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

NOKIA TECHNOLOGIES OY and ALCATEL-LUCENT USA INC., **Plaintiffs,** **v.** **APPLE INC.,** **Defendant.**	**Civil Action No. 2:16-cv-1441** **JURY TRIAL REQUESTED**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Nokia Technologies Oy and Alcatel-Lucent USA Inc. (together, "Plaintiffs" or "Nokia") file this Original Complaint for patent infringement against Defendant Apple Inc. ("Defendant" or "Apple") and allege as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement under 35 U.S.C. § 271. Apple has infringed and continues to infringe, contribute to the infringement of, and/or actively induce others to infringe U.S. Patent Nos. 7,415,247 ("the '247 patent"), 9,270,301 ("the '301 patent"), 8,036,619 ("the '619 patent"), 6,393,260 ("the '260 patent"), 6,480,700 ("the '700 patent"), 7,653,366 ("the '366 patent"), 6,826,391 ("the '391 patent"), 9,473,602 ("the '602 patent"), 6,208,725 ("the '725 patent"), and 6,701,294 ("the '294 patent") (collectively, the "Asserted Patents" or "Patents-in-Suit").

Amazon.com, Inc., Amazon.com Services LLC - Ex. 1020, Page 000001
IPR2024-00798 (Amazon.com, Inc., Amazon.com Services LLC v. Nokia Technologies Oy)

2. Apple infringes Nokia's Asserted Patents through the manufacture and sale of at least its iPhone and iPad products. Nokia's patented inventions enable Apple to sell smaller, more efficient, more capable, and more appealing products.

PARTIES

3. Plaintiff Nokia Technologies Oy ("Nokia Tech") is a Finnish corporation with its principal place of business at Karaportti 3, FIN-02610, Espoo, Finland. Nokia Tech is a wholly-owned subsidiary of Nokia Corporation ("Nokia Corp.") and is the sole owner by assignment of all right, title, and interest in certain of the Asserted Patents.

4. Plaintiff Alcatel-Lucent USA Inc. ("ALU") is a Delaware corporation with its principal places of business at 600 Mountain Avenue, Murray Hill, NJ 01974 and 601 Data Drive, Plano, Texas 75075. ALU conducts significant business operations at its principal place of business at 601 Data Drive, Plano, Texas 75075.

5. ALU is a wholly-owned indirect subsidiary of Alcatel-Lucent S.A. ("Alcatel-Lucent"). In January 2016, Nokia Corp. obtained a controlling interest in Alcatel-Lucent S.A. and ALU became an affiliate of Nokia Corp. ALU is the sole owner by assignment of all right, title, and interest in certain of the Asserted Patents.

6. Defendant Apple Inc. is a California corporation with its principal place of business at 1 Infinite Loop, M/S 38-3TX, Cupertino, California 95014. Apple designs, manufactures, uses, imports into the United States, sells, and/or offers for sale in the United States smartphones, tablets, and other products and/or services that infringe the Asserted Patents. Apple's devices are marketed, offered for sale, and/or sold throughout the United States, including within this District.

JURISDICTION AND VENUE

7. This Court has exclusive subject matter jurisdiction over this case under 28 U.S.C. §§ 1331 and 1338.

8. Venue is proper in this Court pursuant to 28 U.S.C. §§1391 and 1400(b).

9. This Court has personal jurisdiction over Apple. Apple has continuous and systematic business contacts with the State of Texas. Apple, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), conducts business extensively throughout Texas, by shipping, distributing, offering for sale, selling, and advertising (including the provision of interactive web pages) its products and services in the State of Texas and the Eastern District of Texas. Apple, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed its infringing products and services into this District and into the stream of commerce with the intention and expectation that they will be purchased and used by consumers in this District. These infringing products and services have been and continue to be purchased and used by consumers in this District. Apple has committed acts of patent infringement within the State of Texas and, more particularly, within the Eastern District of Texas. Jurisdiction over Apple in this matter is also proper inasmuch as Apple has voluntarily submitted itself to the jurisdiction of the courts by commencing litigations within the State of Texas, by registering with the Texas Secretary of State's Office to do business in the State of Texas, and by appointing a registered agent.

OVERVIEW OF NOKIA'S PATENTS-IN-SUIT

10. On August 19, 2008, the '247 patent was duly and legally issued for an invention entitled, "Method and Arrangement for Transmitting and Receiving RF Signals Through Various Radio Interfaces of Communication Systems." Nokia owns all rights to the '247 patent

necessary to bring this action. A true and correct copy of the '247 patent is attached hereto as Exhibit 1.

11. Prior to the invention of the '247 patent, there was a need for mobile stations that could be used for more than one radio system, as the different radio systems might use, for example, different frequency bands, different modulation techniques, different multiplexing, and different coding schemes. The '247 patent discloses, for example, that multiple systems can be accommodated with fewer hardware elements than previously used.[1]

12. On February 23, 2016, the '301 patent was duly and legally issued for an invention entitled, "Method and Arrangement for Transmitting and Receiving RF Signals Through Various Radio Interfaces of Communication Systems." Nokia owns all rights to the '301 patent necessary to bring this action. A true and correct copy of the '301 patent is attached hereto as Exhibit 2.

13. Similar to the '247 patent, the '301 patent discloses, for example, that multiple radio systems can be accommodated with fewer hardware elements than previously used.

14. On October 11, 2011, the '619 patent was duly and legally issued for an invention entitled, "Oscillator Having Controllable Bias Modes and Power Consumption." Nokia owns all rights to the '619 patent necessary to bring this action. A true and correct copy of the '619 patent is attached hereto as Exhibit 3.

15. The '619 patent discloses, for example, a voltage controlled oscillator arrangement that increases the efficiency of a mobile device through the use of power saving techniques. In one embodiment, for example, an oscillator is configured to provide an oscillator

[1] All descriptions of the inventions herein are presented to give a general background of those inventions. Such statements are not intended to be used, nor should be used, for purposes of patent claim interpretation. Nokia presents these statements subject to, and without waiver of, its right to argue that claim terms should be construed in a particular way, as contemplated by claim interpretation jurisprudence and the relevant evidence.

signal to a radio frequency receiver or transmitter that is part of a multi-mode communication device, and circuitry is provided to vary the power consumption of the oscillator in response to a mode of operation of the multi-mode device, to adjust a phase noise of the oscillator.

16. On May 21, 2002, the ’260 patent was duly and legally issued for an invention entitled, “Method for Attenuating Spurious Signals and Receiver.” Nokia owns all rights to the ’260 patent necessary to bring this action. A true and correct copy of the ’260 patent is attached hereto as Exhibit 4.

17. The ’260 patent discloses, for example, a receiver for attenuating spurious signals, which can be caused by imbalance in the mixer when radio signals are mixed to a second frequency. The ’260 patent teaches that such attenuation can be achieved by balancing the mixer circuit through adjustment of bias voltages and/or currents in transistors of the mixer circuit.

18. On November 12, 2002, the ’700 patent was duly and legally issued for an invention entitled, “Apparatus, and Associated Method, For Operating a Communication Device at Reduced Level of Current Consumption.” Nokia owns all rights to the ’700 patent necessary to bring this action. A true and correct copy of the ’700 patent is attached hereto as Exhibit 5.

19. The ’700 patent discloses, for example, a method and apparatus of reducing the power consumption of power amplifiers, which are utilized during cellular communications, thereby increasing battery life.

20. On January 26, 2010, the ’366 patent was duly and legally issued for an invention entitled, “Hybrid Switched Mode/Linear Power Amplifier Power Supply for Use in Polar Transmitter.” Nokia owns all rights to the ’366 patent necessary to bring this action. A true and correct copy of the ’366 patent is attached hereto as Exhibit 6.

21. The ’366 patent discloses, for example, an apparatus that includes multiple components working in conjunction that provide a power amplifier with the power necessary for transmission. In one embodiment, for example, the disclosed apparatus includes a switch mode part and linear part that provide the required output power to the power amplifier. In an embodiment, the disclosed apparatus also provides a wider operational bandwidth than a purely switch mode-based power supply.

22. On November 30, 2004, the ’391 patent was duly and legally issued for an invention entitled, “Transmission and Reception Antenna System for Space Diversity Reception.” Nokia owns all rights to the ’391 patent necessary to bring this action. A true and correct copy of the ’391 patent is attached hereto as Exhibit 7.

23. The ’391 patent discloses, for example, techniques for improving a mobile device’s reception through the use of one or more “space diversity” antennas. In one embodiment, an antenna system includes at least one antenna that transmits and one that receives. When the system is used for reception, the transmit antenna is tuned to a frequency range that is substantially equal to the receive antenna’s frequency range. In this way, both antennas can be used to receive signals. Because the transmit antenna is used as a diversity antenna for reception, the system obtains the benefit of improving wireless performance while also saving space.

24. On October 18, 2016, the ’602 patent was duly and legally issued for an invention entitled, “Portable Electronic Device.” Nokia owns all rights to the ’602 patent necessary to bring this action. A true and correct copy of the ’602 patent is attached hereto as Exhibit 8.

25. The ’602 patent discloses, for example, a housing structure and design configuration for mobile phones which minimize the amount of space or thickness required to

house the necessary components of the mobile phone. In one embodiment, for example, the disclosed housing structure and arrangement comprise a cut-out in the rear of the housing in which a camera is located, and a user input section which is accessible from an opening between the lateral sides of the housing structure, and which is located above and adjacent to an engine section and a battery.

26. On March 27, 2001, the ’725 patent was duly and legally issued for an invention entitled, “Arrangement for Controlling Remote Telephones.” Nokia owns all rights to the ’725 patent necessary to bring this action. A true and correct copy of the ’725 patent is attached hereto as Exhibit 9.

27. The ’725 patent discloses, for example, a method and apparatus for controlling the status and operation of a mobile phone from a remote location, such as when the phone has been lost or misplaced.

28. On March 2, 2004, the ’294 patent was duly and legally issued for an invention entitled, “User Interface for Translating Natural Language Inquiries into Database Queries and Data Presentations.” Nokia owns all rights to the ’294 patent necessary to bring this action. A true and correct copy of the ’294 patent is attached hereto as Exhibit 10.

29. The ’294 patent discloses, for example, a user interface for translating natural language inquiries into database queries and a set of information to be provided to the user.

30. Nokia is the sole and exclusive owner of all rights, title, and interest in the Patents-in-Suit necessary to bring this action, including the right to recover past and future damages. Nokia has owned all rights to the Patents-in-Suit necessary to bring this action throughout the period of Apple’s infringement and still owns those rights to the Patents-in-Suit. Apple is not currently licensed to practice the Patents-in-Suit.

31. The Patents-in-Suit are valid and enforceable.

32. Apple has imported into the United States, manufactured, used, marketed, offered for sale, and/or sold in the United States, smartphones, tablets, and other mobile communication devices that infringe the Patents-in-Suit.

33. Apple's accused products and services include, but are not limited to, Apple's iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone 5s, iPhone 5c, iPhone SE, iPhone 4s, iPhone 4, iPhone 3GS, iPad Pro, iPad Pro (LTE), iPad Air 2, iPad Air 2 (LTE), iPad Air, iPad Air (LTE), iPad, iPad Mini 4, iPad Mini 4 (LTE), iPad Mini 3, iPad Mini 3 (LTE), iPad Mini 2, iPad Mini 2 (LTE), iPad Mini, iPod Touch, Apple Watch, and Apple TV, and Apple's "Find My iPhone," "Find My iPad," and Find My iPod" services (collectively, the "Apple Accused Products").

34. Apple has been placed on actual notice of the Patents-in-Suit. At a minimum, in accordance with 35 U.S.C. § 287, Apple has had actual notice and knowledge of all the Patents-in-Suit at least as early as the filing of this Original Complaint and/or the date this Original Complaint was served upon Apple. Further, Apple has been put on actual notice of infringement by Nokia prior to the filing of this Complaint as to certain of the Patents-in-Suit, for example, through correspondence from Nokia concerning such allegations. Despite such notice, Apple continues to make, use, import into, market, offer for sale, and/or sell in the United States products that infringe the Patents-in-Suit.

GENERAL ALLEGATIONS

35. Apple has directly and indirectly infringed and continues to directly and indirectly infringe each of the Patents-in-Suit by engaging in acts constituting infringement under 35 U.S.C. § 271(a), (b), and/or (c), including, but not necessarily limited to, one or more of making,

using, selling, and offering to sell, in this District and elsewhere in the United States, and importing into the United States, the Apple Accused Products.

36. Apple's acts of infringement have caused damage to Nokia. Nokia is entitled to recover from Apple the damages sustained by Nokia as a result of Apple's wrongful acts in an amount subject to proof at trial. Nokia also requests an injunction, as the infringing acts and practices of Apple have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause irreparable harm to Nokia for which there is no adequate remedy at law, and for which Nokia is entitled to injunctive relief under 35 U.S.C. § 283.

37. Apple's infringement of the Patents-in-Suit has been and continues to be willful. Apple has committed and continues to commit acts of infringement despite a high likelihood that its actions constitute infringement, and Apple knew or should have known that its actions constituted an unjustifiably high risk of infringement.

38. In the interest of providing detailed averments of infringement, Nokia has identified below at least one exemplary claim per patent to demonstrate infringement by one exemplary product. However, the selection of claims should not be considered limiting, and additional claims of the Patents-in-Suit that are infringed by other Apple products will be disclosed in compliance with the Court's rules related to infringement contentions.

APPLE'S INFRINGING PRODUCTS

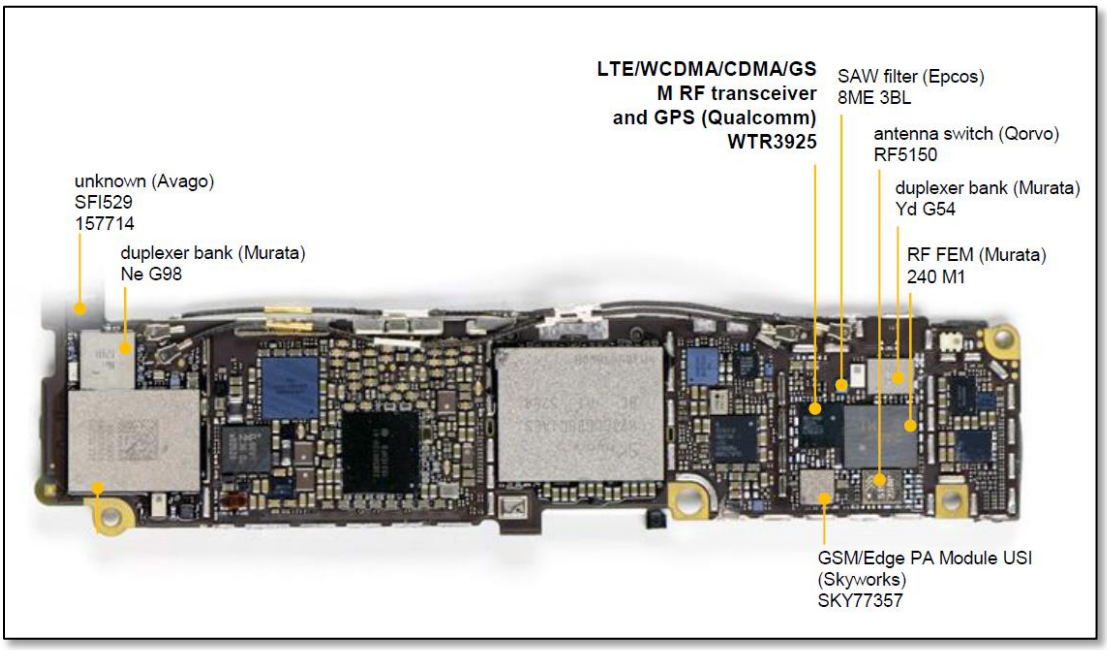
A. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the '247 Patent.

39. Apple's infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone 5s, iPhone SE, iPad Pro (LTE), iPad Air 2 (LTE), iPad Air (LTE), iPad Mini 4 (LTE), iPad Mini 3 (LTE), and iPad Mini 2 (LTE) (collectively, the "'247 Accused Products").

40. The ’247 Accused Products infringe one or more claims of the ’247 patent. For example, as shown below, the Apple iPhone 6s infringes claim 21 of the ’247 patent.

41. Each of the ’247 Accused Products contains a direct-conversion transmitter for operating in different radio communication systems.

42. For example, as shown in the image below, the iPhone 6s contains a Qualcomm WTR3925 RF transceiver chip on its main board, which provides for RF communications in radio communication systems such as LTE, WCDMA, CDMA, and GSM. On information and belief, the Qualcomm WTR3925 RF transceiver includes a direct-conversion transmitter.

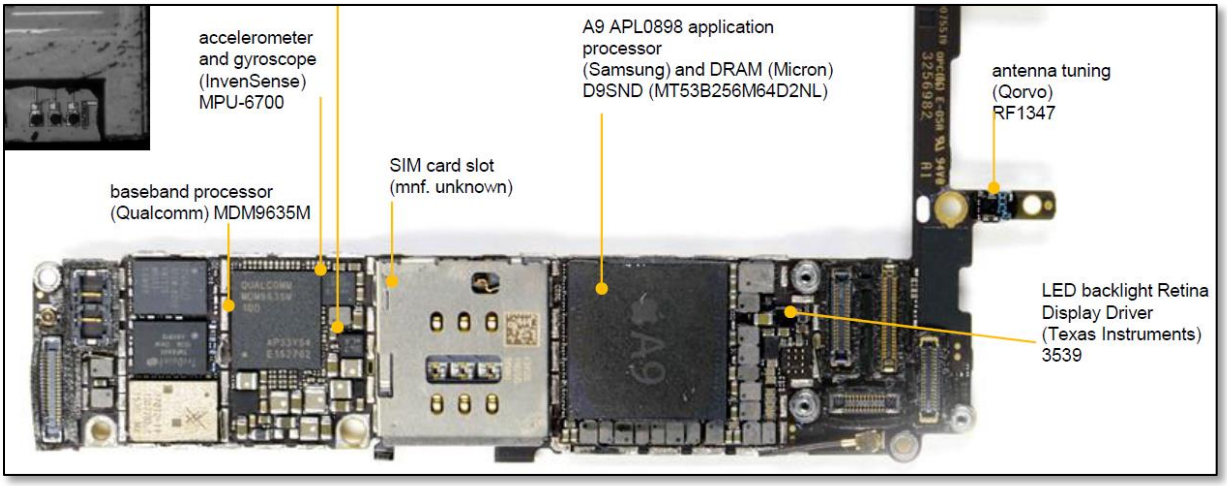


Source: Exhibit 11[2], at 25.

