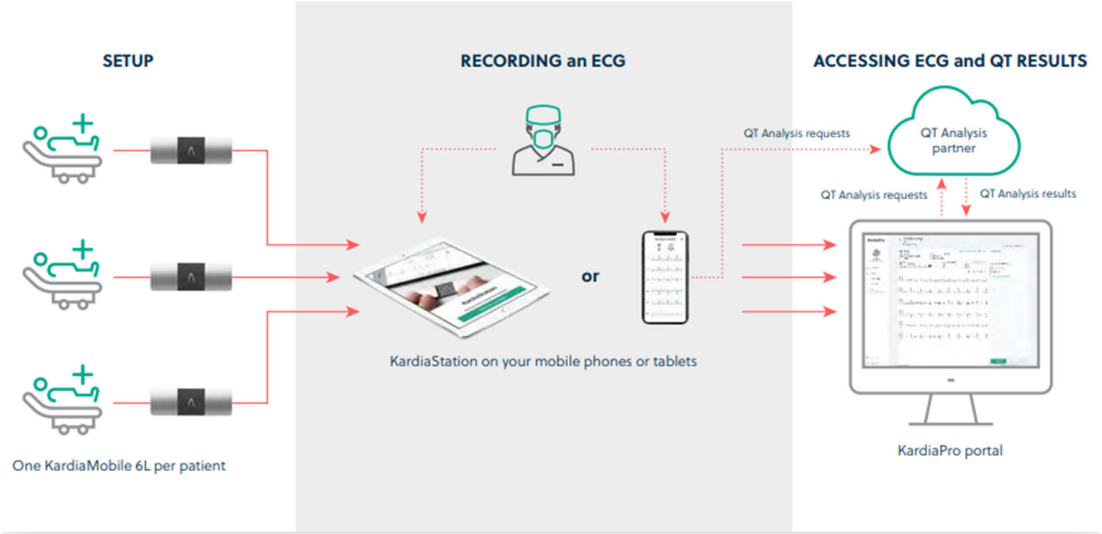

KardiaPro
Robert Morris
MORRIS CARDIOLOGY
Dashboard
Patients
ECG Inbox
Reports
Settings
Sign Out
Settings
Sign Out
ECG Recording
1 of 51
LAST REFRESHED 09:06 AM
Blake Smith
MRN: 660979
DOB: 01-05-1945 (75 yrs old)
Sex: Male
Provider: Morris, J
Connection Plan: -
Connection Period: -
Download ECG
View Patient File
ECG Details
Heart Rate: 75 BPM
Recorded: 04-01-2020 at 01:45 PM
6L
QT Analysis: Completed
QT: 347
RR: 689
QTc: 393
25 mm/s
10 mm/mV
I
II
III
aVR
aVL
aVF
Compare to Previous ECG
Patient Notes
Interpretation History (1)
Kardia Instant Analysis
04-01-2020 at 01:45 PM
Normal
+ Add Interpretation
REASSIGN
CONFIRM

