

denies the allegations of Paragraph 2 of the First Amended Complaint.

3. HTC admits that HTC America, Inc. is a subsidiary of HTC Corporation with its offices at 13920 SE Eastgate Way, Suite 400, Bellevue, Washington 98005. HTC denies that HTC America, Inc. is a Texas corporation. To the extent not expressly admitted, HTC denies the allegations of Paragraph 3 of the First Amended Complaint.

4. HTC admits that Exedea, Inc. was a subsidiary of HTC and was a corporation organized under the laws of the State of Texas. HTC denies that Exedea, Inc. had a principal place of business at 5950 Corporate Drive, Houston, Texas 77036. To the extent not expressly admitted, HTC denies the allegations of Paragraph 4 of the First Amended Complaint.

5. HTC denies the allegations of Paragraph 5 of the First Amended Complaint.

JURISDICTION AND VENUE

6. HTC admits that this purports to be an action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 271.

7. HTC admits this Court generally has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a). To the extent not expressly admitted, HTC denies the allegations of Paragraph 7 of the First Amended Complaint.

8. HTC denies the allegations of Paragraph 8 of the First Amended Complaint.

9. HTC denies the allegations of Paragraph 9 of the First Amended Complaint.

COUNT I: PATENT INFRINGEMENT

10. HTC admits that Exhibit A to the First Amended Complaint appears to be a copy of U.S. Patent No. RE37,802 ("the '802 patent"). HTC admits that on its face, the titled page of the '802 Patent states that it was issued on July 23, 2002. HTC admits that on its face, the titled page of the '802 Patent states that it is entitled "Multicode Direct Sequence Spread Spectrum." To the extent not expressly admitted, HTC denies the allegations of Paragraph 10 of the First

Amended Complaint.

11. HTC denies the allegations of Paragraph 11 of the First Amended Complaint.

12. HTC admits that Exhibit B to the First Amended Complaint appears to be a copy of U.S. Patent No. 5,282,222 ("the '222 patent"). HTC admits that on its face, the titled page of the '222 Patent states that it was issued on January 25, 1994. HTC admits that on its face, the titled page of the '222 Patent states that the patent is entitled "Method and Apparatus for Multiple Access Between Transceivers in Wireless Communications Using OFDM Spread Spectrum." To the extent not expressly admitted, HTC denies the allegations of Paragraph 12 of the First Amended Complaint.

13. HTC denies the allegations of Paragraph 13 of the First Amended Complaint.

14. HTC denies the allegations of Paragraph 14 of the First Amended Complaint.

15. HTC denies the allegations of Paragraph 15 of the First Amended Complaint.

16. HTC denies the allegations of Paragraph 16 of the First Amended Complaint.

17. HTC denies the allegations of Paragraph 17 of the First Amended Complaint.

18. HTC denies the allegations of Paragraph 18 of the First Amended Complaint.

PRAYER FOR RELIEF

Responding to Wi-LAN, Inc.'s prayer for relief, HTC denies that Wi-LAN is entitled to any relief, and specifically denies all of the allegations and prayers for relief contained in Paragraphs 1-6 of its prayer for relief.

AFFIRMATIVE DEFENSES

Without admitting that it bears the burden of proof as to any of them, HTC asserts the following affirmative defenses:

AFFIRMATIVE DEFENSE NO. 1

(Failure to State a Claim)

1. The Complaint, and each cause of action therein, fails to state any claims against HTC upon which relief can be granted.

AFFIRMATIVE DEFENSE NO. 2

(Non-Infringement)

2. HTC has not directly or indirectly infringed, or contributed to or induced the infringement of any valid and enforceable claim of U.S. Patent No. RE37,802 (“the '802 patent”) and U.S. Patent No. 5,282,222 (“ the '222 patent”) and has not otherwise committed any acts in violation of 35 U.S.C. § 271.

AFFIRMATIVE DEFENSE NO. 3

(Invalidity)

3. Some or all of the claims of the '802 patent and the '222 patent are invalid for failing to satisfy one or more requirements of Title 35 of the United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103 and/or 112.

AFFIRMATIVE DEFENSE NO. 4

(Prosecution History Estoppel)

4. HTC has not and is not infringing some or all of the claims of the '802 patent and the '222 patent at least due to statements, representations, admissions, elections, positions, concessions and filings made to the U.S. Patent and Trademark Office (“PTO”) during the prosecution of the applications that matured into the '802 patent and the '222 patent that, in part or collectively, constitute prosecution history estoppel barring Wi-LAN from asserting that the

claims of the patents encompass or are infringed by any product or activities of HTC.

5. HTC has not and is not infringing some or all of the claims of the '802 patent and the '222 patent at least due to statements, representations, admissions, elections, positions, concessions and filings made to the PTO during the prosecution of U.S. and/or foreign applications to which the '802 patent and the '222 patent purport to claim priority that, in part or collectively, constitute prosecution history estoppel barring Wi-LAN from asserting that the claims of the patents encompass or are infringed by any product or activities of HTC.

AFFIRMATIVE DEFENSE NO. 5

(Damages Barred by Lack of Notice)

6. Wi-LAN's claim for damages is barred, in whole or in part, by a failure to satisfy the requirements of 35 U.S.C. § 287(a).

AFFIRMATIVE DEFENSE NO. 6

(No Costs)

7. Wi-LAN is barred by 35 U.S.C. § 288 from receiving any costs associated with this suit.

AFFIRMATIVE DEFENSE NO. 7

(No Injunctive Relief)

8. Wi-LAN is not entitled to any injunctive relief because any alleged injury to Wi-LAN is not immediate or irreparable and Wi-LAN has an adequate remedy at law for any alleged injury.

AFFIRMATIVE DEFENSE NO. 8

(No Enhanced Damages)

9. Wi-LAN is not entitled to any enhanced damages under 35 U.S.C. § 284.

AFFIRMATIVE DEFENSE NO. 9

(No Attorney Fees or Costs)

10. Wi-LAN is not entitled to any attorney's fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

AFFIRMATIVE DEFENSE NO. 10

(No Willful Infringement)

11. HTC has not willfully infringed the '802 patent and the '211 patent.

AFFIRMATIVE DEFENSE NO. 11

(Laches)

12. Wi-LAN's claims are barred, in whole in part, by the doctrine of laches.

AFFIRMATIVE DEFENSE NO. 12

(Unenforceability)

13. Some or all claims of the '802 patent and the '222 patent are unenforceable due to Wi-LAN's inequitable conduct and/or unclean hands in the prosecution of the '802 patent, the '222 patent and U.S. Patent No. 5,555,268 ("the '268 patent") before the U.S. Patent and Trademark Office.

14. On information and belief, individuals subject to the duty of candor under 37 C.F.R. § 1.56 ("Applicants"), including without limitation listed inventors Michel Fattouche ("Fattouche") and Hatim Zaghoul ("Zaghoul") and counsel, engaged in inequitable conduct and/or unclean hands by withholding material information with the intent to deceive the United States Patent and Trademark Office ("USPTO") in connection with prosecuting the '802 patent, which is a reissue of the '268 patent. The '802 and '268 patents share the same specification.

15. Prior to the issuance of the '268 patent, Applicants became aware of prior art

material to the patentability of the '268 and '802 patents, including at least Leonard J. Cimini, "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing," IEEE Transactions on Communications, Vol. Com-33, No. 7 (July 1985) ("Cimini"); U.S. Patent No. 5,063,560 ("Yerbury"); John A. C. Bingham "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," IEEE Communications (May 1990) ("Bingham") and other publications and patents by John A. C. Bingham; and B. Hirosaki, A. Yoshida, O. Tanaka, S. Hasegawa, K. Inoue, and K. Watanabe, "A 19.2 Kbps voiceband data modem based on orthogonally multiplexed QAM technique," IEEE (1985) ("Hirosaki"). Prior to the issuance of the '802 patent, Applicants became aware of prior art that is material to the patentability of the '802 patent, including at least U.S. Patent No. 4,583,236 ("Kromer"); U.S. Patent No. 4,665,404 ("Christy"); U.S. Patent No. 5,430,759 ("Yokey"); Bruce Carlson, Communication Systems: An Introduction to Signals and Noise in Electrical Communication (3d ed. McGraw-Hill 1986) ("Carlson"); and Jinkang Zhu, Shigenobu Sasaki, and Gen Marubayashi, "Proposal of Parallel Combinatory Spread Spectrum Communication System," Transactions of the Institute of Electronics, Information and Communication Engineers, Vol. J74-B-II No. 5 (May 1991) ("Zhu").

16. For example, Fattouche and Zaghloul were aware of Cimini at least by August 10, 1992, when they listed the article in an Information Disclosure Statement submitted to the USPTO during the prosecution of the '222 patent. Additionally, Fattouche and Zaghloul were aware of Yerbury in December 1992 when the Examiner cited Yerbury during the prosecution of the '222 patent. On information and belief, the Bingham article was one of the papers that Fattouche and Zaghloul used prior to filing of the application for the '268 patent. As a further example, Fattouche and Zaghloul were aware of the Hirosaki article at least by August 10, 1992,

when they listed the article in an Information Disclosure Statement submitted to the USPTO during the prosecution of the '222 patent. For example, Kromer was cited in an Office Action rejection during prosecution of U.S. Patent No. 5,127,024 ("the '024 patent"). Additionally, Fattouche and Zaghoul listed the Christy abstract in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,890,068 ("the '068 patent"). As a further example, Fattouche cited Yokev in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,887,022 ("the '022 patent"). Fattouche also published a 1989 paper, "An Adaptive Minimum Redundancy Array for Digital Communications," in which the Carlson reference was cited.

17. Under Wi-LAN's improper assertions of infringement, Cimini is at least material to the patentability of at least independent claims 1, 17, and 23 of the '268 patent and claims that depend from those claims. For example, figure 1(a) of Cimini, described in Part II.A, shows that a serial stream of data can be input to a serial-to-parallel converter to produce sets of "N serial data elements." This is material to the patentability of at least claims 1, 17, and 23. As another example, Figure 1(a) and the description in Part II.A show that the "N serial data elements" are modulated by "N carrier frequencies" and that the "N serial data elements" are spaced by an interval equal to the inverse of the symbol rate frequency. This is material to the patentability of at least claims 1, 17, and 23. An additional example is shown in Figure 1(a) and the accompanying description in Part II.A of the Cimini article in which the parallel data streams are frequency division multiplexed to produce a single waveform for data transmission. This is material to the patentability of at least claims 1, 17, and 23. As a further example, Figure 1(b) shows a receiver for receiving the modulated data symbols, which is material to the patentability of at least claim 17, and also shows a means for operating on the sequence of modulated data

symbols to generate an estimate of the second data stream, and a parallel-to-serial converter to convert the parallel streams into a single output which are material to the patentability of at least claim 17. In addition, the Cimini article is not cumulative of the references cited during the prosecution of the '268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Cimini.