43. Each of the ’247 Accused Products includes a digital signal processor adapted to produce a digital baseband quadrature signal representing an information signal to be transmitted.

[2] Chipworks Apple iPhone 6s Teardown Report, attached hereto as Exhibit 11.

44. For example, as shown below, the iPhone 6s includes a Qualcomm MDM9635M baseband processor that, on information and belief, includes a digital signal processor. On information and belief, the Qualcomm MDM9635M produces a digital baseband quadrature signal that represents the information to be transmitted via the Qualcomm WTR3925 RF transceiver.



Source: Exhibit 11, at 24.

45. Each of the ’247 Accused Products includes a digital-to-analog converter adapted to convert the digital baseband quadrature signal to analog.

46. For example, the Qualcomm WTR3925 RF transceiver in the iPhone 6s operates on analog signals which originate (in digital form) from the MDM9635M digital baseband processor. On information and belief, the digital signals are converted to analog prior to processing by the RF transceiver chip by a digital-to-analog converter.

47. Each of the ’247 Accused Products includes a controllable low-pass filter adapted to filter the analog baseband quadrature signal in order to perform channel filtering according to the radio communication system selected.

48. For example, on information and belief, the Qualcomm WTR3925 RF transceiver in the iPhone 6s includes a low-pass filter, such as a controllable, multi-stage transmit path low-pass filter. Filtering of the analog baseband quadrature signal by the exemplary transmit low-pass filter is done according to the selected radio communication system at least because, for example, it supports multiple different radio communication systems. On information and belief, the exemplary low-pass filter is controllable, for example, by way of control signals provided by the Qualcomm MDM9635M baseband processor.

49. Each of the ’247 Accused Products includes a frequency synthesizer adapted to generate a TX mixing signal at a transmit frequency.

50. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes one or more phase-locked-loops that contain one or more voltage controlled oscillators which are adapted to generate a transmit mixing signal at a transmit frequency.

51. Each of the ’247 Accused Products includes a mixer adapted to produce a signal at a carrier frequency from the analog baseband quadrature signal by mixing with the TX mixing signal.

52. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes mixing circuitry in the transmitter configured to produce a signal at a carrier frequency from the analog baseband quadrature signal by mixing with the transmit mixing signal generated by the exemplary voltage controlled oscillator in the phase-locked-loop. On information and belief, the mixing circuit receives the baseband outputs of the low-pass filter and mixes them with the transmit mixing signal to generate the signal to be transmitted.

53. Each of the ’247 Accused Products includes an amplifier adapted to amplify the signal at the carrier frequency.

54. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes amplifier circuitry, such as a low-band output amplifier and/or a high-band output amplifier which are adapted to amplify the signal at the carrier frequency. The amplifier circuitry receives the up-converted signal from the mixing circuit and, on information and belief, amplifies the signal for transmission.

55. Each of the ’247 Accused Products includes an antenna for transmitting the amplified signal at the carrier frequency.

56. For example, the iPhone 6s includes one or more antennas (*e.g.*, “cellular” antenna, as shown below) for transmitting the amplified signal at the carrier frequency.

Source: Exhibit 11, at 51.

57. In each of the ’247 Accused Products, the frequency synthesizer comprises a TX synthesizer and controllable frequency divider for dividing the frequency of the output signal generated by the TX synthesizer, as well as an output frequency selection input for receiving a program-controlled output frequency selection signal adapted to select the output frequency of said frequency synthesizer according to the radio communication system selected.

58. For example, on information and belief, the transmitter in the WTR3925 transceiver includes a frequency synthesizer comprised of a transmit phase locked loop with one or more voltage controlled oscillators, and a transmit clock divider and splitter circuit. On information and belief, the transmit clock divider and splitter circuit divides the frequency of the signal generated by the transmit phase locked loop. On information and belief, the divider is controllable, at least because it supports multiple different transmit frequencies as shown below.

COMMUNICATION	Protocol (MHz)	3.9G: FDD-LTE: 700, 800, 850, 900, 1700, 1800, 1900, 2100. 2100, 2600 3.9G: TD-LTE: n/a 3G: WCDMA: 850, 900, 1700, 1900, 2100 3G: CDMA: 800, 1700, 1900, 2100 3G: TD-SCDMA: n/a 2G: GSM: 850, 900, 1800, 1900	
	HSDPA/HSUPA (Mbps)	3G: 42.2/5.76	LTE: 300/50

Source: Exhibit 11, at 7.

59. On information and belief, because the output frequency depends on the radio communication system used (*e.g.* GSM 850 MHz, WCDMA 1900 MHz, etc.), input control signals to the frequency synthesizer select the output frequency according to the radio communication system selected. On information and belief, input control signals to the frequency synthesizer direct the signal output by the transmit phase-locked loop through divider circuitry by way of switches and/or multiplexor circuits, for example, to produce the output frequency according to the selected radio communication system. On information and belief, the

divider is controllable, for example, by way of control signals provided by the Qualcomm MDM9635M baseband processor.

60. In each of the ’247 Accused Products, the mixer is common for processing signals for transmission in at least two different radio communication systems.

61. For example, on information and belief, the transmit mixer circuit in WTR3925 transceiver is common for processing signals for transmission in multiple radio communication systems, at least because it supports transmit functionality for those multiple different radio communication systems.

62. In each of the ’247 Accused Products, the transmitter amplifier is common for amplifying carrier frequency signals for transmission to at least two different radio communication systems.

63. For example, on information and belief, the low-band output amplifier in the WTR3925 transmitter is common for amplifying all low-band (and, on information and belief, some mid-band) carrier frequency signals for transmission to all low-band (and, on information and belief, some mid-band) radio communication systems. On information and belief, the high-band output amplifier in the WTR3925 transmitter is common for amplifying all high-band carrier frequency (and, on information and belief, some mid-band) signals for transmission to all high-band (and, on information and belief, some mid-band) radio communication systems.

64. In each of the ’247 Accused Products, the transmitter amplifier comprises a gain control input for receiving a program-controlled gain control signal adapted to set the gain of said transmitter amplifier according to the radio communication system selected.

65. For example, on information and belief, the gain for the low-band output amplifier and high-band output amplifier in the WTR3925 transmitter is set according to the

selected radio communication system, based on, for example, control signals provided by the Qualcomm MDM9635M baseband processor.

66. As described above, the ’247 Accused Products, including the Apple iPhone 6s, infringe one or more claims of the ’247 patent, including claim 21.

67. All ’247 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’247 patent. Apple advertises the ability of the ’247 Accused Products to infringe the ’247 patent, at least by advertising the cellular connectivity capabilities of the ’247 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’247 Accused Products to use the ’247 Accused Products in a manner that infringes the ’247 patent, such as by making cellular telephone calls.

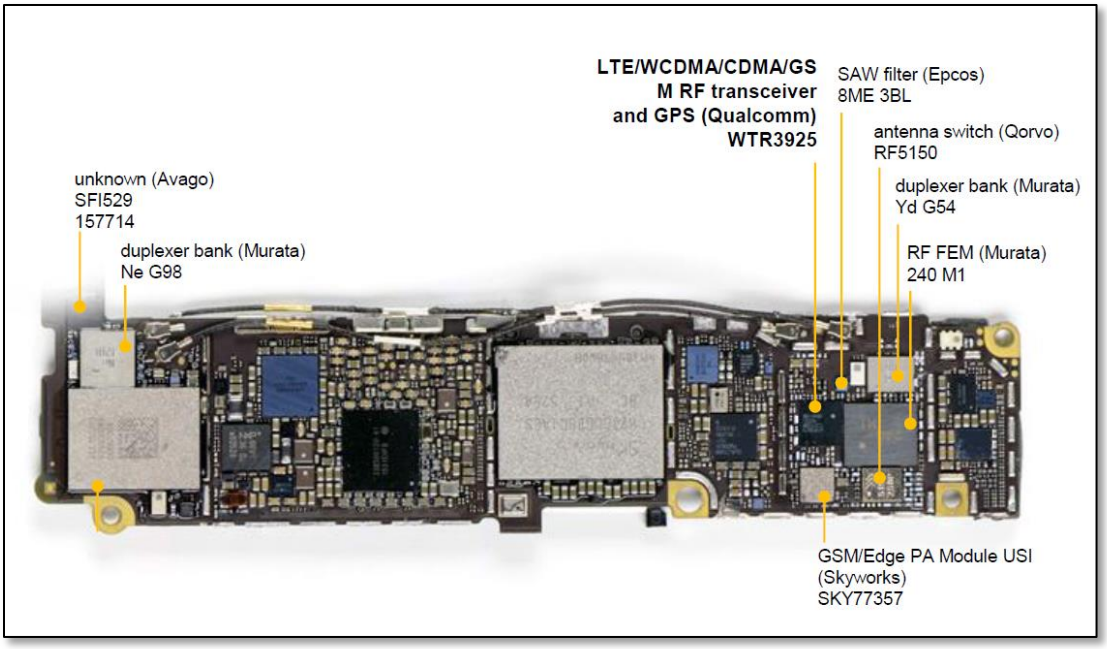
B. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’301 Patent.

68. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone 5s, iPhone SE, iPad Pro (LTE), iPad Air 2 (LTE), iPad Air (LTE), iPad Mini 4 (LTE), iPad Mini 3 (LTE), and iPad Mini 2 (LTE) (collectively, the “’301 Accused Products”).

69. The ’301 Accused Products infringe one or more claims of the ’301 patent. For example, as shown below, the Apple iPhone 6s infringes claim 2 of the ’301 patent.

70. Each of the ’301 Accused Products contains a direct-conversion transmitter.

71. For example, as shown below, the iPhone 6s contains a Qualcomm WTR3925 RF transceiver chip on its main board, which provides for RF communications in radio communications systems such as LTE, WCDMA, CDMA, and GSM. On information and belief, each of the Qualcomm WTR3925 RF transceivers in the iPhone 6s includes a direct-conversion transmitter.



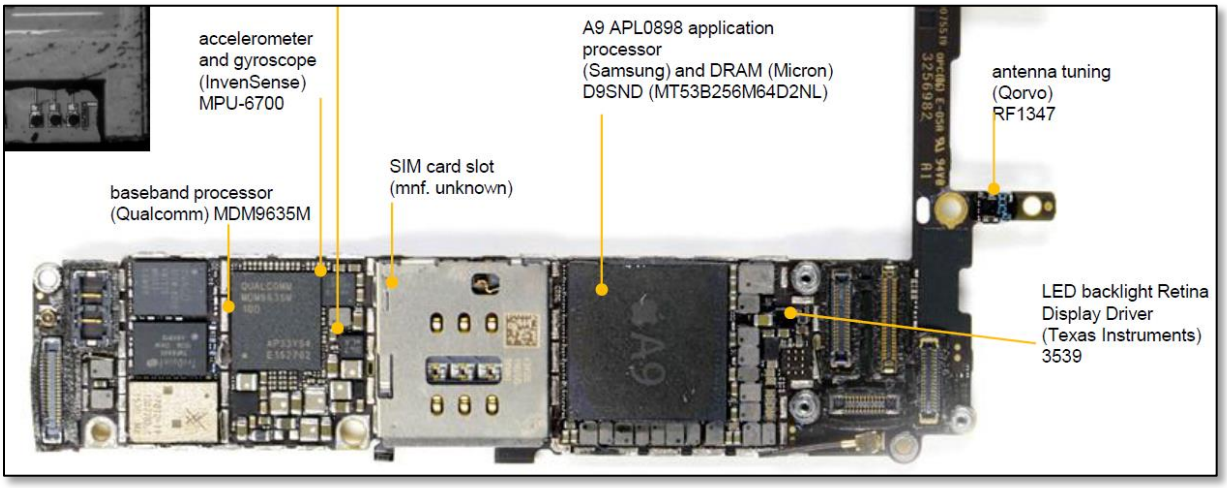
Source: Exhibit 11, at 25

72. Each of the ’301 Accused Products includes a transmit synthesizer common to a plurality of radio interfaces of the direct-conversion transmitter and configured to generate a mixing signal.

73. For example, on information and belief, the WTR3925 RF transceiver includes one or more transmit phase-locked-loops that contain one or more voltage controlled oscillators configured to generate a mixing signal for the direct-conversion transmitter. On information and belief, the transmit phase-locked loop is common to the plurality of radio interfaces because it is used for many of the radio interfaces supported by the iPhone 6s.

74. Each of the ’301 Accused Products includes a controllable low-pass filter common to the plurality of radio interfaces of the direct-conversion transmitter, the controllable low-pass filter configured to perform filtering of an analog baseband transmission signal using a controllable cut-off frequency according to which one of the plurality of radio interfaces of the direct-conversion transmitter is selected.

75. For example, on information and belief, the WTR3925 RF transceiver includes a low-pass filter, such as a controllable, multi-stage transmit path low-pass filter common to the supported radio interfaces. Filtering of the analog baseband transmission signal by the exemplary transmit low-pass filter is done according to the selected radio communication system at least because, for example, it supports multiple different radio communication systems. On information and belief, the cut-off frequency of the exemplary low-pass filter is controllable, for example, by way of control signals provided by the Qualcomm MDM9635M baseband processor.



Source: Exhibit 11, at 24.

76. Each of the ’301 Accused Products includes a frequency divider common to the plurality of radio interfaces of the direct-conversion transmitter, the frequency divider configured to divide a frequency of the mixing signal according to which one of the plurality of radio interfaces of the direct-conversion transmitter is selected, wherein the dividing produces two mixing signal components having a 90-degree phase difference.

77. For example, on information and belief, the WTR3925 RF transceiver includes a transmit clock divider and splitter circuit common to each of radio interfaces of the transmitter.

On information and belief, the transmit clock divider and splitter circuit is configured to divide a frequency of the mixing signal according to which one of the plurality of radio interfaces is selected, such as, for example, GSM 850 MHz or WCDMA 1900 MHz. On information and belief, input control signals to the transmit clock divider and splitter circuit direct the mixing signal through divider circuitry by way of switches and/or multiplexor circuits, for example, to generate the output frequency corresponding to the selected radio interface. On information and belief, the transmit clock divider and splitter circuit produces two mixing signal components having a 90-degree phase difference.

78. Each of the ’301 Accused Products includes a controllable gain transmitter amplifier common to the plurality of radio interfaces of the direct-conversion transmitter and configured to amplify a carrier-frequency signal from a mixer at a gain controlled according to which one of the plurality of radio interfaces of the direct-conversion transmitter is selected.

79. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes amplifier circuitry, such as a low-band output amplifier and/or a high-band output amplifier, which are adapted to amplify a carrier-frequency signal from a mixer at a gain controlled according to the selected radio interface. On information and belief, the transmitter amplifier comprises a gain control input for receiving a gain control input signal configured to set the gain of the low-band or high-band output amplifier according to the radio interface selected.

80. On information and belief, the low-band output amplifier in the WTR3925 transmitter is common for amplifying all low-band (and, on information and belief, some mid-band) carrier frequency signals for transmission to all low-band (and, on information and belief, some mid-band) radio communication systems. On information and belief, the high-band output

amplifier in the WTR3925 transmitter is common for amplifying all high-band carrier frequency (and, on information and belief, some mid-band) signals for transmission to all high-band (and, on information and belief, some mid-band) radio communication systems.

81. In each of the ’301 Accused Products, at least one of the plurality of radio interfaces of the direct-conversion transmitter comprises a modulation, a channel spacing, and a channel bit rate that at least one other of the plurality of radio interfaces of the direct-conversion transmitter does not have.

82. For example, as shown below, the iPhone 6s supports a plurality of radio interfaces.

COMMUNICATION	Protocol (MHz)	3.9G: FDD-LTE: 700, 800, 850, 900, 1700, 1800, 1900, 2100. 2100, 2600 3.9G: TD-LTE: n/a 3G: WCDMA: 850, 900, 1700, 1900, 2100 3G: CDMA: 800, 1700, 1900, 2100 3G: TD-SCDMA: n/a 2G: GSM: 850, 900, 1800, 1900	
	HSDPA/HSUPA (Mbps)	3G: 42.2/5.76	LTE: 300/50

Source: Exhibit 11, at 7.

83. Each supported radio interface comprises a modulation, a channel spacing, and a channel bit rate. By way of example, radio interfaces for GSM, WCDMA, LTE, and CDMA each have different modulations, channel spacing, and channel bit rates. Because the WTR3925 RF transceiver chip in the iPhone 6s is capable of operating in each of these radio interfaces, on information and belief, the iPhone 6s has at least one radio interface with a modulation, a channel spacing, and a channel bit rate that at least one other of the radio interfaces does not have.

84. As described above, the ’301 Accused Products, including the iPhone 6s, infringe one or more claims of the ’301 patent, including claim 2.

85. All ’301 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’301 patent. Apple advertises the ability of the ’301 Accused Products to infringe the ’301 patent, at least by advertising the cellular connectivity capabilities of the ’301 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’301 Accused Products to use the ’301 Accused Products in a manner that infringes the ’301 patent, such as by making cellular telephone calls.

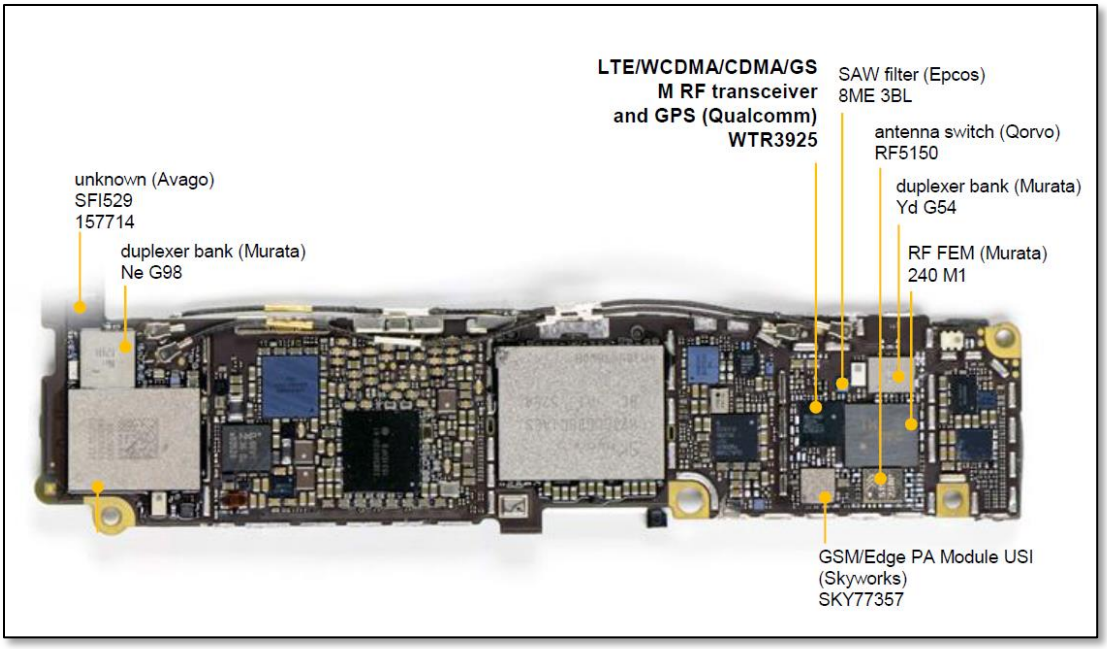
C. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’619 Patent.

86. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, and iPad Pro (LTE) (collectively, the “’619 Accused Products”).

87. The ’619 Accused Products infringe one or more claims of the ’619 patent. For example, as shown below, the Apple iPhone 6s infringes claim 18 of the ’619 patent.

88. Each of the ’619 Accused Products is an apparatus comprising an oscillator configured to provide an oscillator signal to at least one of a radio frequency receiver and a radio frequency transmitter that comprise part of a multi-mode communication device.

89. For example, the Apple iPhone 6s comprises a radio frequency transceiver, such as the Qualcomm WTR3925, which includes a radio frequency receiver and a radio frequency transmitter that support LTE, WCDMA, CDMA, and GSM communication modes.



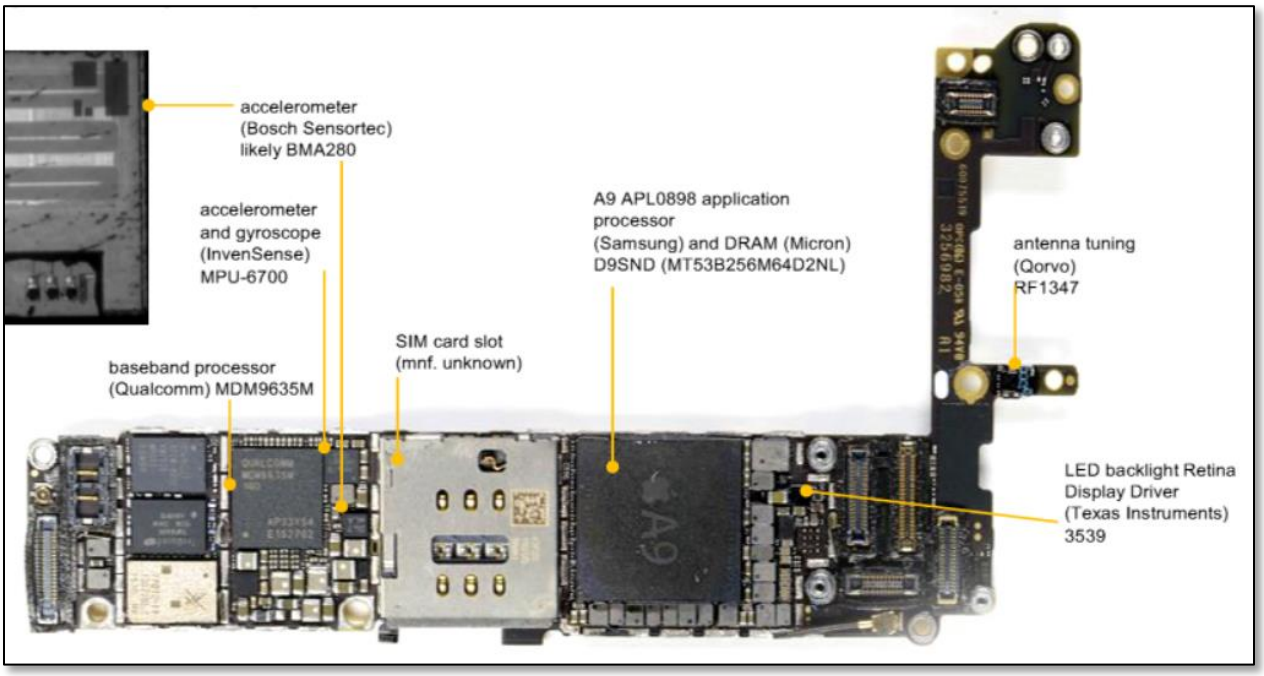
Source: Exhibit 11, at 25.

90. On information and belief, the WTR3925 RF transceiver in the iPhone 6s includes one or more phase-locked loops that contain one or more voltage controlled oscillators ("VCO"), which provides an oscillator signal to the radio frequency transmitter and/or receiver.

91. Each of the '619 Accused Products includes circuitry configured to vary power consumption of said oscillator by changing a value of at least one of a supply voltage (Vcc) and a bias voltage of said oscillator, in response to a mode of operation of the multi-mode communication device to adjust a phase noise of the oscillator.

92. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes circuitry that changes the value of a supply voltage and/or a bias voltage provided to an oscillator transistor of the VCO in response to a mode of operation of the iPhone 6s, such as WCDMA or GSM. On information and belief, such circuitry includes voltage regulators, reference voltage generators, variable resistors, level shifters, and/or switches, which respond to control signals provided by, for example, a baseband processor such as the Qualcomm

MDM9635M (shown below) to change the value of the oscillator supply voltage and/or bias voltage to adjust a phase noise of the oscillator.



Source: Exhibit 11, at 24.

93. As described above, the ’619 Accused Products, including the iPhone 6s, infringe one or more claims of the ’619 patent, including claim 18.

94. All ’619 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’619 patent. Apple advertises the ability of the ’619 Accused Products to infringe the ’619 patent, at least by advertising the cellular connectivity capabilities of the ’619 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’619 Accused Products to use the ’619 Accused Products in a manner that infringes the ’619 patent, such as by making cellular telephone calls.

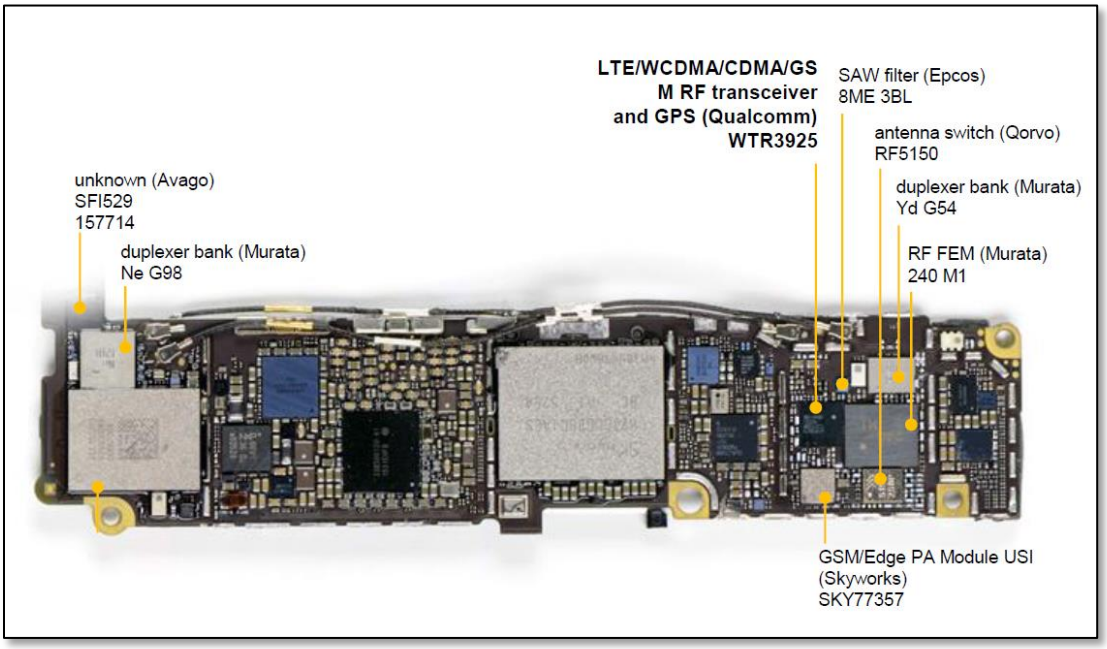
D. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’260 Patent.

95. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone SE, iPad Pro (LTE), iPad Air 2 (LTE), and iPad Mini 4 (LTE) (collectively, the “’260 Accused Products”).

96. The ’260 Accused Products infringe one or more claims of the ’260 patent. For example, as shown below, the Apple iPhone 6s infringes claim 6 of the ’260 patent.

97. Each of the ’260 Accused Products contains a receiver.

98. For example, the Apple iPhone 6s contains a radio frequency transceiver, such as the Qualcomm WTR3925 RF transceiver, which includes a radio frequency receiver that supports LTE, WCDMA, CDMA, and GSM communication modes.



Source: Exhibit 11, at 25.

99. Each of the ’260 Accused Products includes a mixer circuit for mixing radio signals to a second frequency.

100. For example, on information and belief, the WTR3925 RF transceiver in the iPhone 6s includes a receive mixer circuit, which mixes radio signals from supported LTE, WCDMA, CDMA, and GSM communication modes to a second frequency, such as baseband frequency.

101. Each of the ’260 Accused Products includes means for attenuating spurious signals when receiving radio signals.

102. For example, on information and belief, the receiver within the exemplary WTR3925 RF transceiver includes means for attenuating spurious signals during receipt of radio signals, such as I/Q double-balanced mixers.

103. Each of the ’260 Accused Products includes a balance adjustment means in the mixer circuit to adjust the circuit’s balance by adjusting at least one of the bias voltages and currents in transistors of the mixer circuit.

104. For example, on information and belief, the receiver within the exemplary WTR3925 RF transceiver includes a balance adjustment means in the mixer circuit, such as voltage generators, voltage regulators, and voltage switches. By way of further example, on information and belief, the voltage regulators and voltage generators have variable voltage sources which are controlled to adjust the mixer circuit’s balance, for example, by adjusting bias voltages at the gates of differential-paired transistors of the mixer circuit.

105. As described above, the ’260 Accused Products, including the iPhone 6s, infringe one or more claims of the ’260 patent, including claim 6.

106. All ’260 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’260 patent. Apple advertises the ability of the ’260 Accused Products to infringe the ’260 patent, at least by advertising the cellular connectivity capabilities of the ’260 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’260 Accused Products to use the ’260 Accused Products in a manner that infringes the ’260 patent, such as by making cellular telephone calls.

E. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’700 Patent.

107. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone SE, iPad Pro (LTE), and iPad Mini 4 (LTE) (collectively, the “’700 Accused Products”).

108. The ’700 Accused Products infringe one or more claims of the ’700 patent. For example, as shown below, the Apple iPhone 6s infringes claim 1 of the ’700 patent.

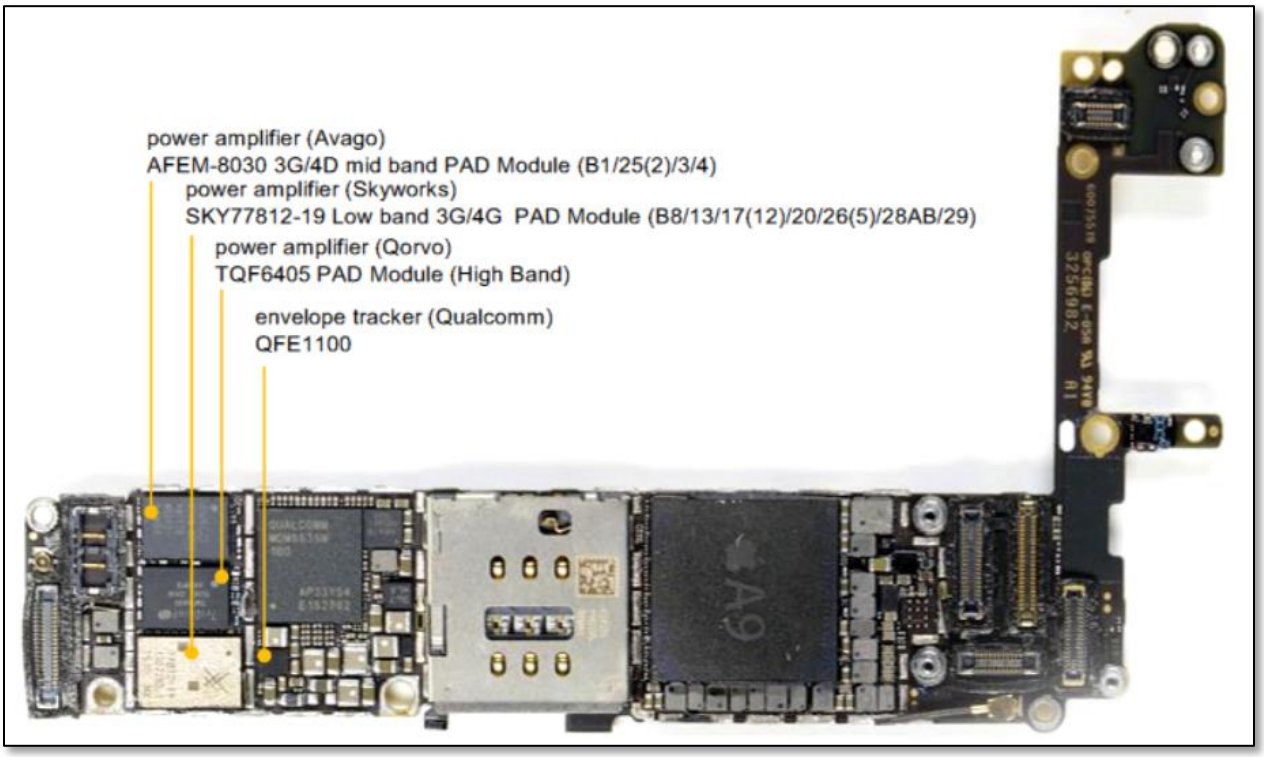
109. Each of the ’700 Accused Products is a radio device operable in a radio communication system to communicate radio-frequency communication signals and operates at selected radio characteristics.

110. For example, the Apple iPhone 6s is a radio device operable in a radio communication system, for example, such as LTE, to communicate radio-frequency communication signals at selected radio characteristics.

111. Each of the ’700 Accused Products includes a first amplifier element coupled to receive a first radio frequency signal.

112. For example, the iPhone 6s includes a Skyworks SKY77812 power amplifier module, as shown below, which on information and belief includes a first amplifier element,

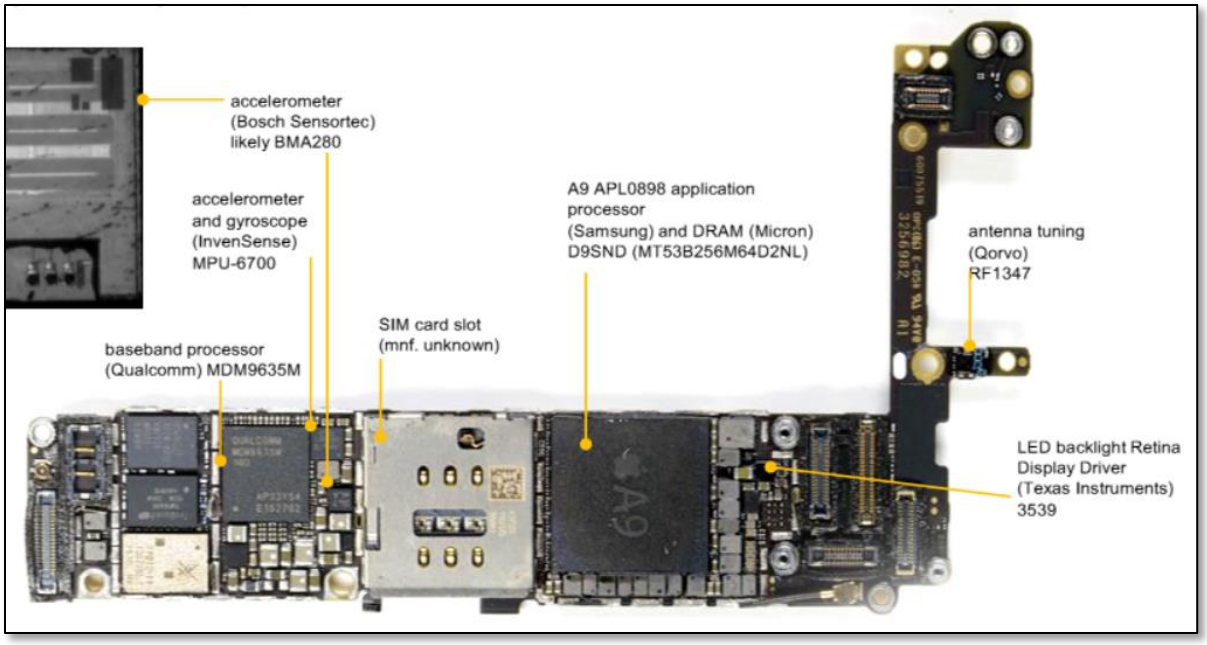
such as a driver stage amplifier, coupled to receive a first radio-frequency signal, such as low-band signals in LTE, for example.



Source: Exhibit 11, at 22.

113. The first amplifier element in each of the ’700 Accused Products is biased by a first-bias current signal of a first selectable biasing level.

114. For example, on information and belief, the first amplifier element in the Skyworks SKY77812 power amplifier module is biased by a first bias current signal provided by a bias generator, for example, such as a bias signal to the base of the driver stage amplifier transistor. On information and belief, the bias signal is selectable, for example, based on control input provided by a baseband processor, such as the Qualcomm MDM9635M baseband processor.



Source: Exhibit 11, at 24.

115. The first amplifier element in each of the ’700 Accused Products generates a first amplified radio frequency signal exhibiting a first level of linearity, the first level of linearity responsive to the first-bias current signal.

116. For example, the first amplifier element in the Skyworks SKY77812 power amplifier module generates a first amplified radio frequency signal, such as an RF output signal, that on information and belief exhibits a first level of linearity responsive to the first bias current signal.

117. Each of the ’700 Accused Products includes a second amplifier element coupled to receive indications of the first amplified radio frequency signal generated by said first amplifier element.

118. For example, on information and belief, the Skyworks SKY77812 power amplifier module includes a second amplifier element, such as a stage two amplifier, which is

coupled to receive indications of the first amplified radio frequency signal, such as the RF output from the driver stage amplifier.

