

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

CORE WIRELESS LICENSING)	
S.A.R.L.)	
)	CIVIL ACTION NO. 6:14-cv-752
Plaintiff,)	
)	JURY TRIAL DEMANDED
v.)	
)	
APPLE INC.,)	
)	
Defendant.)	

CORE WIRELESS LICENSING S.A.R.L.'S FIRST AMENDED COMPLAINT
FOR BREACH OF CONTRACT, DECLARATORY RELIEF,
AND PATENT INFRINGEMENT

Plaintiff, Core Wireless Licensing S.à.r.l. (“Core Wireless”), for its First Amended Complaint against Defendant, Apple Inc. (“Apple”), alleges:

THE PARTIES

1. Core Wireless is a corporation duly organized and existing under the laws of the Grand Duchy of Luxembourg, having a principal place of business at 12, rue Jean Engling L-1466 Luxembourg. Core Wireless has a regular and established place of business and does business relating to the patents-in-suit in connection with its wholly-owned subsidiary, Core Wireless Licensing Ltd. (“Core Wireless USA”), a corporation duly organized and existing under the laws of the State of Texas, having a principal place of business at 5601 Granite Parkway, Suite 1300, Plano, TX 75024, which is within the Eastern District of Texas. All pertinent documents and discovery relevant to this matter either reside at Core Wireless USA’s local address or will be produced at that address. Core Wireless is the owner of record of the patents involved in this action.

2. Defendant, Apple, is a corporation duly organized and existing under the laws of the State of California, having a principal place of business at 1 Infinite Loop, Cupertino, CA 95014. Apple’s registered agent, registered with the Texas Secretary of State’s Office, is CT Corp. System at 1999 Bryan St., Suite 900, Dallas, TX 75201.

3. Defendant, Apple, is currently litigating several United States patents in this District that are technologically related to the patents-in-suit and which are also owned by Core Wireless. The Court’s knowledge of the technology and patents in the pending case (Civil Action No. 6:12-CV-100) will assist the Court substantially in deciding issues in this case.

JURISDICTION

4. Certain claims in this action arise under the patent laws of the United States. Accordingly, this Court has subject matter jurisdiction over the patent claims pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has subject matter jurisdiction over the breach of contract claims pursuant to 28 U.S.C. §§ 1332 and 1367. The matter in controversy exceeds the sum or value of \$75,000, exclusive of interest and costs, and is between a citizen of a State and a citizen or subject of a foreign state.

6. This Court has subject matter jurisdiction over the declaratory judgment causes of action pursuant to 28 U.S.C. §§ 2201 and/or 2202. An actual case or controversy has arisen between the parties that is definite and concrete and which touches the legal relations of the parties having adverse legal interests.

7. This Court has personal jurisdiction over Apple because Apple does business in the State of Texas and in this judicial district and/or has infringed or caused infringement in the State of Texas and in this judicial district.

8. This Court has personal jurisdiction over Apple because Apple has established minimum contacts with the Eastern District of Texas. Apple manufactures (directly or indirectly through third party manufacturers) and/or assembles products that are and have been used, offered for sale, sold, and purchased in the Eastern District of Texas. Apple, directly and/or through its distribution network, places wireless mobile communication devices within the stream of commerce, which stream is directed at this district, with the knowledge and/or understanding that those products will be sold in the State of Texas, including in 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. Therefore, the exercise of jurisdiction over Apple is appropriate under the applicable jurisdictional statutes and would not offend traditional notions of fair play and substantial justice.

VENUE

9. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391 and 1400(b) because Apple has committed, and continues to commit, acts of infringement, including providing wireless mobile communication devices that are used, offered for sale, sold, and have been purchased in the State of Texas, including in the Eastern District of Texas.

FACTUAL ALLEGATIONS

I. PATENTS-IN-SUIT

10. United States Patent No. 5,946,634 ("634 patent"), entitled *Mobile Communications*, was duly and lawfully issued August 31, 1999. Core Wireless is the current owner of all rights, title, and interest in and to the '634 patent. A true and correct copy of the '634 patent is attached hereto as Exhibit 1.

11. United States Patent No. 6,477,151 ("151 patent"), entitled *Packet Radio Telephone Services*, was duly and lawfully issued November 5, 2002. Core Wireless is the current owner of all rights, title, and interest in and to the '151 patent. A true and correct copy of the '151 patent is attached hereto as Exhibit 2.

12. United States Patent No. 6,633,536 ("536 patent"), entitled *Signalling In A Digital Mobile Communications System*, was duly and lawfully issued October 14, 2003. Core Wireless is the current owner of all rights, title, and interest in and to the '536 patent. A true and correct copy of the '536 patent is attached hereto as Exhibit 3.

13. United States Patent No. 7,782,818 (“’818 patent”), entitled *System And Method For Providing A Connection In A Communication Network*, was duly and lawfully issued August 24, 2010. Core Wireless is the current owner of all rights, title, and interest in and to the ’818 patent. A true and correct copy of the ’818 patent is attached hereto as Exhibit 4.

14. United States Patent No. RE44,828 E (“’828 patent”), entitled *Method And Arrangement For Choosing A Channel Coding And Interleaving Scheme For Certain Types Of Packet Data Connections*, was duly and lawfully issued April 8, 2014. The ’828 patent is a reissue of U.S. Patent No. 7,773,708 originally issued August 10, 2010. Core Wireless is the current owner of all rights, title, and interest in and to the ’828 patent. A true and correct copy of the ’828 patent is attached hereto as Exhibit 5.

II. CORE WIRELESS’S STANDARD-ESSENTIAL PATENTS

15. The ’634, ’151, ’536, ’818, and ’828 patents (“patents-in-suit”) are among over 1,200 Standard-Essential Patents owned by Core Wireless. Core Wireless became the owner of these Standard-Essential Patents on or around September 1, 2011, obtaining all right, title and interest in, to and under the patents-in-suit, including without limitation all legal rights of the original owner of the patents, Nokia Corporation (“Nokia”), and further including enforcement rights.

16. The patents-in-suit were originally invented by, procured by, or assigned to Nokia, which is and has been a member of the European Telecommunications Standards Institute (“ETSI”), a non-profit Standard Setting Organization headquartered in France.

17. ETSI is and has been involved in standardization of the most recent generations of mobile communications standards, including Global System for Mobile (“GSM”) also known as 2G, GSM improvements known as GSM Packet Radio Service (“GPRS”) and Enhanced Data Rates for GSM Evolution, the third generation of GSM technology known as Universal Mobile

Telecommunications System (“UMTS”) or 3G, and Long-Term Evolution (“LTE”) known as 4G, which is anticipated to become the first global mobile communications standard.

18. Nokia declared before ETSI that the patents-in-suit are essential to one or more of the mobile communications standards developed or completed by ETSI including without limitation the GSM/GPRS, UMTS, and LTE standards. As a result, pursuant to ETSI’s Intellectual Property Rights (“IPR”) Policy, Nokia had an obligation to license the patents-in-suit on fair, reasonable, and non-discriminatory (“FRAND”) terms.

