UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

Omni MedSci, Inc.,

Plaintiff,

v.

Apple Inc.,

Defendant.

Case No. 2:18-cv-134

COMPLAINT FOR PATENT INFRINGEMENT AND DEMAND FOR JURY TRIAL

Plaintiff, Omni MedSci, Inc. ("Omni MedSci"), alleges as follows:

The Parties

1. Plaintiff Omni MedSci is a Michigan corporation having its principal place of business at 1718 Newport Creek Drive, Ann Arbor, Michigan 48103. Dr. Mohammed N. Islam is the principal of Omni MedSci. Dr. Islam is a tenured Professor of Optics and Photonics in the Electrical and Computer Engineering Department, and a Professor of Biomedical Engineering, at the University of Michigan's College of Engineering. Omni MedSci is part of the Omni family of companies, which create, develop, and commercialize Dr. Islam's optical technology in various fields. The Omni companies also develop and provide unique optical products to the U.S. Department of Defense and intelligence community.

2. Defendant Apple Inc. ("Apple") is a California corporation, having a regular and established place of business at 1 Infinite Loop, Cupertino, California 95014. Apple may be served

with process through its registered agent for service of process C T Corporation System (C0168406).

Jurisdiction and Venue

3. This is a complaint for patent infringement under 35 U.S.C. §§ 101, *et seq*. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338.

4. The court has personal jurisdiction over Apple, and venue under 28 U.S.C. §§1391(a)(1) and 1400(b) is proper in this district, because Apple has two regular and established places of business in this district and because Apple offers for sale and sells infringing Apple Watches in this district at those locations.

The Patents-in-Suit

5. On May 16, 2017, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,651,533 ("the '533 patent") (Exhibit A) to Dr. Mohammed N. Islam.

6. On September 12, 2017, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,757,040 ("the '040 patent") (Exhibit B) to Dr. Mohammed N. Islam.

7. On January 9, 2018, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,861,286 ("the '286 patent") (Exhibit C) to Dr. Mohammed N. Islam.

8. On February 6, 2018, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,885,698 ("the '698 patent") (Exhibit D) to Dr. Mohammed N. Islam.

9. The '533 patent, the '040 patent, the '286 patent, and the '698 patent are, collectively, the "Patents-in-Suit."

10. Omni MedSci has been, and remains, the owner by assignment of the Patents-in-Suit.

Background Facts

11. By 2012, Omni MedSci had invented technology for using lasers in medical and other applications, including wearable measurement devices incorporating lasers and other components that can detect and monitor physiological parameters such as glucose, ketones, heart rate, blood constituents, and dental carries.

12. On December 31, 2012, Omni MedSci filed a set of patent applications covering its developments using lasers for medical and other applications.

13. Between June 2014 and July 2016, Dr. Islam had a series of meetings and email exchanges with Apple personnel regarding the technology underlying his then-pending patent applications, including the now-issued Patents-in-Suit. In those exchanges, Apple was offered the opportunity to license or acquire Omni MedSci's patented and patent-pending technology, but Apple declined.

14. On June 11-12, 2014, Dr. Islam met with Apple employees Drs. Michael O'Reilly and Michael Hillman in Cupertino, California to discuss Omni MedSci's then patent-pending technology.

15. Dr. Hillman then arranged for a meeting with Dr. Islam and approximately ten Apple employees in Cupertino, California to discuss technical details of Omni MedSci's then patent-pending technology. The meeting took place at Apple on February 5, 2015.

16. On July 14, 2016, Apple employee Greg Joswiak emailed Dr. Islam inviting him to provide additional information about his technology. Mr. Joswiak indicated that he would share the information with his team at Apple.

17. Four days later, Apple employees Drs. Ed Hull and Shonn Hendee arranged a meeting with Dr. Islam and approximately ten Apple employees in Cupertino, California to discuss technical details of Omni MedSci's then patent-pending technology. The meeting took place at

Apple on July 18, 2016. At the meeting, Dr. Islam shared the published patent application for the '533 patent and the published parent patent applications for the '698, '040 and '286 patents.

18. Dr. Islam continued to correspond with Apple employees regarding the status of his pending patent applications and technological development. On December 21, 2017, Dr. Islam emailed Drs. O'Reilly, Hull, and Hendee identifying the issued '533 and '040 patents, and enclosing copies of the allowed claims for the '268 and '698 patents. In response, Dr. O'Reilly emailed Dr. Islam stating, "We [Apple] don't wish to receive any information about any of your IP [Intellectual Property]."

