

CONTAINS CONFIDENTIAL BUSINESS INFORMATION -- SUBJECT TO PROTECTIVE ORDER
CONTAINS SOURCE CODE – ATTORNEYS’ EYES ONLY INFORMATION

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

Before the Honorable Cameron R. Elliot
Administrative Law Judge

In the Matter of

CERTAIN WEARABLE ELECTRONIC
DEVICES WITH ECG FUNCTIONALITY
AND COMPONENTS THEREOF

Inv. No. 337-TA-1266

APPLE INC.’S POST-HEARING BRIEF

**CONTAINS CONFIDENTIAL BUSINESS INFORMATION -- SUBJECT TO PROTECTIVE ORDER
CONTAINS SOURCE CODE – ATTORNEYS’ EYES ONLY INFORMATION**

I.	INTRODUCTION	1
A.	Procedural History.....	1
B.	The Parties	2
1.	Complainant AliveCor, Inc.....	2
2.	Respondent Apple Inc.	2
3.	Overview of the Technology.....	3
4.	Methods and Tools to Monitor a Patient’s Heart	4
5.	PPG Technology.....	5
6.	ECG Technology.....	5
C.	The Patents in Suit.....	6
1.	The Asserted Claims.....	6
2.	The ’941 Patent	6
3.	The ’499 and ’731 Patents.....	7
4.	The Preambles of the ’941 and ’731 Patents Are Limiting.....	8
D.	The Products at Issue.....	10
1.	Apple’s High Heart Rate Notification (HHRN)	10
2.	Apple’s Irregular Rhythm Notification (IRN)	11
3.	Apple’s ECG App.....	13
4.	Apple’s Usage Statistics	14
II.	JURISDICTION.....	15
III.	RELEVANT LEGAL STANDARDS.....	15
IV.	PATENT NO. 10,595,941.....	15
A.	Non-infringement of the ’941 Patent	15
1.	IRN Does Not Infringe Claim 12(f)(i)-(ii) of the ’941 Patent Because it Does Not Determine a Discordance	17
2.	HHRN Does Not “Based On the Presence of The Discordance, Indicate to the User a Possibility of an Arrhythmia Being Present” under Claim 12(f)(ii) of the ’941 patent..	21
3.	Apple Watch Does Not Infringe Claim 12(f)(iii) Because It Does Not “Confirm the Presence of <i>the</i> Arrhythmia”	26
a.	ECG App Does Not Record or Analyze ECG Data Overlapping in Time with PPG Data Associated with the Arrhythmia.....	28
b.	There Are No Inputs from PPG or Processed Versions of PPG, to the ECG App Algorithm	29
c.	Apple’s Documents Show that ECG App Operates Independently from IRN or HHRN.....	31

**CONTAINS CONFIDENTIAL BUSINESS INFORMATION – SUBJECT TO PROTECTIVE ORDER
CONTAINS SOURCE CODE – ATTORNEYS’ EYES ONLY INFORMATION**

- d. Dr. Jafari’s Expansive Interpretation of “to Confirm” Goes Against the Plain Meaning, and Provides a Limitless Time for the System May Confirm a Generalized Condition32
- e. AliveCor’s Cited Evidence Fails to Show that Apple Watch’s ECG App Confirms the Arrhythmia35
- 4. No Infringement of Dependent Claims 13, 19, 20, 21, 22, and 2339
- B. No Technical Industry (KardiaBand, [REDACTED])39
 - 1. KardiaBand (KBS)40
 - a. KBS does not practice claim 12 of the ’941 patent (or its dependents)41
 - b. KBS does not “based on the presence of the discordance, indicate to the user the possibility of an arrhythmia”42
 - c. KBS does not “receive electric signals of the user to confirm the presence of the arrhythmia”42
 - d. KBS does not practice dependent claims 16, 20, 22, 21, 22 or 2343
 - 2. [REDACTED]44
 - 3. [REDACTED]48
- C. Invalidity of the ’941 Patent54
 - 1. Patent-Ineligible Subject Matter.....54
 - a. *Alice* Step One: Claim 12 Is Directed to Longstanding Arrhythmia Diagnostic Processes and Does Not Recite Any Specific Improvements in Cardiac Monitoring Devices54
 - b. *Alice* Step Two: The Claims Contain Only Well-Known, Routine, and Conventional Elements that Fail to Provide Any Inventive Concept57
 - c. The Asserted Dependent Claims Are Not Patent Eligible.....59
 - 2. Obviousness Under 35 U.S.C. § 103: AMON, Almen, and/or Kotzin.....60
 - a. For Obviousness, AMON, Almen, and Kotzin Need Only Be Enabled When Taken as a Whole, to a Person of Ordinary Skill, at the Time of the Challenged Invention.....62
 - b. Motivation to Combine AMON, Almen, and Kotzin65
 - c. Claim 1267
 - i. 12[pre]: 12. A smartwatch, comprising:67
 - ii. 12[a]: a processor;.....68
 - iii. 12[b]: a first sensor configured to sense an activity level value of a user, wherein the first sensor is coupled to the processor;68
 - iv. 12[c]: a photoplethysmogram (“PPG”) sensor configured to sense a heart rate parameter of the user when the activity level value is resting, wherein the PPG sensor is coupled to the processor;68
 - v. 12[d]: an electrocardiogram (“ECG”) sensor configured to sense electrical signals of a heart, wherein the ECG sensor comprises a first electrode and a