19. Nokia also declared before ETSI that the over 1,200 Standard-Essential Patents owned by Core Wireless are essential to one or more of the mobile communications standards developed or completed by ETSI including without limitation the GSM/GPRS, UMTS, and LTE standards. Accordingly, Nokia also had an obligation to license those patents on FRAND terms.

20. Core Wireless, as the present owner of a portfolio of ETSI Standard-Essential Patents, has voluntarily agreed to grant licenses under FRAND terms to willing licensees who negotiate in good faith. Core Wireless publicly affirmed its ETSI commitments by submitting its own FRAND undertaking to ETSI.

21. ETSI’s IPR Policy Section 3.2 states that IPR holders are to be adequately and fairly rewarded for use of their IPRs in the implementation of standards and technical specifications. A true and correct copy of ETSI’s IPR Policy is attached hereto as Exhibit 6.

III. CORE WIRELESS’S ATTEMPTS TO LICENSE APPLE

22. Apple implements the GSM/GPRS, UMTS, and/or the LTE standards in certain of its wireless mobile communications devices, including, without limitation, Apple’s devices marketed and sold within Apple’s iPhone and iPad product families, further including without limitation Apple’s iPhone, iPhone 3G, iPhone 3GS, iPhone 4, iPhone 4S, iPhone 5, iPhone 5C, iPhone 5S, iPhone 6, iPhone 6 Plus, iPad, iPad 2, third and fourth generation iPads, iPad Mini,

second and third generation iPad Mini, iPad Air, and iPad Air 2 (“Apple Standard-Compliant Products”) that infringe one or more of the patent claims involved in this action.

23. Apple is also a member of ETSI. As an ETSI member, Apple knows it is required to follow ETSI’s IPR Policy in connection with all of its relevant activities.

24. Core Wireless is informed and believes that Nokia offered Apple a license to the patents-in-suit, and its other Standard-Essential Patents, on FRAND terms at least as early as 2009. While Apple and Nokia agreed to a license for a subset of Nokia’s patents, Apple did not license the rest of Nokia’s patents that are now owned by Core Wireless, including the patents-in-suit.

25. Between at least February 2012 and July 2012, Core Wireless again attempted to negotiate FRAND license terms with Apple related to Core Wireless’s Standard-Essential Patents, including the patents-in-suit. Apple essentially ignored Core Wireless’s overtures.

26. On October 30, 2012 Apple demanded Core Wireless provide Apple with a FRAND offer. Core Wireless responded, but Apple ignored Core Wireless’s response.

27. On January 30, 2013, Apple again demanded Core Wireless provide Apple with a FRAND offer. In response, Core Wireless made a specific FRAND royalty rate offer to Apple on February 22, 2013. Apple ignored Core Wireless’s offer.

28. On September 27, 2013, Apple sent Core Wireless another demand for a FRAND offer, ignoring Core Wireless’s specific FRAND offer made on February 22, 2013.

29. During 2014, representatives of Core Wireless and Apple have met twice without any success in Apple agreeing to pay for a license to the patents-in-suit or any of Core Wireless’s Standard-Essential Patents.

30. On June 8, 2014, Apple finally responded to Core Wireless's offers with a low-ball counteroffer that was grossly incommensurate with the value of Core Wireless's Standard-Essential Patent portfolio.

31. To date, Apple has provided Core Wireless no compensation in return for a license to use the patents-in-suit or any of Core Wireless's Standard-Essential Patents.

IV. APPLE'S INFRINGEMENT OF THE PATENTS-IN-SUIT

32. 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) and/or (b) including without limitation by one or more of making, using, selling, and offering to sell, in this District and elsewhere in the United States, and importing into this District and elsewhere in the United States Apple Standard-Compliant Products.

33. Apple is doing business in the United States, and, more particularly, in the Eastern District of Texas by making, using, selling, importing, and/or offering for sale products, including without limitation Apple Standard-Compliant Products, that infringe one or more of the patent claims involved in this action.

34. Apple is responsible for the manufacture (directly or indirectly through third party manufacturers) of Apple's Standard-Compliant Products in the United States and this District through its website,¹ retail store locations,² and third-party distributors, including without limitation cellular service providers like AT&T³ and Verizon.⁴

¹ See generally, <http://www.apple.com/shop> (last accessed August 25, 2015).

² See, e.g., Apple retail store location at Willow Bend, 6121 West Park Boulevard, Plano, TX 75093 (<http://www.apple.com/retail/willowbend/>), which is located in Collin Country, which is within the Eastern District of Texas.

³ See, e.g., <http://www.att.com/cellphones/iphone/iphone-6.html#sku=sku7380579>.

⁴ See, e.g., <http://www.verizonwireless.com/smartphones/iphone-6/>.

FIRST COUNT
(Breach of Apple's Contractual Obligations to ETSI)

35. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-34 of this Complaint as though fully set forth herein.

36. ETSI provides its members with the benefit of being involved in the setting of standards that affect entities involved in providing products and/or services related to mobile communications. ETSI's activities are closely aligned with market needs and there is wide acceptance of its standards. Accordingly, mobile communications businesses benefit from ETSI membership by being able to provide input on issues that may have financial impacts on their businesses.

37. As a condition of receiving the benefits that ETSI provides to its members, ETSI members and affiliates must comply with ETSI's Directives, also known as Bylaws. ETSI's IPR Policy is found in Annex 6 of the ETSI Rules of Procedures, making the rights and obligations specified by the IPR Policy binding on all ETSI members and affiliates.

38. Apple is bound by ETSI's IPR Policy by virtue of its ETSI membership and participation in the organization from which Apple derives a benefit.

39. ETSI's IPR Policy requires IPR patent holders to be adequately and fairly rewarded for use of their IPRs in the implementation of standards and technical specifications.

40. ETSI's IPR Policy states that any violation of the Policy by a member, including affiliates, shall be deemed a breach of that member's obligations to ETSI.

41. Core Wireless, as an owner of Standard-Essential Patents committed to ETSI IPR FRAND licensing obligations, is an intended third party beneficiary of Apple's contract with ETSI.

42. Apple's refusal to negotiate in good faith a FRAND rate for Core Wireless's patents-in-suit and its other Standard-Essential Patents is a violation of ETSI's IPR Policy.

43. Apple has breached its contractual obligations to ETSI, which is causing harm to Core Wireless by failing to financially compensate Core Wireless for its patented technology essential to the standards used by Apple's Standard-Compliant Products. Such compensation is required by Apple's contract with ETSI.

SECOND COUNT

(Breach of Apple's Contractual Obligations to Core Wireless)

44. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-43 of this Complaint as though fully set forth herein.

45. Apple has taken the position that it is expressly or impliedly licensed to those patents that have been declared essential to an ETSI standard, including the GSM/GPRS, UMTS, and/or the LTE standards. An example of Apple expressing its position is publicly available at Document 2013-18 filed on October 10, 2012 in Case 5:11-cv-01846-LHK (N.D. Cal.).