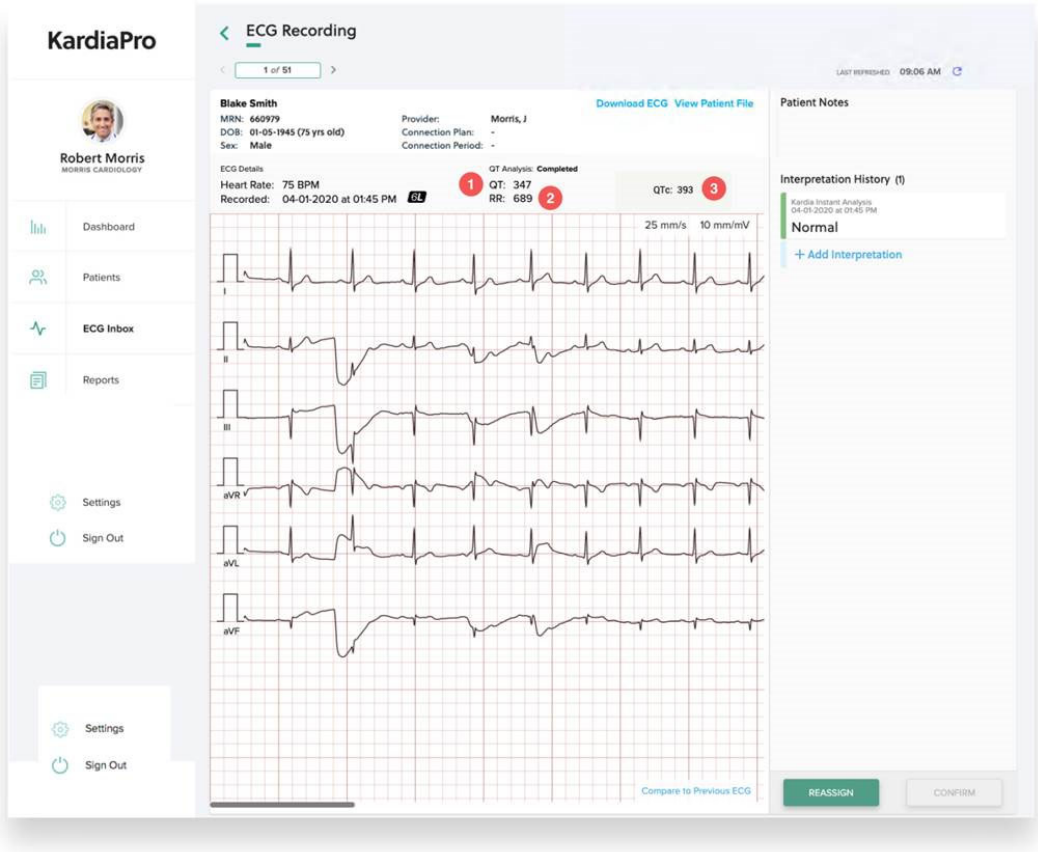
Reviewing ECGs, continued
(Interpretation Workflow)

AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

99. AliveCor, at least when using the Accused Products, practices "the plurality of approved destinations for the sub-category of wellness data, wherein the sub-category of wellness data is approved to be accessed from the wellness database by the plurality of approved destinations of wellness data" as required by Claim 1 of the '898 Patent. For example, the Accused Products, upon collecting patients' data, display a plurality of approved sources of patients' data and allow a clinician to share a patient's particular sub-category of approved wellness data with approved destinations. *See, e.g.*, Exhibit 28 (https://clinicians.alivecor.com/our-solution).





Reviewing ECGs, continued (Interpretation Workflow)

AFTER SAVING YOUR INTERPRETATION, YOU CAN EITHER

1. Select "Reassign" to send ECG to a different KardiaPro Inbox for review. The user must have a user account in your organization's KardiaPro account.

100. Each claim in the '898 Patent recites an independent invention. Neither Claim 1, described above, nor any other individual claim is representative of all claims in the '898 Patent.

101. AliveCor has been aware of the '898 Patent since at least the filing date of this Complaint.

102. AliveCor actively induced and is actively inducing infringement of at least Claim 1 of the '898 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b).

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103. AliveCor's customers and end-users of the Accused Products directly infringe Claim 1 of the '898 Patent, at least by using the Accused Products, as described above in Paragraphs 89–101.

104. Since at least the filing date of this Complaint, AliveCor knowingly induces infringement of at least Claim 1 of the '898 Patent by customers and end-users of the Accused Products with specific intent to induce infringement, and/or with willful blindness to the possibility that its acts induce infringement, through activities relating to selling, marketing, advertising, promotion, support, and distribution of the Accused Products in the United States.

105. AliveCor instructs customers and end-users, at least through its marketing, promotional, and instructional materials, to use the infringing Accused Products, as described in detail above in Paragraphs 89–101. AliveCor creates and distributes promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the user of the Accused Products in a manner that directly infringes the Asserted Patents. For example, AliveCor instructs users on how to use its products to detect a heart condition, specifically instructs users not to move when taking a heart measurement, and further instructs users on how to access and use the Kardia App dashboard. AliveCor also instructs users how to use its KardiaCare service to automatically translate healthcare information, including information regarding a care event, to a user's family. *See, e.g.*, Exhibit 15 (KardiaMobile 6L IFU); Exhibit 16 (KardiaMobile System IFU); Exhibit 17 (KardiaMobile Card IFU); Exhibit 23 ("Setting up your Kardia account," (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000111761); Exhibit 24 ("Setting up your KardiaMobile," (2020), https://alivecor.zendesk.com/hc/en-us/articles/360001941227); Exhibit 25 ("Setting up your KardiaMobile 6L," (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000113821); Exhibit 20 (KardiaMobile Card, https://store.kardia.com/products/kardiamobile-card); Exhibit 18 (KardiaMobile 6L, https://store.kardia.com/products/kardiamobile6l); Exhibit 19 (KardiaMobile, https://store.kardia.com/products/kardiamobile); Exhibit 29 (https://kssahsn.net/wp-content/uploads/2020/05/KardiaMobile-Remote-ECG-COVID-19-.pdf); Exhibit 30 (https://clinicaltrials.gov/ct2/show/results/NCT03557034).