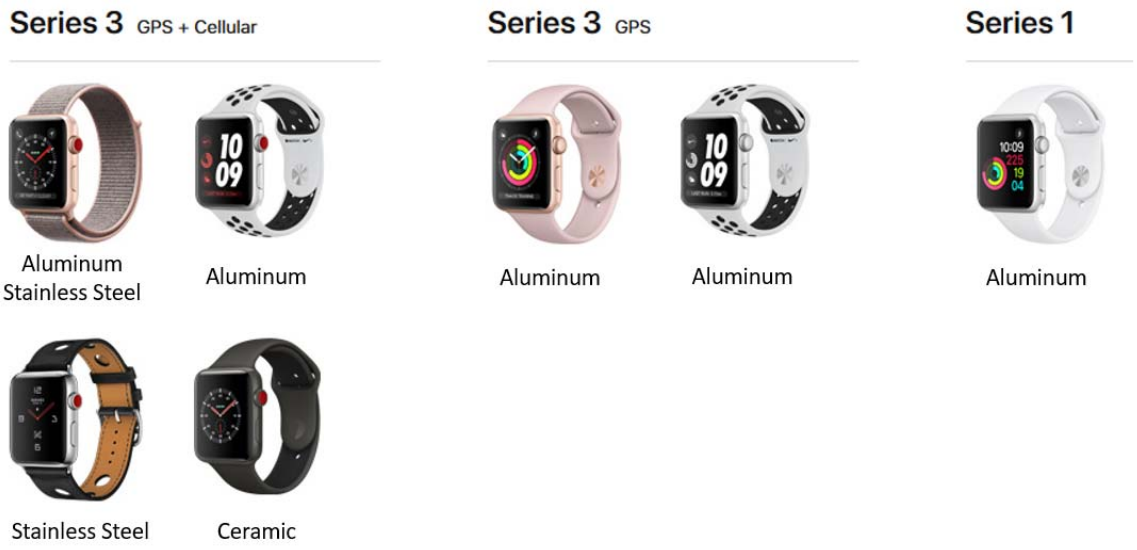
19. As of December 21, 2017, Apple knew the claim scope of all four of the Patents-in-Suit.

Apple's Infringing Apple Watch Products

20. On information and belief,[1] Apple has made and sold several models of its Apple Watch product, including, for example, "Series 1," "Series 2," "Series 3 GPS," and "Series 3 GPS + Cellular" watches. Omni MedSci asserts infringement by all models, including the models sold to date and models sold in the future, which are covered by the claims of the Patents-in-Suit (collectively, "Watches"). Exemplary Watches advertised on Apple's web site (https://www.apple.com/watch/compare/, captured on March 8, 2018) as shown below:

[1] For allegations based on information and belief, Omni MedSci believes that the allegations will have evidentiary support after a reasonable opportunity for investigation and discovery.

Exemplary Apple Watches



21. The Watches are wearable devices that measure a physiological parameter, namely, heart rate.

22. The Watches measure heart rate non-invasively using semiconductor light emitting diodes ("LEDs").

23. The light emitted from the LEDs in the Watches includes near-infrared wavelengths.

24. The Watches can modulate the light emitted from the LEDs.

25. The Watches can use a lock-in technique, such as synchronous demodulation, which is used to detect the modulation frequency.

26. The Watches can improve the signal-to-noise ratio of the LED light reflected from the skin by increasing the intensity of the light emitted from the LEDs.

27. The Watches can also improve the signal-to-noise ratio of the LED light reflected from the skin by increasing the pulse rate of the LEDs.

28. The Watches have lenses that deliver the light from the LEDs to a Watch wearer's skin.

29. The Watches have detectors that receive LED light reflected from the skin.

30. The Watches have one or more analog to digital converters that process the reflected light received by the detectors.

31. A receiver in the Watches can be synchronized to the LED light sources.

32. The Watches can capture light while the LEDs are off to improve the signal-to-noise ratio of the light captured from the LED light reflected from the skin by differencing between the light captured while the LEDs are off and the light captured from the LED light reflected from the skin.

33. The Watches can communicate with an Apple smart phone or tablet.

Count 1 – Infringement of the '533 Patent

34. Omni MedSci reasserts and incorporates the allegations contained in the paragraphs above.

35. Apple has directly infringed and is directly infringing the '533 patent by making using, offering for sale, and selling the Watches, and importing the Watches into the United States.