46. According to Apple, its alleged license agreements with ETSI IPR holders are subject only to agreement on the terms of a FRAND royalty as compensation to the IPR holder.

47. Accordingly, Apple by its own admissions and actions has entered into an agreement with IPR holders to negotiate a FRAND royalty rate in good faith. Core Wireless is at least a third party beneficiary of Apple's admitted contractual obligations.

48. Apple has and is continuing to derive the benefit of its alleged license agreement with Core Wireless without fulfilling its end of the bargain with Core Wireless.

49. Apple has accordingly breached its contractual obligations to Core Wireless by unreasonably stalling negotiations and refusing to reasonably respond to Core Wireless's FRAND offer.

50. Apple's breach of its contractual obligations is harming Core Wireless by failing to financially compensate Core Wireless for its patented technology essential to the standards used by Apple's Standard-Compliant Products, despite Apple's acknowledgement that compensation is an element of its contract with Core Wireless.

THIRD COUNT
(Declaratory Judgment that Apple Is an Unwilling Licensee)

51. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-50 of this Complaint as though fully set forth herein.

52. A substantial controversy exists between Core Wireless and Apple of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

53. Core Wireless and Apple have adverse legal interests because Apple continues to use Core Wireless's patented technology without a license, constituting infringement, and without paying for a license Core Wireless has offered and is obligated to provide to Apple.

54. Apple has demonstrated an unwillingness to negotiate a FRAND royalty rate with Nokia or Core Wireless in good faith by, among other things, unreasonably stalling negotiations and essentially ignoring Core Wireless's FRAND offer.

55. At the same time, Apple has profited by virtue of its use of Core Wireless's Standard-Essential Patents, including the patents-in-suit, to the detriment of Core Wireless.

56. The longer Apple is allowed to engage in its infringing activity without consequence or paying for a license, the lower the value of the patents-in-suit and Core Wireless's Standard-Essential Patents may become as licensing assets, at least in part, because the period before each patent expires is decreasing and Apple's known delay provides incentives for other potential licensees to refuse to pay for a license, frustrating Core Wireless's rights pursuant to ETSI's IPR Policy.

57. As a direct, proximate, and foreseeable result of Apple's refusal to negotiate in good faith a FRAND royalty with Core Wireless, or to reasonably respond to Core Wireless's FRAND royalty offers, or demonstrate a willingness to take a license during Apple's lengthy hold-out period, Core Wireless has been harmed and continues to suffer harm, including without limitation by being denied the adequate and fair reward set forth by the ETSI IPR Policy for use of Core Wireless's Standard-Essential Patents and being forced to resolve this matter through unnecessary litigation in which Core Wireless is required to pay what should be unnecessary attorneys' fees and expenses.

FOURTH COUNT
**(Declaratory Judgment of a FRAND Royalty Rate
for Core Wireless's Standard-Essential Patents)**

58. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-57 of this Complaint as though fully set forth herein.

59. To the extent Apple is found to be entitled to a license on FRAND terms despite the fact that it is an unwilling licensee and has violated its contractual obligations to ETSI to negotiate for a license in good faith, Core Wireless is entitled at a minimum to a FRAND royalty rate, and Core Wireless seeks the Court's determination of the FRAND royalty rate.

60. ETSI's Guide on IPRs states in Section 4.3 that national courts of law have the sole authority to resolve IPR disputes. A true and correct copy of the "ETSI Guide on Intellectual Property Rights (IPRs)," "Version adopted by Board #94 on 19 September 2013" is attached hereto as Exhibit 7.

61. Core Wireless's rights continue to remain uncertain in the absence of Court intervention. On the one hand, Core Wireless has an obligation to license its Standard-Essential Patents on FRAND terms, it has made a FRAND licensing offer to Apple, and Apple has refused to accept the offer or further negotiate in good faith. On the other hand, Core Wireless is entitled

to compensation pursuant to ETSI's IPR Policy, which right to compensation even Apple acknowledges. Unless and until a FRAND royalty rate is determined, Core Wireless continues to be damaged by delayed adjudication of its rights.

62. The Court's determination of a FRAND royalty rate is specific relief available through a decree of conclusive character.

FIFTH COUNT
(Infringement of the '634 patent)

63. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-62 of this Complaint as though fully set forth herein.

64. The '634 patent discloses the use of common low-level protocols to allow a mobile device to access and/or switch between different networks that use technically incompatible communications protocols. The '634 patent thus allows for increased flexibility with regard to the types of networks a mobile device can access. In one embodiment, the mobile device receives a type signal that indicates which backbone networks are available. The mobile device then selectively applies a stack of higher-level communications protocols based on that type signal. Advantageously, a mobile device can also use low-level protocol signals to obtain information about the network, such as without limitation, quality of service, prior registration, and other information.

65. The limitations of the asserted apparatus and/or method claims of the '634 patent may be satisfied by hardware, software, and/or firmware, or any combination thereof, including without limitation antennas, filters, power amplifiers, baseband processors, and/or transceivers in Apple's Standard-Compliant Products, which practice at least the LTE standard. Apple has

admitted that its products, including the Standard-Compliant Products, conform to, satisfy, and implement the LTE standard.⁵

66. Core Wireless is informed and believes that it is necessary to practice one or more of the claims of the '634 patent to comply with the requirements of certain standards applicable to mobile communications, specifically certain portions of the LTE standard, including without limitation 3GPP TS 23.401, 3GPP TS 24.301, and/or 3GPP TS 36.300, as detailed in Core Wireless's infringement contentions served on March 6, 2015. Core Wireless is informed and believes that Apple Standard-Compliant Products comply with at least the LTE standards covered by the claims of the '634 patent and therefore infringe claims of the '634 patent.

67. Apple has had knowledge of the '634 patent since at least as early as 2009, when Nokia offered Apple a license to its standard essential patents, including the patents-in-suit. Moreover, Apple has had knowledge of the '634 patent since September 10, 2014 when Core Wireless provided direct notice to Apple of its infringement of the '634 patent via the filing and service of Core Wireless's Original Complaint. Additionally, since at least March 6, 2015, Apple has had knowledge of Core Wireless's infringement contentions concerning the '634

⁵ See, e.g., **Exhibit 8**, attached hereto, which is a true and correct copy of <http://www.apple.com/iphone/compare/> (last printed August 27, 2015) (listing LTE as a supported protocol); **Exhibit 9**, attached hereto, which is a true and correct copy of <http://www.apple.com/iphone/LTE/> (last printed August 27, 2015); **Exhibit 10**, attached hereto, which is a true and correct copy of <http://www.apple.com/ipad/compare/> (last printed August 27, 2015) (listing LTE as a supported protocol); **Exhibit 11**, attached hereto, which is a true and correct copy of a user manual for an iPad using iOS 8.4 at 164; **Exhibit 12**, attached hereto, which is a true and correct copy of a user manual for an iPhone using iOS 8.4 at 14, 52, 54, 190; **Exhibit 13**, attached hereto, which is a true and correct copy of <http://www.apple.com/pr/library/2012/09/12Apple-Introduces-iPhone-5.html> (last printed August 27, 2015). See also Apple's Partial Answer, Defenses and Counterclaims to Core Wireless's Complaint (Doc. No. 79) at ¶ 22 ("Apple admits that certain of its wireless mobile devices operate on networks supporting the GSM/GPRS, UMTS, and/or LTE standards.").

patent, including without limitation the specific functionalities claimed by the '634 patent, the specific Apple Standard-Compliant Products infringing the '634 patent, and a detailed claim-by-claim, element-by-element analysis of infringement by Apple Standard-Compliant Products.