18. On information and belief, Applicants deliberately failed to disclose the Cimini article to the USPTO with an intent to deceive during the prosecution of the '268 patent. For example, Fattouche and Zaghoul identified the Cimini article during the prosecution of the '222 patent prior to filing the application for the '268 patent. Moreover, in the specification for the '268 patent, Fattouche and Zaghoul state that “[w]hen $L=2$ with the first N -point transform being a DFT and the second being a RT, we have a system identical to the ['222] patent,” confirming their belief in the materiality of the '222 patent to the '268 patent, and under that belief the corresponding need to disclose the Cimini article in connection with the prosecution of the '268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of the Cimini article by providing it to the USPTO during prosecution of the '802 patent. The USPTO would not have allowed at least independent claims 1, 17 and 23 of the '268 patent if it were aware of the undisclosed Cimini article. Therefore, the Cimini article is but-for material prior art.

19. Under Wi-LAN's improper assertions of infringement and improper application of the claims, Yerbury is at least material to the patentability of at least independent claims 1, 17 and 23 of the '268 patent and claims that depend from those claims. For example, Yerbury shows a transmission system whereby “pseudo-noise (PN) codes are used asynchronously to direct sequence modulate the channel carriers at a high rate relative to the data rate;” this allows

a number of information bearing channels to share the same medium and “approximately the same frequency band.” See, e.g., ‘560 patent, col. 1:10–17. Claim 1 of Yerbury and the related disclosure are material to the patentability of at least independent claims 1, 17 and 23 of the ‘268 patent and dependent claim 18 of the ‘268 patent. As a further example, Claim 10 of Yerbury describes the receiving means for the transmission system, which includes a “plurality of receiver channels,” and a “correlation means” for collapsing the spread-spectrum signal to a narrow bandwidth “corresponding to the transmission channel signal bandwidth.” See, e.g., *id.* at col. 9:5–18. Claim 10 of Yerbury, and the related description, is material to the patentability of at least dependent claims 10, 12, and 21 of the ‘268 patent. As another example, Claim 10 of Yerbury describes a receiver means and a correlation means “provided for each receiver channel to cause the spread-spectrum signal received on a respective channel to be collapsed to a narrow bandwidth,” and claim 27 of Yerbury specifies that to produce an estimate of the data stream, the collapsed signal is passed through a narrowband filter, which are material to the patentability of at least claims 10, 12, and 21 of the ‘268 patent. Additionally, Yerbury is not cumulative of the information in the references cited during the prosecution of the ‘268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Yerbury.

20. On information and belief, Applicants deliberately failed to disclose the Yerbury reference to the USPTO with an intent to deceive during prosecution of the ‘268 patent. For example, during prosecution of the ‘222 patent, more than a year before Fattouche and Zaghoul filed for the ‘268 patent, the Examiner cited Yerbury in a December 10, 1992 Office Action, and stated that Yerbury was “pertinent to the applicant’s disclosure.” In the specification for the ‘268 patent, Fattouche and Zaghoul state that “[w]hen $L=2$ with the first N -point transform being a

DFT and the second being a RT, we have a system identical to the [‘222] patent,” confirming their belief in the materiality of the ‘222 patent to the ‘268 patent, and their belief in the need to disclose Yerbury in connection with the prosecution of the ‘268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of Yerbury by providing it to the USPTO during prosecution of the ‘802 patent. The USPTO would not have allowed at least independent claims 1, 10, 12, 17, 21 and 23 of the ‘268 patent if it were aware of the undisclosed Yerbury reference. Therefore, the Yerbury reference is but-for material prior art.

21. Under Wi-LAN’s improper assertions of infringement, the Bingham article is material to the patentability of at least independent claims 1, 17, and 23 of the ‘268 patent and claims that depend from those claims. For example, Figure 1 of Bingham and the accompanying description in the Multiplexing section of the article show a multicarrier modulation scheme, whereby input data are grouped into blocks of M bits; the M bits are then used to modulate carriers spaced across a usable frequency band, and the modulated carriers are summed for transmission. This is material to the patentability of at least claims 1, 2, 17, 18, 23, and 24 of the ‘268 patent. As a further example, Bingham describes demodulating the received signal in the receiver by performing a real-to-complex Fast Fourier Transform. This is shown in Figure 7, and the accompanying description in the section Implementation, in which the receiver performs a serial-to-parallel conversion followed by a Fast Fourier Transform; the data is then sent through a decoder and a parallel-to-serial buffer. These descriptions are material to the patentability of at least claim 10 of the ‘268 patent. Additionally, Bingham is not cumulative of the references cited during the prosecution of the ‘268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Bingham.

22. On information and belief, Applicants deliberately failed to disclose the Bingham

reference to the USPTO with an intent to deceive during prosecution of the '268 patent.

Fattouche and Zaghoul confirmed their belief in the materiality of the Bingham article by providing it to the USPTO during prosecution of the '802 patent, a reissue of the '268 patent.

The USPTO would not have allowed at least claims 1, 2, 17, 18, 23, and 24 of the '268 patent if it were aware of the undisclosed Bingham reference. Therefore, the Bingham reference is but-for material prior art.

23. Under Wi-LAN's improper assertions of infringement, the Hirosaki article is material to the patentability of at least independent claims 1, 17, and 23 of the '268 patent and the claims that depend from those claims. For example, Part 2 of the Hirosaki article shows using the orthogonally multiplexed quadrature amplitude modulation technique, whereby the "entire transmission band is divided into a number of mutually spectrum overlapping subchannels." The subchannels can be discriminated from each other provided they are orthogonal. This is material to the patentability of at least claims 1, 17, and 23 of the '268 patent. As a further example, Part 4 of the Hirosaki article shows a modem composed of five functional blocks: the transmitter, the receiver, the 8-channel time division multiplexer, the modem controller, and the time pulse generator. A microprocessor at the transmitter encodes the original data into a block of bits to be transmitted over each channel. Part 4 further discloses applying the following processing to a received signal: low-pass filter, gain control, and then digital conversion. This is material to the patentability of at least claim 17 of the '268 patent. Additionally, Hirosaki is not cumulative of the references cited during the prosecution of the '268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Hirosaki.

24. On information and belief, Applicants deliberately failed to disclose the Hirosaki

article to the USPTO with an intent to deceive during the prosecution of the '268 patent. For example, Fattouche and Zaghoul included the Hirosaki article in an Information Disclosure Statement submitted to the USPTO on August 10, 1992 during the prosecution of '222 patent, one and a half years before filing for the '268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of the Hirosaki article by providing it to the USPTO during prosecution of the '802 patent, a reissue of the '268 patent. The USPTO would not have allowed at least independent claims 1, 17 and 23 of the '268 patent if it were aware of the undisclosed Hirosaki reference. Therefore, the Hirosaki reference is but-for material prior art.

25. Under Wi-LAN's improper assertions of infringement, Kromer is material to the patentability of at least claims 1, 10, and 17 of the '802 patent and the claims that depend from those claims. For example, Figure 2 of Kromer and the accompanying description at 4:29 through 5:41, and claims 1 and 10, are material to the patentability of at least independent claims 1 and 10 of '802 patent. As a further example, claim 1 of Kromer shows a transmitter having (1) "a convolutional encoder for transforming each of a plurality of information bit sequences," and (2) a "modulated signal generating means, in response to each of said expanded bit sequences" which are material to the patentability of at least claims 1, 2, 17, 18, and 33 of the '802 patent. As another example, claim 1 of Kromer shows a receiver "having a demodulation and slicer means for demodulating and detecting said modulated carrier signal to obtain a plurality of received expanded bit sequences." This is material to the patentability of at least claim 17 of the '802 patent. Additionally, Kromer is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Kromer.

26. On information and belief, Applicants deliberately failed to disclose Kromer to

the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, during the prosecution of U.S. Patent No. 5,127,024 ("the '024 patent"), the examiner stated that Kromer shows "a data modulator for transmitting a sequence of data symbols at a symbol rate $1/T$, the modulator being characterized as having a carrier frequency and data symbols, the data symbol is real or complex and is the time index of the symbol." The '024 patent lists Fattouche as an inventor. The USPTO would not have allowed at least claims 1, 2, 17, 18, and 33 of the '802 patent if it were aware of the undisclosed Kromer reference. Therefore, the Kromer reference is but-for material prior art.

27. Under Wi-LAN's improper assertions of infringement, Christy is material to the patentability of at least claims 1, 2, 17, and 21 of the '802 patent and the claims that depend from those claims. For example, claim 1 of Christy discloses a base station with "means for transmitting a spread spectrum signal," and claim 2 of Christy further specifies that the "means for transmitting comprises means for generating a pseudorandom noise code, means for generating a carrier signal and means for modulating said carrier signal with said pseudorandom noise code." These descriptions are material to the patentability of at least claims 1, 2, and 17 of the '802 patent. As a further example, Christy shows using pseudorandom noise codes to generate modulated data which is material to the patentability of at least claim 17 of the '802 patent. As another example, dependent claim 4 of Christy discloses a "detection means" for "duplicating said pseudorandom noise codes" and a "means for cross correlating said receiver spread spectrum signal with said duplicated pseudorandom noise code." These descriptions are material to the patentability of at least claims 12, 17, and 21 of the '802 patent. Additionally, Christy is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim

limitations as presented by Christy.

28. On information and belief, Applicants deliberately failed to disclose Christy to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Fattouche and Zaghoul listed the Christy abstract in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,890,068 ("the '068 patent"), which lists Fattouche and Zaghoul as inventors. The USPTO would not have allowed at least claims 1, 2, 17, and 21 of the '802 patent if it were aware of the undisclosed Christy reference. Therefore, the Christy reference is but-for material prior art.