..

second electrode, and wherein the ECG sensor is coupled to the processor;
and.....69

vi. 12[e]: a non-transitory computer readable storage medium encoded with a
computer program including instructions executable by the processor to
cause the processor to: determine if a discordance is present between the
activity level value of the user and the heart rate parameter of the user;.....69

vii. 12[f]: based on the presence of the discordance, indicate to the user a
possibility of an arrhythmia being present70

viii. 12[g]: receive electric signals of the user from the ECG sensor to confirm the
presence of the arrhythmia.71

d. Claim 13: The smartwatch [] according to claim 12, wherein the heart rate
parameter comprises an indication of a [HRV], and wherein the arrhythmia is
atrial fibrillation.....72

e. Claim 16: The smartwatch or wristlet according to claim 12, wherein indicating
to the user further comprises: instructing the user to record an ECG using the
ECG sensor.74

f. Claim 18: The smartwatch according to claim 12, wherein the heart rate
parameter is a PPG signal.....74

g. Claim 19: The smartwatch according to claim 18, wherein the heart rate
parameter is a heartrate variability (“HRV”) value, wherein the HRV value is
derived from the PPG signal.....74

h. Claim 20: The smartwatch according to claim 18, wherein the heart rate
parameter is a heartrate, wherein the heartrate is derived from the PPG signal. .75

i. Claim 21: The smartwatch according to claim 12, the processor further to:
display an ECG rhythm strip from the electric signals.75

j. Claim 22: The smartwatch according to claim 12, wherein the PPG sensor is
located on a back of the smartwatch.76

k. Claim 23: The smartwatch according to claim 12, wherein the first electrode is
located on the smartwatch where the first electrode contacts a first side of the
user's body while the user wears the smartwatch, and the second electrode is
located on the smartwatch where the user must actively contact the second
electrode with a second side of the user's body opposite from the first side.76

3. AliveCor’s Secondary Considerations Evidence Do Not Save the Asserted Patents
From an Obviousness Finding.....76

a. There Is No Nexus Between Alleged Secondary Considerations and the Asserted
Patents77

b. Apple Did Not Copy AliveCor’s Products77

c. AliveCor Did Not Solve the Long-Felt but Unmet Need for Continuous ECG
Monitoring in the Outpatient Setting80

d. The Commercial Success of the Apple Watch Is in No Way Tied to the Claimed
Inventions81

...

**CONTAINS CONFIDENTIAL BUSINESS INFORMATION – SUBJECT TO PROTECTIVE ORDER
CONTAINS SOURCE CODE – ATTORNEYS’ EYES ONLY INFORMATION**

e. AliveCor’s Own Licenses Demonstrate the Asserted Patents Are Not Valuable	83
f. No Evidence of Skepticism	83
g. No Evidence of Industry Praise	84
D. Experimental Use Exception	86
V. PATENT NO. 10,595,731	87
A. Non-Infringement of the ’731 Patent	87
1. AliveCor Has Failed to Establish a <i>Prima Facie</i> Case of Direct Infringement of Claim 1	87
a. HHRN does not “detect, based on the PPG data, the presence of an arrhythmia” under claim 1(f)(ii) of the ’731 patent	87
b. Apple Watch Does Not Infringe Claim 1(f)(iv) Because ECG App, IRN, and HHRN Do Not Confirm the Presence of <i>the</i> Arrhythmia Based on the ECG Data	88
2. No Infringement of Dependent Claims 3, 5, 8-10, 12, 15, and 16	88
B. No Technical Domestic Industry (KardiaBand, [REDACTED])	88
1. KardiaBand (KBS)	88
2. [REDACTED]	90
3. [REDACTED]	90
C. Invalidity of the ’731 Patent	91
1. Patent-Ineligible Subject Matter	91
a. <i>Alice</i> Step One: Claim 1 Is Directed to Longstanding Arrhythmia Diagnostic Processes and Does Not Recite Any Specific Improvements in Cardiac Monitoring Devices	91
b. <i>Alice</i> Step Two: The Claims Contain Only Well-Known, Routine, and Conventional Elements That Fail to Provide Any Inventive Concept	92
c. The Asserted Dependent Claims Are Not Patent Eligible	93
2. Obviousness Under 35 U.S.C. § 103: AMON, Almen, and/or Kotzin	95
a. Motivation to Combine AMON, Almen, and/or Kotzin	96
b. Claim 1:	96
i. 1[pre]: A smart watch to detect the presence of an arrhythmia of a user, comprising:	96
ii. 1[a]: a processing device;	96
iii. 1[b]: a photoplethysmography (“PPG”) sensor operatively coupled to the processing device;	96
iv. 1[c]: an ECG sensor, comprising two or more ECG electrodes, the ECG sensor operatively coupled to the processing device;	97
v. 1[d]: a display operatively coupled to the processing device; and	97

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.