68. In violation of 35 U.S.C. § 271(a), Apple is and has been infringing one or more claims of the '634 patent directly by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, without authority, products, including without limitation Apple Standard-Compliant Products, that are covered by or practice the inventions claimed in the '634 patent. Apple is infringing claims of the '634 patent literally and/or pursuant to the doctrine of equivalents.

69. In violation of 35 U.S.C. § 271(b), Apple is and has been infringing one or more of the '634 patent's claims indirectly by inducing the infringement of the '634 patent's claims by third parties, including without limitation manufacturers, resellers, and/or end users of Apple's Standard-Compliant Products, in this District, and elsewhere in the United States. Direct infringement is the result of activities performed by third parties in relation to Apple's Standard-Compliant Products, including without limitation by end users enabled and encouraged by Apple to use Apple Standard-Compliant Products in their normal, customary way in accordance with at least the LTE standard to infringe the '634 patent.

70. Apple actively induces third parties, including without limitation end-users of Apple's Standard-Compliant Products, to infringe the '634 patent by, among other things, (i) enabling a user of Apple's Standard-Compliant Products to use the products in accordance with at least the LTE standard as disclosed and claimed in the '634 patent;⁶ (ii) providing instructions

⁶ On March 6, 2015, Core Wireless served Apple with its infringement contentions pursuant to P.R. 3-1, which detail Apple's infringement of the asserted claims of the '634 patent.

to end-users of Apple Standard-Compliant Products for using the Apple Standard-Compliant Products in their customary way;⁷ (iii) advertising compliance with at least the LTE standard;⁸ and (iv) providing to third parties the hardware (e.g., antenna(s), filter(s), switch(es), transceiver(s), and/or baseband processor(s) contained in Apple Standard-Compliant Products) and software components (e.g., Apple's iOS operating system running on Apple's Standard-Compliant Products and other software and/or firmware used to operate components of the Apple Standard-Compliant Products) that may be required for or associated with infringement of the '634 patent's claims via the manufacture, marketing, sale, and/or distribution of Apple Standard-Compliant Products through Apple's website, retail store locations, and third-party distributors.

71. Apple's foregoing activities have been without authority and/or license from Core Wireless.

72. Apple has had direct and actual knowledge of the '634 patent since 2009, and certainly has had direct and actual knowledge of the '634 patent and Core Wireless's infringement claims at least as of the filing of Core Wireless's Original Complaint in September 2014. Apple has also had direct and actual knowledge of Core Wireless's specific infringement contentions concerning the '634 patent since at least March 2015. Despite Apple's knowledge of the '634 patent and Core Wireless's infringement contentions, Apple continues to engage in the activities described above which enable and encourage third parties, including without limitation end-users of Apple's Standard-Compliant Products, to use such devices in their ordinary and

⁷ See, e.g., **Exhibits 11** and **12**.

⁸ See, e.g., **Exhibit 8** (listing LTE as a supported protocol); **Exhibit 9**; **Exhibit 10** (listing LTE as a supported protocol); **Exhibit 13**.

customary way in accordance with the LTE standard as disclosed and claimed in the '634 patent. Apple thereby specifically intends third parties, including without limitation end-users of Apple's Standard-Compliant Products, to infringe the '634 patent.

73. Core Wireless is informed and believes that Apple's infringement of the '634 patent has been and continues to be willful entitling Core Wireless to increased damages pursuant to 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action pursuant to 35 U.S.C. § 285.

74. Core Wireless is informed and believes that Apple intends to and will continue to directly infringe and induce infringement of the '634 patent's claims.

75. Apple's acts of infringement have caused damages to Core Wireless and Core Wireless is entitled to recover from Apple the damages sustained by Core Wireless as a result of Apple's wrongful acts in an amount subject to proof at trial.

SIXTH COUNT
(Infringement of the '151 patent)

76. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-75 of this Complaint as though fully set forth herein.

77. The '151 patent is directed to the field of packet-switched cellular networks, in which data sent from the mobile device must be received by the network in specific, allocated time slots. Due to propagation delay between a transmitting mobile device and a receiving network, a mobile device advances the transmission of data by a timing advance value ("TAV") so that the data is received by the network during the allocated time slot. At the time of the invention of the '151 patent, the communication standards required a mobile device to calculate a new TAV for each channel. The '151 patent allows the efficient use of the same TAV by both the uplink and downlink channels for transmission in the uplink direction. This advantageously

increases the number of mobile devices which may use the same time slot for transmitting and receiving timing advance information.

78. The limitations of the asserted apparatus and/or method claims of the '151 patent may be satisfied by hardware, software, and/or firmware, or any combination thereof, including without limitation antennas, filters, switches, power amplifiers, baseband processors, and/or transceivers in Apple's Standard-Compliant Products, which practice at least the LTE and/or GSM standards. Apple has admitted that its products, including the Standard-Compliant Products, conform to, satisfy, and implement the LTE and/or GSM standards.⁹

79. Core Wireless is informed and believes that it is necessary to practice one or more of the claims of the '151 patent to comply with the requirements of certain standards applicable to mobile communications, specifically certain portions of the GSM standard, including without limitation 3GPP TS 43.064, 3GPP TS 44.060, 3GPP TS 45.002, and/or 3GPP TS 45.010, and/or certain portions of the LTE standard, including without limitation 3GPP TS 23.002, 3GPP TS 36.133, 3GPP TS 36.213, 3GPP TS 36.300, 3GPP TS 36.302, and/or 3GPP TS 36.321, as detailed in Core Wireless's infringement contentions served on March 6, 2015. Core Wireless is informed and believes that Apple's Standard-Compliant Products comply with at least the applicable GSM and/or LTE standards covered by the claims of the '151 patent and therefore infringe claims of the '151 patent.

⁹ See, e.g., **Exhibit 8** (listing LTE and GSM as supported protocols); **Exhibit 9**; **Exhibit 10** (listing LTE and GSM as supported protocols); **Exhibit 11** at 12 (discussing connection to GSM network), 164 (LTE); **Exhibit 12** at 14, 52, 54, 190; **Exhibit 13**. See also Apple's Partial Answer, Defenses and Counterclaims to Core Wireless's Complaint (Doc. No. 79) at ¶ 22 ("Apple admits that certain of its wireless mobile devices operate on networks supporting the GSM/GPRS, UMTS, and/or LTE standards.").