29. Under Wi-LAN's improper assertions of infringement, Yokev is material to the patentability of at least claims 1 and 17 of the '802 patent and the claims that depend from those claims. For example, dependent claim 7 of Yokev shows a carrier generator means for "producing a series frequencies for the frequency-hopped spread spectrum carrier, selected in response to the repeating pseudo-random code sequence;" claim 7 further shows a "modulation means" for "modulating the information onto the frequency-hopped spread spectrum carrier for transmission by the transmitter." Also, claim 24 of Yokev shows that collisions between signals can be avoided "through the use of an orthogonal set of selected frequencies and patterns." These descriptions are material to the patentability of at least claims 1 and 17 of the '802 patent. Additionally, Yokev is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Yokev.

30. On information and belief, Applicants deliberately failed to disclose Yokev to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Yokev was cited in an Information Disclosure Statement submitted to the USPTO during prosecution of

the '022 patent which lists Fattouche as an inventor. The USPTO would not have allowed at least claims 1 and 17 of the '802 patent if it were aware of the undisclosed Yokey reference.

Therefore, the Yokey reference is but-for material prior art.

31. Under Wi-LAN's improper assertions of infringement, Carlson is material to the patentability of at least claims 1, 2, and 17 of the '802 patent and the claims that depend from those claims. For example, Carlson states: "Spread spectrum communications systems employ special techniques designed to combat strong interference and/or to prevent message recovery by unauthorized receivers. As the name suggests, these techniques spread the transmitted signal spectrum over a frequency range much greater than the message bandwidth. The spectral spreading involves an auxiliary pseudo-noise (PN) process that looks random but can be replicated by authorized receivers." This section, which includes the structure at the receiver to demodulate the spread spectrum signal, is material to the patentability of at least claims 1 and 17. As a further example, Carlson shows using multiple spread spectrum codes, which is material to the patentability of at least claims 1, 2, and 17 of the '802 patent. Additionally, Carlson is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Carlson.

32. On information and belief, Applicants deliberately failed to disclose the Carlson reference to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Fattouche published a 1989 paper, "An Adaptive Minimum Redundancy Array for Digital Communications," in which the Carlson reference was relied upon for its disclosures related to the bit error probability in a communications system using QPSK signals. The USPTO would not have allowed at least claims 1, 2, and 17 of the '802 patent if it were aware of the

undisclosed Carlson reference. Therefore, the Carlson reference is but-for material prior art.

33. Under Wi-LAN's improper assertions of infringement, Zhu is at least material to the patentability of at least independent claims 1, 17, and 23 of the '802 patent and claims that depend from those claims. For example, Zhu shows two methods for increasing frequency utilization in spread spectrum communications. Zhu shows a method whereby "different spread sequences" are assigned "to each bit state equal in numbers to the number of transmission data points involved," and Figure 2 of Zhu and the accompanying description shows an implementation of a parallel combinatory spread spectrum system, including a serial to parallel converter for data, a combiner to combine the data prior to transmission, and a modulator for modulating the data with a carrier. These descriptions are material to the patentability of at least claims 1, 17 and 23 of the '802 patent. As a further example, Figure 1 and the accompanying description shows the receiving means, including a demodulator, "reverse spreading using N spread sequences," and a parallel to serial converter to convert the data into a final output. This is material to the patentability of at least claim 17 of the '802 patent. Additionally, Zhu is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Zhu. The USPTO would not have allowed at least independent claims 1, 17, and 23 of the '802 patent if it were aware of the undisclosed Zhu reference. Therefore, the Zhu reference is but-for material prior art.

34. On information and belief, Applicants deliberately failed to disclose Zhu to the USPTO with an intent to deceive during the prosecution of the '802 patent.

35. Additionally, during the prosecution of the '268 and '802 patents, Applicants made knowingly false statements to the USPTO on topics material to the patentability of the

'802 patent. For example, during the prosecution of the '268 patent, Applicants falsely stated that "[t]his is believed to be the first proposal for the use of spread spectrum for mobile transceivers" in order to distinguish the application over prior art cited by the examiner. This statement was a primary basis on which Applicants distinguished then claim 41, which issued as claim 23, and at the time this statement was made, Applicants were aware of numerous prior art references showing the use of spread spectrum for mobile transceivers. For example, in 1991, Fattouche and Zaghoul cited the EIA/TIA "Dual-Mode mobile station-base station compatibility standard" (Jan. 1990) in their article entitled "Diversity for Indoor Radio Communications," and in 1992, during the prosecution of the '222 patent, the USPTO provided Yerbury to Applicants in the course of an office action. Both of these references show mobile spread-spectrum transceivers.

36. Additionally, during the reissue proceedings, Applicants secured the '802 patent for an alleged invention not disclosed in the '268 patent by submitting a declaration in which they falsely and misleadingly claimed error. For example, Applicants falsely stated that there was error in connection with claim elements concerning the number of data symbols, codes, and chips per code.

37. On information and belief, Applicants engaged in a pattern and practice of deliberately withholding and misrepresenting material information during prosecution of the '268 and '802 patents with the intent to deceive the USPTO, rendering the '802 patent unenforceable for inequitable conduct and/or unclean hands. The permeation and extent of this misconduct throughout Applicants' prosecution as noted above and as noted in connection with the additional patents in suit further confirms that Applicants acted with intent to deceive.

38. Furthermore, the '802 patent is unenforceable under the doctrine of infectious

unenforceability because of Applicants' pattern of inequitable conduct and/or unclean hands during prosecution of other patents including the '268 patent. In addition to revealing the intent to deceive at all relevant times, this pattern infects and renders the '802 patent unenforceable.

39. On information and belief, individuals subject to the duty of candor under 37 C.F.R. § 1.56 ("Applicants"), including listed inventors Fattouche and Zaghloul and counsel, engaged in inequitable conduct and/or unclean hands by withholding material information with the intent to deceive the USPTO in connection with prosecuting the '222 patent.

40. Prior to the issuance of the '222 patent, Fattouche and Zaghloul became aware of prior art that is material to the patentability of the '222 patent, including at least John A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," IEEE Communications (May 1990) ("Bingham"); John G. Proakis, Digital Communications (2d ed. McGraw-Hill 1989) ("Proakis"); and Bruce Carlson, Communication Systems: An Introduction to Signals and Noise in Electrical Communication (3d ed. McGraw-Hill 1986) ("Carlson").

41. Under Wi-LAN's improper assertions of infringement, the Bingham article is material to the patentability of at least independent claims 1 and 7 of the '222 patent and claims that depend from those claims. For example, in the section Multiplexing, Bingham shows a frequency division multiplexer for multiplexing information, where the information is spaced across any usable frequency band. This is material to the patentability of at least claim 1 of the '222 patent. As another example, in the section Modulation and Demodulation, Bingham specifies that the sub-bands are orthogonal, and describes processing the received information at the receiver. These descriptions are material to the patentability of at least independent claim 7 of the '222 patent. As a further example, the Bingham article also shows "Adaptive Loading,"

which requires the receiver to “measure the sub-band SNRs, calculate the best power and bit assignments, and send this information back to the transmitter.” This is material to the patentability of at least dependent claims 3 and 5. Another example is found in the section, “Correcting for the Effects of Channel Impairments,” in which Bingham describes linearly equalizing the received signal, and calculating the channel characteristics. This is material to the patentability of at least claims 1 and 7 of the ‘222 patent. Additionally, Bingham is not cumulative of the references cited during the prosecution of the ‘222 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Bingham.

42. On information and belief, Applicants deliberately failed to disclose the Bingham article to the USPTO with an intent to deceive during prosecution of the ‘222 patent. For example, Fattouche and Zaghoul were aware of the Bingham article and confirmed their belief in the materiality of the Bingham article by providing it to the USPTO during prosecution of the ‘802 patent. The USPTO would not have allowed at least claims 1 and 7 of the ‘222 patent if it were aware of the undisclosed Bingham reference. Therefore, the Bingham reference is but-for material prior art.

43. Under Wi-LAN’s improper assertions of infringement, the Proakis reference is material to the patentability of at least independent claim 1 of the ‘222 patent and claims that depend from that claim. For example, Figure 8.1.1 and the accompanying description show the basic elements of a spread spectrum digital communications system. The figure shows a channel encoder and a channel decoder which are material to the patentability of at least claim 1. As a further example, Proakis shows the following receiver elements: a bandpass filter for filtering the received signal and a local oscillator which are material to the patentability of at least claim

1. As another example, the communications system in Proakis describes using a sampler for “sampling the output of the correlator,” as shown in Figure 8.2.2. This is material to the patentability of at least claim 1. A further example is shown in section 4.5.1, which describes methods that can be used for estimating the phase difference of the received signal. Figure 4.5.1 illustrates one method of carrier recovery using a square-law device. This illustration and the accompanying description are material to the patentability of at least claim 1. Additionally, Proakis is not cumulative of the references cited during the prosecution of the ‘222 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Proakis.

44. On information and belief, Applicants deliberately failed to disclose the Proakis reference to the USPTO with an intent to deceive during the prosecution of the ‘222 patent. For example, Fattouche published a 1991 paper, “A Spread Spectrum Radiolocation Technique and Its Application to Cellular Radio,” in which Proakis was relied upon for its disclosures related to the receiver structure in a communications system. Then, in a paper published by inventors Fattouche and Zaghoul, in 1992 during prosecution of the ‘222 patent, the inventors recognized that Proakis was relevant to modeling of the indoor radio propagation channel. Applicants further confirmed the materiality of Proakis by referencing it in the ‘268 patent specification concerning commonly used spread spectrum techniques. The USPTO would not have allowed at least independent claim 1 of the ‘222 patent if it were aware of the undisclosed Proakis reference. Therefore, the Proakis reference is but-for material prior art.

45. Under Wi-LAN’s improper assertions of infringement, Carlson is material to the patentability of at least claims 1 and 2 of the ‘222 patent. For example, in section 2.2, Carlson shows using Fourier transforms as a means to represent signals in either frequency-domain or

time-domain representation. This is material to the patentability of at least independent claim 1, and dependent claim 2 of the '222 patent. As a further example, Carlson shows, in section 12.4, digital multiplexing, whereby two or more digital signals are interleaved. This is material to the patentability of at least claim 1. Additionally, Carlson is not cumulative of the references cited during the prosecution of the '222 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Carlson.

