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13 Attorneys for Samsung Electronics Co., Ltd.,
 Samsung Electronics America, Inc., and Samsung
 14 Telecommunications America LLC

15 UNITED STATES DISTRICT COURT

16 NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION

17 APPLE INC., a California corporation,
 18 Plaintiff,
 19 vs.

20 SAMSUNG ELECTRONICS CO., LTD., a
 Korean business entity; SAMSUNG
 21 ELECTRONICS AMERICA, INC., a New
 York corporation; SAMSUNG
 22 TELECOMMUNICATIONS AMERICA, LLC,
 a Delaware limited liability company,
 23 Defendants.

CASE NO. 11-cv-01846-LHK

**DECLARATION OF RICHARD WESEL
 IN SUPPORT OF SAMSUNG'S
 PROPOSED CLAIM CONSTRUCTION
 FOR U.S. PATENT NO. 7,200,792**

Date: January 20, 2012
 Time: 10:00 am
 Courtroom 4, 5th Floor
 Judge: Hon. Lucy H. Koh

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1 I, Richard Wesel, declare:

2 1. I am a professor at the University of California, Los Angeles, in the field of
3 Electrical Engineering, specializing in communications. I have been asked to provide an expert
4 declaration on behalf of Samsung Electronics Co. Ltd., Samsung Electronics America, Inc., and
5 Samsung Telecommunications America, LLC (collectively “Samsung”) as to the meaning of the
6 term “symbol” in claims 11 and 14 of U.S. Patent No. 7,200,792, as it would have been
7 understood by persons of ordinary skill in the art at the time of the invention (on or around
8 December 2001). If called upon as a witness, I could competently testify to the truth of each
9 statement herein.

10 2. I am being compensated for my work in this matter at the rate of \$450 per hour.
11 My compensation does not depend in any way on the outcome of this investigation or the
12 particular testimony or opinions I provide.

13 3. In preparing this declaration, I have considered my own experiences in the field,
14 the items discussed herein, and the items listed below:

- 15 A. U.S. Patent No. 7,200,792 (“’792 patent”).
- 16 B. U.S. Patent No. 7,200,792 prosecution history.
- 17 C. Declaration of Prof. Richard D. Gitlin in Support of Apple's Proposed
18 Claim Construction for U.S. Patent No. 7,200,792, dated November 14,
19 2011 (“Gitlin Decl.”).
- 20 D. Gitlin, Hayes and Weinstein, DATA COMMUNICATIONS PRINCIPLES, Kluwer
21 Academic/Plenum Publishers (1992) (“Gitlin, et. al., DATA
22 COMMUNICATIONS PRINCIPLES”).
- 23 E. Apple's PLR 4-2 disclosure, dated Oct. 31, 2011, for the term “symbol,”
24 *i.e.*, Apple's PLR 4-2 disclosure at 12-17.
- 25 F. Samsung's PLR 4-2 disclosure, dated Oct. 31, 2011, for the term “symbol,”
26 *i.e.*, Samsung's PLR 4-2 disclosure, Exhibit A at 46.

27 4. I reserve the right to supplement or amend this declaration based on any new
28 information received that is relevant to my opinions.

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1 I. PROFESSIONAL BACKGROUND

2 5. I have a bachelor's and master's degrees in electrical engineering from the
3 Massachusetts Institute of Technology and a doctorate in electrical engineering from Stanford
4 University.

5 6. I am currently a Professor in the Electrical Engineering Department and Associate
6 Dean of Academic and Student Affairs for the Henry Samueli School of Engineering and Applied
7 Science (HSSEAS) at the University of California, Los Angeles.

8 7. I have been an electrical engineering professor at UCLA since 1996 teaching
9 courses in error control coding and communication systems among other topics. I received the
10 HSSEAS TRW Excellence in Teaching Award in 2000.

11 8. I have authored or co-authored over 130 conference and journal publications on
12 communications and signal processing.

13 9. I have received the National Science Foundation CAREER Award and an Okawa
14 Foundation Award for Excellence in Telecommunications Research.

15 10. Attached as Exhibit A is a copy of my curriculum vitae setting forth my
16 qualifications and publications.

17

18 II. PERSON OF ORDINARY SKILL IN THE ART

19 11. I understand that to determine the ordinary and customary meaning of a claim term,
20 one looks to the meaning that a person of ordinary skill in the art would have given the term at the
21 time of the invention, which in this case is at least as early as December 2001. Based on my
22 experiences and the materials I have reviewed, it is my opinion that one of ordinary skill in the
23 field of the '792 patent is a person in the field of electrical engineering specializing in
24 communications, with either a Bachelor's degree and approximately three years of experience or a
25 Master's degree with approximately one year of experience.

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1 III. MEANING OF “SYMBOL” – PLAIN AND ORDINARY MEANING

2 12. I have been asked to provide my opinion about the meaning of the word “symbol”
3 as used in claims 11 and 14 of the '792 patent. I understand that the meaning of a term is
4 considered in the context of the patent as a whole, including the claim language and the
5 specification, as well as the patent's prosecution history – collectively described as intrinsic
6 evidence. I also understand that claim construction may take into account extrinsic evidence, such
7 as dictionaries and treatises; however, such evidence is considered less reliable than intrinsic
8 evidence, and is examined in the context of the available intrinsic evidence.