80. Apple has had knowledge of the '151 patent at least as early as 2009, when Nokia offered Apple a license to its standard essential patents, including the patents-in-suit. Moreover, Apple has had knowledge of the '151 patent since September 10, 2014 when Core Wireless provided direct notice to Apple of its infringement of the '151 patent via the filing and service of Core Wireless's Original Complaint. Additionally, since at least March 6, 2015, Apple has had knowledge of Core Wireless's infringement contentions concerning the '151 patent, including without limitation the specific functionalities claimed by the '151 patent, the specific Apple Standard-Compliant Products infringing the '151 patent, and a detailed claim-by-claim, element-by-element of infringement by Apple Standard-Compliant Products.

81. In violation of 35 U.S.C. § 271(a), Apple is and has been infringing one or more claims of the '151 patent directly by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, without authority, products, including without limitation Apple Standard-Compliant Products, that are covered by or practice the inventions claimed in the '151 patent. Apple is infringing claims of the '151 patent literally and/or pursuant to the doctrine of equivalents.

82. In violation of 35 U.S.C. § 271(b), Apple is and has been infringing one or more of the '151 patent's claims indirectly by inducing the infringement of the '151 patent's claims by third parties, including without limitation manufacturers, resellers, and/or end users of Apple Standard-Compliant Products, in this District, and elsewhere in the United States. Direct infringement is the result of activities performed by third parties in relation to Apple Standard-Compliant Products, including without limitation by end users enabled and encouraged by Apple to use Apple Standard-Compliant Products in their normal, customary way in accordance with at least the GSM and/or LTE standards to infringe the '151 patent.

83. Apple actively induces third parties, including without limitation end users of Apple Standard-Compliant Products, to infringe the '151 patent by, among other things, (i) enabling a user of Apple Standard-Compliant Products to use the products in accordance with at least the GSM and/or LTE standards as disclosed and claimed in the '151 patent;¹⁰ (ii) providing instructions to end-users of Apple Standard-Compliant Products for using the Apple Standard-Compliant Products in their customary way;¹¹ (iii) advertising compliance with at least the GSM and/or LTE standards;¹² and (iv) providing to third parties the hardware (e.g., antenna(s), filter(s), switch(es), transceiver(s), and/or baseband processor(s) contained in Apple Standard-Compliant Products) and software components (e.g., Apple's iOS operating system running on Apple Standard-Compliant Products and other software and/or firmware used to operate components of the Apple Standard-Compliant Products) that may be required for or associated with infringement of the '151 patent's claims via the manufacture, marketing, sale, and/or distribution of Apple Standard-Compliant Products through Apple's website, retail store locations, and third-party distributors.

84. Apple's foregoing activities have been without authority and/or license from Core Wireless.

85. Apple has had direct and actual knowledge of the '151 patent since at least 2009, and certainly has had direct and actual knowledge of the '151 patent and Core Wireless's

¹⁰ On March 6, 2015, Core Wireless served Apple with its infringement contentions pursuant to P.R. 3-1, which detail Apple's infringement of the asserted claims of the '151 patent.

¹¹ See, e.g., **Exhibit 11** at 12 (discussing connection to GSM network), 164 (LTE); **Exhibit 12** at 14, 52, 54, 190.

¹² See, e.g., **Exhibit 8** (listing LTE and GSM as supported protocols); **Exhibit 9**; **Exhibit 10** (listing LTE and GSM as supported protocols); **Exhibit 11** at 12 (discussing connection to GSM network), 164 (LTE); **Exhibit 12** at 14, 52, 54, 190; **Exhibit 13**.

infringement claims at least as of the filing of Core Wireless's Original Complaint in September 2014. Apple has also had direct and actual knowledge of Core Wireless's specific infringement contentions concerning the '151 patent since at least March 2015. Despite Apple's knowledge of the '151 patent and Core Wireless's infringement contentions, Apple continues to engage in the activities described above which enable and encourage third parties, including without limitation end-users of Apple Standard-Compliant Products, to use such devices in their ordinary and customary way in accordance with at least the GSM and/or LTE standards as disclosed and claimed in the '151 patent. Apple thereby specifically intends third parties, including without limitation end-users of Apple's Standard-Compliant Products, to infringe the '151 patent.

86. Core Wireless is informed and believes that Apple's infringement of the '151 patent has been and continues to be willful entitling Core Wireless to increased damages pursuant to 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action pursuant to 35 U.S.C. § 285.

87. Core Wireless is informed and believes that Apple intends to and will continue to directly infringe and induce infringement of the '151 patent's claims.

88. Apple's acts of infringement have caused damages to Core Wireless and Core Wireless is entitled to recover from Apple the damages sustained by Core Wireless as a result of Apple's wrongful acts in an amount subject to proof at trial.

SEVENTH COUNT
(Infringement of the '536 patent)

89. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-88 of this Complaint as though fully set forth herein.

90. The '536 patent discloses a novel signaling scheme in a cellular system whereby signaling data is interleaved between speech data for durations that are brief enough to not

impair the quality of the speech transmitted. In contrast with the prior art, which required separate channels for transmitting signaling data or halting the speech channel to allow signaling data to be sent, the '536 patent allows for more efficient usage of the speech channel by inserting brief bursts of signaling data frames in between speech data frames for transmission. The '536 patent achieves this in part by marking the signaling frames such that the receiver can distinguish the signaling frames from the speech frames and process them accordingly. The '536 patent also achieves its objectives by limiting the number of consecutive signaling frames that are inserted in the speech transmission such that the quality of speech is still acceptable to the user at the receiving end.

91. The limitations of the asserted apparatus and/or method claims of the '536 patent may be satisfied by hardware, software, and/or firmware, or any combination thereof, including without limitation antennas, RF filters, RF switches, RF transceivers, power amplifiers, and/or baseband processors in Apple's Standard-Compliant Products, which practice at least the GSM standard. Apple has admitted that its products, including the Standard-Compliant Products, conform to, satisfy, and implement the GSM standard.¹³

92. Core Wireless is informed and believes that it is necessary to practice one or more of the claims of the '536 patent to comply with the requirements of certain standards applicable to mobile communications, specifically certain portions of the GSM standard, including without limitation 3GPP TS 05.03, 3GPP TS 05.09, 3GPP TS 26.093, and/or 3GPP TS 45.005, as

¹³ See, e.g., **Exhibit 8** (listing GSM as a supported protocol); **Exhibit 10** (listing GSM as a supported protocol); **Exhibit 11** at 12 (discussing connection to GSM network); **Exhibit 12** at 14, 15, 54, 56, 57. See also Apple's Partial Answer, Defenses and Counterclaims to Core Wireless's Complaint (Doc. No. 79) at ¶ 22 ("Apple admits that certain of its wireless mobile devices operate on networks supporting the GSM/GPRS, UMTS, and/or LTE standards.").

detailed in Core Wireless's infringement contentions served on March 6, 2015. Core Wireless is informed and believes that Apple's Standard-Compliant Products comply with at least the GSM standards covered by the claims of the '536 patent and therefore infringe claims of the '536 patent.