119. The second stage amplifier element in each of the ’700 Accused Products is selectably operable in a large-signal mode and in a small-signal mode, said second amplifier operated in the large-signal mode when the indications of the first amplified radio frequency signal applied thereto is at least as great as a threshold value such that, when operated in the large-signal mode, said second amplifier become self-biased at a fixed gain level.

120. For LTE, for example, on information and belief, the stage two amplifier in the Skyworks SKY77812 power amplifier module receives indications of the first amplified radio frequency, such as an RF output signal, generated by the first amplifier element, such as the driver stage amplifier. On information and belief, the stage two amplifier is biased by a second selectable bias signal provided by a bias generator, for example, such as a bias signal to the base of the second stage amplifier transistor. On information and belief, the stage two amplifier is selectably operable in a large-signal mode and in a small-signal mode such that, when operated in the large-signal mode, the second stage amplifier becomes self-biased at a fixed gain level.

121. As described above, the ’700 Accused Products, including the iPhone 6s, infringe one or more claims of the ’700 patent, including claim 1.

122. All ’700 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’700 patent. Apple advertises the ability of the ’700 Accused Products to infringe the ’700 patent, at least by advertising the cellular connectivity capabilities of the ’700 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’700 Accused Products to use the ’700 Accused Products in a manner that infringes the ’700 patent, such as by making cellular telephone calls.

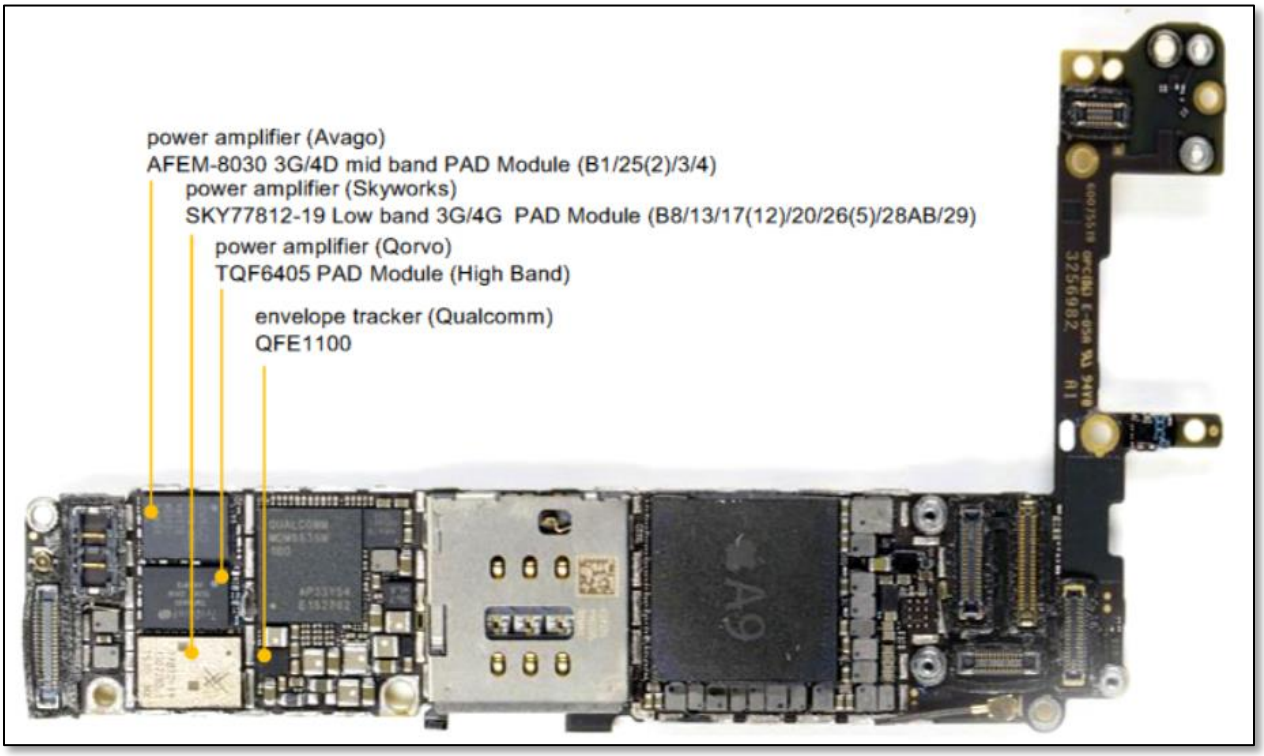
F. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’366 Patent.

123. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone SE, iPad Pro (LTE), and iPad Mini 4 (LTE) (collectively, the “’366 Accused Products”).

124. The ’366 Accused Products infringe one or more claims of the ’366 patent. For example, as shown below, the Apple iPhone 6s infringes claim 1 of the ’366 patent.

125. Each of the ’366 Accused Products contains a DC-DC converter.

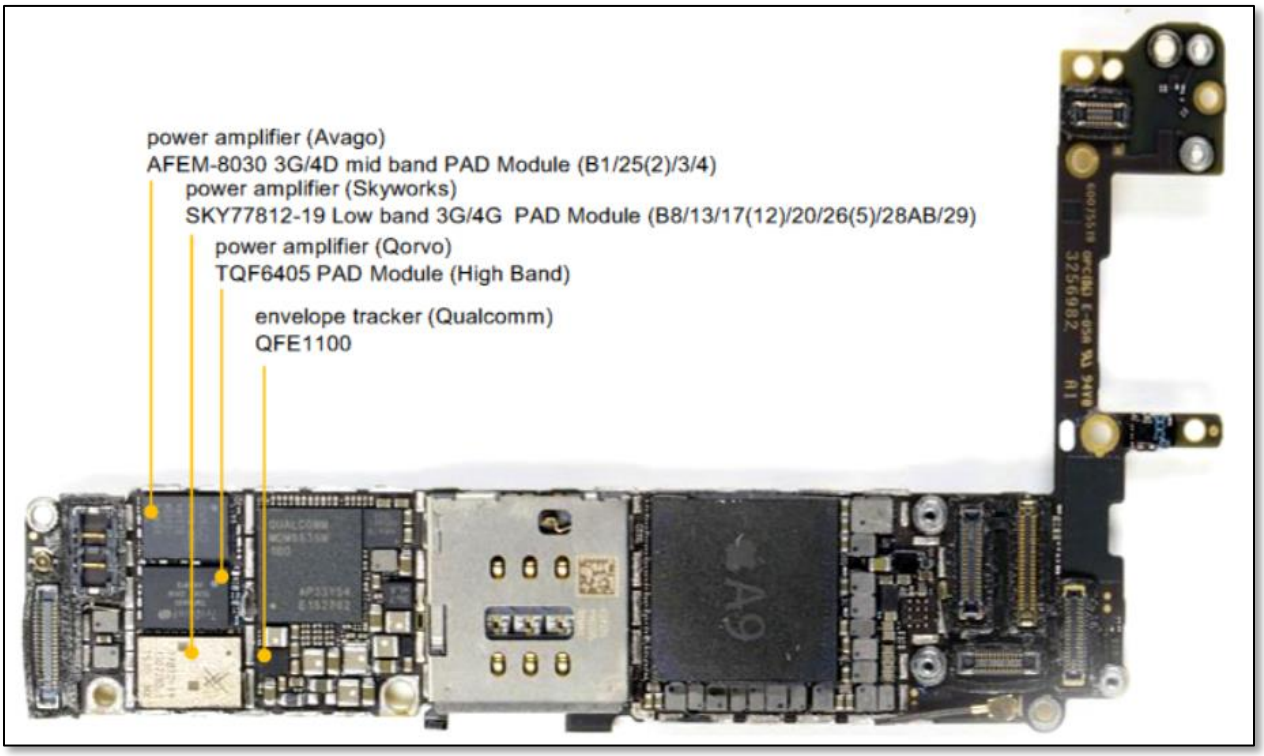
126. For example, the Apple iPhone 6s contains a Qualcomm QFE1100 envelope tracking chip on its main board, shown below. On information and belief, the Apple iPhone 6s with a QFE1100 includes circuitry to perform DC-DC conversion including, for example, amplifier path circuitry and buck converter circuitry.



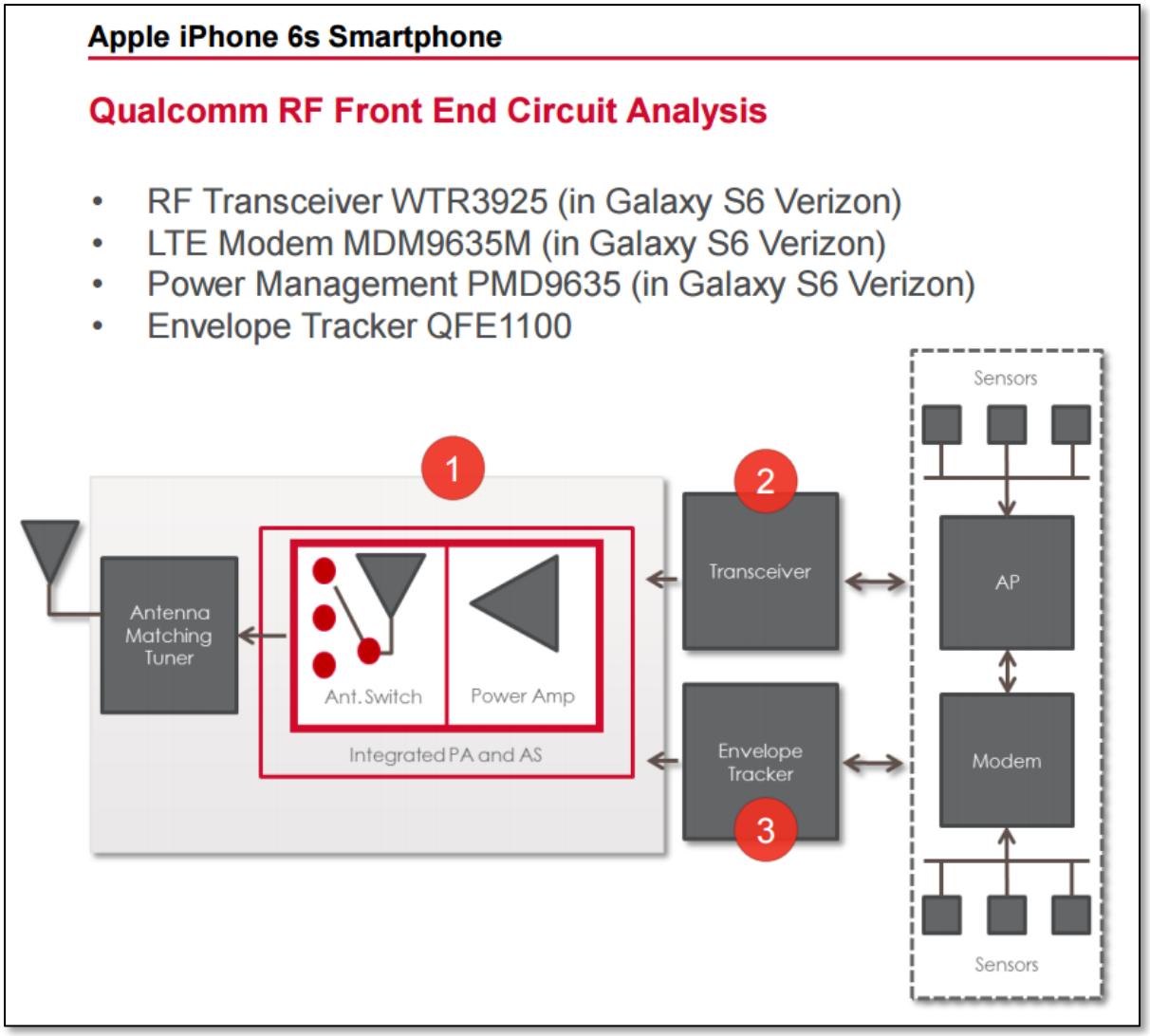
Source: Exhibit 11, at 22.

127. Each of the ’366 Accused Products includes circuitry with a switch mode part between a DC source and a load, and the switch mode part is configured to provide x amount of output power.

128. For example, on information and belief, the DC-DC converter in the Apple iPhone 6s with a QFE1100 envelope tracking chip comprises switch mode part circuitry, including a buck converter, which is located between a DC source, such as the iPhone 6s battery, and a load, such as and including the Skyworks SKY77812 and/or Avago AFEM-8030 power amplifier modules. On information and belief, the switch mode part circuitry is configured to provide an amount of power (“x”) to the SKY77812 and/or AFEM-8030 power amplifier modules, for example.



Source: Exhibit 11, at 22.



Source: Exhibit 11, at 26.

129. Each of the '366 Accused Products includes circuitry with a linear mode part in parallel with the switch mode part between the same or a different DC source and the load, the linear mode part configured to provide y amount of output power.

130. For example, on information and belief, the DC-DC converter in the Apple iPhone 6s with a QFE1100 envelope tracking chip comprises linear mode part circuitry in an amplifier in parallel with the switch mode part circuitry including a buck converter. By way of further example, on information and belief, the amplifier is located between the iPhone 6s battery

and the SKY77812 and/or AFEM-8030 power amplifier modules, and is configured to provide "y" amount of output power to the SKY77812 and/or AFEM-8030.

131. In each of the '366 Accused Products, x is greater than y, and the ratio of x to y is optimized for particular application constraints.

132. For example, on information and belief, the switch mode part circuitry including a buck converter has a higher output capability than that of the linear mode part circuitry in the amplifier. For example, on information and belief, the buck converter minimum power output is significantly more than that of the linear mode circuitry in the amplifier. On information and belief, the power output of the buck converter and the amplifier can be optimized for the constraints of a particular application, for example, through control of transistors that are configured to be turned on or off.

133. In each of the '366 Accused Products, the linear mode part exhibits a faster response time to a required change in output voltage than the switch mode part.

134. For example, on information and belief, the linear mode part circuitry in the amplifier exhibits a faster response time to a required change in output voltage than the switch mode part circuitry including a buck converter, based at least on differing circuit designs.

135. In each of the '366 Accused Products, the linear mode part compensates at least in part for load variations.

136. For example, on information and belief, the linear mode part circuitry in the amplifier, which is in parallel with the switch mode part circuitry, allows for compensation at least in part for load variations.

137. In each of the '366 Accused Products, the switch mode part is configured to be switchable between a slave mode controlled by the linear mode part and a master mode.

138. For example, on information and belief, the iPhone 6s with the QFE1100 envelope tracking chip has circuitry that enables the switch mode part circuitry including a buck converter to be switchable between receiving the envelope tracking inputs from the output of the linear mode part circuitry in the amplifier and receiving the envelop tracking inputs independently.

139. As described above, the ’366 Accused Products, including the iPhone 6s, infringe one or more claims of the ’366 patent, including claim 1.

140. All ’366 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’366 patent. Apple advertises the ability of the ’366 Accused Products to infringe the ’366 patent, at least by advertising the cellular connectivity capabilities of the ’366 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’366 Accused Products to use the ’366 Accused Products in a manner that infringes the ’366 patent, such as by making cellular telephone calls.

G. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’391 Patent.

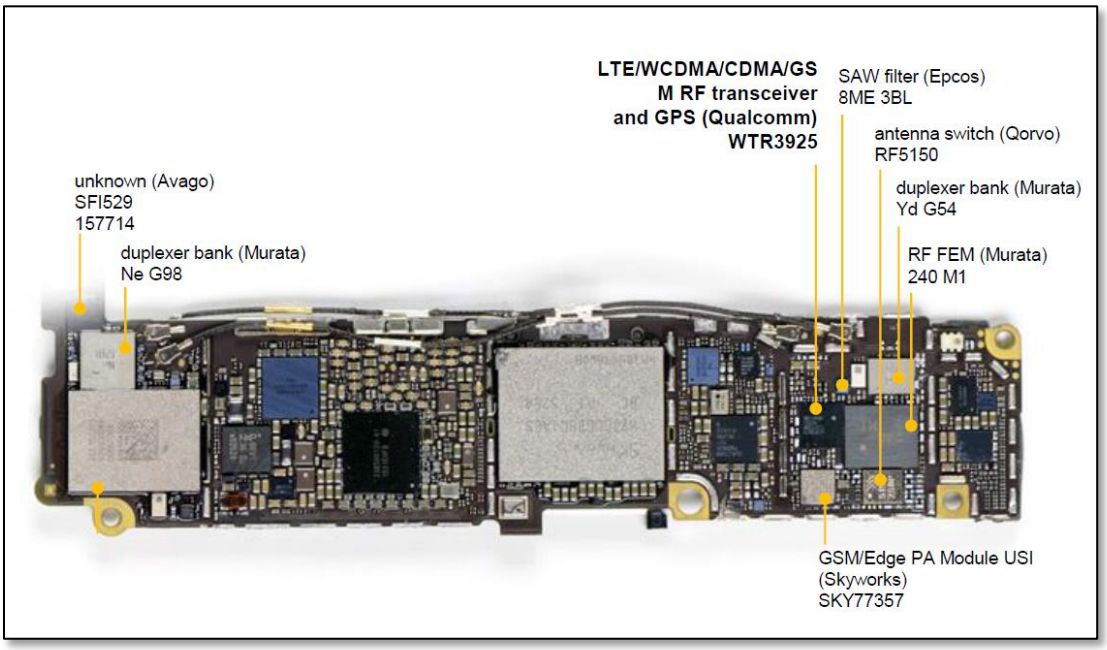
141. Apple’s infringing products and services at issue include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone SE, iPad Pro (LTE), iPad Air 2 (LTE), iPad Air (LTE), iPad Mini 4 (LTE), iPad Mini 3 (LTE), and iPad Mini 2 (LTE) (collectively, the “’391 Accused Products”).

142. The ’391 Accused Products infringe one or more claims of the ’391 patent. For example, as shown below, the Apple iPhone 6s infringes claim 19 of the ’391 patent.

143. Each of the ’391 Accused Products includes a radio communication system including a first subsystem and a second subsystem, wherein the first subsystem includes a

receiver operating at a first frequency range, and the second subsystem includes a transmitter operating at a second frequency range different from the first frequency range.

