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SparkFun Electronics, Inc.

UNITED STATES DISTRICT COURT

DISTRICT OF COLORADO

ALTAIR LOGIX, LLC, Plaintiff, v. SPARKFUN ELECTRONICS, INC. Defendant.	Case No. 1:21-cv-01751-NRN **DEFENDANT'S ANSWER, AFFIRMATIVE DEFENSE, AND COUNTERCLAIMS**

DEFENDANT SPARKFUN ELECTRONICS, INC'S ANSWER, AFFIRMATIVE DEFENSE, AND COUNTERCLAIMS

By and through its undersigned counsel, Defendant SparkFun Electronics, Inc. ("SparkFun") does herein respond to Plaintiff's Complaint, Dkt. No. 1, and asserts its affirmative defense and counterclaims.

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THE PARTIES

1. SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

2. Admitted.

JURISDICTION AND VENUE

3. Admitted.

4. Admitted.

5. Denied.

6. SparkFun admits that venue is proper; SparkFun denies all allegations of infringement.

7. Admitted, except infringement, which is denied.

COUNT 1: PATENT INFRINGEMENT

8. The face of the asserted states that it issued on 9/11/2001. SparkFun denies that it was duly and legally issued

9. Admitted that the title appears to be accurate and that a document with said title was attached to Plaintiff's complaint.

10. SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

11. Denied that the claimed ideas are "new". Denied that this paragraph accurately describes the asserted claim.

12. The single asserted claim does not match this description. Denied.

13. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

14. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

15. The language in this paragraph tracks the language in the '434 Patent specification

but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

16. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

17. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

18. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

19. The language in this paragraph tracks the language in the '434 Patent specification but SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation outside the teachings of said specification, and therefore denies same.

20. Denied.

21. Denied.

22. Denied that this paragraph accurately describes the asserted claim.

23. Admitted that the diagram is a copy of Figure 3.

24. SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

25. Denied that this paragraph accurately describes the asserted claim.

26. Denied.

27. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

28. The NEON processor was not standard in all ARM Cortex A-9 processors. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

29. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same. The NEON processor was not standard in all ARM Cortex A-9 processors. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

30. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

31. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

32. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

33. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

34. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

35. SparkFun was not the manufacturer of the accused processor nor does SparkFun have said processor in its possession. As such, SparkFun lacks knowledge or information sufficient to form a belief about the truth of this allegation, and therefore denies same.

36. Denied.

37. Denied.

JURY DEMAND

SparkFun also demands a jury for all issues to triable.

PRAYER FOR RELIEF

SparkFun denies that Plaintiff is entitled to any relief requested.

AFFIRMATIVE DEFENSE: NON- INFRINGEMENT

1. Upon information and belief, SparkFun does not infringe Claim 1 of the asserted '434 Patent.

2. For example, upon information and belief, the accused NEON co-processor was optionally available in the ARM Cortex A-9 processors. SparkFun no longer sells the pcDuino and does not know if the accused products it sold contained NEON coprocessors.

3. Second, the named inventor of the asserted '434 Patent acted as his own lexicographer in defining several of the claimed elements. *See* '434, 16:16-17:43. SparkFun no longer sells the pcDuino but is in the process of acquiring materials necessary to see whether the alleged MPU and "execution units" in the pcDuino meet those definitions.

4. SparkFun will disclose this and any other non-infringement positions available according to the case schedule and local patent rules.

COUNTERCLAIMS

THE PARTIES

1. Counterclaim defendant Altair Logix, LLX ("Altair") is a Texas Limited Liability Company with its principal place of business in Frisco Texas.

2. Altair was formed on or around June 12, 2018.

3. Altair is a non-practicing entity.

4. According to papers filed with the Texas Secretary of state, it appears that the sole

managing member of Altair is Jason Nguyen.

5. Upon information and belief, Altair is owned in whole or in part by Jason Nguyen.

6. Upon information and belief, most if not all of Altair's settlements have been for nuisance value.

7. Altair owns a single asset, the asserted patent.

8. SparkFun is a value-driven business and local employer based in Niwot, Colorado.

Taken in 2013, the SparkFun team toasted to 10 years in business.