93. Apple has had knowledge of the '536 patent at least as early as 2009, when Nokia offered Apple a license to its standard essential patents, including the patents-in-suit. Moreover, Apple has had knowledge of the '536 patent since September 10, 2014 when Core Wireless provided direct notice to Apple of its infringement of the '536 patent via the filing and service of Core Wireless's Original Complaint. Additionally, since at least March 6, 2015, Apple has had knowledge of Core Wireless's infringement contentions concerning the '536 patent, including without limitation the specific functionalities claimed by the '536 patent, the specific Apple Standard-Compliant Products infringing the '536 patent, and a detailed claim-by-claim, element-by-element of infringement by Apple Standard-Compliant Products.

94. In violation of 35 U.S.C. § 271(a), Apple is and has been infringing one or more claims of the '536 patent directly by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, without authority, products, including without limitation Apple Standard-Compliant Products, that are covered by or practice the inventions claimed in the '536 patent. Apple is infringing claims of the '536 patent literally and/or pursuant to the doctrine of equivalents.

95. In violation of 35 U.S.C. § 271(b), Apple is and has been infringing one or more of the '536 patent's claims indirectly by inducing the infringement of the '536 patent's claims by third parties, including without limitation manufacturers, resellers, and/or end users of Apple Standard-Compliant Products, in this District, and elsewhere in the United States. Direct

infringement is the result of activities performed by third parties in relation to Apple Standard-Compliant Products, including without limitation by end users enabled and encouraged by Apple to use Apple Standard-Compliant Products in their normal, customary way in accordance with at least the GSM standard to infringe the '536 patent.

96. Apple actively induces third parties, including without limitation end users of Apple Standard-Compliant Products, to infringe the '536 patent by, among other things, (i) enabling a user of Apple Standard-Compliant Products to use the products in accordance with at least the GSM standard as disclosed and claimed in the '536 patent;¹⁴ (ii) providing instructions to end users of Apple Standard-Compliant Products for using the Apple Standard-Compliant Products in their customary way;¹⁵ (iii) advertising compliance with at least the GSM standard;¹⁶ and (iv) providing to third parties the hardware (e.g., antenna(s), filter(s), switch(es), transceiver(s), and/or baseband processor(s) contained in Apple Standard-Compliant Products) and software components (e.g., Apple's iOS operating system running on Apple Standard-Compliant Products and other software and/or firmware used to operate components of the Apple Standard-Compliant Products) that may be required for or associated with infringement of the '536 patent's claims via the manufacture, marketing, sale, and/or distribution of Apple Standard-Compliant Products through Apple's website, retail store locations, and third-party distributors.

¹⁴ On March 6, 2015, Core Wireless served Apple with its infringement contentions pursuant to P.R. 3-1, which detail Apple's infringement of the asserted claims of the '536 patent.

¹⁵ See, e.g., **Exhibit 11** at 12 (discussing connection to GSM network); **Exhibit 12** at 14, 15, 54, 56, 57.

¹⁶ See, e.g., **Exhibit 8** (listing GSM as a supported protocol); **Exhibit 10** (listing GSM as a supported protocol).

97. Apple's foregoing activities have been without authority and/or license from Core Wireless.

98. Apple has had direct and actual knowledge of the '536 patent since at least 2009, and certainly has had direct and actual knowledge of the '536 patent and Core Wireless's infringement claims at least as of the filing of Core Wireless's Original Complaint in September 2014. Apple has also had direct and actual knowledge of Core Wireless's specific infringement contentions concerning the '536 patent since at least March 2015. Despite Apple's knowledge of the '536 patent and Core Wireless's infringement contentions, Apple continues to engage in the activities described above which enable and encourage third parties, including without limitation end users of Apple Standard-Compliant Products, to use such devices in their ordinary and customary way in accordance with at least the GSM standard as disclosed and claimed in the '536 patent. Apple thereby specifically intends third parties, including without limitation end users of Apple Standard-Compliant Products, to infringe the '536 patent.

99. Core Wireless is informed and believes that Apple's infringement of the '536 patent has been and continues to be willful entitling Core Wireless to increased damages pursuant to 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action pursuant to 35 U.S.C. § 285.

100. Core Wireless is informed and believes that Apple intends to and will continue to directly infringe and induce infringement of the '536 patent's claims.

101. Apple's acts of infringement have caused damages to Core Wireless and Core Wireless is entitled to recover from Apple the damages sustained by Core Wireless as a result of Apple's wrongful acts in an amount subject to proof at trial.

EIGHTH COUNT
(Infringement of the '818 patent)

102. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-101 of this Complaint as though fully set forth herein.

103. The '818 patent concerns the ability of a cellular phone to connect to any one of a number of core network elements (which are elements in a cellular network that connect to the landline telephone network, to the Internet, and to other core networks) serving a specific geographical area. The '818 patent discloses methods and apparatus that allow a cell phone to send a message to the network which allows the selection of a particular core network element to use for a connection. This increases the stability and resilience of a cell phone's connection to network services.

104. The limitations of the asserted apparatus and/or method claims of the '818 patent may be satisfied by hardware, software, and/or firmware, or any combination thereof, including without limitation antennas, RF switches, memory, baseband processors, and/or transceivers in Apple's Standard-Compliant Products, which practice at least the UMTS and/or LTE standards. Apple has admitted that its products, including the Standard-Compliant Products, conform to, satisfy, and implement at least the UMTS and/or LTE standards.¹⁷

105. Core Wireless is informed and believes that it is necessary to practice one or more of the claims of the '818 patent to comply with the requirements of certain standards applicable

¹⁷ See, e.g., **Exhibit 8** (listing LTE and UMTS as supported protocols); **Exhibit 9**; **Exhibit 10** (listing LTE and UMTS as supported protocols); **Exhibit 11** at 164 (discussing connection to LTE network); **Exhibit 12** at 14, 52, 54, 190; **Exhibit 13**. See also Apple's Partial Answer, Defenses and Counterclaims to Core Wireless's Complaint (Doc. No. 79) at ¶ 22 ("Apple admits that certain of its wireless mobile devices operate on networks supporting the GSM/GPRS, UMTS, and/or LTE standards.").

to mobile communications, specifically certain portions of the UMTS standard, including without limitation 3GPP TS 23.236, 3GPP TS 25.331, 3GPP TS 25.413, and/or 3GPP TS 23.060, and/or certain portions of the LTE standard, including without limitation 3GPP TS 23.401, 3GPP TS 23.003, 3GPP TS 36.300, 3GPP TS 24.301, 3GPP TS 36.331, 3GPP TS 23.002, 3GPP TS 32.752, 3GPP TS 36.401, 3GPP TS 36.413, 3GPP TS 23.251, 3GPP TS 29.303, and/or 3GPP TS 36.410, as detailed in Core Wireless's infringement contentions served on March 6, 2015. Core Wireless is informed and believes that Apple Standard-Compliant Products comply with at least the UMTS and/or LTE standards covered by the claims of the '818 patent and therefore infringe claims of the '818 patent.