36. Based on publicly available information, the Watches infringe at least claims 5, 7-10, 13, 16, and 17 of the '533 patent. Omni MedSci reserves the right to assert additional claims of the '533 patent after a reasonable opportunity for investigation and discovery.

37. Apple's infringement is described further below with respect to exemplary claim 5. The analysis below is based on publicly available information.

38. Claim 5 recites: "A measurement system comprising: a light source comprising a plurality of semiconductor sources that are light emitting diodes." Apple sells a system, which

includes Watch that can measure heart rate. Apple sells a system, which includes Watches that use multiple light emitting diodes that are semiconductor light sources. *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

39. Claim 5 further recites: "the light emitting diodes configured to generate an output optical beam with one or more optical wavelengths, wherein at least a portion of the one or more optical wavelengths is a near-infrared wavelength between 700 nanometers and 2500 nanometers." Apple sells a system, which includes Watches with infrared LEDs, which emit wavelengths between 700 nanometers and 2500 nanometers. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2017/0281024.

40. Claim 5 further recites: "the light source configured to increase signal-to-noise ratio by increasing a light intensity from at least one of the plurality of semiconductor sources and by increasing a pulse rate of at least one of the plurality of semiconductor sources." Apple sells a system, which includes Watches that include a heart rate sensor designed to compensate for low signal levels by increasing both LED brightness and sampling rate. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

41. Claim 5 further recites: "an apparatus comprising a plurality of lenses configured to receive a portion of the output optical beam and to deliver an analysis output beam to a sample." Apple sells a system, which includes Watches with a plurality of lenses capable of delivering an analysis output beam.





42. Claim 5 further recites: "a receiver configured to receive and process at least a portion of the analysis output beam reflected or transmitted from the sample and to generate an output signal." Apple sells a system, which includes Watches with photodiode sensors that receive at least a portion of the analysis output beam reflected off the skin, and generates an output signal, including heart rate information. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

43. Claim 5 further recites: "wherein the receiver is configured to be synchronized to the light source." Apple sells a system, which include Watches with a receiver that can be synchronized with the watch's LEDs. *See, e.g.*, U.S. Patent Publication No. 2016/0058367.

44. Claim 5 further recites: "a personal device comprising a wireless receiver, a wireless transmitter, a display, a microphone, a speaker, one or more buttons or knobs, a microprocessor and a touch screen, the personal device configured to receive and process at least a portion of the output signal, wherein the personal device is configured to store and display the processed output signal." Apple sells a system, which includes personal devices (*e.g.*, iPhone) that have a wireless receiver, a wireless transmitter, a display, a microphone, a speaker, one or more buttons or knobs, a microprocessor and a touch screen. The personal devices can receive and process data (*e.g.*, heart rate information) from the Apple watch and store and display the processed data. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

45. Claim 5 further recites: "wherein at least a portion of the processed output signal is configured to be transmitted over a wireless transmission link." Apple sells a system, with a personal device (*e.g.*, iPhone), which can transmit the data it receives (*e.g.*, heart rate information) and processes from Watches over a wireless transmission link to Apple's iCloud. *See, e.g.*, Apple

website at http://support.apple.com/en-us/HT204666; https://www.imore.com/how-sync-your-health-data-ios-11-and-how-it-works.

46. Claim 5 further recites: "a remote device configured to receive over the wireless transmission link an output status comprising the at least a portion of the processed output signal, to process the received output status to generate processed data and to store the processed data." Apple sells a system, which includes the Apple iCloud that can receive over a wireless transmission link an output status comprising at least a portion of the processed data transmitted from Apple personal devices (*e.g.*, iPhones). The Apple iCloud can then process the transmitted output status to generate and store data such as heart rate information. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; https://www.imore.com/how-sync-your-health-data-ios-11-and-how-it-works.

Count 2 – Infringement of the '040 Patent

47. Omni MedSci reasserts and incorporates the allegations contained in the paragraphs above.

48. Apple has directly infringed and is directly infringing the '040 patent by making using, offering for sale, and selling the Watches, and importing the Watches into the United States.

49. Based on publicly available information, the Watches infringe at least claims 1, 2 and 4 of the '040 patent. Omni MedSci reserves the right to assert additional claims of the '040 patent after a reasonable opportunity for investigation and discovery.