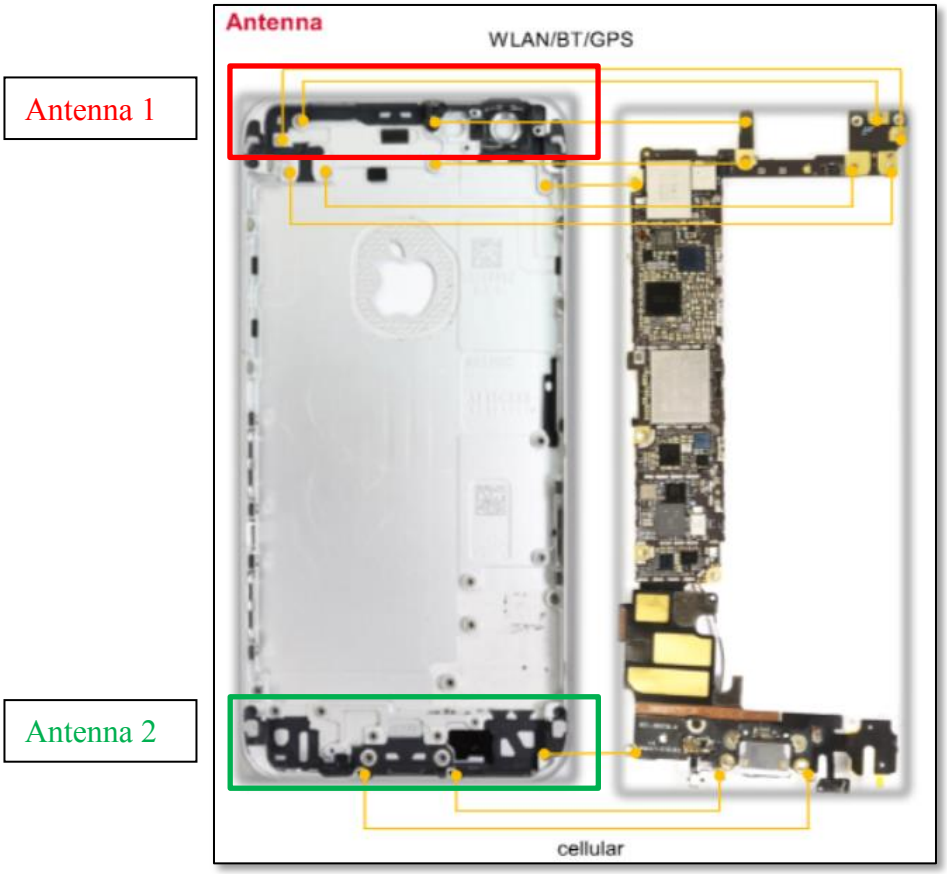
144. For example, the iPhone 6s contains a radio communication system that includes a Qualcomm WTR3925 radio frequency transceiver that supports LTE, WCDMA, CDMA, and GSM communication modes. The radio communication system comprises a first subsystem that includes at least one receiver in the Qualcomm WTR3925 transceiver that operates at a first frequency range. The radio communication system also comprises a second subsystem that includes at least one transmitter in the Qualcomm WTR3925 transceiver that operates at a second frequency range, which on information and belief is different from the first frequency range.



Source: Exhibit 11, at 25.

145. Each of the ’391 Accused Products includes a first antenna operatively connected to the receiver and optimally tuned for receiving signals in the first frequency range and conveying the received signals to the receiver when the system is used for reception.

146. For example, as shown below, the iPhone 6s includes a first antenna, *e.g.*, shown below in red outline ("Antenna 1"), which on information and belief is operatively connected to a receiver in the Qualcomm WTR3925 transceiver. On information and belief, Antenna 1 is optimally tuned for receiving signals in the first frequency range and conveying received signals to the receiver when the system is used for reception.



Source: Exhibit 11, at 51 (with annotations).

147. Each of the '391 Accused Products includes a second antenna operatively connected to the transmitter and optimally tuned to the second frequency for transmitting signals from the transmitter when the system is used for transmission.

148. For example, as shown above, the iPhone 6s includes a second antenna, *e.g.*, shown above in green outline ("Antenna 2"), which on information and belief is operatively

connected to a transmitter in the Qualcomm WTR3925 transceiver. On information and belief, Antenna 2 is optimally tuned for transmitting signals in the second frequency range from the transmitter in the WTR3925 RF transceiver when the system is used for transmission.

149. Each of the ’391 Accused Products includes a tuning mechanism, operatively connected to the second antenna for tuning the second antenna to a third frequency range substantially equal to the first frequency range when the system is used for reception, so that the second antenna also receives signals in the first frequency range.

150. For example, the iPhone 6s radio communication system is configured to transmit and receive at a variety of cellular frequencies, as shown below.

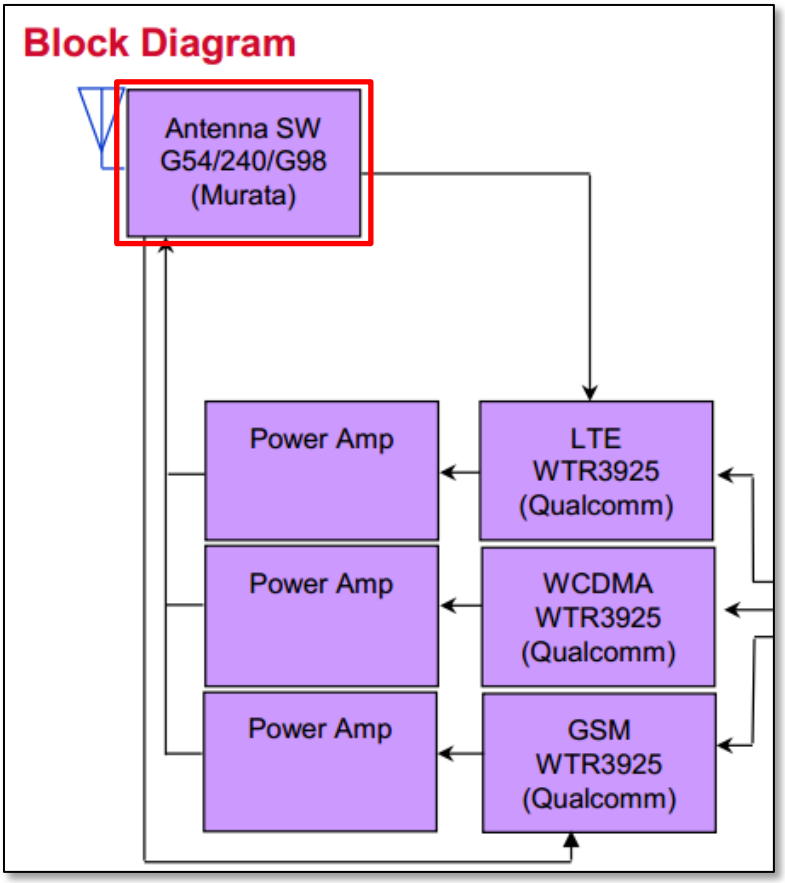
COMMUNICATION	Protocol (MHz)	3.9G: FDD-LTE: 700, 800, 850, 900, 1700, 1800, 1900, 2100. 2100, 2600 3.9G: TD-LTE: n/a 3G: WCDMA: 850, 900, 1700, 1900, 2100 3G: CDMA: 800, 1700, 1900, 2100 3G: TD-SCDMA: n/a 2G: GSM: 850, 900, 1800, 1900

Source: Exhibit 11, at 7.

151. On information and belief, the iPhone 6s radio communication system includes at least one antenna tuner that is operatively connected to the exemplary Antenna 2. Furthermore, on information and belief, the iPhone 6s implements the handover procedures specified in the 3GPP standards, including but not limited to the inter-frequency and inter-RAT mobility measurement procedures. For example, when the iPhone 6s implements inter-frequency cell measurement during a compressed mode frame or a measurement gap frame, the iPhone 6s is used for reception. On information and belief, when the iPhone 6s is used for reception, a combination of at least one antenna tuner and software tune Antenna 2 to a third frequency range substantially equal to the first frequency range so that Antenna 2 also receives signals in the first frequency range.

152. Each of the ’391 Accused Products includes means, operatively connected to the second antenna and the receiver, for conveying the signals in the first frequency range received by the second antenna to the receiver when the system is used for reception.

153. For example, the iPhone 6s radio communication system includes at least one Murata antenna switching component (*e.g.*, outlined in red below).



Source: Exhibit 11, at 57 (with annotations).

154. The exemplary Murata antenna switching component is operatively connected to Antenna 2 and the Qualcomm WTR3925 transceiver. On information and belief, a combination of software and the switching component(s) conveys the signals in the first frequency range received by Antenna 2 to the Qualcomm WTR3925 transceiver, for example, during a compressed mode frame or during a measurement gap frame.

155. As described above, the ’391 Accused Products, including the Apple iPhone 6s, infringe one or more claims of the ’391 patent, including claim 19.

156. All ’391 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’391 patent. Apple advertises the ability of the ’391 Accused Products to infringe the ’391 patent, at least by advertising the cellular connectivity capabilities of the ’391 Accused Products. Additionally, Apple provides instruction manuals that instruct users of the ’391 Accused Products to use the ’391 Accused Products in a manner that infringes the ’391 patent, such as by making cellular telephone calls.

H. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’602 Patent.

157. Apple’s infringing products and services include, but are not limited to, the Apple iPhone 7, iPhone 7 Plus, iPhone 6s, iPhone 6s Plus, iPhone 6, iPhone 6 Plus, iPhone 5s, iPhone SE, iPad Pro, iPad Pro (LTE), iPad Air 2, iPad Air 2 (LTE), iPad Air, iPad Air (LTE), iPad Mini 4, iPad Mini 4 (LTE), iPad Mini 3, iPad Mini 3 (LTE), iPad Mini 2, and iPad Mini 2 (LTE) (collectively, the “’602 Accused Products”).

158. The ’602 Accused Products infringe one or more claims of the ’602 patent. For example, as shown below, the Apple iPhone 6s infringes claim 1 of the ’602 patent.

159. Each of the ’602 Accused Products is a portable electronic device.

160. For example, the iPhone 6s is a portable electronic device.

161. Each of the ’602 Accused Products includes a one piece housing forming enclosed exterior lateral sides and a rear side.

162. For example, as shown below, the iPhone 6s has a one piece housing that forms enclosed exterior lateral sides (identified by the red arrows below) and a rear side (outlined in green below).

Source: Exhibit 11, at 13 (annotations added).

163. Each of the ’602 Accused Products includes a cut out in the rear side of said housing.

164. For example, the iPhone 6s includes a cut out in the rear of the housing, as shown in red outline below.

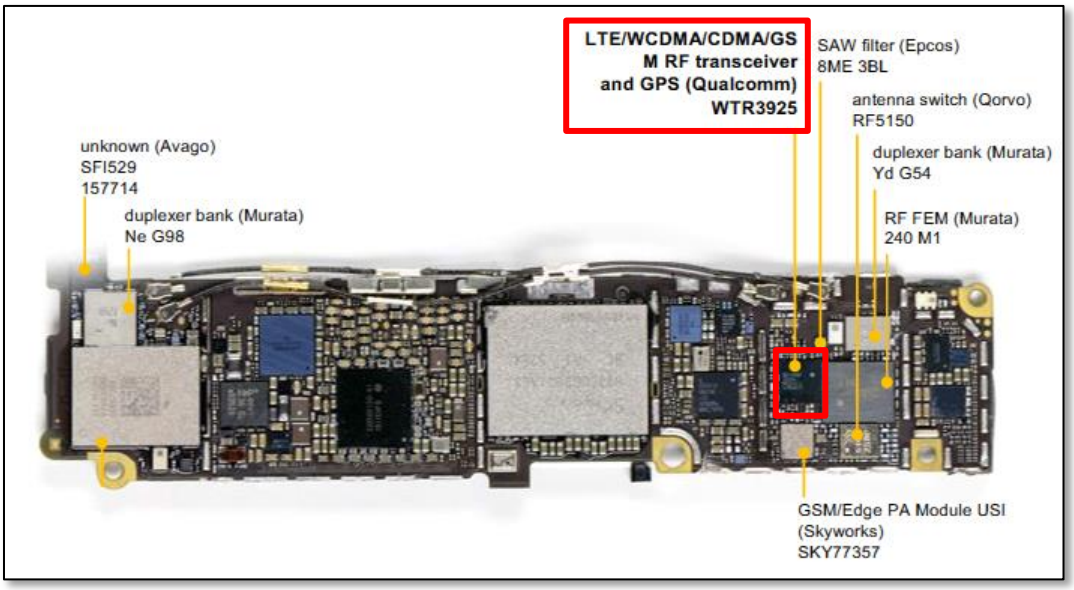
Source: Exhibit 11, at 13 (annotations added).

165. Each of the ’602 Accused Products includes a camera located in said housing and extending to said cut out at said rear side.

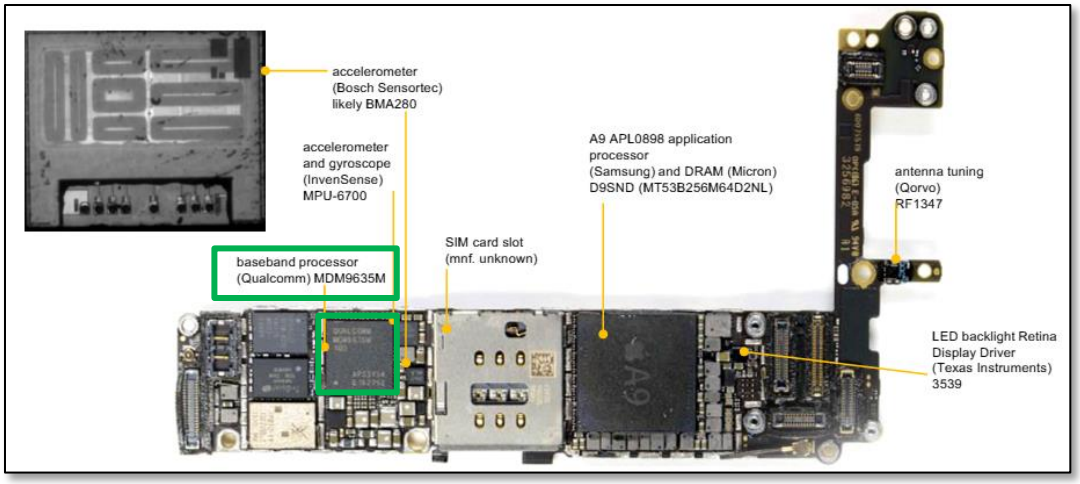
166. For example, in the iPhone 6s, a camera is located in the housing and extends to the cut out at the rear side of the housing, as shown above.

167. Each of the ’602 Accused Products includes an engine section comprising a printed circuit board, a transceiver, a processor and a memory.

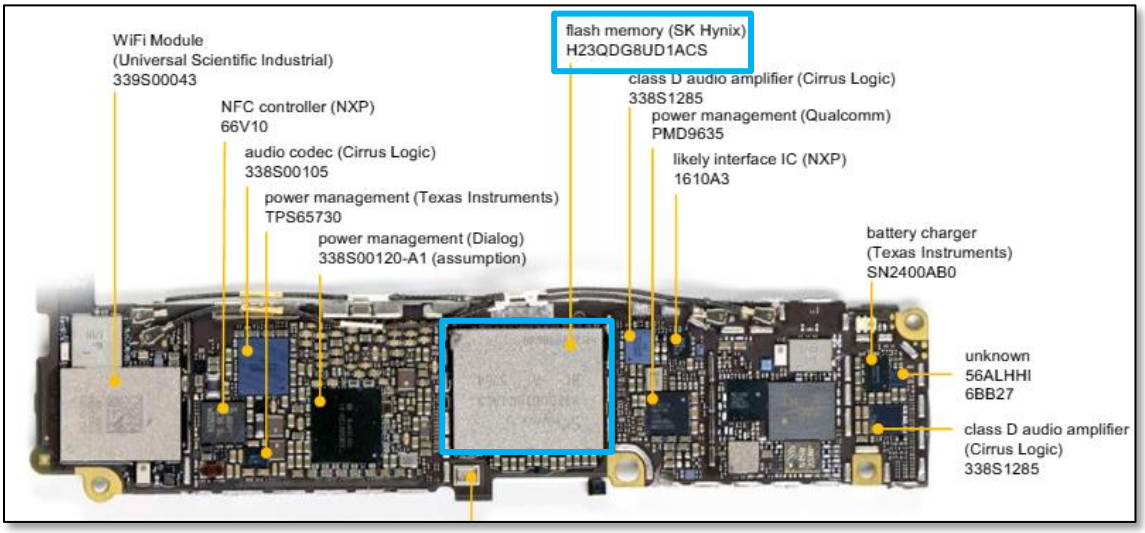
168. For example, the iPhone 6s contains an engine section comprising a printed circuit board. As shown below, the circuit board includes a transceiver (*e.g.*, WTR3925 (outlined in red)), a processor (*e.g.*, MDM9635M (outlined in green), and a memory (*e.g.*, SK Hynix flash memory (outlined in blue)).



Source: Exhibit 11, at 25 (with annotations for WTR3925 transceiver).



Source: Exhibit 11, at 24 (with annotations for MDM9635M baseband processor).



Source: Exhibit 11, at 28 (with annotations for flash memory).

169. Each of the ’602 Accused Products includes a user input section located above the engine section and a battery, wherein the user input section is located adjacent the battery and the engine section.

170. For example, the iPhone 6s has a touch display located above the engine section and a battery, wherein the touch display is located adjacent the battery and the engine section.

Removal of the touch display, as shown below, demonstrates that the battery (outlined in green) and the engine section (outlined in pink) are directly beneath and adjacent to the touch display.

Source: Exhibit 11, at 38 (with annotations).

171. In each of the ’602 Accused Products, the battery and engine section are housed in the housing and the user input is located in an opening between said exterior lateral sides of said one piece housing of the portable electronic device.

172. For example, in the iPhone 6s, the battery and engine section are located within the housing, as shown above. The user input of the iPhone 6s is located in an opening between the exterior lateral sides of the housing of the iPhone 6s, as shown below.

Source: Exhibit 11, at 6 (with annotations).

173. As described above, the ’602 Accused Products, including the Phone 6s, infringe one or more claims of the ’602 patent, including claim 1.

I. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the ’725 Patent.