106. Apple has had knowledge of the '818 patent at least as early as 2009, when Nokia offered Apple a license to its standard essential patents, including the patents-in-suit. Moreover, Apple has had knowledge of the '818 patent since September 10, 2014 when Core Wireless provided direct notice to Apple of its infringement of the '818 patent via the filing and service of Core Wireless's Original Complaint. Additionally, since at least March 6, 2015, Apple has had knowledge of Core Wireless's infringement contentions concerning the '818 patent, including without limitation the specific functionalities claimed by the '818 patent, the specific Apple Standard-Compliant Products infringing the '818 patent, and a detailed claim-by-claim, element-by-element of infringement by Apple Standard-Compliant Products.

107. In violation of 35 U.S.C. § 271(a), Apple is and has been infringing one or more claims of the '818 patent directly by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, without authority, products, including without limitation Apple Standard-Compliant Products, that are covered by or practice the inventions

claimed in the '818 patent. Apple is infringing claims of the '818 patent literally and/or pursuant to the doctrine of equivalents.

108. In violation of 35 U.S.C. § 271(b), Apple is and has been infringing one or more of the '818 patent's claims indirectly by inducing the infringement of the '818 patent's claims by third parties, including without limitation manufacturers, resellers, and/or end users of Apple Standard-Compliant Products, in this District, and elsewhere in the United States. Direct infringement is the result of activities performed by third parties in relation to Apple Standard-Compliant Products, including without limitation by end users enabled and encouraged by Apple to use Apple Standard-Compliant Products in their normal, customary way in accordance with at least the UMTS and/or LTE standards to infringe the '818 patent.

109. Apple actively induces third parties, including without limitation end-users of Apple Standard-Compliant Products, to infringe the '818 patent by, among other things, (i) enabling a user of Apple Standard-Compliant Products to use the products in accordance with at least the UMTS and/or LTE standard as disclosed and claimed in the '818 patent;¹⁸ (ii) providing instructions to end-users of Apple's Standard-Compliant Products for using the Standard-Compliant Products in their customary way;¹⁹ (iii) advertising compliance with at least the UMTS and/or LTE standards;²⁰ and (iv) providing to third parties the hardware (e.g., antenna(s), filter(s), switch(es), transceiver(s), and/or baseband processor(s) contained in Apple Standard-

¹⁸ On March 6, 2015, Core Wireless served Apple with its infringement contentions pursuant to P.R. 3-1, which detail Apple's infringement of the asserted claims of the '818 patent.

¹⁹ See, e.g., **Exhibit 11** at 164 (discussing connection to LTE network); **Exhibit 12** at 14, 52, 54, 190.

²⁰ See, e.g., **Exhibit 8** (listing LTE and UMTS as supported protocols); **Exhibit 9**; **Exhibit 10** (listing LTE and UMTS as supported protocols).

Compliant Products) and software components (e.g., Apple's iOS operating system running on Apple Standard-Compliant Products and other software and/or firmware used to operate components of the Apple Standard-Compliant Products) that may be required for or associated with infringement of the '818 patent's claims via the manufacture, marketing, sale, and/or distribution of Apple Standard-Compliant Products through Apple's website, retail store locations, and third-party distributors.

110. Apple's foregoing activities have been without authority and/or license from Core Wireless.

111. Apple has had direct and actual knowledge of the '818 patent since at least 2009, and certainly has had direct and actual knowledge of the '818 patent and Core Wireless's infringement claims at least as of the filing of Core Wireless's Original Complaint in September 2014. Apple has also had direct and actual knowledge of Core Wireless's specific infringement contentions concerning the '818 patent since at least March 2015. Despite Apple's knowledge of the '818 patent and Core Wireless's infringement contentions, Apple continues to engage in the activities described above which enable and encourage third parties, including without limitation end-users of Apple Standard-Compliant Products, to use such devices in their ordinary and customary way in accordance with the UMTS and/or LTE standards as disclosed and claimed in the '818 patent. Apple thereby specifically intends third parties, including without limitation end-users of Apple's Standard-Compliant Products, to infringe the '818 patent.

112. Core Wireless is informed and believes that Apple's infringement of the '818 patent has been and continues to be willful entitling Core Wireless to increased damages pursuant to 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action pursuant to 35 U.S.C. § 285.

113. Core Wireless is informed and believes that Apple intends to and will continue to directly infringe and/or induce infringement of the '818 patent.

114. Apple's acts of infringement have caused damages to Core Wireless and Core Wireless is entitled to recover from Apple the damages sustained by Core Wireless as a result of Apple's wrongful acts in an amount subject to proof at trial.

NINTH COUNT
(Infringement of the '828 patent)

115. Core Wireless incorporates by reference the allegations set forth in Paragraphs 1-114 of this Complaint as though fully set forth herein.

116. The '828 patent is generally directed to selecting a most optimal channel coding scheme for a packet data communication between a mobile station and a network. The channel coding scheme of a connection can be changed according to the need of the connection. Different packet data connections (e.g., sending text messages, sending emails, browsing web pages, making internet phone calls, etc.) will have different channel coding requirements, and different channel coding requirements have their respective benefits and costs. For instance, a stronger channel coding may be required in a packet data connection where frequent retransmissions of unsuccessfully retrieved packets is expected, but such channel coding may lower the throughput of data per packet that can be sent. The '828 patent discloses that channel coding schemes may be selected based upon the Quality of Service (QoS) parameters requested by the mobile station and are reflective of the type of connection needed by the mobile station.

117. The limitations of the asserted apparatus and/or method claims of the '828 patent may be satisfied by hardware, software, and/or firmware, or any combination thereof, including without limitation antennas, filters, power amplifiers, baseband processors, and/or transceivers in Apple Standard-Compliant Products, which practice at least the UMTS standard. Apple has

admitted that its products, including the Apple Standard-Compliant Products, conform to, satisfy, and implement at least the UMTS standard.²¹

118. Core Wireless is informed and believes that it is necessary to practice one or more of the claims of the '828 patent to comply with the requirements of certain standards applicable to mobile communications, specifically certain portions of the UMTS standard, including without limitation 3GPP TS 23.060, 3GPP TS 23.107, 3GPP TS 24.008, 3GPP TS 25.301, 3GPP TS 25.212, 3GPP TS 25.331, and/or 3GPP TS 25.413, as detailed in Core Wireless's infringement contentions served on March 6, 2015. Core Wireless is informed and believes that Apple Standard-Compliant Products comply with at least the UMTS standards covered by the claims of the '828 patent and therefore infringe claims of the '828 patent.