50. Apple's infringement is described further below with respect to exemplary claim 1. The analysis below is based on publicly available information.

51. Claim 1 recites: "A wearable device for use with a smart phone or tablet, the wearable device comprising: a measurement device including a light source comprising a plurality

of light emitting diodes (LEDs) for measuring one or more physiological parameters." Apple sells Watches, which are wearable devices, that use multiple light emitting diodes (semiconductor light sources). *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

52. Claim 1 further recites: "the measurement device configured to generate, by modulating at least one of the LEDs having an initial light intensity." The Watches modulate at least one of the LEDs by fluctuating the LEDs' brightness (intensity). *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

53. Claim 1 further recites: "an input optical beam having one or more optical wavelengths, wherein at least a portion of the one or more optical wavelengths is a near-infrared wavelength between 700 nanometers and 2500 nanometers." The Watches include infrared LEDs, which emit wavelengths between 700 nanometers and 2500 nanometers. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2017/0281024.

54. Claim 1 further recites: "the measurement device comprising one or more lenses configured to receive and to deliver a portion of the input optical beam to tissue." The Watches include one or more lenses capable of receiving and delivering a portion of an optical beam to skin.





55. Claim 1 further recites: "wherein the tissue reflects at least a portion of the input optical beam delivered to the tissue." When the Watches deliver the optical beam to the skin, the

skin reflects at least a portion of that optical beam. *See, e.g.*, U.S. Patent Publication Nos. 2016/0058309 and 2016/0058367.

56. Claim 1 further recites: "the measurement device further comprising a reflective surface configured to receive and redirect at least a portion of light reflected from the tissue." The Watches include mirrors around the LEDs and sensors, which receive and redirect at least a portion of light reflected from the skin. *See, e.g.*, U.S. Patent Publication Nos. 2016/0058309 and 2016/0058312.



57. Claim 1 further recites: "the measurement device further comprising a receiver configured to: capture light while the LEDs are off and convert the captured light into a first signal and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the input optical beam reflected from the tissue." On information and belief, the Watches include sensors, which capture light while the LEDs are off and convert the captured light into a first signal and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the input optical beam reflected from the skin. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

58. Claim 1 further recites: "the measurement device configured to improve a signal-to-noise ratio of the input optical beam reflected from the tissue by differencing the first signal and the second signal." On information and belief, the Watches reduce the signal-to-noise ratio optical beam received from the skin by differencing a first signal and second signal. *See, e.g.*, U.S. Patent Publication No. 2016/0058367.

59. Claim 1 further recites: "the light source configured to further improve the signal-to-noise ratio of the input optical beam reflected from the tissue by increasing the light intensity relative to the initial light intensity from at least one of the LEDs." The Watches improve the signal-to-noise ratio of the optical beam reflected from the skin by increasing the brightness (intensity) of the Watches' LEDs. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

60. Claim 1 further recites: "the measurement device further configured to generate an output signal representing at least in part a non-invasive measurement on blood contained within the tissue." The Watches can generate an output signal, which represents the user's heart rate. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

61. Claim 1 further recites: "the wearable device configured to communicate with the smart phone or tablet." The Watches can communicate wirelessly with other Apple devices such as the iPhone or iPad. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

62. Claim 1 further recites: "the smart phone or tablet comprising a wireless receiver, a wireless transmitter, a display, a voice input module, a speaker, and a touch screen, the smart phone or tablet configured to receive and to process at least a portion of the output signal, wherein the smart phone or tablet is configured to store and display the processed output signal, wherein at

least a portion of the processed output signal is configured to be transmitted over a wireless transmission link." The iPhone, which the Watches can communicate with, includes a wireless transmitter, a display, a voice input module, a speaker, and a touch screen. The iPhone can receive and process data (*e.g.*, heart rate information) from the Watches and store and display the processed data. And at least a portion of the processed data from the Watches can be transmitted to the Apple iCloud over a wireless transmission link. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; https://www.imore.com/how-sync-your-health-data-ios-11-and-how-it-works.

Count 3 – Infringement of the '286 Patent

63. Omni MedSci reasserts and incorporates the allegations contained in the paragraphs above.

64. Apple has directly infringed and is directly infringing the '286 patent by making using, offering for sale, and selling the Watches, and importing the Watches into the United States.