106. AliveCor provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Such instructions

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include, for example, data sheets, technical specifications, customer support services, product sheets, and technical support services.

107. AliveCor contributed and is contributing to infringement of at least Claim 1 of the '898 Patent, in violation of 35 U.S.C. § 271(c).

108. AliveCor's customers and end-users of the Accused Products directly infringe Claim 1 of the '898 Patent, at least by using the Accused Products, as described in detail above in Paragraphs 89–101.

109. AliveCor contributes to infringement of the '898 Patent by offering to sell, selling, and importing into the United States the Accused Products and components thereof, including, for example, the Accused Products and associated software applications, firmware, and other services. Such components are substantial, material parts of the claimed inventions of the '898 Patent and have no substantial non-infringing use. For example, AliveCor's Accused Products are designed to detect a cardiac care event and have no other substantial use. Further, AliveCor's KardiaCare service is designed to send a user's care event results to a third party automatically and make such information available to clinicians, and there are no substantial non-infringing uses associated with the KardiaCare service.

110. The Accused Products and associated software applications, firmware, and other services supplied by AliveCor are especially made and especially adapted for use in infringing the '898 Patent and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

111. AliveCor's infringement of the '898 Patent is without license or other authorization.

112. AliveCor's continued infringement of the '898 Patent has damaged and will continue to damage Apple.

113. Unless and until enjoined by this Court, AliveCor will continue to directly infringe as well as induce and contribute to infringement of the '898 Patent. AliveCor's infringing acts are causing and will continue to cause Apple at least irreparable harm, for which there is no adequate remedy at law. Under 35 U.S.C. § 283, Apple is entitled to a permanent injunction against further infringement.

114. This case is exceptional, entitling Apple to an award of attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

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FOURTH CAUSE OF ACTION

Infringement of the ’533 Patent by AliveCor

115. Apple realleges and incorporates each of the allegations in Paragraphs 1–114 above as though fully set forth herein.

116. The ’533 Patent discloses novel devices and methods for receiving inputs and displaying tutorials for measuring biometric data and responding to the interruption of a measurement. In particular, the patent discloses unique hardware and software capable of using inventive user interface technology to guide patients through the measurement process, and specifically provides concrete techniques to solve the problems of improper measurements. The novel features disclosed in the ’533 Patent improve upon prior-art techniques for managing health monitoring that the patent describes “are generally cumbersome and inefficient” and “time-consuming.” Exhibit 13 (’533 Patent), 1:45–52. Specifically, the ’533 Patent teaches devices with “faster, more efficient methods and interfaces” for managing health monitoring that increase “the effectiveness, efficiency, and user satisfaction with such devices.” *Id.*, 10:34–39. For example, the claims require a specific type of user interface to be shown to record biometric information. *Id.*, cl. 1. The claims next provide innovative solutions to the problem of an interrupted biometric recording by displaying a “second user interface” when the “first criteria”—the biometric input to the device—is no longer met. *Id.* This is a unique problem arising in automatic biometric systems such as the one claimed in the patent and used by AliveCor. As the ’533 patent explains, certain computing algorithms that detect biometric conditions require sufficient sample sizes of measurements to provide an evaluation; before the ’533 patent, there was no efficient way to ensure that a user’s sample size was sufficient. *Id.*, 34:28–42. Moreover, the patent provides another period of time to deal with other computing issues dealing with device inactivity, problems that existed without a solution in the prior art. *Id.*, cl. 1.

117. AliveCor’s products and/or services that infringe the ’533 Patent include, but are not limited to, the KardiaMobile Card, the Kardia App, and use thereof.

118. AliveCor makes, uses, sells, offers for sale, and/or imports the Accused Products and components thereof in the United States.