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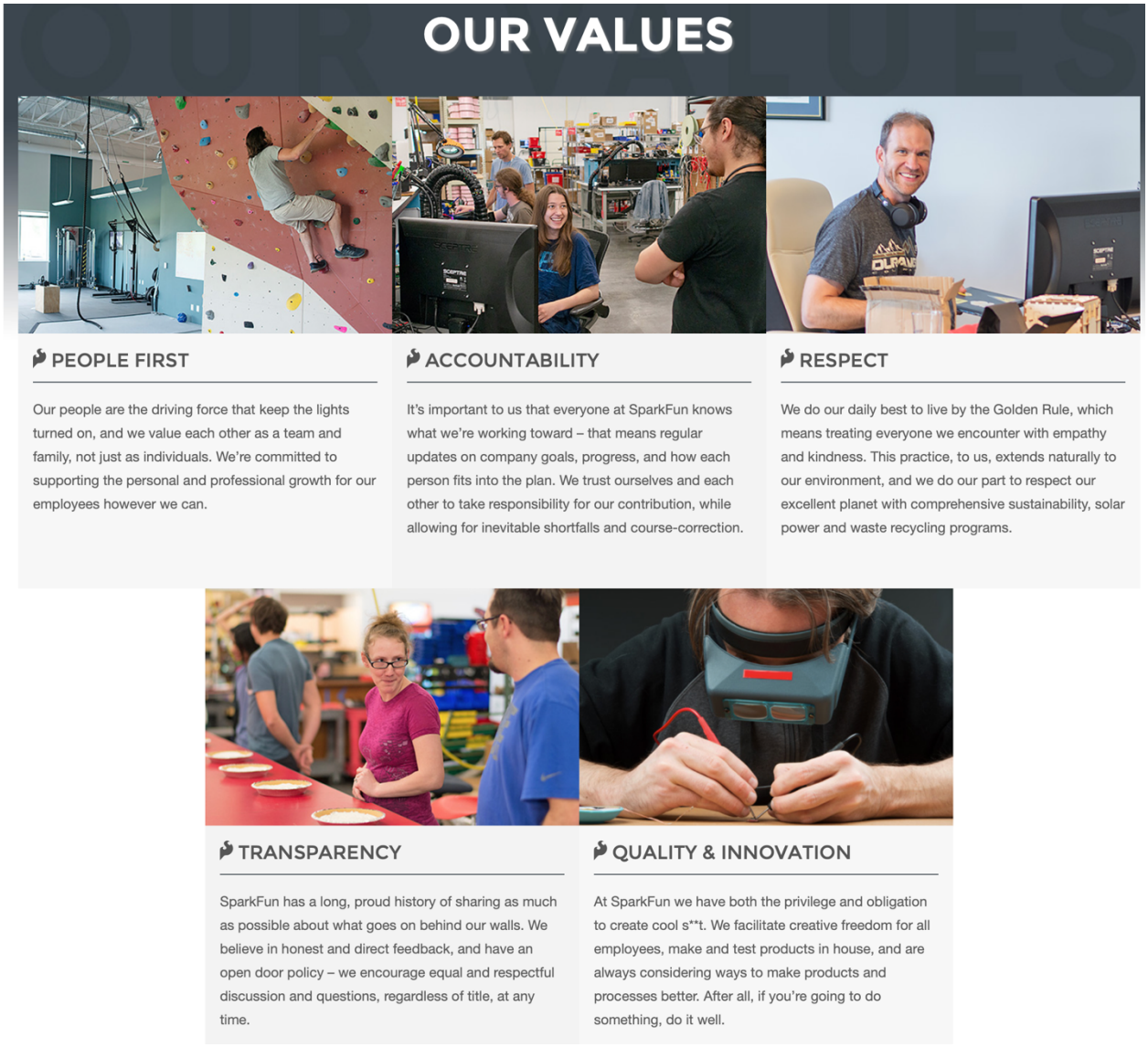

https://www.sparkfun.com/about_sparkfun

9. In 2002, Nathan ("Nate") Seidle was getting a degree in electrical engineering at Colorado University. During that time, he was helping a friend at CU build a remote control for a pipe-crawling robot. Designed to inspect the inside of vertical steel pipes, the robot had huge magnetic wheels and was driven with stepper motors. Nate's job was to translate a couple joysticks for direction and a slider for speed. Nate was thrilled with the learning process, especially compared to the pure theory in his CU classes.