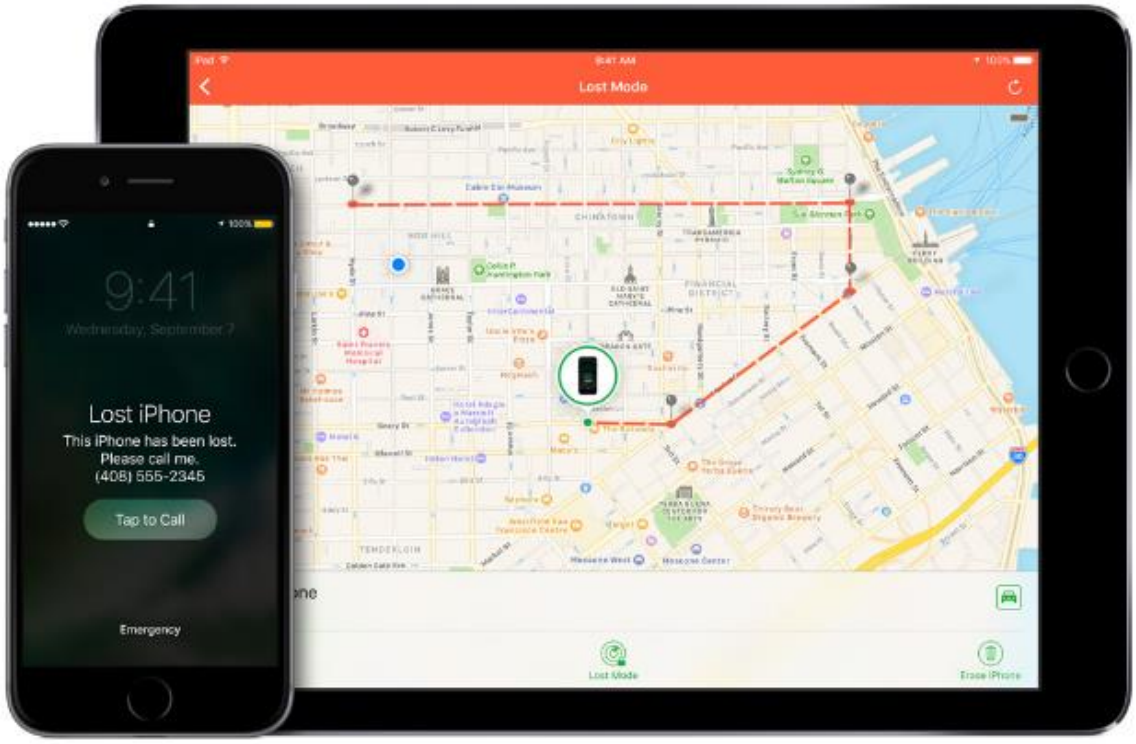
174. Apple’s products and services at issue include, but are not limited to, the Apple “Find My iPhone,” “Find My iPad,” and “Find My iPod” services, as implemented on Apple iCloud/MobileMe, and available on Apple products, including the iPhone 3GS, iPhone 4, iPhone 4s, iPhone 5, iPhone 5s, iPhone 5c, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone SE, iPhone 7, iPhone 7 Plus, iPad, iPad Air, iPad Air 2, iPad Mini, iPad Mini 2, iPad Mini 3, iPad Mini 4, iPad Pro, and iPod Touch (collectively, the “’725 Accused Products”).

175. The ’725 Accused Products infringe one or more claims of the ’725 patent. For example, as shown below, Apple’s “Find My iPhone” service infringes claim 8 of the ’725 patent.

176. The ’725 Accused Products practice a method of controlling the status of at least one of keys, buttons, and lamp displays of a telecommunications station comprising the steps of establishing a data connection from a controlling computer to a controlled computer. For example, when a user wishes to locate or lock a lost or stolen iPhone via the “Find My iPhone” service, the user logs into Apple’s iCloud from a controlling computer. When the user selects the “Find iPhone” icon, the controlling computer establishes a connection with Apple’s iCloud server.

Find My iPhone, iPad, and Mac

You take your devices everywhere. Which means you might leave them anywhere. Whether they're at the office in a conference room or under a pillow on your couch, with Find My iPhone, chances are they won't be lost for long.

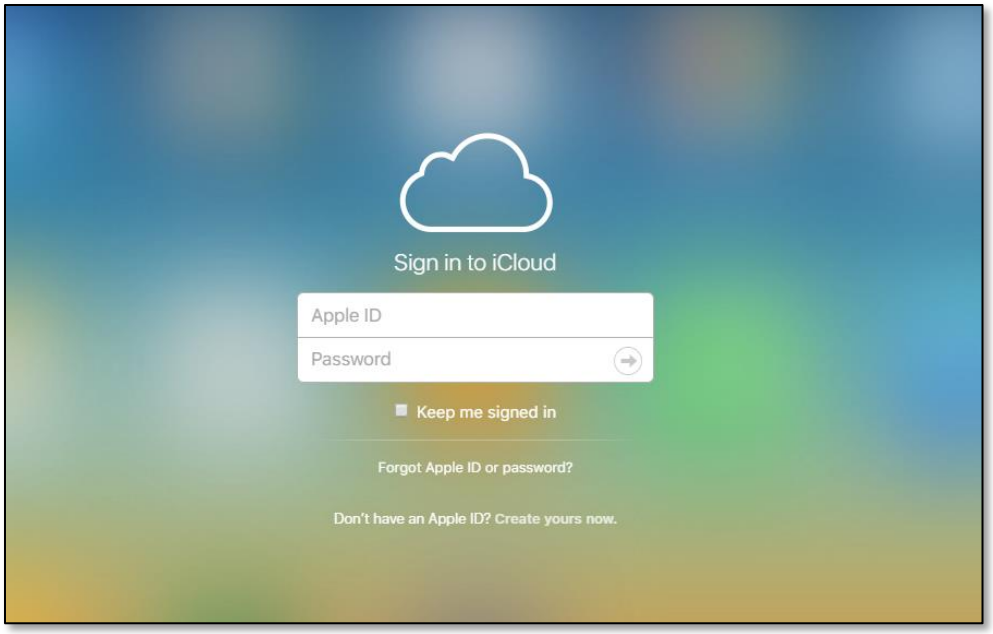


See what you're missing.

Don't panic. If one of your Apple devices goes missing, iCloud can help you figure out where it is. Just sign in at iCloud.com or use the Find My iPhone app to see your missing iPhone, iPad, iPod touch, or Mac on a map. And with the Lost Mode feature you don't just see where your device is, you can track where it's been. That way you can decide on your best course of action. You can immediately lock your device and send it a message with a contact number. Then whoever finds it can call you from the Lock screen without accessing the rest of the information on your device.

Lock Your Screen | Display a Message | Get Notified | Track Location

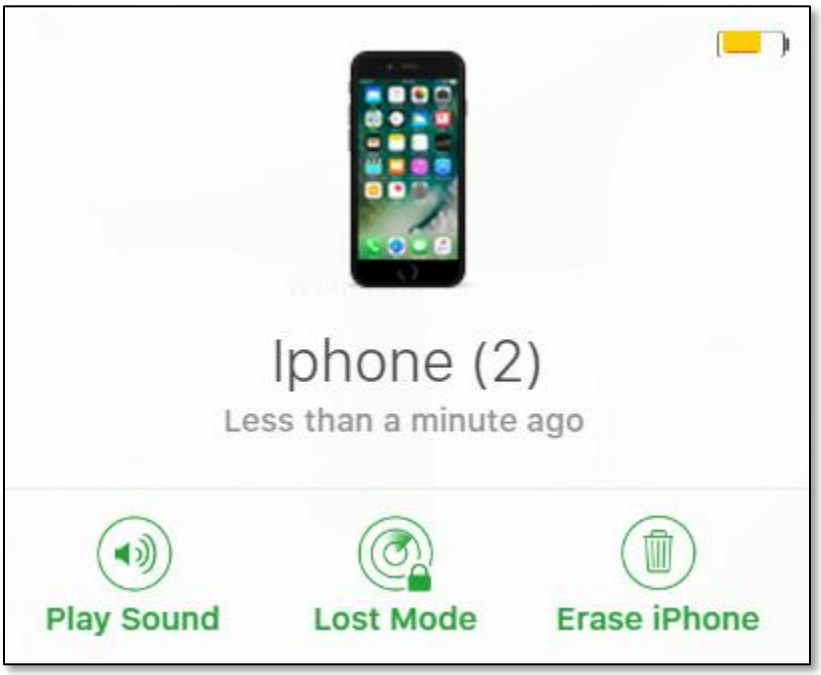
Source: http://www.apple.com/icloud/find-my-iphone.html



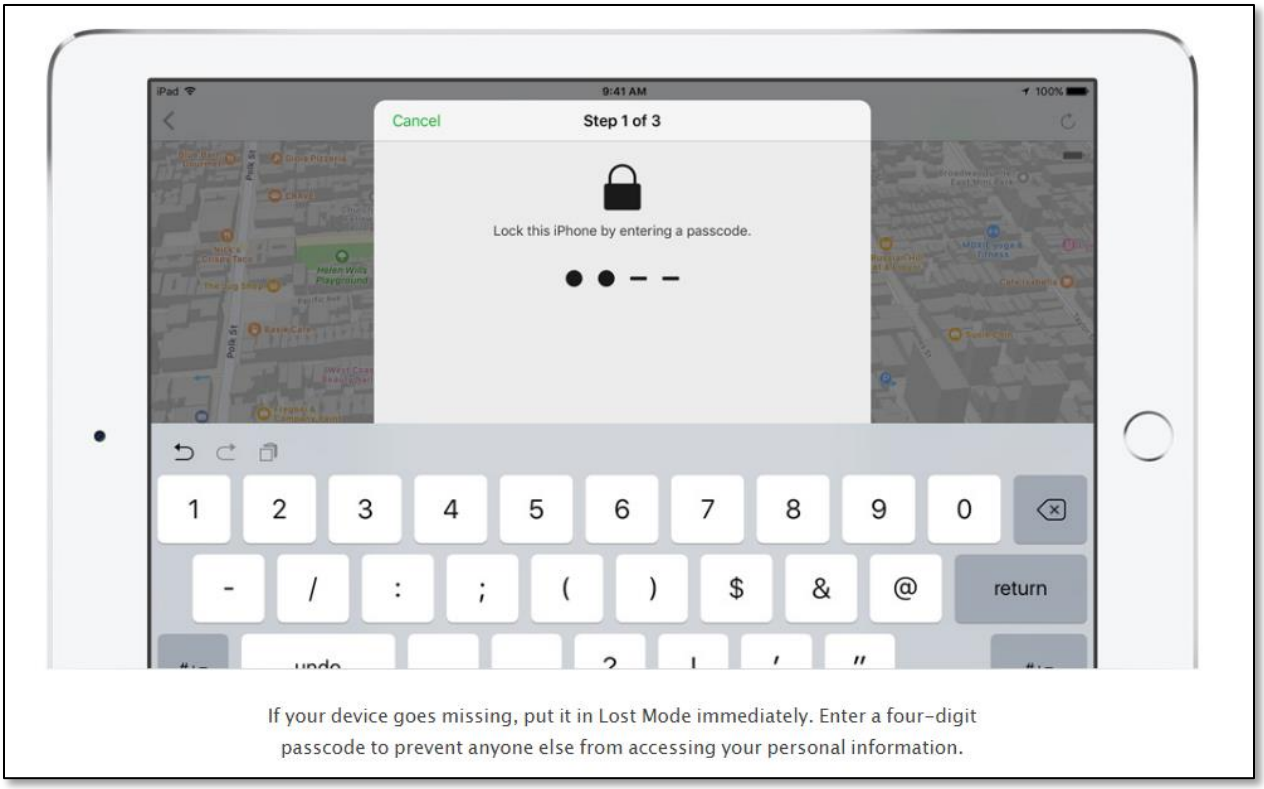
Source: https://www.icloud.com/

Source: https://www.icloud.com/

177. The ’725 Accused Products practice a method of controlling the status of at least one of keys, buttons, and lamp displays of a telecommunications station comprising the steps of: responsive to user command, transmitting status control information for controlling the status of at least one of keys, buttons, or lamp displays from said controlling computer to said controlled computer. For example, once in the “Find iPhone” menu, the user is presented with several options, such as “Lost Mode,” as can be seen below. As can further be seen below, “Lost Mode” controls the status of the iPhone’s keys and buttons by locking access to the iPhone. Responsive to the user’s selection, the “Find My iPhone” service transmits the status control information from the user’s computer, phone, or tablet to the iCloud server.



Source: “Find iPhone” Screen Capture



Source: http://www.apple.com/icloud/find-my-iphone.html

178. The ’725 Accused Products practice a method of controlling the status of at least one of keys, buttons, and lamp displays of a telecommunications station comprising the steps of: transmitting status control information from said controlled computer to said telecommunications station for controlling the status of at least one of keys, buttons and lamp displays of said telecommunications station. For example, as can be seen above, the Apple iCloud server transmits the “enter lost mode” command to the lost iPhone.

179. As described above, the ’725 Accused Products, including Apple’s “Find My iPhone” service, infringe one or more claims of the ’725 patent, including claim 8.

180. All of the ’725 Accused Products are pre-configured and sold by Apple with the ability to infringe the ’725 patent. Apple advertises the ability of the ’725 Accused Products to infringe the ’725 patent, at least by advertising the “Find My iPhone” feature, as seen above.

Additionally, Apple provides instruction manuals that instruct users of the '725 Accused Products to use the '725 Accused Products in a manner that infringes the '725 patent. For example, Apple provides the Apple iPhone User Guide which instructs users of '725 Accused Products to use "Find My iPhone" in an infringing manner, as shown below.

Find My iPhone

If you misplace your iPhone, Find My iPhone can help you locate it and protect your data. Use the Find My iPhone app on another iPhone, iPad, iPod touch, or Mac or the web app at www.icloud.com/find to locate your iPhone on a map, lock it remotely, play a sound, display a message, or erase all its data.

Note: For more information about Find My iPhone, please refer to the Help in the app.

Turn on Find My iPhone. Go to Settings > iCloud > Find My iPhone.

Important: To use these features, Find My iPhone must be turned on *before* your iPhone is lost. iPhone must be able to connect to the Internet for you to locate and secure the device. iPhone sends its last location prior to the battery running out when Send Last Location in Settings is turned on.

Use Find My iPhone. Open the Find iPhone app on an iOS device, or go to www.icloud.com/find on your computer. Sign in, then select your device.

- *Play Sound:* Play a sound at full volume for two minutes, even if the ringer is set to silent.
- *Lost Mode:* Immediately lock your missing iPhone with a passcode and display a custom message on the screen with a contact number. Find My iPhone tracks and reports the location of your iPhone, so you can see where it's been. When your iPhone is in Lost Mode, Find My iPhone attempts to suspend or remove the ability to pay with credit and debit cards used for Apple Pay (iPhone SE, iPhone 6, iPhone 6 Plus, and later). See Apple Pay.
- *Erase iPhone:* Protect your privacy by erasing all the information and media on your iPhone and restoring it to its original factory settings. Erasing iPhone also removes the ability to make payments using your credit and debit cards used for Apple Pay (iPhone SE, iPhone 6, iPhone 6 Plus, and later). See Apple Pay.

Source: http://help.apple.com/iphone/9/#/iph14a868ba

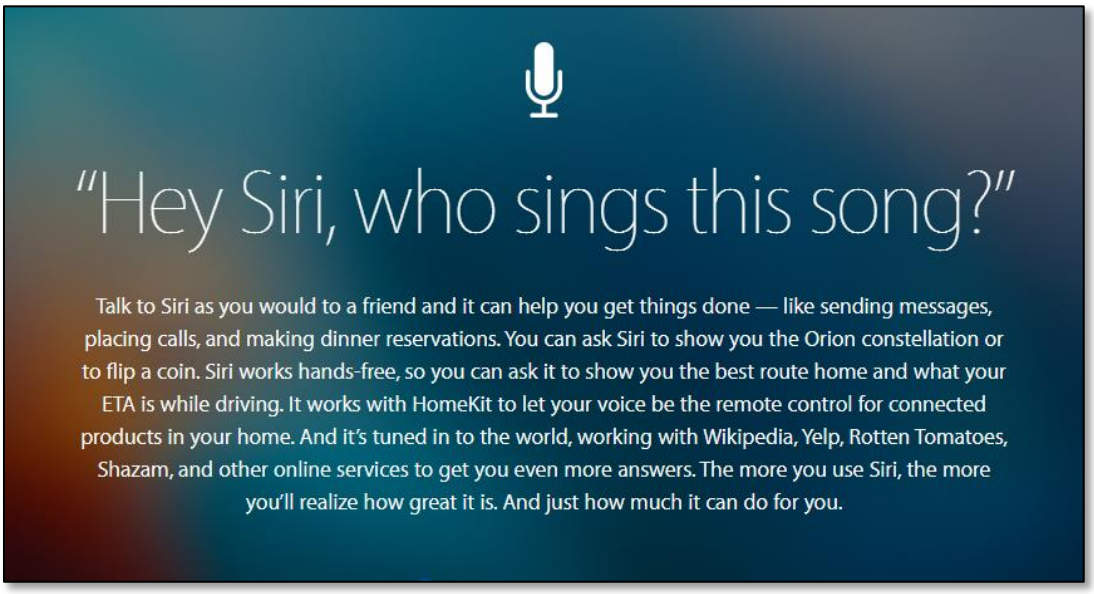
J. Apple Makes, Imports, Uses, Sells, and/or Offers for Sale Products and Services that Infringe the '294 Patent

181. Apple's products and services at issue include Apple's Siri intelligent personal assistant program, which is part of Apple's iOS, watchOS, and tvOS operating systems. The devices upon which Siri operates include, but are not limited to, the Apple iPhone 5, iPhone 5s, iPhone 5c, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, iPhone

SE, iPad, iPad Air, iPad Air 2, iPad Mini, iPad Mini 2, iPad Mini 3, iPad Mini 4, iPod Touch, Apple Watch, and Apple TV (collectively, the "'294 Accused Products").

182. The '294 Accused Products infringe the claims of the '294 patent. For example, as shown below, the Siri feature on Apple's iOS 10 infringes claim 7 of the '294 patent.

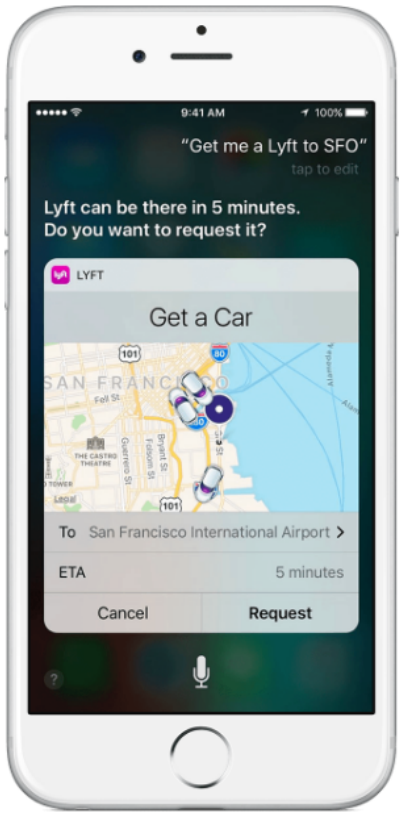
183. The '294 Accused Products are apparatuses for use in a user interface, together with a set of associated databases in which data may be represented as data tables with fields representing different classes of data. For example, Apple's Siri acts as an intelligent personal assistant in conjunction with the user interface (including touch display, microphone, and speaker) of Apple mobile devices, including the iPhone, iPad, and iPod Touch.