119. Apple has had knowledge of the predecessor patent to the '828 patent at least as early as 2009, when Nokia offered Apple a license to its standard essential patents, including the patents-in-suit. Moreover, Apple has had knowledge of the '828 patent since September 10, 2014 when Core Wireless provided direct notice to Apple of its infringement of the '828 patent via the filing and service of Core Wireless's Original Complaint. Additionally, since at least March 6, 2015, Apple has had knowledge of Core Wireless's infringement contentions concerning the '828 patent, including without limitation the specific functionalities claimed by the '828 patent, the specific Apple Standard-Compliant Products infringing the '828 patent, and

²¹ See, e.g., **Exhibit 8** (listing UMTS as a supported protocol); **Exhibit 10** (listing UMTS as a supported protocol); **Exhibit 12** at 14. See also Apple's Partial Answer, Defenses and Counterclaims to Core Wireless's Complaint (Doc. No. 79) at ¶ 22 ("Apple admits that certain of its wireless mobile devices operate on networks supporting the GSM/GPRS, UMTS, and/or LTE standards.").

a detailed claim-by-claim, element-by-element of infringement by Apple Standard-Compliant Products.

120. In violation of 35 U.S.C. § 271(a), Apple is and has been infringing one or more claims of the '828 patent directly by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, without authority, products, including without limitation Apple Standard-Compliant Products, that are covered by or practice the inventions claimed in the '828 patent. Apple is infringing claims of the '828 patent literally and/or pursuant to the doctrine of equivalents.

121. In violation of 35 U.S.C. § 271(b), Apple is and has been infringing one or more of the '828 patent's claims indirectly by inducing the infringement of the '828 patent's claims by third parties, including without limitation manufacturers, resellers, and/or end users of Apple Standard-Compliant Products, in this District, and elsewhere in the United States. Direct infringement is the result of activities performed by third parties in relation to Apple Standard-Compliant Products, including without limitation by end users enabled and encouraged by Apple to use Apple Standard-Compliant Products in their normal, customary way in accordance with at least the UMTS standard to infringe the '828 patent.

122. Apple actively induces third parties, including without limitation end-users of Apple Standard-Compliant Products, to infringe the '828 patent by, among other things, (i) enabling a user of Apple Standard-Compliant Products to use the products in accordance with at least the UMTS standard as disclosed and claimed in the '828 patent;²² (ii) providing instructions to end-users of Apple's Standard-Compliant Products for using the Standard-Compliant Products

²² On March 6, 2015, Core Wireless served Apple with its infringement contentions pursuant to P.R. 3-1, which detail Apple's infringement of the asserted claims of the '828 patent.

in their customary way;²³ (iii) advertising compliance with at least the UMTS standard;²⁴ and (iv) providing to third parties the hardware (e.g., antenna(s), filter(s), switch(es), transceiver(s), and/or baseband processor(s) contained in Apple Standard-Compliant Products) and software components (e.g., Apple's iOS operating system running on Apple Standard-Compliant Products and other software and/or firmware used to operate components of the Apple Standard-Compliant Products) that may be required for or associated with infringement of the '828 patent's claims via the manufacture, marketing, sale, and/or distribution of Apple Standard-Compliant Products through Apple's website, retail store locations, and third-party distributors.

123. Apple's foregoing activities have been without authority and/or license from Core Wireless.

124. Apple has had direct and actual knowledge of the predecessor of the '828 patent at least since 2009, and certainly has had direct and actual knowledge of the '828 patent and Core Wireless's infringement claims at least as of the filing of Core Wireless's Original Complaint in September 2014. Apple has also had direct and actual knowledge of Core Wireless's specific infringement contentions concerning the '828 patent since at least March 2015. Despite Apple's knowledge of the '828 patent and Core Wireless's infringement contentions, Apple continues to engage in the activities described above which enable and encourage third parties, including without limitation end-users of Apple Standard-Compliant Products, to use such devices in their ordinary and customary way in accordance with at least the UMTS standard as disclosed and claimed in the '828 patent. Apple thereby specifically intends

²³ See, e.g., **Exhibit 12** at 14.

²⁴ See, e.g., **Exhibit 8** (listing UMTS as a supported protocol); **Exhibit 10** (listing UMTS as a supported protocol).

third parties, including without limitation end-users of Apple's Standard-Compliant Products, to infringe the '828 patent.

125. Core Wireless is informed and believes that Apple's infringement of the '828 patent has been and continues to be willful entitling Core Wireless to increased damages pursuant to 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action pursuant to 35 U.S.C. § 285.

126. Core Wireless is informed and believes that Apple intends to and will continue to directly infringe and/or induce infringement of the '828 patent's claims.

127. Apple's acts of infringement have caused damages to Core Wireless and Core Wireless is entitled to recover from Apple the damages sustained by Core Wireless as a result of Apple's wrongful acts in an amount subject to proof at trial.

DAMAGES

128. As a result of Apple's contractual breaches, Core Wireless has suffered damages; however, Core Wireless does not yet know the full extent of those damages and they cannot be ascertained except through discovery and special accounting. To the fullest extent permitted by law, Core Wireless seeks recovery of all contractual damages to which Core Wireless would be entitled to in law or in equity.

129. Apple's acts of infringement are and were committed intentionally, knowingly, and with callous disregard of Core Wireless's legitimate rights. Core Wireless is therefore entitled to and now seeks to recover exemplary damages in an amount not less than the maximum amount permitted by law.

130. As a result of Apple's acts of infringement, Core Wireless has suffered actual and consequential damages; however, Core Wireless 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, Core Wireless seeks recovery of damages at least for reasonable royalties, unjust enrichment, and benefits received by Apple as a result of using the misappropriated technology. Core Wireless further seeks any other damages to which Core Wireless would be entitled to in law or in equity.

ATTORNEYS' FEES

131. Core Wireless is entitled to recover reasonable and necessary attorneys' fees under applicable law.

PRAYER FOR RELIEF

Core Wireless respectfully requests that this Honorable Court enter preliminary and final orders, declarations, and judgments against Apple as are necessary to provide Core Wireless with the following relief:

- (a) A judgment that Apple breached its contractual obligations with ETSI;
- (b) A judgment that Apple breached its contractual obligations with Core Wireless;
- (c) All direct and consequential damages stemming from Apple's breaches of its contractual obligations, including without limitation attorneys' fees and litigation expenses;
- (d) A declaration that Apple violated its duty to negotiate in good faith and is an unwilling licensee to Core Wireless's Standard-Essential Patents, including the patents-in-suit;
- (e) A mandatory future royalty payable on each future product sold by Apple that is found to infringe one or more of the patents-in-suit and on all future products which are not colorably different from products found to infringe;
- (f) As a minimum measure of the compensation Core Wireless is entitled to, a declaration of a FRAND royalty rate for Core Wireless's Standard-Essential Patents;
- (g) A judgment that Apple has infringed and/or is infringing one or more claims of the '634 patent;

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