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119. AliveCor directly infringes—literally and/or under the doctrine of equivalents—at least Claim 20 of the '533 Patent, at least by making, using, selling, offering for sale, and/or importing its Accused Products and components thereof in the United States

120. For example, Claim 20 of the '533 Patent recites:

> 20. A non-transitory computer-readable storage medium storing one or more programs configured to be executed by one or more processors of a first electronic device with a display and one or more input devices including a biometric sensor, the one or more programs including instructions for:
>
> > displaying, on the display, a first user interface indicating that the first electronic device is ready to detect biometric information;
> >
> > detecting a first input with the biometric sensor that satisfies first criteria;
> >
> > in response to detecting the first input with the biometric sensor:
> >
> > > starting to record biometric information detected by the biometric sensor; and
> > >
> > > displaying, on the display, a second user interface that is different from the first user interface, wherein the second user interface includes an indication of progress in recording the biometric information;
> >
> > after recording at least a portion of the biometric information, detecting, via the one or more input devices, that the first criteria are no longer met;
> >
> > in response to detecting that the first criteria are no longer met for a first period of time, resetting the indication of progress in recording the biometric information and maintaining display of the second user interface; and
> >
> > in response to detecting that the first criteria are no longer met for a second period of time that is longer than the first period of time, replacing display of the second user interface with the first user interface.

121. AliveCor, at least when using the Accused Products, practices each limitation of Claim 20 of the '533 Patent.

122. To the extent the preamble is construed to be limiting, the Accused Products include a "non-transitory computer readable storage medium storing one or more programs configured to be executed by one or more processors of a first electronic device with a display and one or more input devices including a biometric sensor." The Kardia App is a program configured to be executed by one or more processors of a first electronic device with a display (*e.g.*, a phone or tablet running at least

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Android OS 6.0) and one or more input devices including a biometric sensor (*e.g.*, the KardiaMobile Card). *See, e.g.*, Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card) ("KardiaMobile Card is compatible with most popular phones and tablets. To use your Kardia device, **you must download the Kardia app on a compatible device** running at least Apple iOS 10.3.3, or at least Android OS 6.0.") (emphasis in original); Exhibit 31 (KardiaMobile Card Compatibility, https://alivecor.zendesk.com/hc/en-us/articles/1500000449521-Compatibility); Exhibit 20 (KardiaMobile Card Store Front, https://store.kardia.com/products/kardiamobile-card).

123. The Accused Products include "one or more programs including instructions for: displaying, on the display, a first user interface indicating that the first electronic device is ready to detect biometric information." This is depicted in the image below. *See* Exhibit 22 (Kardia Mobile App screenshots).

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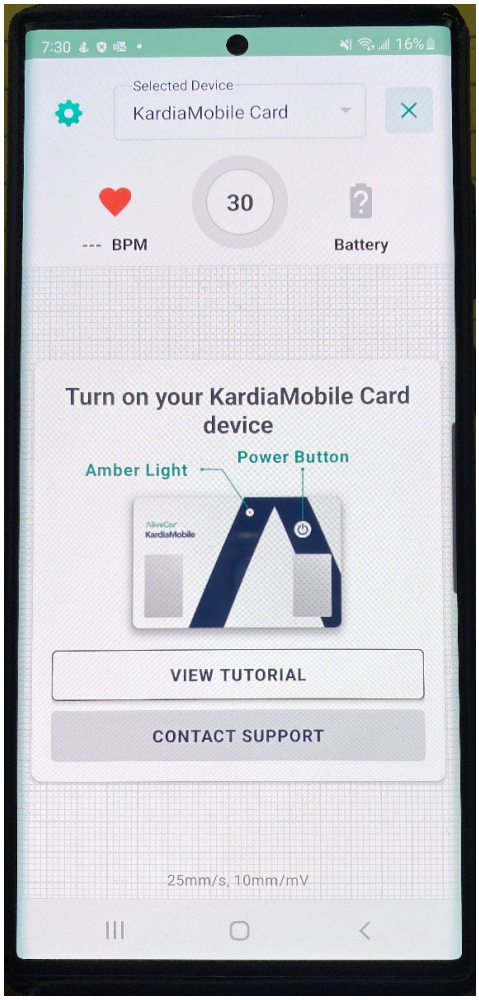

124. The Accused Products include "one or more programs including instructions for . . . detecting a first input with the biometric sensor that satisfies first criteria." This is depicted in the image below. *See* Exhibit 17 (Kardia Mobile Card IFU).