Source: http://www.apple.com/ios/siri/

Ask Siri a question

You can ask Siri to find directions, answer questions, send messages, and more. There are several ways to talk to Siri:



Use the Home button

Hold down the Home button until Siri opens, then say what you need.

If you have an iPhone 6s or later, or an iPad Pro (9.7-inch), you can say what you need as soon as you press the Home button. Siri listens while you press the Home button and responds even if Siri wasn't on the screen when you started.

Say, "Hey Siri"

You can use Siri without pressing the Home button. Just say "Hey Siri" and ask your question. For example, you can say "Hey Siri, how's the weather?"

If you have an iPhone 6s or later, or an iPad Pro (9.7-inch) you can use "Hey Siri" whenever you want. If you have an iPhone 6 or earlier, or another iPad or iPod touch model, you need to plug your device into power first. Learn more about "Hey Siri," like how to set up the feature.

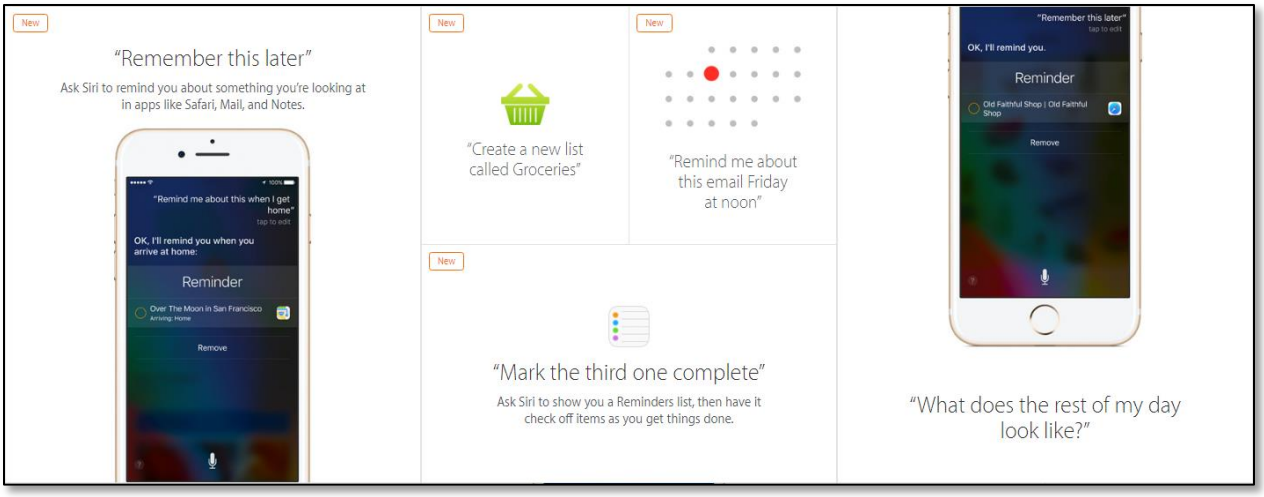
Talk to Siri with your headset

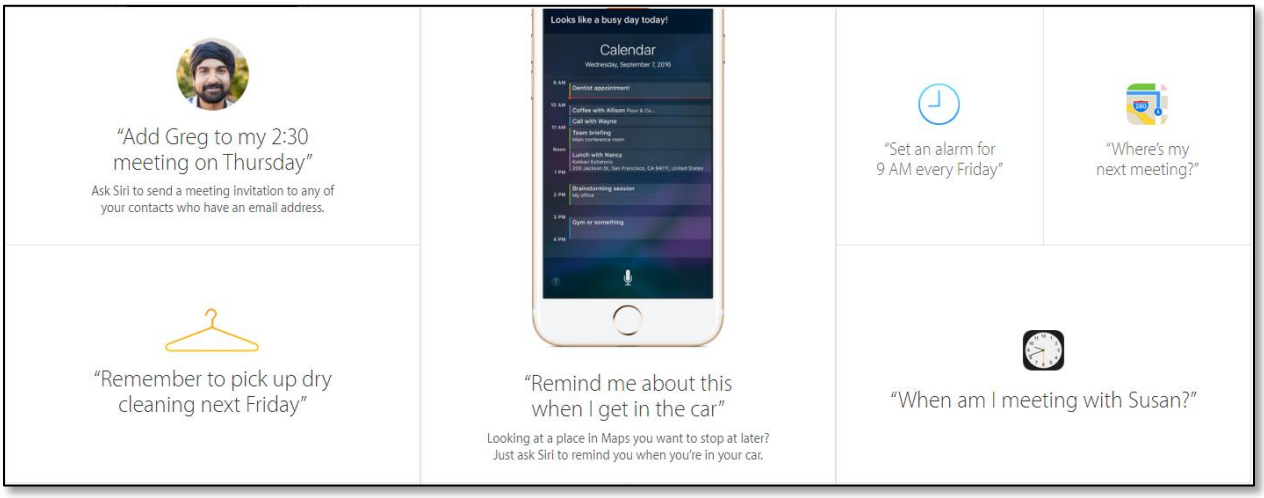
If you're using a headset that has a remote or another type of Bluetooth device, hold down the center button or call button until you hear a chime. Then say what you need.

If you have AirPods, double-tap the outside of either one to activate Siri.

Source: https://support.apple.com/en-us/HT204389

184. Siri is able to search and access data on the Web and web-based applications. It also interacts with user databases on the mobile phone, such as Music, Mail, Messages, Calendar, Reminders, Notes, and Contacts, for example.





Source: http://www.apple.com/ios/siri/

185. Siri often represents databases as a table in which different fields represent different classes of data. For example, as shown below, Siri provides the contact list as a table with different classes of data, such as phone number, email address, and mailing address data.

Source: http://www.apple.com/ios/siri/

186. The '294 Accused Products comprise a receiver for receiving a natural language user inquiry. For example, Siri provides a speaker-independent natural language interface that can accept text and other input methods. Additionally, when implemented on a mobile device such as an iPhone, the microphone on the mobile device receives the user inquiry. Additionally, as shown below, Siri receives a natural language user input via a microphone or user interface of the Apple device, such as the iPhone or iPad.

More Than Just Speech Recognition

Services like Siri are "natural language processing" apps that use statistical models to figure out what you probably meant to say when your pronunciation or word choice is garbled. Natural language programs can tell, for instance, that a sentence that sounds like "I like two sailboats around eBay" is probably "I like to sail boats around the bay."

This technology has been around for years. Every time you've "talked" to your bank's robotic bill paying system, you've been using natural language processing (though at many banks, the language processing has been pretty bad in the past).

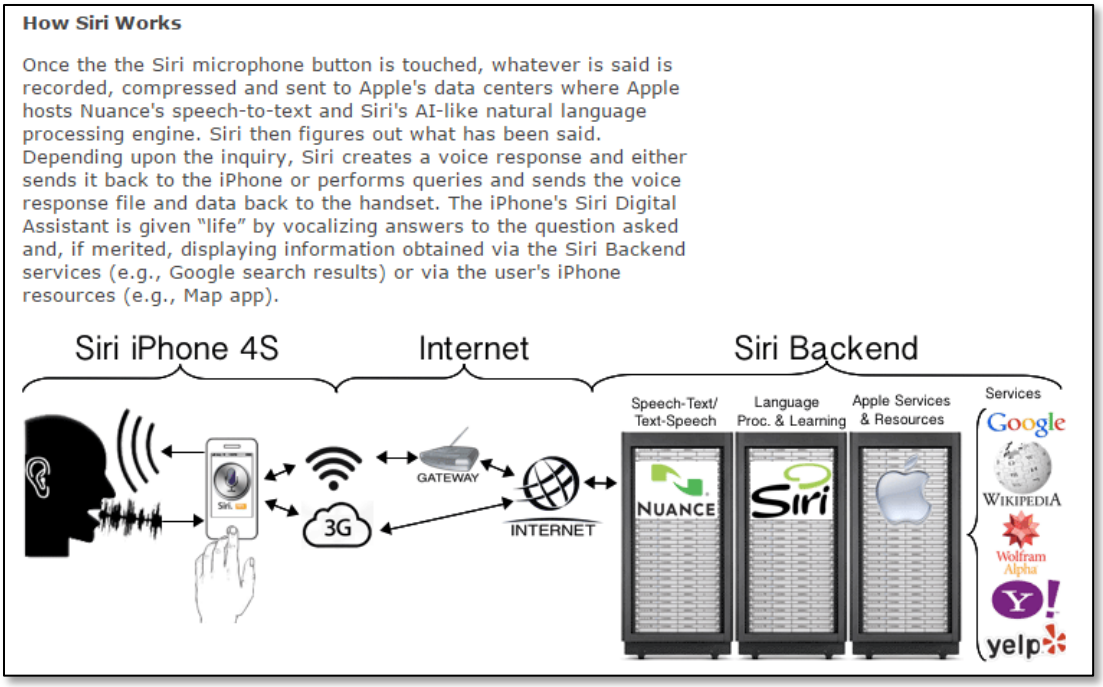
Android phones have used cloud-based language processing for years. But Google's Voice Actions app, for instance, requires you to use a limited set of commands such as "listen to..." or "note to self..." to initiate a communication.

Siri uses a combination of artificial intelligence and its continually growing knowledge of you to understand not only what you say, but what you mean. As a result, you can ask for things in many different ways. Because Siri is tied into your iPhone 4S, it knows where you are and who you contact most often. That context helps it understand what you mean when you say "Find me a cab near here" or "Call my mother." Siri doesn't respond only to "Call Mark Smith"; it will also respond correctly to "call my best friend" or "I want to talk to Mark."

Source: http://www.pcworld.com/article/242479/what_makes_siri_special_.html

187. The ’294 Accused Products comprise a first translator unit for translating said natural language inquiry to one or more database queries to be made.

188. For example, Siri communicates with backend servers to first convert the spoken inquiry into text, and then translates the natural-language text into queries of the Apple services, web searches, or queries, as described above and as shown below.



Source: http://www.venturewerks.com/blog-siriprimer.html

189. The '294 Accused Products comprise a first translator unit, said first translator including a first apparatus using knowledge of semantics of fields of one or more prescribed databases of said set of associated databases, knowledge about information visualization technology, and knowledge about a relationship of information visualization to the semantics of the fields of one or more prescribed databases and being adapted to determine whether a set of complete database queries can be formulated. Siri's natural language processing server converts the user query, previously converted to text form, into a task model that maps the user input into queries for the desired services. Siri also determines whether a task model can be created for a given user input.

> **2.5.2 Use cases supported by SIRI**
> SIRI's approach to personal assistant is to convert user requests first into text, and then convert this text into a task model while using the contextual information. And it uses the task model to map input into API queries to the web services. In order for SIRI to respond to a query, it needs a task model and this also enables SIRI extensibility via new task models. Task models are coded into the software during development, and identify actions with set of web services capable of servicing the request. It's a specialized model that understands a specific task and how to execute it. Supporting new task entails creation of new task models during software development time, and then attaching to sequence of steps to complete that task.

Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf

190. Additionally, Siri uses contextual models to determine how best to obtain requested information, and that application and/or database used to obtain that information. Those applications have appropriate information visualization capabilities built into them. Siri then combines the application visualization with the semantics of the data to display the results in the most appropriate manner.

> With Siri, there are no *pre-defined* ways of requesting Siri do something or answer a question—it simply understands what a user wants to do. Importantly, Siri not only understands spoken words, it understands context. Understanding context requires deciphering natural language and then adroitly accessing the resources at Siri's disposal to perform tasks or correctly answer basic or even certain complex questions.

Source: http://www.abaltatech.com/files/2015/05/Siri_-_A_Primer_-_Abalta_Technologies.pdf

> Once SIRI identifies the task to be performed, output of the task could be in the form of information gathered by calling a web service or automating a task such as setting up a reminder or creating a new meeting invite. SIRI then maps this output to user consumable form.

Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf

191. The ’294 Accused Products comprise a first translator unit, said first translator including a specifier unit, said specifier unit using knowledge of the semantics of the fields of said one or more prescribed databases, knowledge about information visualization technology, and knowledge about the relationship of information visualization to the semantics of the fields of said one or more prescribed databases, and being responsive to an indication from said first apparatus that a set of complete database inquiries can be formulated, for specifying one or more database queries to be made. For example, the Accused Products include a set of task models coded into the Siri software that determine the appropriate database and application to access based on the user query which was generated by the natural language translation and semantic processing.

192. The ’294 Accused Products comprise an evaluator unit for evaluating results of said translating and knowledge of the semantics of the fields of said one or more prescribed databases, knowledge about information visualization technology, and knowledge about the relationship of information visualization to the semantics of the fields of said one or more prescribed databases to determine if at least one prescribed database query has resulted. For example, Siri’s “Dialog Flow Processor” performs the function of the evaluator unit. It determines whether a task model can be generated or if additional information is needed from the user.

> *Dialog Flow Processor*
> Dialog flow processor embeds itself within each of the user inputs and disambiguation phases while SIRI is trying to map user request to web service calls to external applications or internal iOS applications. This module enables the agent to keep the context of the question in mind, and ask the user questions in order to gather any incomplete information to complete the task.

Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf

193. The ’294 Accused Products comprise an interrogator unit for querying said one or more prescribed databases. For example, embedded in each task model within Siri is the capability of generating API queries used to interrogate the appropriate web service or data resource, as can be seen in the excerpt below.

> **2.5.2 Use cases supported by SIRI**
> SIRI's approach to personal assistant is to convert user requests first into text, and then convert this text into a task model while using the contextual information. And it uses the task model to map input into API queries to the web services. In order for SIRI to respond to a query, it needs a task model and this also enables SIRI extensibility via new task models. Task models are coded into the software during development, and identify actions with set of web services capable of servicing the request. It's a specialized model that understands a specific task and how to execute it. Supporting new task entails creation of new task models during software development time, and then attaching to sequence of steps to complete that task.

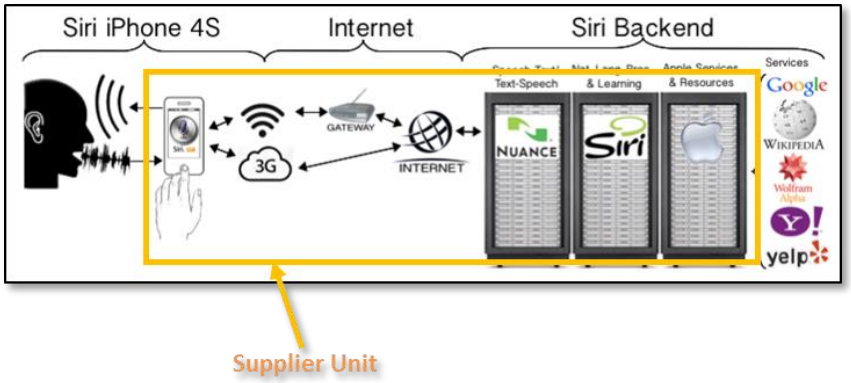
Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf (annotation added).

194. The ’294 Accused Products comprise a formulator unit, responsive to results including retrieved data of said prescribed database query from said one or more prescribed databases, employing knowledge of the semantics of the retrieved data, knowledge of the semantics of the fields of said one or more prescribed databases populated by the retrieved data, knowledge about information visualization technology, and knowledge about the relationship of information visualization to the semantics of the fields of said one or more prescribed databases for formulating information to be supplied to said user. For example, the data model within Siri’s task flow formulates the results of the web service or user database query and binds those results with the other relevant information and knowledge related to the task in responding to the user query.

> Task Flow models define the workflow for an identified task. These models define set of dependencies for the task, preconditions, task decomposition, and the post conditions. Specializations of Task model implement specific task such as Dining out domain model shown in the figure 2-3. This model enables the agent to plan for the task as well as collect all the relevant information for a given sub task at the time it's required. These models explicitly bind with the web services that can be used to complete the task. This binding of web service is done at the design time, so the agent at execution time knows before hand on set of web services it will be interacting with for a particular task.
>
> Each model maintains a data model that contains data required to accomplish the task as well as the relationships and constraints between the data elements. This data is then used to map to the web services called and the response from the web service is fed back into the data model and converted into user-friendly form for displaying to the user.

Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf (annotations added).

195. The '294 Accused Products comprise a supplier unit to supply said formulated information to be presented to said user, said supplier including a second apparatus, responsive to the query and employing knowledge of semantics of the retrieved data, knowledge of the semantics of the fields of said one or more prescribed databases populated by the retrieved data, knowledge about information visualization technology, and knowledge about the relationship of information visualization to the semantics of the fields of said one or more prescribed databases to determine one or more presentation formats and a presenter unit adapted to present said formulated information to the user in said determined one or more presentation formats using one or more presentation modes. For example, the Siri program, including the Apple device, wireless connections, and backend servers, delivers the requested information to the user. Siri determines the appropriate format in which to present the results.



Source: http://www.venturewerks.com/blog-siriprimer.html (annotations added).

> Each model maintains a data model that contains data required to accomplish the task as well as the relationships and constraints between the data elements. This data is then used to map to the web services called and the response from the web service is fed back into the data model and converted into user-friendly form for displaying to the user.

Source: http://web.mit.edu/smadnick/www/wp/2013-11.pdf (annotations added).

196. Additionally, Siri comprises a presenter unit. For example, the user device upon which Siri is installed (such as an iPhone or iPad) may present the resulting formulated information as a visual display or an audio response.

Source: http://www.apple.com/ios/siri/

197. As described above, the '294 Accused Products, including Apple's Siri program, infringe the claims of the '294 patent, including claim 7.

198. All of the '294 Accused Products are pre-configured and sold by Apple with the ability to infringe the '294 patent. Apple advertises the ability of the '294 Accused Products to infringe the '294 patent, at least by advertising Apple's Siri feature. *See* http://www.apple.com/ios/siri/. Additionally, Apple provides instruction manuals that instruct

users of the ’294 Accused Products to use the ’294 Accused Products in a manner that infringes the ’294 patent. For example, Apple provides the Apple iPhone User Guide which instructs end-users to enable and operate Siri in a manner that infringes the ’294 patent. *See* http://help.apple.com/iphone/9/#/iph83aad8922.