65. Based on publicly available information, the Watches infringe at least claims 16-17, 19 and 20 of the '286 patent. Omni MedSci reserves the right to assert additional claims of the '286 patent after a reasonable opportunity for investigation and discovery.

66. Apple's infringement is described further below with respect to exemplary claim 16. The analysis below is based on publicly available information.

67. Claim 16 recites: "A wearable device for use with a smart phone or tablet, the wearable device comprising: a measurement device including a light source comprising a plurality of light emitting diodes (LEDs) for measuring one or more physiological parameters." Apple sells Watches, which are wearable devices that use multiple light emitting diodes. *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

68. Claim 16 further recites: "the measurement device configured to generate, by modulating at least one of the LEDs having an initial light intensity." The Watches modulate at least one of the LEDs, which fluctuate in brightness (intensity). *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

69. Claim 16 further recites: "an optical beam having a plurality of optical wavelengths, wherein at least a portion of the plurality of optical wavelengths is a near-infrared wavelength between 700 nanometers and 2500 nanometers." The Watches include infrared LEDs, which emit wavelengths between 700 nanometers and 2500 nanometers. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2017/0281024.

70. Claim 16 further recites: "the measurement device comprising one or more lenses configured to receive and to deliver a portion of the optical beam to tissue." The Watches include one or more lenses capable of receiving and delivering a portion of an optical beam to skin.





71. Claim 16 further recites: "wherein the tissue reflects at least a portion of the optical beam delivered to the tissue." When the Watches deliver the optical beam to the skin, the skin reflects at least a portion of that optical beam. *See, e.g.*, U.S. Patent Publication Nos. 2016/0058309 and 2016/0058367.

72. Claim 16 further recites: "wherein the measurement device is adapted to be placed on a wrist or an ear of a user." The Watches are adapted to be placed on the user's wrist.

73. Claim 16 further recites: "the measurement device further comprising a receiver configured to: capture light while the LEDs are off and convert the captured light into a first signal and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the optical beam reflected from the tissue." On information and belief, the Watches includes sensors, which capture light while the LEDs are off and convert the captured light into a first signal and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the input optical beam reflected from the skin. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

74. Claim 16 further recites: "the measurement device configured to improve a signal-to-noise ratio of the optical beam reflected from the tissue by differencing the first signal and the second signal." On information and belief, the Watches reduce the signal-to-noise ratio of the optical beam received from the skin by differencing the first signal and the second signal. *See, e.g.*, U.S. Patent Publication No. 2016/0058367.

75. Claim 16 further recites: "the light source configured to further improve the signal-to-noise ratio of the optical beam reflected from the tissue by increasing the light intensity relative to the initial light intensity from at least one of the LEDs." The Watches improve the signal-to-noise ratio of the optical beam reflected from the skin by increasing the brightness (intensity) of the Watches' LEDs. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

76. Claim 16 further recites: "the measurement device further configured to generate an output signal representing at least in part a non-invasive measurement on blood contained within the tissue." The Watches can generate an output signal, which represents the user's heart

rate. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

77. Claim 16 further recites: "wherein the receiver includes a plurality of spatially separated detectors." The Watches include a plurality (two) of photodiode sensors, which are spatially separated. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666.

78. Claim 16 further recites: "wherein at least one analog to digital converter is coupled to the spatially separated detectors." On information and belief, the Watches include at least one analog to digital converter, which is coupled to the spatially separated photodiode sensors. *See, e.g.*, U.S. Patent Publication No. 2019/0038045.

Count 4 – Infringement of the '698 Patent

79. Omni MedSci reasserts and incorporates the allegations contained in the paragraphs above.

80. Apple has directly infringed and is directly infringing the '698 patent by making using, offering for sale, and selling the Watches, and importing the Watches into the United States.

81. Based on publicly available information, the Watches infringe at least claims 1, 2-3 and 5 of the '698 patent. Omni MedSci reserves the right to assert additional claims of the '698 patent after a reasonable opportunity for investigation and discovery.

82. Apple's infringement is described further below with respect to exemplary claim 1. The analysis below is based on publicly available information.

83. Claim 1 recites: "A wearable device, comprising: a measurement device including a light source comprising a plurality of light emitting diodes (LEDs) for measuring one or more physiological parameters." Apple sells Watches, which are wearable devices that use multiple light emitting diodes. *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

84. Claim 1 further recites: "the measurement device configured to generate, by modulating at least one of the LEDs having an initial light intensity." The Watches modulate at least one of the LEDs by fluctuating the LEDs' brightness (intensity). *See, e.g.*, Apple's website at http://support.apple.com/en-us/HT204666.