46. On information and belief, Applicants deliberately failed to disclose the Carlson reference to the USPTO with an intent to deceive during the prosecution of the '222 patent. For example, Fattouche published a 1989 paper, "An Adaptive Minimum Redundancy Array for Digital Communications," in which the Carlson reference was relied upon for its disclosures related to the bit error probability in a communications system using QPSK signals. The USPTO would not have allowed at least claims 1 and 2 of the '222 patent if it were aware of the undisclosed Carlson reference. Therefore, the Carlson reference is but-for material prior art.

47. Accordingly, on information and belief, Applicants engaged in a pattern and practice of deliberately withholding and misrepresenting material information during prosecution with an intent to deceive the USPTO, rendering the '222 patent unenforceable for inequitable conduct and/or unclean hands. The permeation and extent of this misconduct throughout Applicants' prosecution as noted above and as noted in connection with the additional patents in suit further confirms that Applicants acted with intent to deceive.

48. Furthermore, the '222 patent is unenforceable under the doctrine of infectious unenforceability because of Applicants' pattern of inequitable conduct and/or unclean hands during prosecution of other patents to the extent alleged by Wi-LAN to be related to the '222 patent. In addition to revealing the intent to deceive at all relevant times, this pattern infects and

renders the '222 patent unenforceable.

AFFIRMATIVE DEFENSE NOS. 14-18

(Fraud, Constructive Fraud, Express Waiver, Implied Waiver and Equitable Estoppel)

49. Some or all claims of the '802 patent and the '222 patent are unenforceable due to Wi-LAN's material misrepresentations and/or omissions knowingly made in bad faith in the IEEE 802.11 standards-setting process with the intent to induce reliance.

The IEEE's Rules and Policies Regarding Standards

50. In this action, Wi-LAN has alleged that mobile handsets and other products having wireless capability compliant with the IEEE 802.11 standards infringe the '802 and '222 patents.

51. The IEEE is a professional association and leading developer of technical standards. IEEE members include engineers, scientists and allied professionals whose technical interests relate to electrical and computer sciences, engineering and related disciplines. Members may participate in the standards-setting process in working groups and/or subgroups called task groups.

52. To protect against unscrupulous conduct by any member who seeks to benefit unfairly from, or to manipulate to its advantage, the IEEE's standard-setting process, and to enable the IEEE and its members to develop standards free from potentially blocking patents, the IEEE instituted policies and rules regarding the disclosure and licensing of patents.

53. At all relevant times alleged herein, the IEEE's rules and policies required fairness and candor with respect to intellectual property. By way of example only, the IEEE required its members to submit letters of assurance including either a general disclaimer to the effect that the patentee will not enforce any of its present or future patents whose use would be required to implement the proposed IEEE standard against any person or entity using the patents

to comply with the standard, or a statement that a license will be made available to all applicants without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination. For example, the IEEE's Standards Board Bylaws state, "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."

Additionally, the IEEE's Standards Board Bylaws further state:

This assurance shall be a letter that is in the form of either

- a) A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement the proposed IEEE standard against any person or entity using the patent(s) to comply with the standard or
- b) A statement that a license will be made available to all applicants without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.

54. The IEEE formed the 802.11 working group in 1990. The IEEE 802.11 standard is entitled "Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications" and concerns wireless local area networking ("wireless LAN")

55. In 1997, the IEEE formed two task groups: the 802.11a and 802.11b. The 802.11a task group was concerned with a standard for wireless LAN in the 5 GHz frequency band. The 802.11b task group was concerned with a standard for wireless LAN in the 2.4 GHz frequency band.

56. Members of the IEEE participating in the standards setting process for 802.11a and 802.11b included Wi-LAN. As a result of its membership in the IEEE, Wi-LAN agreed, both explicitly and implicitly, that it would abide by the rules and policies of the IEEE.

Wi-LAN's Bad Faith Misrepresentations and Omissions

57. On information and belief, Wi-LAN intentionally and knowingly made material misrepresentations and/or omissions in connection with standards-setting organizations, including as set forth below.

58. On July 6-11, 1998, the 802.11 working group met in La Jolla, California in connection with the standards-setting process.

59. Wi-LAN's president and CEO, Hatim Zaghloul, and Vice President of Engineering, Steven Knudsen, attended the July 1998 802.11 meeting in La Jolla.

60. Numerous proposals had been submitted to the 802.11b task group for consideration prior to the July 1998 meeting in La Jolla, including proposals from Alantro Communications ("Alantro"), Micrilor Inc. ("Micrilor"), Raytheon, KDD, Golden Bridge Technology, Harris Semiconductor ("Harris"), and Lucent Technologies ("Lucent")

61. On the first day of the 802.11 meeting, July 6, 1998, Harris and Lucent submitted a joint proposal (the "Harris/Lucent Proposal") to the 802.11b task group.

62. On July 7, 1998, Alantro, Micrilor, Harris and Lucent presented their proposals to members of the 802.11b task group.

63. On July 7, 1998, Wi-LAN submitted a letter to the chairman of the 802.11 working group offering to license its patents on fair, reasonable and non-discriminatory terms and conditions with respect to 802.11b.

64. On July 9, 1998, the 802.11b task group voted in favor of pursuing the Harris/Lucent Proposal, and decided not to pursue other proposals. For example, the 802.11b task group also considered proposals submitted by Alantro and Micrilor. The task group could have decided not to pursue any of the pending proposals.

65. After the 802.11b task group voted to pursue the Harris/Lucent Proposal, it then

recommended the Harris/Lucent Proposal to the 802.11 working group as the base for the 802.11b standard. The 802.11 working group accepted the recommendation of the 802.11b task group.

66. The IEEE 802.11 working group met again in September 1998 in Westford, Massachusetts.

67. On September 10, 1998, four days before the September 1998 802.11 meeting, Wi-LAN filed an application to reissue the '268 patent. This patent application (hereinafter, the "Reissue Application") later issued as the '802 patent. In prosecuting the Reissue Application, Wi-LAN submitted claims that Wi-LAN alleges are infringed by certain products having wireless capability compliant with the IEEE 802.11 standards.

68. On September 14, 1998, after filing the Reissue Application, Wi-LAN submitted a letter to the chairman of the 802.11 working group stating that Wi-LAN believed that the then-pending Reissue Application was not necessary to the practice of 802.11b. Wi-LAN's letter states, "Wi-LAN Inc. hereby withdraws its previous IP statement dated July 9, 1998 to the extent that it implied that Wi-LAN existing US patent on multicode technology, US patent # 5,555,268, or another pending patent are necessary for the implementation of devices incorporating the IEEE802.11b draft standard."

69. The IEEE 802.11 working group met again in November 1998 in Albuquerque, New Mexico. Wi-LAN's president and CEO, Mr. Zaghoul, and Vice President of Engineering, Mr. Knudsen, attended the November 1998 meeting in Albuquerque, New Mexico. In particular, Mr. Zaghoul attended a meeting of the 802.11b task group at the November 1998 Albuquerque 802.11 meeting. With Mr. Zaghoul in attendance at that meeting, the 802.11b task group addressed Wi-LAN's September 14, 1998 letter. At the meeting, Wi-LAN continued to

represent that it believed that the Reissue Application was not necessary to the practice of 802.11b. The meeting minutes for the 802.11b task group state, “270 - r1 WLAN IP statement (They no longer feel that they have any IP related to standard).” Based on Wi-LAN’s assertions, the 802.11b task group expressed the view that “We no longer feel that WiLAN IP position applies to the proposed 802.11b standard.”

70. On information and belief, at all relevant times, Wi-LAN intentionally and in bad faith failed to inform the IEEE that Wi-LAN had filed the Reissue Application or of its contents, or that Wi-LAN intended to assert its patents in bad faith against the 802.11b standard, without offering licenses on fair, reasonable, and non-discriminatory terms.

71. On information and belief, Wi-LAN, Fattouche, and/or Zaghloul made numerous other misrepresentations and/or omissions regarding Wi-LAN’s patents with intent to deceive. For example, on information and belief, in or around the same time period that Wi-LAN was contemplating or pursuing the reissue application that eventually issued as the ‘802 patent, Wi-LAN, Fattouche, and/or Zaghloul were aware that the patents-in-suit were invalid, were unenforceable, and/or did not apply to the accused products. For instance, on information and belief, Wi-LAN obtained information confirming the invalidity of the claims applied for in connection with the reissue application/’802 patent. On information and belief, Wi-LAN was also aware of facts revealing numerous acts of inequitable conduct, rendering the claims unenforceable, as alleged above, and continued to engage in inequitable conduct during prosecution of the reissue application/’802 patent. Despite this knowledge, Wi-LAN intentionally and in bad faith made misrepresentations and/or omissions concerning the validity and enforceability of the patents. As another example, Wi-LAN was aware of limitations on its ability to obtain monetary recoveries and injunctive relief with respect to its patents, but

continued to seek licenses on unreasonable and discriminatory terms. For instance, on information and belief, Wi-LAN was aware of facts revealing that products allegedly embodying the inventions of the patents-in-suit were sold by Wi-LAN without being properly marked. Wi-LAN also sought unreasonable and discriminatory licenses with intentional disregard of promises Wi-LAN and/or Wi-LAN's predecessors-in-interest made to standards-setting organizations and their members, and notwithstanding its knowledge of the facts alleged herein.

Wi-LAN's Letters of Assurance Regarding 802.11a and 802.11g

72. On July 7, 1998, Wi-LAN submitted a letter to the chair of the IEEE 802.11 working group referencing the "Standards Recommendation Relating to Technology Being Proposed by Lucent Technologies and NTT for Inclusion in the IEEE P802.11a (OFDM) Standards Project" in the subject line and confirming that it was "prepared to license its existing patents directed to and necessary for the practice of the referenced OFDM Technology, if Lucent and NTT's proposal is adopted by the IEEE, on fair, reasonable and non-discriminatory terms and conditions to qualified applicants in accordance with the IEEE Patent Policy." The 802.11 working group adopted the referenced proposal.