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Recording an EKG

1. Open the app and tap "**Record your EKG**".
2. If this is your first time using the KardiaMobile Card, follow the on-screen instructions to set up and choose your device.
3. Pick up the KardiaMobile Card using your index finger and thumb; and press the power button using your thumb.

125. The Accused Products include "one or more programs including instructions for . . . in response to detecting the first input with the biometric sensor: starting to record biometric information detected by the biometric sensor." This is depicted in the images below. *See* Exhibit 22 (Kardia App screenshots); *see also* Exhibit 32 (https://www.youtube.com/watch?v=eA9pv6TVr-c).

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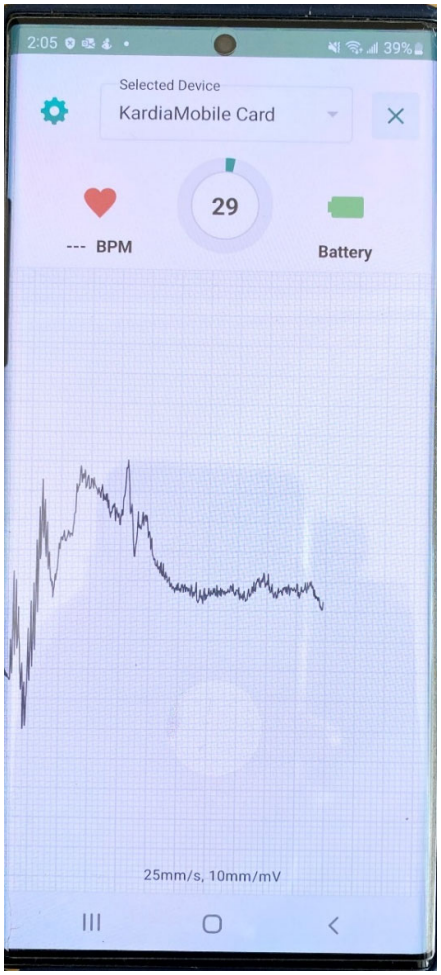
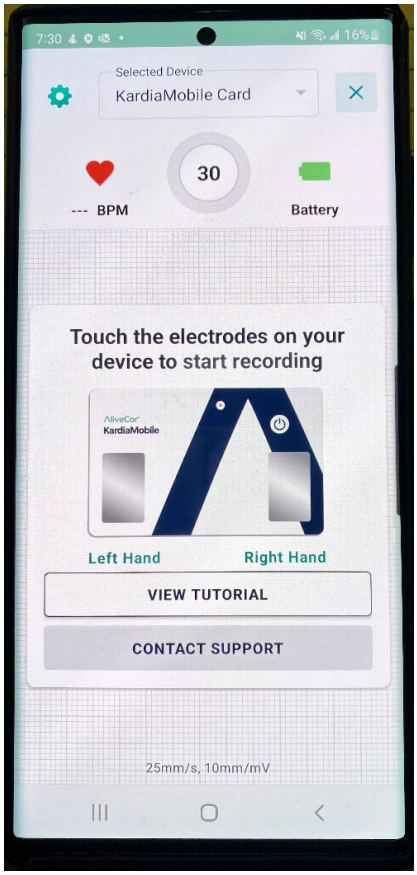


126. The Accused Products include "one or more programs including instructions for . . . in response to detecting the first input with the biometric sensor. . . displaying, on the display, a second user interface that is different from the first user interface, wherein the second user interface includes an indication of progress in recording the biometric information." This is depicted in the images below. *See* Exhibit 22 (Kardia App screenshots); *see also* Exhibit 32 (https://www.youtube.com/watch?v=eA9pv6TVr-c).



127. The Accused Products include "one or more programs including instructions for . . . after recording at least a portion of the biometric information, detecting, via the one or more input devices, that the first criteria are no longer met" and "in response to detecting that the first criteria are no longer met for a first period of time, resetting the indication of progress in recording the biometric information and maintaining display of the second user interface." This is depicted in the images below, which illustrate that the device detects a loss of a connection and determines that the first criteria are no longer met, resetting the progress indicator and maintaining the second user interface. *See* Exhibit 22 (Kardia App screenshots); *see also* Exhibit 32 (https://www.youtube.com/watch?v=eA9pv6TVr-c).