85. Claim 1 further recites: "an input optical beam having one or more optical wavelengths, wherein at least a portion of the one or more optical wavelengths is a near-infrared wavelength between 700 nanometers and 2500 nanometers." The Watches include infrared LEDs, which emit wavelengths between 700 nanometers and 2500 nanometers. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2017/0281024.

86. Claim 1 further recites: "the measurement device comprising one or more lenses configured to receive and to deliver a portion of the input optical beam to tissue." The Watches include one or more lenses capable of receiving and delivering a portion of an optical beam to skin.





87. Claim 1 further recites: "wherein the tissue reflects at least a portion of the input optical beam delivered to the tissue." When the Watches deliver the optical beam to the skin, the skin reflects at least a portion of that optical beam. *See, e.g.*, U.S. Patent Publication Nos. 2016/0058309 and 2016/0058367.

88. Claim 1 further recites: "the measurement device further comprising a receiver, wherein the receiver includes a plurality of spatially separated detectors." The Watches include

two photodiode sensors (receivers) that are spatially separated. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

89. Claim 1 further recites: "the detectors configured to: capture light while the LEDs are off and convert the captured light into a first signal; and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the input optical beam reflected from the tissue." On information and belief, the Watches include sensors, which capture light while the LEDs are off and convert the captured light into a first signal; and capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the input optical beam reflected from the skin. *See, e.g.*, Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

90. Claim 1 further recites: "wherein at least one analog to digital converter is coupled to the spatially separated detectors and is configured to generate at least a first data signal from the first signal and at least a second data signal from the second signal." On information and belief, the Watches include at least one analog to digital converter, which is coupled to the spatially separated photodiode sensors, and is configured to generate at least a first data signal from the first signal and at least a second data signal from the second signal. *See, e.g.*, U.S. Patent Publication No. 2019/0038045.

91. Claim 1 further recites: "the measurement device configured to improve a signal-to-noise ratio of the input optical beam reflected from the tissue by differencing the first data signal and the second data signal." On information and belief, the Watches reduce the signal-to-noise ratio of the optical beam received from the skin by differencing the first signal and the second signal. *See, e.g.*, U.S. Patent Publication No. 2016/0058367.

92. Claim 1 further recites: "to generate an output signal representing at least in part a non-invasive measurement on blood contained within the tissue." The Watches can generate an output signal, which represents the user's heart rate. *See, e.g.,* Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2016/0058367.

93. Claim 1 further recites: "wherein the modulating at least one of the LEDs has a modulation frequency and wherein the receiver is configured to use a lock-in technique that detects the modulation frequency." The Watches' LEDs have a modulation frequency of hundreds of times per second. Further, on information and belief, the Watches' receiver uses a lock-in technique that detects the modulation frequency. *See, e.g.,* Apple website at http://support.apple.com/en-us/HT204666; U.S. Patent Publication No. 2008/0297487.

Count 5 – Willful Infringement

94. Omni MedSci reasserts and incorporates the allegations contained in the paragraphs above.

95. Based on the communications and meetings between Dr. Islam and Apple personnel, Apple knew of its infringement of the Patents-in-Suit or was willfully blind to its infringement.

96. Apple's infringement of the Patents-in-Suit has been willful.

Demand for Relief

WHEREFORE, Omni MedSci requests entry of judgment against Apple as follows:

A. Finding Apple liable for infringement of the Patents-in-Suit and that the infringement has been willful;

B. Awarding Omni MedSci damages under 35 U.S.C. § 271 adequate to compensate for Apple's infringement;

C. Permanently enjoining Apple, together with any officers, agents, servants, employees, and attorneys, and such other persons in active concert of participation with them, who receive actual notice of the Order, from further infringement of the Patents-in-Suit;

D. A declaration this case is exceptional within the meaning of 35 U.S.C. § 285 and awarding Omni MedSci its reasonable attorney fees, costs, and disbursements;

E. Awarding Omni MedSci interest in all damages awarded; and

F. Granting Omni MedSci all other relief to which it is entitled.

Demand for Jury Trial

Omni MedSci demands trial by jury for all issues so triable.

Dated: April 6, 2018

Respectfully submitted,

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