COUNT I: PATENT INFRINGEMENT OF THE ’247 PATENT

199. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

200. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’247 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’247 patent including, but not limited to, at least the ’247 Accused Products. The accused devices that infringe one or more claims of the ’247 patent include, but are not limited to, at least the ’247 Accused Products.

201. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’247 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’247 Accused Products and/or related services using the ’247 Accused Products.

202. The ’247 Accused Products directly infringe one or more claims of the ’247 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’247 patent.

203. Apple has had knowledge and notice of the ’247 patent and its infringement thereof since at least March 3, 2015, when Nokia sent a letter to Apple concerning such allegations. Apple has been involved in licensing discussions with Nokia regarding Nokia’s

patent portfolio, which includes the ’247 patent. Apple has also received actual notice of the ’247 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

204. Apple indirectly infringes the ’247 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’247 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’247 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’247 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, online documentation, developer information, and API documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’247 Accused Products in the way Apple intends and directly infringe the ’247 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’247 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’247 patent.

205. Apple also indirectly infringes the ’247 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’247 Accused Products and causing the ’247 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’247 Accused Products, such that the ’247 patent is directly infringed. The accused components within the ’247 Accused Products are material to

the invention of the ’247 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’247 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’247 patent and with intent, or willful blindness, that they cause the direct infringement of the ’247 patent.

206. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’247 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

207. Apple’s infringement of the ’247 patent has damaged and will continue to damage Nokia.

COUNT II: PATENT INFRINGEMENT OF THE ’301 PATENT

208. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

209. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’301 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’301 patent including, but not limited to, at least the ’301 Accused Products. The accused devices that infringe one or more claims of the ’301 patent include, but are not limited to, at least the ’301 Accused Products.

210. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’301 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’301 Accused Products and/or related services using the ’301 Accused Products.

211. The ’301 Accused Products directly infringe one or more claims of the ’301 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’301 patent.

212. Apple has had knowledge of the ’301 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia’s patent portfolio, which includes the ’301 patent. Apple has also received actual notice of the ’301 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

213. Apple indirectly infringes the ’301 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’301 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’301 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’301 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’301 Accused Products in the way Apple intends and directly infringe the ’301 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’301 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’301 patent.

214. Apple also indirectly infringes the ’301 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering

to sell, in this District and elsewhere in the United States, the ’301 Accused Products and causing the ’301 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’301 Accused Products, such that the ’301 patent is directly infringed. The accused components within the ’301 Accused Products are material to the invention of the ’301 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’301 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’301 patent and with intent, or willful blindness, that they cause the direct infringement of the ’301 patent.

215. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’301 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

216. Apple’s infringement of the ’301 patent has damaged and will continue to damage Nokia.

COUNT III: PATENT INFRINGEMENT OF THE ’619 PATENT

217. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

218. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’619 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’619 patent including, but not limited to, at least the ’619 Accused Products. The accused devices that infringe one or more claims of the ’619 patent include, but are not limited to, at least the ’619 Accused Products.

219. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’619 patent by way of inducement and/or contributory infringement, literally and/or

under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the '619 Accused Products and/or related services using the '619 Accused Products.

220. The '619 Accused Products directly infringe one or more claims of the '619 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the '619 patent.

221. Apple has had knowledge of the '619 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia's patent portfolio, which includes the '619 patent. Apple has also received actual notice of the '619 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

222. Apple indirectly infringes the '619 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple's customers and end-users, in this District and elsewhere in the United States. For example, Apple's customers and end-users directly infringe through their use of the inventions claimed in the '619 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the '619 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the '619 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple's inducement, Apple's customers and end-users use the '619 Accused Products in the way Apple intends and directly infringe the '619 patent. Apple has performed and continues to perform these affirmative

acts with knowledge of the ’619 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’619 patent.

223. Apple also indirectly infringes the ’619 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’619 Accused Products and causing the ’619 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’619 Accused Products, such that the ’619 patent is directly infringed. The accused components within the ’619 Accused Products are material to the invention of the ’619 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’619 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’619 patent and with intent, or willful blindness, that they cause the direct infringement of the ’619 patent.

224. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’619 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

225. Apple’s infringement of the ’619 patent has damaged and will continue to damage Nokia.

COUNT IV: PATENT INFRINGEMENT OF THE ’260 PATENT

226. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

227. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’260 patent by making, using, selling, offering for sale, and/or importing into the United

States products and/or methods covered by one or more claims of the ’260 patent including, but not limited to, at least the ’260 Accused Products. The accused devices that infringe one or more claims of the ’260 patent include, but are not limited to, at least the ’260 Accused Products.

228. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’260 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’260 Accused Products and/or related services using the ’260 Accused Products.

229. The ’260 Accused Products directly infringe one or more claims of the ’260 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’260 patent.

230. Apple has had knowledge and notice of the ’260 patent and its infringement thereof since at least March 3, 2015, when Nokia sent a letter to Apple concerning such allegations. Apple has been involved in licensing discussions with Nokia regarding Nokia’s patent portfolio, which includes the ’260 patent. Apple has also received actual notice of the ’260 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

231. Apple indirectly infringes the ’260 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’260 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise

making available the ’260 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’260 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’260 Accused Products in the way Apple intends and directly infringe the ’260 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’260 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’260 patent.

232. Apple also indirectly infringes the ’260 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’260 Accused Products and causing the ’260 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’260 Accused Products, such that the ’260 patent is directly infringed. The accused components within the ’260 Accused Products are material to the invention of the ’260 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’260 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’260 patent and with intent, or willful blindness, that they cause the direct infringement of the ’260 patent.

233. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’260 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

234. Apple's infringement of the '260 patent has damaged and will continue to damage Nokia.

COUNT V: PATENT INFRINGEMENT OF THE '700 PATENT

235. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

236. Apple infringes, contributes to the infringement of, and/or induces infringement of the '700 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the '700 patent including, but not limited to, at least the '700 Accused Products. The accused devices that infringe one or more claims of the '700 patent include, but are not limited to, at least the '700 Accused Products.

237. Apple has been and is now directly infringing and/or indirectly infringing the claims of the '700 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the '700 Accused Products and/or related services using the '700 Accused Products.

238. The '700 Accused Products directly infringe one or more claims of the '700 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the '700 patent.

239. Apple has had knowledge of the '700 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia's patent portfolio, which includes the '700 patent. Apple has also received actual notice of the '700 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

240. Apple indirectly infringes the ’700 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’700 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’700 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’700 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’700 Accused Products in the way Apple intends and directly infringe the ’700 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’700 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’700 patent.

241. Apple also indirectly infringes the ’700 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’700 Accused Products and causing the ’700 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’700 Accused Products, such that the ’700 patent is directly infringed. The accused components within the ’700 Accused Products are material to the invention of the ’700 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’700 patent. Apple has performed and continues to

perform these affirmative acts with knowledge of the ’700 patent and with intent, or willful blindness, that they cause the direct infringement of the ’700 patent.

242. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’700 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

243. Apple’s infringement of the ’700 patent has damaged and will continue to damage Nokia.

COUNT VI: PATENT INFRINGEMENT OF THE ’366 PATENT

244. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

245. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’366 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’366 patent including, but not limited to, at least the ’366 Accused Products. The accused devices that infringe one or more claims of the ’366 patent include, but are not limited to, at least the ’366 Accused Products.

246. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’366 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’366 Accused Products and/or related services using the ’366 Accused Products.

247. The ’366 Accused Products directly infringe one or more claims of the ’366 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’366 patent.

248. Apple has had knowledge of the ’366 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia’s patent portfolio, which includes the ’366 patent. Apple has also received actual notice of the ’366 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

249. Apple indirectly infringes the ’366 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’366 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’366 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’366 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’366 Accused Products in the way Apple intends and directly infringe the ’366 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’366 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’366 patent.

250. Apple also indirectly infringes the ’366 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’366 Accused Products and causing the ’366 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’366 Accused Products, such that the ’366 patent is

directly infringed. The accused components within the ’366 Accused Products are material to the invention of the ’366 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’366 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’366 patent and with intent, or willful blindness, that they cause the direct infringement of the ’366 patent.

251. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’366 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

252. Apple’s infringement of the ’366 patent has damaged and will continue to damage Nokia.

COUNT VII: PATENT INFRINGEMENT OF THE ’391 PATENT

253. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

254. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’391 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’391 patent including, but not limited to, at least the ’391 Accused Products. The accused devices that infringe one or more claims of the ’391 patent include, but are not limited to, at least the ’391 Accused Products.

255. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’391 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United

States, and/or exporting infringing products, namely the ’391 Accused Products and/or related services using the ’391 Accused Products.

256. The ’391 Accused Products directly infringe one or more claims of the ’391 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’391 patent.

257. Apple has had knowledge of the ’391 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia’s patent portfolio, which includes the ’391 patent. Apple has also received actual notice of the ’391 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

258. Apple indirectly infringes the ’391 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’391 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’391 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’391 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’391 Accused Products in the way Apple intends and directly infringe the ’391 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’391 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’391 patent.

259. Apple also indirectly infringes the ’391 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’391 Accused Products and causing the ’391 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’391 Accused Products, such that the ’391 patent is directly infringed. The accused components within the ’391 Accused Products are material to the invention of the ’391 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’391 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’391 patent and with intent, or willful blindness, that they cause the direct infringement of the ’391 patent.

260. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’391 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

261. Apple’s infringement of the ’391 patent has damaged and will continue to damage Nokia.

COUNT VIII: PATENT INFRINGEMENT OF THE ’602 PATENT

262. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

263. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’602 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’602 patent including, but

not limited to, at least the ’602 Accused Products. The accused devices that infringe one or more claims of the ’602 patent include, but are not limited to, at least the ’602 Accused Products.

264. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’602 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’602 Accused Products and/or related services using the ’602 Accused Products.

265. The ’602 Accused Products directly infringe one or more claims of the ’602 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’602 patent.

266. Apple has had knowledge of the ’602 patent. Apple has been involved in licensing discussions with Nokia regarding Nokia’s patent portfolio, which includes the ’602 patent. Apple has also received actual notice of the ’602 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

267. Apple indirectly infringes the ’602 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’602 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’602 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’602 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing,

product manuals, advertisements, and online documentation. As a result of Apple's inducement, Apple's customers and end-users use the '602 Accused Products in the way Apple intends and directly infringe the '602 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the '602 patent and with the intent, or willful blindness, that the induced acts directly infringe the '602 patent.

268. Apple also indirectly infringes the '602 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple's affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the '602 Accused Products and causing the '602 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers' and end-users' use of the '602 Accused Products, such that the '602 patent is directly infringed. The accused components within the '602 Accused Products are material to the invention of the '602 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the '602 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the '602 patent and with intent, or willful blindness, that they cause the direct infringement of the '602 patent.

269. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the '602 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

270. Apple's infringement of the '602 patent has damaged and will continue to damage Nokia.

COUNT IX: PATENT INFRINGEMENT OF THE '725 PATENT

271. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

272. Apple infringes, contributes to the infringement of, and/or induces infringement of the '725 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the '725 patent including, but not limited to, at least the '725 Accused Products. The accused devices that infringe one or more claims of the '725 patent include, but are not limited to, at least the '725 Accused Products.

273. Apple has been and is now directly infringing and/or indirectly infringing the claims of the '725 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the '725 Accused Products and/or related services using the '725 Accused Products.

274. The '725 Accused Products directly infringe one or more claims of the '725 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the '725 patent.

275. Apple has had knowledge of the '725 patent. Apple has also received actual notice of the '725 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

276. Apple indirectly infringes the '725 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple's customers and end-users, in this District and elsewhere in the United States. For example, Apple's customers and end-users directly infringe through their use of the inventions claimed in the '725 patent. Apple induces this direct

infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’725 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’725 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’725 Accused Products in the way Apple intends and directly infringe the ’725 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’725 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’725 patent.

277. Apple also indirectly infringes the ’725 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’725 Accused Products and causing the ’725 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’725 Accused Products, such that the ’725 patent is directly infringed. The accused components within the ’725 Accused Products are material to the invention of the ’725 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’725 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’725 patent and with intent, or willful blindness, that they cause the direct infringement of the ’725 patent.

278. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’725 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

279. Apple’s infringement of the ’725 patent has damaged and will continue to damage Nokia.

COUNT X: PATENT INFRINGEMENT OF THE ’294 PATENT

280. Nokia incorporates by reference the preceding paragraphs as though fully set forth herein.

281. Apple infringes, contributes to the infringement of, and/or induces infringement of the ’294 patent by making, using, selling, offering for sale, and/or importing into the United States products and/or methods covered by one or more claims of the ’294 patent including, but not limited to, at least the ’294 Accused Products. The accused devices that infringe one or more claims of the ’294 patent include, but are not limited to, at least the ’294 Accused Products.

282. Apple has been and is now directly infringing and/or indirectly infringing the claims of the ’294 patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by making, using, testing, selling, consigning, importing into the United States, distributing within the United States, and/or exporting infringing products, namely the ’294 Accused Products and/or related services using the ’294 Accused Products.

283. The ’294 Accused Products directly infringe one or more claims of the ’294 patent. Apple makes, uses, sells, offers for sale, and/or imports, in this District and elsewhere in the United States, these devices and thus directly infringes the ’294 patent.

284. Apple has had knowledge of the ’294 patent. Apple has also received actual notice of the ’294 patent as of the date this lawsuit was filed and/or the date this Original Complaint was served upon Apple.

285. Apple indirectly infringes the ’294 patent, as provided in 35 U.S.C. § 271(b), by inducing infringement by others, such as Apple’s customers and end-users, in this District and elsewhere in the United States. For example, Apple’s customers and end-users directly infringe through their use of the inventions claimed in the ’294 patent. Apple induces this direct infringement through its affirmative acts of manufacturing, selling, distributing, and/or otherwise making available the ’294 Accused Products, and providing instructions, documentation, and other information to customers and end-users suggesting they use the ’294 Accused Products in an infringing manner, including in-store technical support, online technical support, marketing, product manuals, advertisements, and online documentation. As a result of Apple’s inducement, Apple’s customers and end-users use the ’294 Accused Products in the way Apple intends and directly infringe the ’294 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’294 patent and with the intent, or willful blindness, that the induced acts directly infringe the ’294 patent.

286. Apple also indirectly infringes the ’294 patent, as provided by 35 U.S.C. § 271(c), by contributing to direct infringement committed by others, such as customers and end-users, in this District and elsewhere in the United States. Apple’s affirmative acts of selling and offering to sell, in this District and elsewhere in the United States, the ’294 Accused Products and causing the ’294 Accused Products to be manufactured, used, sold, and offered for sale contribute to Apple customers’ and end-users’ use of the ’294 Accused Products, such that the ’294 patent is directly infringed. The accused components within the ’294 Accused Products are material to

the invention of the ’294 patent, are not staple articles or commodities of commerce, have no substantial non-infringing uses, and are known by Apple to be especially made or especially adapted for use in infringement of the ’294 patent. Apple has performed and continues to perform these affirmative acts with knowledge of the ’294 patent and with intent, or willful blindness, that they cause the direct infringement of the ’294 patent.

287. Upon information and belief, Apple derives revenue, directly and indirectly, from the activities relating to the ’294 Accused Products, including their importation, testing, manufacture, use, sale, and offer for sale.

288. Apple’s infringement of the ’294 patent has damaged and will continue to damage Nokia.

DAMAGES

289. As a result of Apple’s acts of infringement, Nokia has suffered actual and consequential damages. However, Nokia does not yet know the full extent of the infringement, and its extent cannot be ascertained except through discovery and special accounting. To the fullest extent permitted by law, Nokia seeks recovery of damages at least for reasonable royalties, unjust enrichment, and benefits received by Apple as a result of using misappropriated technology. Nokia further seeks any other damages to which Nokia is entitled under law or in equity.

ATTORNEYS’ FEES

290. Nokia is entitled to recover reasonable and necessary attorneys’ fees under applicable law.

DEMAND FOR JURY TRIAL

Nokia hereby demands a jury trial for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Nokia respectfully requests that this Court enter judgment in its favor as follows:

A. that Apple infringes each of the Patents-in-Suit;

B. that Apple's infringement of each of the Patents-in-Suit was willful, and that Apple's continued infringement of these patents is willful;

C. awarding Nokia damages in an amount adequate to compensate Nokia for Apple's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty under 35 U.S.C. § 284;

D. awarding enhanced damages pursuant to 35 U.S.C. § 284;

E. awarding Nokia pre-judgment and post-judgment interest to the full extent allowed under the law, as well as its costs;

F. entering a permanent injunction against all Apple products found to infringe the Patents-in-Suit;

G. entering an order finding that this is an exceptional case and awarding Nokia its reasonable attorneys' fees pursuant to 35 U.S.C. § 285;

H. ordering an accounting of damages;

I. awarding Nokia its costs of suit; and

J. awarding such other relief as the Court may deem appropriate and just under the circumstances.

Dated: December 21, 2016

Respectfully submitted,

/s/ Theodore Stevenson, III

Theodore Stevenson, III
tstevenson@mckoolsmith.com
Nicholas Mathews
nmathews@mckoolsmith.com
McKool Smith, P.C.
300 Crescent Court, Suite 1500
Dallas, Texas 75201
Telephone: (214) 978-4000
Facsimile: (214) 978-4044

Samuel F. Baxter
sbaxter@mckoolsmith.com
McKool Smith, P.C.
104 E. Houston Street, Suite 3000
P.O. Box O
Marshall, Texas 75670
Telephone: (903) 923-9000
Facsimile: (903) 923-9099

Kevin L. Burgess
kburgess@mckoolsmith.com
McKool Smith, P.C.
300 W. Sixth Street, Suite 1700
Austin, Texas 78701
Telephone: (512) 692-8700
Facsimile: (512) 692-8744

John D. Haynes – Lead Attorney
Patrick J. Flinn
Wesley C. Achey
David S. Frist
Michael C. Deane
ALSTON & BIRD LLP
One Atlantic Center
1201 West Peachtree Street
Suite 4900
Atlanta, GA 30309
Telephone: (404) 881-7000
Facsimile: (404) 881-7777
Email: john.haynes@alston.com
Email: patrick.flinn@alston.com
Email: wes.achey@alston.com
Email: david.frist@alston.com
Email: michael.deane@alston.com

Adam D. Swain
ALSTON & BIRD LLP
The Atlantic Building
950 F Street, NW
Washington, DC 20004
Telephone: (202) 239-3300
Facsimile: (202) 239-3333
Email: adam.swain@alston.com

Counsel for Plaintiffs Nokia Technologies Oy and Alcatel-Lucent USA Inc.