73. On November 9, 1998, Wi-LAN submitted a letter of assurance referencing the "Standards Recommendation Relating to the IEEE P802.11a (OFDM) Draft Standards" in the subject line and confirming that it was "prepared to license its existing and future patents directed to and necessary for the practice of the referenced OFDM Technology, if the IEEE802.11a Draft Standard is adopted by the IEEE, on fair, reasonable and non-discriminatory terms and conditions to qualified applicants in accordance with the IEEE Patent Policy." The 802.11 working group adopted the referenced standard.

74. On November 29, 2000, Wi-LAN submitted a letter of assurance referencing the "Standards Recommendation Relating to the IEEE P802.11b Task Group G (OFDM) Draft

Standards” in the subject line and confirming that it was “prepared to license its existing and future patents directed to and necessary for the practice of the referenced OFDM Technology, if the IEEE802.11b Task Group G Draft Standard is adopted by the IEEE, on fair, reasonable and non-discriminatory terms and conditions to qualified applicants in accordance with the IEEE Patent Policy.”

75. On information and belief, Wi-LAN, intentionally and in bad faith failed to offer licenses on fair, reasonable and non-discriminatory terms, and instead is pursuing excessive royalties and injunctive relief in litigation, in intentional disregard of promises Wi-LAN made to standards setting organizations and their members, notwithstanding Wi-LAN’s knowledge of the facts alleged herein.

76. On information and belief, Wi-LAN intentionally and knowingly made material misrepresentations and/or omissions to the IEEE, its members, others relying on 802.11 including Defendants in this action, and the public, including, as alleged herein, misrepresentations and/or omissions regarding its alleged patents and/or patent applications. Wi-LAN had a duty to disclose facts regarding its alleged intellectual property, including as a result of its representations to the IEEE and other representations, as alleged herein.

77. On information and belief, Wi-LAN’s material misrepresentations and/or omissions were knowingly false and made in bad faith with the intent to induce reliance.

78. The IEEE and its members reasonably have relied on the foregoing misrepresentations and/or omissions in adopting and using the 802.11 standards. Furthermore, HTC reasonably has relied on the foregoing misrepresentations and/or omissions, and/or the 802.11 standards, in investing substantial resources developing and marketing products accused of alleged infringement in this action.

79. On information and belief, Wi-LAN intentionally and knowingly made material misrepresentations and/or omissions to the IEEE, including, as alleged herein, misrepresentations and/or omissions regarding its alleged patents and/or patent applications. Wi-LAN had a duty to disclose facts regarding its alleged intellectual property, including as a result of its representations to the IEEE, as alleged herein.

80. On information and belief, Wi-LAN's material misrepresentations and/or omissions were knowingly false and made in bad faith with the intent to induce reliance.

81. The IEEE and its members reasonably have relied on the foregoing misrepresentations and/or omissions in adopting and using the 802.11 standards. Furthermore, HTC reasonably has relied on the foregoing misrepresentations and/or omissions, and/or the 802.11 standards, in investing substantial resources developing and marketing products accused of alleged infringement in this action.

82. On September 14, 1998, four days after the filing of the Reissue Application which later issued as the '802 patent, Wi-LAN submitted the letter to the chairman of the 802.11 working group stating, *inter alia*, that "Wi-LAN Inc. hereby withdraws its previous IP statement dated July 9, 1998 to the extent that it implied that Wi-LAN existing US patent on multicode technology, the '268 patent, or another pending patent are necessary for the implementation of devices incorporating the IEEE802.11b draft standard." By withdrawing its previous assurance to IEEE, Wi-LAN voluntarily and intentionally relinquished its right to enforce the '802 patent.

AFFIRMATIVE DEFENSE NO. 19

(Failure to Comply with FRAND Obligations)

83. On information and belief, Wi-LAN has undertaken, in accordance with the relevant rules and intellectual property rights policies of applicable Standard Setting

Organizations (“SSOs”), to grant licenses to some entities under each of the ‘802 and ‘222 patents on fair, reasonable, and nondiscriminatory (“FRAND”) terms and conditions. These FRAND obligations are found in Intellectual Property Policies adopted by ETSI (“the ETSI IPR Policy”), including but not limited to Clause 6.1 of the ETSI IPR Policy, and the Statement on ITU Telecommunication Standardization Bureau (TSB) Patent Policy adopted by the International Telecommunication Union (ITU) (“the ITU Patent Policy”). Wi-LAN has not, however, offered to HTC reasonable and nondiscriminatory royalty terms and rates that are proportionate to royalty terms and rates offered to similarly situated companies. As a third party beneficiary of the rules and intellectual property rights policies of the relevant SSOs, HTC has the right to be granted license(s) to the ‘802 and ‘222 patents on FRAND terms and conditions.

84. Wi-LAN has failed to comply with its FRAND obligations under the relevant rules and intellectual property rights policies of the relevant SSOs with respect to HTC (which is claiming the benefit thereof) by refusing to offer a license on FRAND terms. Wi-LAN’s FRAND obligations limit the damages, if any, available to Wi-LAN in this action.

AFFIRMATIVE DEFENSE NO. 20

(Reservation of Rights)

85. HTC reserves the right to add any additional defenses that discovery may reveal.

AFFIRMATIVE DEFENSE NO. 21

(Reservation of Rights)

86. One or more of the claims of the ‘802 patent are invalid under the doctrine of recapture.

AFFIRMATIVE DEFENSE NO. 22

(Sales to Government)

87. Wi-LAN's claims are barred in whole or in part and are limited by 28 U.S.C. § 1498.

AFFIRMATIVE DEFENSE NO. 23

(First Sale, Patent Exhaustion)

88. Wi-LAN's claims for relief are limited by the doctrines of exhaustion and/or first sale and Wi-LAN is not entitled to a double recovery.

COUNTERCLAIMS

As to the Counterclaims of HTC Corp., HTC America, Inc., and Exedeia, Inc. (collectively, "HTC") against Wi-LAN Inc. ("Wi-LAN"), HTC alleges as follows:

THE PARTIES

1. HTC Corp. is a Taiwan corporation with its headquarters at No. 23, Xinghua Road, Taoyuan City, Taoyuan County 330, Taiwan, Republic of China.
2. HTC America, Inc. is a subsidiary of HTC Corp. and is a Washington corporation with its headquarters at 13920 SE Eastgate Way, Suite 200, Bellevue, Washington, 98005.
3. Exedeia, Inc. was a subsidiary of HTC Corp. and was a corporation organized under the laws of the State of Texas with no office in the United States. Exedeia, Inc. filed its Certificate of Termination with the Secretary of the State for the State of Texas on December 30, 2011.
4. Upon information and belief, Wi-LAN is a corporation existing under the laws of Canada with its principal place of business at 11 Holland Ave., Suite 608, Ottawa, Ontario, Canada K1Y 4S1.

5. On February 2, 2011, Wi-LAN filed a Complaint alleging patent infringement in the United States District Court for the Eastern District of Texas.

6. On December 6, 2012, Wi-LAN filed a First Amended Complaint alleging patent infringement in the United States District Court for the Eastern District of Texas.

JURISDICTION AND VENUE

7. This action arises under the patent laws of the United States and seeks declaratory judgment under 28 U.S.C. §§ 2201 and 2202. This Court has jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

8. Venue is proper in this judicial district pursuant to 28 U.S.C. §§1391 and 1400, *et. seq.*

COUNT ONE **DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF U.S. PATENT NO. RE37,802**

9. HTC repeats and realleges each and every allegation contained in Paragraphs 1-8 of these Counterclaims as if fully set forth herein.

10. Wi-LAN has alleged that HTC infringed U.S. Patent No. RE37,802 (“the ‘802 patent”). Wi-LAN allegedly has all rights and interest in the ‘802 patent.

11. As a result of these averments, an actual case or controversy exists between HTC and Wi-LAN concerning infringement of the ‘802 patent.

12. HTC is not infringing and has not infringed any claim of the ‘802 patent.

13. HTC is not willfully, deliberately, or intentionally infringing and has not willfully, deliberately, or intentionally infringed any claim of the ‘802 patent.

14. Pursuant to the Declaratory Judgment Act, 28 U.S.C. §2201 *et. seq.*, HTC is

entitled to a declaratory judgment of non-infringement of the '802 patent.

COUNT TWO
DECLARATORY JUDGMENT OF INVALIDITY OF U.S. PATENT NO RE37,802

15. HTC repeats and realleges each and every allegation contained in Paragraphs 1-14 of these Counterclaims as if fully set forth herein.

16. As a result of these averments, an actual case or controversy exists between HTC and Wi-LAN concerning the validity of the '802 patent.

17. The claims of the '802 patent are invalid under one or more sections of Title 35 of the United States Code, including, but not limited to 35 U.S.C. §§ 101, 102, 103, and/or 112.

18. Pursuant to the Declaratory Judgment Act, 28 U.S.C. §2201 *et. seq.*, HTC is entitled to a declaratory judgment that the claims of the '802 patent are invalid for failing to meet one or more conditions for patentability under one or more sections of Title 35 of the United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

COUNT THREE
DECLARATORY JUDGMENT OF UNENFORCEABILITY OF U.S. PATENT NO. RE37,802

19. HTC repeats and realleges each and every allegation contained in Paragraphs 1-18 of these Counterclaims as if fully set forth herein.

20. On information and belief, individuals subject to the duty of candor under 37 C.F.R. § 1.56 ("Applicants"), including without limitation listed inventors Michel Fattouche ("Fattouche") and Hatim Zaghoul ("Zaghoul") and counsel, engaged in inequitable conduct and/or unclean hands by withholding material information with the intent to deceive the United States Patent and Trademark Office ("USPTO") in connection with prosecuting the '802 patent, which is a reissue of the '268 patent. The '802 and '268 patents share the same specification.