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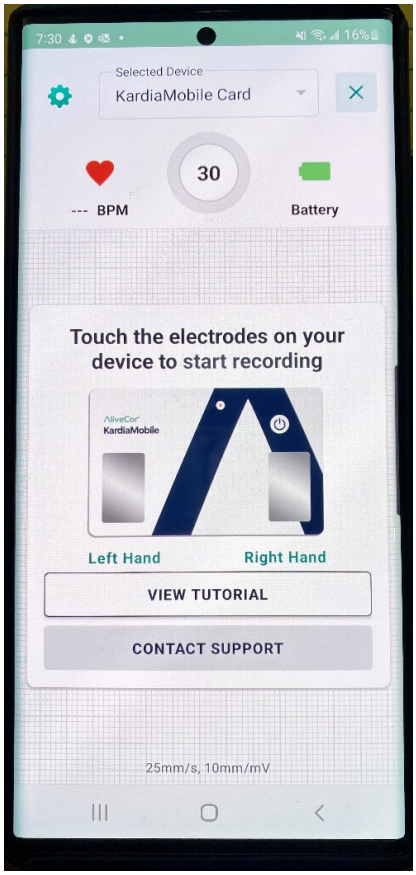
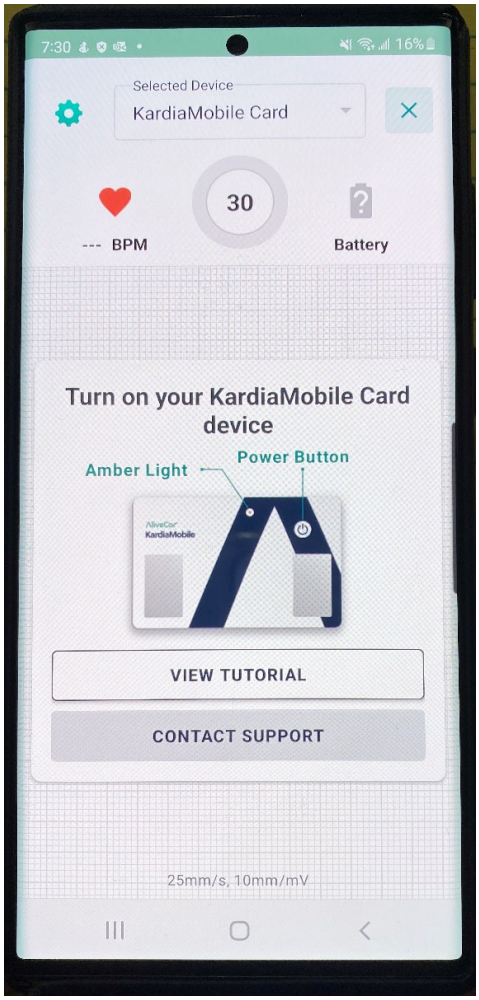


128. The Accused Products include "one or more programs including instructions for . . . in response to detecting that the first criteria are no longer met for a second period of time that is longer than the first period of time, replacing display of the second user interface with the first user interface." This is depicted in the images below, which occurs after a period of time longer than the period of time discussed in connection with the previous limitation. *See* Exhibit 22 (Kardia Mobile App screenshots).



129. Each claim in the ’533 Patent recites an independent invention. Neither Claim 20, described above, nor any other individual claim is representative of all claims in the ’533 Patent.

130. AliveCor has been aware of the ’533 Patent since at least the filing date of this Complaint.

131. AliveCor has actively induced infringement of at least Claim 20 of the ’533 Patent since at least the filing date of this Complaint, in violation of 35 U.S.C. § 271(b).

132. AliveCor’s customers and end-users of the Accused Products directly infringe Claim 20 of the ’533 Patent, at least by using the Accused Products, as described above in Paragraphs 122–30.

133. Since at least the filing date of this Complaint AliveCor knowingly induces infringement of at least Claim 20 of the ’533 Patent by customers and end-users of the Accused Products with specific intent to induce infringement, and/or with willful blindness to the possibility that its acts induce

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infringement, through activities relating to selling, marketing, advertising, promotion, support, and distribution of the Accused Products in the United States.