9 13. I am informed and understand that district courts are not required to construe every
10 limitation present in a patent's claim. In particular, a district court is not obligated to construe
11 terms with ordinary meanings, lest trial courts be inundated with requests to parse the meaning of
12 every word in the asserted claims. However, a determination that a claim term “needs no
13 construction” or can be understood according to its “plain and ordinary meaning” may be
14 inadequate when a term has more than one ordinary meaning or when reliance on a term's ordinary
15 meaning does not resolve the parties' dispute.

16 14. The '792 patent is directed to the field of communications, specifically to data
17 transmission in a communication system. In that field, “symbol” is such a ubiquitous and well-
18 understood term in data communications that some data communications textbooks use it without
19 any definition. *See* Gitlin, et. al., DATA COMMUNICATIONS PRINCIPLES. In my opinion, it would
20 be immediately apparent to a person of ordinary skill in the art that the '792 patent uses “symbol”
21 in a manner similar to other books, documents, and writings in the communications field. Thus, a
22 person of ordinary skill in the art would recognize that Claims 11 and 14 of the '792 patent are
23 properly understood using the plain and ordinary meaning of “symbol.” Because “symbol” is
24 being used in this ordinary and customary sense, no construction of this term is necessary.

25 15. The plain and ordinary meaning is clear in the context of data transmission and
26 reception. In that context, “symbol” is widely understood to describe a modulated signal
27 representing a number of bits of information. The signal is “modulated” in the sense that one or

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1 more of its properties, such as phase, frequency, or amplitude, are altered to convey the
 2 information. The selected modulation technique specifies the number of bits that a symbol
 3 represents. Therefore, if the Court decides a construction of the term “symbol” is necessary, it
 4 should be given its plain and ordinary meaning: **“a modulated signal representing a number of
 5 bits specified according to the modulation technique.”** Apple's and Samsung's proposed
 6 constructions are summarized in the table below.

Claim No.	Disputed Term	Apple's Proposed Construction	Samsung's Proposed Construction
11 and 14	“symbol”	“a modulated pattern in a sequence of such patterns that represents a plurality of bits”	Plain and ordinary meaning If the Court decides a construction is necessary: “a modulated signal representing a number of bits specified according to the modulation technique”

14 a.) **“a modulated signal” v. “a modulated pattern”**

15 1.) **Intrinsic Evidence – “a modulated signal”**

16 16. A “symbol” is a “modulated signal,” and not a “modulated pattern.” The language
 17 of the claims indicates that symbol is used in this plain and ordinary sense. Claims 11 and 14 both
 18 claim a “received symbol.” In order for a “symbol” to be “received,” it must have been
 19 transmitted by a source. The transmission and reception of a symbol indicate the “symbol” is a
 20 signal.

21 17. Moreover, Claims 11 and 14 include the language “demodulating a received
 22 symbol into a plurality of systematic bits and parity bits.” The ordinary meaning of
 23 “demodulating” requires a demodulator to receive a modulated signal. The understanding of
 24 “symbol” in its ordinary sense as a “signal” is fully consistent with the use of “demodulating” in
 25 the claim language.

26 18. The specification further confirms that a “received symbol” refers to a “signal.”
 27 Columns 21-24 of the specification teach the functionality of the receivers that is described in

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1 Claims 11 and 14. Near the beginning of that section, entitled “Receiver According to Invention,”
 2 the specification states, “Since a **received signal** is in the form of a **symbol modulated** by a
 3 modulator in the transmitter, **the received signal is first demodulated** by a demodulator and then
 4 provided to a deinterleaver.” ’792 patent at 21:48-51 (emphasis added). The specification
 5 describes a “received signal” as a “symbol” because “symbol” refers to a type of signal under its
 6 ordinary meaning.

7 19. Indeed, the phrase “received signal” in the specification is used in a parallel manner
 8 to the term “received symbol” in Claims 11 and 14. The specification language cited above
 9 (21:48-51) closely tracks the language of Claims 11 and 14. Both the specification and the claim
 10 language describe receiving information in the form of a signal/symbol, demodulating that
 11 information, and then deinterleaving that information. Thus, a person of ordinary skill in the art
 12 would have recognized that this specification language describes “symbol” as used in Claims 11
 13 and 14. Below is a side-by-side comparison of the specification language and the claim language
 14 that highlights the parallel use of “signal” and “symbol” in the specification and the claims of the
 15 ’792 patent.

'792 Patent, 21:48-51	Claim 11	Claim 14
“Since a received signal is in the form of a symbol modulated in the transmitter, the received signal is first demodulated by a demodulator and then provided to a deinterleaver .”	“An apparatus for receiving data in a communication system comprising: a demodulator for demodulating a received symbol into a plurality of systematic bits and parity bits; a first deinterleaver ...”	“A method for receiving data in a communication system, comprising: demodulating a received symbol into a plurality of systematic bits and parity bits; writing the plurality of systematic bits on a column by column basis in a first deinterleaver ...”

23 **2.) Extrinsic Evidence – “a modulated signal”**

24 20. As mentioned above in ¶14, Dr. Gitlin's book does not even define “symbol,”
 25 which is not surprising because “symbol” is a widely understood term. However, Dr. Gitlin
 26 implicitly uses “symbol” in its plain and ordinary sense to mean a “modulated signal,” by using
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