21. Prior to the issuance of the '268 patent, Applicants became aware of prior art material to the patentability of the '268 and '802 patents, including at least Leonard J. Cimini, "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing," IEEE Transactions on Communications, Vol. Com-33, No. 7 (July 1985) ("Cimini"); U.S. Patent No. 5,063,560 ("Yerbury"); John A. C. Bingham "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," IEEE Communications (May 1990) ("Bingham") and other publications and patents by John A. C. Bingham; and B. Hirosaki, A. Yoshida, O. Tanaka, S. Hasegawa, K. Inoue, and K. Watanabe, "A 19.2 Kbps voiceband data modem based on orthogonally multiplexed QAM technique," IEEE (1985) ("Hirosaki"). Prior to the issuance of the '802 patent, Applicants became aware of prior art that is material to the patentability of the '802 patent, including at least U.S. Patent No. 4,583,236 ("Kromer"); U.S. Patent No. 4,665,404 ("Christy"); U.S. Patent No. 5,430,759 ("Yokey"); Bruce Carlson, Communication Systems: An Introduction to Signals and Noise in Electrical Communication (3d ed. McGraw-Hill 1986) ("Carlson"); and Jinkang Zhu, Shigenobu Sasaki, and Gen Marubayashi, "Proposal of Parallel Combinatory Spread Spectrum Communication System," Transactions of the Institute of Electronics, Information and Communication Engineers, Vol. J74-B-II No. 5 (May 1991) ("Zhu").

22. For example, Fattouche and Zaghoul were aware of Cimini at least by August 10, 1992, when they listed the article in an Information Disclosure Statement submitted to the USPTO during the prosecution of U.S. Patent No. 5,282,222 ("the '222 patent"). Additionally, Fattouche and Zaghoul were aware of Yerbury in December 1992 when the Examiner cited Yerbury during the prosecution of the '222 patent. On information and belief, the Bingham article was one of the papers that Fattouche and Zaghoul used prior to filing of the application

for the '268 patent. As a further example, Fattouche and Zaghoul were aware of the Hirotsuki article at least by August 10, 1992, when they listed the article in an Information Disclosure Statement submitted to the USPTO during the prosecution of the '222 patent. For example, Kromer was cited in an Office Action rejection during prosecution of U.S. Patent No. 5,127,024 ("the '024 patent"). Additionally, Fattouche and Zaghoul listed the Christy abstract in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,890,068 ("the '068 patent"). As a further example, Fattouche cited Yokey in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,887,022 ("the '022 patent"). Fattouche also published a 1989 paper, "An Adaptive Minimum Redundancy Array for Digital Communications," in which the Carlson reference was cited.

23. Under Wi-LAN's improper assertions of infringement, Cimini is at least material to the patentability of at least independent claims 1, 17, and 23 of the '268 patent and claims that depend from those claims. For example, figure 1(a) of Cimini, described in Part II.A, shows that a serial stream of data can be input to a serial-to-parallel converter to produce sets of "N serial data elements." This is material to the patentability of at least claims 1, 17, and 23. As another example, Figure 1(a) and the description in Part II.A show that the "N serial data elements" are modulated by "N carrier frequencies" and that the "N serial data elements" are spaced by an interval equal to the inverse of the symbol rate frequency. This is material to the patentability of at least claims 1, 17, and 23. An additional example is shown in Figure 1(a) and the accompanying description in Part II.A of the Cimini article in which the parallel data streams are frequency division multiplexed to produce a single waveform for data transmission. This is material to the patentability of at least claims 1, 17, and 23. As a further example, Figure 1(b)

shows a receiver for receiving the modulated data symbols, which is material to the patentability of at least claim 17, and also shows a means for operating on the sequence of modulated data symbols to generate an estimate of the second data stream, and a parallel-to-serial converter to convert the parallel streams into a single output which are material to the patentability of at least claim 17. In addition, the Cimini article is not cumulative of the references cited during the prosecution of the '268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Cimini.

24. On information and belief, Applicants deliberately failed to disclose the Cimini article to the USPTO with an intent to deceive during the prosecution of the '268 patent. For example, Fattouche and Zaghoul identified the Cimini article during the prosecution of the '222 patent prior to filing the application for the '268 patent. Moreover, in the specification for the '268 patent, Fattouche and Zaghoul state that "[w]hen $L=2$ with the first N -point transform being a DFT and the second being a RT, we have a system identical to the ['222] patent," confirming their belief in the materiality of the '222 patent to the '268 patent, and under that belief the corresponding need to disclose the Cimini article in connection with the prosecution of the '268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of the Cimini article by providing it to the USPTO during prosecution of the '802 patent. The USPTO would not have allowed at least independent claims 1, 17 and 23 of the '268 patent if it were aware of the undisclosed Cimini article. Therefore, the Cimini article is but-for material prior art.

25. Under Wi-LAN's improper assertions of infringement and improper application of the claims, Yerbury is at least material to the patentability of at least independent claims 1, 17 and 23 of the '268 patent and claims that depend from those claims. For example, Yerbury

shows a transmission system whereby “pseudo-noise (PN) codes are used asynchronously to direct sequence modulate the channel carriers at a high rate relative to the data rate;” this allows a number of information bearing channels to share the same medium and “approximately the same frequency band.” See, e.g., ‘560 patent, col. 1:10–17. Claim 1 of Yerbury and the related disclosure are material to the patentability of at least independent claims 1, 17 and 23 of the ‘268 patent and dependent claim 18 of the ‘268 patent. As a further example, Claim 10 of Yerbury describes the receiving means for the transmission system, which includes a “plurality of receiver channels,” and a “correlation means” for collapsing the spread-spectrum signal to a narrow bandwidth “corresponding to the transmission channel signal bandwidth.” See, e.g., id. at col. 9:5–18. Claim 10 of Yerbury, and the related description, is material to the patentability of at least dependent claims 10, 12, and 21 of the ‘268 patent. As another example, Claim 10 of Yerbury describes a receiver means and a correlation means “provided for each receiver channel to cause the spread-spectrum signal received on a respective channel to be collapsed to a narrow bandwidth,” and claim 27 of Yerbury specifies that to produce an estimate of the data stream, the collapsed signal is passed through a narrowband filter, which are material to the patentability of at least claims 10, 12, and 21 of the ‘268 patent. Additionally, Yerbury is not cumulative of the information in the references cited during the prosecution of the ‘268 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Yerbury.

26. On information and belief, Applicants deliberately failed to disclose the Yerbury reference to the USPTO with an intent to deceive during prosecution of the ‘268 patent. For example, during prosecution of the ‘222 patent, more than a year before Fattouche and Zaghoul filed for the ‘268 patent, the Examiner cited Yerbury in a December 10, 1992 Office Action, and

stated that Yerbury was “pertinent to the applicant’s disclosure.” In the specification for the ‘268 patent, Fattouche and Zaghoul state that “[w]hen $L=2$ with the first N-point transform being a DFT and the second being a RT, we have a system identical to the [‘222] patent,” confirming their belief in the materiality of the ‘222 patent to the ‘268 patent, and their belief in the need to disclose Yerbury in connection with the prosecution of the ‘268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of Yerbury by providing it to the USPTO during prosecution of the ‘802 patent. The USPTO would not have allowed at least independent claims 1, 10, 12, 17, 21 and 23 of the ‘268 patent if it were aware of the undisclosed Yerbury reference. Therefore, the Yerbury reference is but-for material prior art.

27. Under Wi-LAN’s improper assertions of infringement, the Bingham article is material to the patentability of at least independent claims 1, 17, and 23 of the ‘268 patent and claims that depend from those claims. For example, Figure 1 of Bingham and the accompanying description in the Multiplexing section of the article show a multicarrier modulation scheme, whereby input data are grouped into blocks of M bits; the M bits are then used to modulate carriers spaced across a usable frequency band, and the modulated carriers are summed for transmission. This is material to the patentability of at least claims 1, 2, 17, 18, 23, and 24 of the ‘268 patent. As a further example, Bingham describes demodulating the received signal in the receiver by performing a real-to-complex Fast Fourier Transform. This is shown in Figure 7, and the accompanying description in the section Implementation, in which the receiver performs a serial-to-parallel conversion followed by a Fast Fourier Transform; the data is then sent through a decoder and a parallel-to-serial buffer. These descriptions are material to the patentability of at least claim 10 of the ‘268 patent. Additionally, Bingham is not cumulative of the references cited during the prosecution of the ‘268 patent, including at least because the

references cited during prosecution do not show the claim limitations as presented by Bingham.

28. On information and belief, Applicants deliberately failed to disclose the Bingham reference to the USPTO with an intent to deceive during prosecution of the '268 patent. Fattouche and Zaghoul confirmed their belief in the materiality of the Bingham article by providing it to the USPTO during prosecution of the '802 patent, a reissue of the '268 patent. The USPTO would not have allowed at least claims 1, 2, 17, 18, 23, and 24 of the '268 patent if it were aware of the undisclosed Bingham reference. Therefore, the Bingham reference is but-for material prior art.

29. Under Wi-LAN's improper assertions of infringement, the Hirosaki article is material to the patentability of at least independent claims 1, 17, and 23 of the '268 patent and the claims that depend from those claims. For example, Part 2 of the Hirosaki article shows using the orthogonally multiplexed quadrature amplitude modulation technique, whereby the "entire transmission band is divided into a number of mutually spectrum overlapping subchannels." The subchannels can be discriminated from each other provided they are orthogonal. This is material to the patentability of at least claims 1, 17, and 23 of the '268 patent. As a further example, Part 4 of the Hirosaki article shows a modem composed of five functional blocks: the transmitter, the receiver, the 8-channel time division multiplexer, the modem controller, and the time pulse generator. A microprocessor at the transmitter encodes the original data into a block of bits to be transmitted over each channel. Part 4 further discloses applying the following processing to a received signal: low-pass filter, gain control, and then digital conversion. This is material to the patentability of at least claim 17 of the '268 patent. Additionally, Hirosaki is not cumulative of the references cited during the prosecution of the '268 patent, including at least because the references cited during prosecution do not show the

claim limitations as presented by Hirosaki.

30. On information and belief, Applicants deliberately failed to disclose the Hirosaki article to the USPTO with an intent to deceive during the prosecution of the '268 patent. For example, Fattouche and Zaghoul included the Hirosaki article in an Information Disclosure Statement submitted to the USPTO on August 10, 1992 during the prosecution of '222 patent, one and a half years before filing for the '268 patent. Fattouche and Zaghoul further confirmed their belief in the materiality of the Hirosaki article by providing it to the USPTO during prosecution of the '802 patent, a reissue of the '268 patent. The USPTO would not have allowed at least independent claims 1, 17 and 23 of the '268 patent if it were aware of the undisclosed Hirosaki reference. Therefore, the Hirosaki reference is but-for material prior art.