134. AliveCor instructs customers and end-users, at least through its marketing, promotional, and instructional materials, to use the infringing Accused Products, as described in detail above in Paragraphs 122–30. AliveCor creates and distributes promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the user of the Accused Products in a manner that directly infringes the Asserted Patents. In particular, AliveCor instructs end users on how to use its products to capture biometric data alongside display prompts. *See, e.g.*, Exhibit 17 (KardiaMobile Card IFU); Exhibit 23 ("Setting up your Kardia account," (2020), https://alivecor.zendesk.com/hc/en-us/articles/1500000111761); Exhibit 20 (KardiaMobile Card, https://store.kardia.com/products/kardiamobile-card).

135. AliveCor provides its customers and end-users with additional instructions that direct the customers and end-users to use the Accused Products in an infringing manner. Such instructions include, for example, data sheets, technical specifications, customer support services, product sheets, and technical support services.

136. AliveCor contributed and is contributing to infringement of at least Claim 20 of the '533 Patent, in violation of 35 U.S.C. § 271(c).

137. AliveCor's customers and end-users of the Accused Products directly infringe Claim 20 of the '533 Patent, at least by using the Accused Products, as described in detail above in Paragraphs 122–30.

138. AliveCor contributes to infringement of the '533 Patent by offering to sell, selling, and importing into the United States the Accused Products and components thereof, including, for example, the Accused Products and associated software applications, firmware, and other services. Such components are substantial, material parts of the claimed inventions of the '533 Patent and have no substantial non-infringing use. The only use of AliveCor's Accused Products is using the first and second leads of the devices to detect electrical signals to determine if a user has any heart conditions and displaying such information on a user interface on a display of an electronic device, including as directed by the Kardia App.

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139. The Accused Products and associated software applications, firmware, and other services supplied by AliveCor are especially made and especially adapted for use in infringing the '533 Patent and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

140. AliveCor's infringement of the '533 Patent is without license or other authorization.

141. AliveCor's continued infringement of the '533 Patent has damaged and will continue to damage Apple.

142. Unless and until enjoined by this Court, AliveCor will continue to directly infringe as well as induce and contribute to infringement of the '533 Patent. AliveCor's infringing acts are causing and will continue to cause Apple at least irreparable harm, for which there is no adequate remedy at law. Under 35 U.S.C. § 283, Apple is entitled to a permanent injunction against further infringement.

143. This case is exceptional, entitling Apple to an award of attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

DEMAND FOR JURY TRIAL

144. Apple respectfully requests a jury trial on any issues so triable by right.

PRAYER FOR RELIEF

145. WHEREFORE, Apple respectfully request that this Court enter judgment in their favor and grant the following relief:

(i) a judgment that AliveCor infringes, directly and indirectly, the Asserted Patents;

(ii) an order permanently enjoining AliveCor, its affiliates and subsidiaries, and each of its officers, agents, servants and employees and those acting in privity or concert with them, from making, offering to sell, selling, using, or importing into the United States products claimed in any of the claims of the Asserted Patents; using or performing methods claimed in any of the claims of the Asserted Patents; inducing others to use and perform methods that infringe any claim of the Asserted Patents; inducing others to make, offer, sell, use or import into the United States articles that infringe, or are made by a process that infringes, any claim of the Asserted Patents; and contributing to others infringing any claim of the Asserted Patents, until after the expiration of the Asserted Patents, respectively, including any extensions and/or additional periods of exclusivity to which Apple is or becomes entitled;

AliveCor, Inc. Exhibit 1016
IPR2023-00950
Ex. 1016.51

(iii) an order awarding damages under 35 U.S.C. §§ 154 & 284 in an amount sufficient to compensate Apple for their damages arising from infringement by AliveCor, including, but not limited to, lost profits and/or a reasonable royalty;

(iv) a judgment and order requiring AliveCor to pay Apple the prejudgment and post-judgment interest to the fullest extent allowed under the law, as well as their costs;

(v) an order finding that this is an exceptional case and awarding Apple its reasonable attorneys' fees pursuant to 35 U.S.C. § 285; and

(vi) such other relief as the Court may deem appropriate and just under the circumstances.

AliveCor, Inc. Exhibit 1016
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DATED: December 2, 2022

Respectfully submitted,

KIRKLAND & ELLIS LLP

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