31. Under Wi-LAN's improper assertions of infringement, Kromer is material to the patentability of at least claims 1, 10, and 17 of the '802 patent and the claims that depend from those claims. For example, Figure 2 of Kromer and the accompanying description at 4:29 through 5:41, and claims 1 and 10, are material to the patentability of at least independent claims 1 and 10 of '802 patent. As a further example, claim 1 of Kromer shows a transmitter having (1) "a convolutional encoder for transforming each of a plurality of information bit sequences," and (2) a "modulated signal generating means, in response to each of said expanded bit sequences" which are material to the patentability of at least claims 1, 2, 17, 18, and 33 of the '802 patent. As another example, claim 1 of Kromer shows a receiver "having a demodulation and slicer means for demodulating and detecting said modulated carrier signal to obtain a plurality of received expanded bit sequences." This is material to the patentability of at least claim 17 of the '802 patent. Additionally, Kromer is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution

do not show the claim limitations as presented by Kromer.

32. On information and belief, Applicants deliberately failed to disclose Kromer to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, during the prosecution of U.S. Patent No. 5,127,024 ("the '024 patent"), the examiner stated that Kromer shows "a data modulator for transmitting a sequence of data symbols at a symbol rate $1/T$, the modulator being characterized as having a carrier frequency and data symbols, the data symbol is real or complex and is the time index of the symbol." The '024 patent lists Fattouche as an inventor. The USPTO would not have allowed at least claims 1, 2, 17, 18, and 33 of the '802 patent if it were aware of the undisclosed Kromer reference. Therefore, the Kromer reference is but-for material prior art.

33. Under Wi-LAN's improper assertions of infringement, Christy is material to the patentability of at least claims 1, 2, 17, and 21 of the '802 patent and the claims that depend from those claims. For example, claim 1 of Christy discloses a base station with "means for transmitting a spread spectrum signal," and claim 2 of Christy further specifies that the "means for transmitting comprises means for generating a pseudorandom noise code, means for generating a carrier signal and means for modulating said carrier signal with said pseudorandom noise code." These descriptions are material to the patentability of at least claims 1, 2, and 17 of the '802 patent. As a further example, Christy shows using pseudorandom noise codes to generate modulated data which is material to the patentability of at least claim 17 of the '802 patent. As another example, dependent claim 4 of Christy discloses a "detection means" for "duplicating said pseudorandom noise codes" and a "means for cross correlating said receiver spread spectrum signal with said duplicated pseudorandom noise code." These descriptions are material to the patentability of at least claims 12, 17, and 21 of the '802 patent. Additionally,

Christy is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Christy.

34. On information and belief, Applicants deliberately failed to disclose Christy to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Fattouche and Zaghoul listed the Christy abstract in an Information Disclosure Statement submitted to the USPTO during prosecution of U.S. Patent No. 5,890,068 ("the '068 patent"), which lists Fattouche and Zaghoul as inventors. The USPTO would not have allowed at least claims 1, 2, 17, and 21 of the '802 patent if it were aware of the undisclosed Christy reference. Therefore, the Christy reference is but-for material prior art.

35. Under Wi-LAN's improper assertions of infringement, Yokev is material to the patentability of at least claims 1 and 17 of the '802 patent and the claims that depend from those claims. For example, dependent claim 7 of Yokev shows a carrier generator means for "producing a series frequencies for the frequency-hopped spread spectrum carrier, selected in response to the repeating pseudo-random code sequence;" claim 7 further shows a "modulation means" for "modulating the information onto the frequency-hopped spread spectrum carrier for transmission by the transmitter." Also, claim 24 of Yokev shows that collisions between signals can be avoided "through the use of an orthogonal set of selected frequencies and patterns." These descriptions are material to the patentability of at least claims 1 and 17 of the '802 patent. Additionally, Yokev is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Yokev.

36. On information and belief, Applicants deliberately failed to disclose Yokev to the

USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Yokey was cited in an Information Disclosure Statement submitted to the USPTO during prosecution of the '022 patent which lists Fattouche as an inventor. The USPTO would not have allowed at least claims 1 and 17 of the '802 patent if it were aware of the undisclosed Yokey reference. Therefore, the Yokey reference is but-for material prior art.

37. Under Wi-LAN's improper assertions of infringement, Carlson is material to the patentability of at least claims 1, 2, and 17 of the '802 patent and the claims that depend from those claims. For example, Carlson states: "Spread spectrum communications systems employ special techniques designed to combat strong interference and/or to prevent message recovery by unauthorized receivers. As the name suggests, these techniques spread the transmitted signal spectrum over a frequency range much greater than the message bandwidth. The spectral spreading involves an auxiliary pseudo-noise (PN) process that looks random but can be replicated by authorized receivers." This section, which includes the structure at the receiver to demodulate the spread spectrum signal, is material to the patentability of at least claims 1 and 17. As a further example, Carlson shows using multiple spread spectrum codes, which is material to the patentability of at least claims 1, 2, and 17 of the '802 patent. Additionally, Carlson is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Carlson.

38. On information and belief, Applicants deliberately failed to disclose the Carlson reference to the USPTO with an intent to deceive during the prosecution of the '802 patent. For example, Fattouche published a 1989 paper, "An Adaptive Minimum Redundancy Array for Digital Communications," in which the Carlson reference was relied upon for its disclosures

related to the bit error probability in a communications system using QPSK signals. The USPTO would not have allowed at least claims 1, 2, and 17 of the '802 patent if it were aware of the undisclosed Carlson reference. Therefore, the Carlson reference is but-for material prior art.

39. Under Wi-LAN's improper assertions of infringement, Zhu is at least material to the patentability of at least independent claims 1, 17, and 23 of the '802 patent and claims that depend from those claims. For example, Zhu shows two methods for increasing frequency utilization in spread spectrum communications. Zhu shows a method whereby "different spread sequences" are assigned "to each bit state equal in numbers to the number of transmission data points involved," and Figure 2 of Zhu and the accompanying description shows an implementation of a parallel combinatory spread spectrum system, including a serial to parallel converter for data, a combiner to combine the data prior to transmission, and a modulator for modulating the data with a carrier. These descriptions are material to the patentability of at least claims 1, 17 and 23 of the '802 patent. As a further example, Figure 1 and the accompanying description shows the receiving means, including a demodulator, "reverse spreading using N spread sequences," and a parallel to serial converter to convert the data into a final output. This is material to the patentability of at least claim 17 of the '802 patent. Additionally, Zhu is not cumulative of the references cited during the prosecution of the '802 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Zhu. The USPTO would not have allowed at least independent claims 1, 17, and 23 of the '802 patent if it were aware of the undisclosed Zhu reference. Therefore, the Zhu reference is but-for material prior art.

40. On information and belief, Applicants deliberately failed to disclose Zhu to the USPTO with an intent to deceive during the prosecution of the '802 patent.

41. Additionally, during the prosecution of the '268 and '802 patents, Applicants made knowingly false statements to the USPTO on topics material to the patentability of the '802 patent. For example, during the prosecution of the '268 patent, Applicants falsely stated that "[t]his is believed to be the first proposal for the use of spread spectrum for mobile transceivers" in order to distinguish the application over prior art cited by the examiner. This statement was a primary basis on which Applicants distinguished then claim 41, which issued as claim 23, and at the time this statement was made, Applicants were aware of numerous prior art references showing the use of spread spectrum for mobile transceivers. For example, in 1991, Fattouche and Zaghoul cited the EIA/TIA "Dual-Mode mobile station-base station compatibility standard" (Jan. 1990) in their article entitled "Diversity for Indoor Radio Communications," and in 1992, during the prosecution of the '222 patent, the USPTO provided Yerbury to Applicants in the course of an office action. Both of these references show mobile spread-spectrum transceivers.

42. Additionally, during the reissue proceedings, Applicants secured the '802 patent for an alleged invention not disclosed in the '268 patent by submitting a declaration in which they falsely and misleadingly claimed error. For example, Applicants falsely stated that there was error in connection with claim elements concerning the number of data symbols, codes, and chips per code.

43. On information and belief, Applicants engaged in a pattern and practice of deliberately withholding and misrepresenting material information during prosecution of the '268 and '802 patents with the intent to deceive the USPTO, rendering the '802 patent unenforceable for inequitable conduct and/or unclean hands. The permeation and extent of this misconduct throughout Applicants' prosecution as noted above and as noted in connection with

the additional patents in suit further confirms that Applicants acted with intent to deceive.

44. Furthermore, the '802 patent is unenforceable under the doctrine of infectious unenforceability because of Applicants' pattern of inequitable conduct and/or unclean hands during prosecution of other patents including the '268 patent. In addition to revealing the intent to deceive at all relevant times, this pattern infects and renders the '802 patent unenforceable.

45. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

46. A judicial declaration is necessary and appropriate so that HTC may ascertain its rights regarding the '802 patent.

47. This is an exceptional case under 35 U.S.C. § 285 including without limitation because Wi-LAN filed its Complaint with knowledge of the facts stated in this Counterclaim.

COUNT FOUR
DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF U.S. PATENT NO.
5,282,222

48. HTC repeats and realleges each and every allegation contained in Paragraphs 1-47 of these Counterclaims as if fully set forth herein.

49. Wi-LAN has alleged that HTC infringed U.S. Patent No. 5,282,222 ("the '222 patent"). Wi-LAN allegedly has all rights and interest in the '222 patent.

50. As a result of these averments, an actual case or controversy exists between HTC and Wi-LAN concerning infringement of the '222 patent.

51. HTC is not infringing and has not infringed any claim of the '222 patent.

52. HTC is not willfully, deliberately, or intentionally infringing and has not willfully, deliberately, or intentionally infringed any claim of the '222 patent.

53. Pursuant to the Declaratory Judgment Act, 28 U.S.C. §2201 *et. seq.*, HTC is entitled to a declaratory judgment of non-infringement of the '222 patent.

COUNT FIVE
DECLARATORY JUDGMENT OF INVALIDITY OF U.S. PATENT NO 5,282,222

54. HTC repeats and realleges each and every allegation contained in Paragraphs 1-53 of these Counterclaims as if fully set forth herein.

55. As a result of these averments, an actual case or controversy exists between HTC and Wi-LAN concerning the validity of the '222 patent.

56. The claims of the '222 patent are invalid under one or more sections of Title 35 of the United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

57. Pursuant to the Declaratory Judgment Act, 28 U.S.C. §2201 *et. seq.*, HTC is entitled to a declaratory judgment that the claims of the '222 patent are invalid for failing to meet one or more conditions for patentability under one or more sections of Title 35 of the United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

COUNT SIX
DECLARATORY JUDGMENT OF UNENFORCEABILITY OF U.S. PATENT NO. 5,282,222

58. HTC repeats and realleges each and every allegation contained in Paragraphs 1-57 of these Counterclaims as if fully set forth herein.

59. On information and belief, individuals subject to the duty of candor under 37 C.F.R. § 1.56 ("Applicants"), including listed inventors Fattouche and Zaghloul and counsel, engaged in inequitable conduct and/or unclean hands by withholding material information with the intent to deceive the USPTO in connection with prosecuting the '222 patent.

60. Prior to the issuance of the '222 patent, Fattouche and Zaghloul became aware of

prior art that is material to the patentability of the '222 patent, including at least John A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," IEEE Communications (May 1990) ("Bingham"); John G. Proakis, Digital Communications (2d ed. McGraw-Hill 1989) ("Proakis"); and Bruce Carlson, Communication Systems: An Introduction to Signals and Noise in Electrical Communication (3d ed. McGraw-Hill 1986) ("Carlson").

61. Under Wi-LAN's improper assertions of infringement, the Bingham article is material to the patentability of at least independent claims 1 and 7 of the '222 patent and claims that depend from those claims. For example, in the section Multiplexing, Bingham shows a frequency division multiplexer for multiplexing information, where the information is spaced across any usable frequency band. This is material to the patentability of at least claim 1 of the '222 patent. As another example, in the section Modulation and Demodulation, Bingham specifies that the sub-bands are orthogonal, and describes processing the received information at the receiver. These descriptions are material to the patentability of at least independent claim 7 of the '222 patent. As a further example, the Bingham article also shows "Adaptive Loading," which requires the receiver to "measure the sub-band SNRs, calculate the best power and bit assignments, and send this information back to the transmitter." This is material to the patentability of at least dependent claims 3 and 5. Another example is found in the section, "Correcting for the Effects of Channel Impairments," in which Bingham describes linearly equalizing the received signal, and calculating the channel characteristics. This is material to the patentability of at least claims 1 and 7 of the '222 patent. Additionally, Bingham is not cumulative of the references cited during the prosecution of the '222 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by

Bingham.

62. On information and belief, Applicants deliberately failed to disclose the Bingham article to the USPTO with an intent to deceive during prosecution of the '222 patent. For example, Fattouche and Zaghoul were aware of the Bingham article and confirmed their belief in the materiality of the Bingham article by providing it to the USPTO during prosecution of the '802 patent. The USPTO would not have allowed at least claims 1 and 7 of the '222 patent if it were aware of the undisclosed Bingham reference. Therefore, the Bingham reference is but-for material prior art.

63. Under Wi-LAN's improper assertions of infringement, the Proakis reference is material to the patentability of at least independent claim 1 of the '222 patent and claims that depend from that claim. For example, Figure 8.1.1 and the accompanying description show the basic elements of a spread spectrum digital communications system. The figure shows a channel encoder and a channel decoder which are material to the patentability of at least claim 1. As a further example, Proakis shows the following receiver elements: a bandpass filter for filtering the received signal and a local oscillator which are material to the patentability of at least claim 1. As another example, the communications system in Proakis describes using a sampler for "sampling the output of the correlator," as shown in Figure 8.2.2. This is material to the patentability of at least claim 1. A further example is shown in section 4.5.1, which describes methods that can be used for estimating the phase difference of the received signal. Figure 4.5.1 illustrates one method of carrier recovery using a square-law device. This illustration and the accompanying description are material to the patentability of at least claim 1. Additionally, Proakis is not cumulative of the references cited during the prosecution of the '222 patent, including at least because the references cited during prosecution do not show the claim

limitations as presented by Proakis.

64. On information and belief, Applicants deliberately failed to disclose the Proakis reference to the USPTO with an intent to deceive during the prosecution of the '222 patent. For example, Fattouche published a 1991 paper, "A Spread Spectrum Radiolocation Technique and Its Application to Cellular Radio," in which Proakis was relied upon for its disclosures related to the receiver structure in a communications system. Then, in a paper published by inventors Fattouche and Zaghloul, in 1992 during prosecution of the '222 patent, the inventors recognized that Proakis was relevant to modeling of the indoor radio propagation channel. Applicants further confirmed the materiality of Proakis by referencing it in the '268 patent specification concerning commonly used spread spectrum techniques. The USPTO would not have allowed at least independent claim 1 of the '222 patent if it were aware of the undisclosed Proakis reference. Therefore, the Proakis reference is but-for material prior art.

65. Under Wi-LAN's improper assertions of infringement, Carlson is material to the patentability of at least claims 1 and 2 of the '222 patent. For example, in section 2.2, Carlson shows using Fourier transforms as a means to represent signals in either frequency-domain or time-domain representation. This is material to the patentability of at least independent claim 1, and dependent claim 2 of the '222 patent. As a further example, Carlson shows, in section 12.4, digital multiplexing, whereby two or more digital signals are interleaved. This is material to the patentability of at least claim 1. Additionally, Carlson is not cumulative of the references cited during the prosecution of the '222 patent, including at least because the references cited during prosecution do not show the claim limitations as presented by Carlson.

66. On information and belief, Applicants deliberately failed to disclose the Carlson reference to the USPTO with an intent to deceive during the prosecution of the '222 patent. For

example, Fattouche published a 1989 paper, “An Adaptive Minimum Redundancy Array for Digital Communications,” in which the Carlson reference was relied upon for its disclosures related to the bit error probability in a communications system using QPSK signals. The USPTO would not have allowed at least claims 1 and 2 of the ‘222 patent if it were aware of the undisclosed Carlson reference. Therefore, the Carlson reference is but-for material prior art.

67. Accordingly, on information and belief, Applicants engaged in a pattern and practice of deliberately withholding and misrepresenting material information during prosecution with an intent to deceive the USPTO, rendering the ‘222 patent unenforceable for inequitable conduct and/or unclean hands. The permeation and extent of this misconduct throughout Applicants’ prosecution as noted above and as noted in connection with the additional patents in suit further confirms that Applicants acted with intent to deceive.

68. Furthermore, the ‘222 patent is unenforceable under the doctrine of infectious unenforceability because of Applicants’ pattern of inequitable conduct and/or unclean hands during prosecution of other patents to the extent alleged by Wi-LAN to be related to the ‘222 patent. In addition to revealing the intent to deceive at all relevant times, this pattern infects and renders the ‘222 patent unenforceable.

69. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

70. A judicial declaration is necessary and appropriate so that HTC may ascertain its rights regarding the ‘222 patent.

71. This is an exceptional case under 35 U.S.C. § 285 including without limitation because Wi-LAN filed its Complaint with knowledge of the facts stated in this Counterclaim.

COUNT SEVEN
HTC IS ENTITLED TO LICENSE THE ASSERTED PATENTS FROM
WI-LAN ON FAIR, REASONABLE AND NON-DISCRIMINATORY
TERMS AND CONDITIONS

72. HTC repeats and realleges each and every allegation contained in Paragraphs 1-71 of these Counterclaims as if fully set forth herein.

73. On information and belief, Wi-LAN has undertaken, in accordance with the relevant rules and intellectual property rights policies of applicable Standard Setting Organizations (“SSOs”), to grant licenses to some entities under each of the Patents-In-Suit on fair, reasonable, and nondiscriminatory (“FRAND”) terms and conditions. These FRAND obligations are found in Intellectual Property Policies adopted by ETSI (“the ETSI IPR Policy”), including but not limited to Clause 6.1 of the ETSI IPR Policy, and the Statement on ITU Telecommunication Standardization Bureau (TSB) Patent Policy adopted by the International Telecommunication Union (ITU) (“the ITU Patent Policy”). Wi-LAN has not, however, offered to HTC reasonable and nondiscriminatory royalty terms and rates that are proportionate to royalty terms and rates offered to similarly situated companies. As a third party beneficiary of the rules and intellectual property rights policies of the relevant SSOs, HTC has the right to be granted license(s) to the Patents-In-Suit on FRAND terms and conditions.

74. Wi-LAN has failed to comply with its FRAND obligations under the relevant rules and intellectual property rights policies of the relevant SSOs with respect to HTC (which is claiming the benefit thereof) by refusing to offer a license on FRAND terms.

75. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.

76. In the event that one or more claims of the Asserted Patent in suit are found valid

and infringed, a judicial declaration that HTC is entitled to license the Asserted Patents under FRAND terms and conditions is necessary and appropriate.

HTC'S PRAYER FOR RELIEF

WHEREFORE, HTC respectfully requests that:

- A. Wi-LAN's complaint be dismissed with prejudice;
- B. HTC be awarded judgment in favor of all its Counterclaims;
- C. The '802 patent and the '222 patent be held not infringed;
- D. The '802 patent and the '222 patent be held invalid;
- E. The '802 patent and the '222 patent be held unenforceable;
- F. Wi-LAN be enjoined from asserting that HTC, its officers, agents, representatives, stockholders, and/or customers infringe, contributorily infringe, or induce infringement of the claims of the '802 patent and the '222 patent;
- G. Wi-LAN be enjoined from bringing suit against any officers, agents, representatives, stockholders, and/or customers of HTC alleging that they infringe, contributorily infringe, or induce infringement of the claims of the '802 patent and the '222 patent;
- H. This be declared an exceptional case pursuant to 35 U.S.C. § 285 and HTC be awarded its attorneys' fees and costs (including expert fees);
- I. HTC be entitled to license the '802 and '222 patents from Wi-LAN on fair, reasonable and non-discriminatory terms and conditions; and
- J. HTC be awarded damages, costs, attorneys' fees, and such other and further relief as the Court may deem just and proper.

Dated: December 20, 2012

Respectfully submitted,

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JURY DEMAND

Pursuant to Fed. R. Civ. P. 38(b), HTC demands a trial by jury of all issues triable of right by a jury.

Dated: December 20, 2012

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that on December 20, 2012, counsel of record who are deemed to have consented to electronic service are being served with a copy of this document by electronic mail.

/s/ Eric H. Findlay
Eric H. Findlay