10. At the time, Nate had a hard time obtaining the necessary supplies, e.g., a

programmer, from the websites then-available. It wasn't long before Nate turned his frustration into a small business, forming a company that helped get electronics into other makers hands. SparkFun was founded in 2003 with the aim of providing a trusted source for electronics for hobbyists, educators, and young people.

11. Today SparkFun employs more than a hundred Coloradans. Engineers, manufacturers, IT, sales, QA, business, marketing, and customer service people all work together under one roof in Niwot, Colorado.

12. SparkFun believes everyone deserves access to electronics literacy. For example, in its Department of Education, since 2009, SparkFun has helped students and educators around the world introduce electronic literacy tools and concepts into their schools.

ADAMS 12 FIVE STAR SCHOOL DISTRICT SEES SUCCESS WORKING ALONGSIDE SPARKFUN EDUCATION

See https://www.sparkfuneducation.com

13. SparkFun is committed to infusing lives with a passion for electronic exploration

and play. For example, in 2008, Nate bet the Director of Engineering, Pete, that he couldn't build a robot able to circumnavigate the building by itself. Based on that bet, SparkFun's Autonomous Vehicle Competition was born. For over a decade, SparkFun's AVC brought competitors, robots, and spectators to Colorado from around the world, to see what happens when machines are left to their own devices:[1]

https://www.sparkfun.com/avc_2018_archive

14. In sum, SparkFun is a local Colorado company that cares deeply about community, electronics literacy, giving back, and having some fun (SparkFun) along the way.

JURISDICTION AND VENUE

15. These counterclaims arise under the patent laws of the United States, Title 35, United States Code. The jurisdiction of this Court is proper under at least 35 U.S.C. § 271 et seq., and 28 U.S.C. §§ 1331, 1338, 1367, and 2201–02.

[1] SparkFun's AVC was retired in 2018. SparkFun's AVC resources, rules, course maps and scoring rubrics are available to anyone who wants to host AVC events in their own communities. SparkFun will assist any community in hosting their own AVC event.

16. Altair has consented to the personal jurisdiction of this Court at least by commencing its action for patent infringement in this District, as set forth in its Complaint.

17. Based solely on the filing of this action, venue is proper, though not necessarily convenient, in this District pursuant at least 28 U.S.C. §§ 1391 and 1400.

COUNT 1: INVALIDITY

18. Altair accuses the ARM Cortex-A9 Quad-processor, which optionally comprises NEON media coprocessors.

19. The NEON coprocessor is a single instruction, multiple data ("SIMD") processor.

20. The first use of SIMD instructions was in the ILLIAC IV, which was completed in 1966.

21. SIMD was the basis for vector supercomputers of the early 1970s such as the CDC Star-100 and the Texas Instruments ASC, which could operate on a vector of data with a single instruction. Vector processing was especially popularized by Cray in the 1970s and 1980s, although vector processing architectures are now considered separate from SIMD computers.

22. The first era of modern SIMD computers was characterized by massively parallel processing-style supercomputers such as the Thinking Machines Connected Machine ("CM") CM-1 and CM-2.

23. The Connection Machine CM-1 was the first commercial supercomputer designed expressly for problems of Artificial Intelligence (AI). A massively parallel supercomputer with 65,536 processors, it was the brainchild of Danny Hillis, conceived in the early 1980s while he was a doctoral student with Marvin Minsky at the MIT Artificial Intelligence Lab, and built at his start-up Thinking Machines Corporation. Departing from conventional computer architecture of the time, the CM-1 was modeled on the structure of a human brain: rather than relying on a single powerful processor to perform calculations one after another, the data was distributed over the

tens of thousands of simple 1-bit processors, all of which could perform calculations simultaneously.

24. What enabled the processors to communicate faster than previous SIMD designs was the internal network, a 12-dimensional boolean n-cube structure suggested by Nobel Prize physicist Richard Feynman. Within this hardwired physical structure, the software data structures for communication and transfer of data between processors could change as needed depending on the nature of the problem. The connections between processors were more important than the processors themselves, hence the name "Connection Machine."

25. In 1987 the CM-1 was superseded by the more powerful CM-2 in the same package and similar architecture. In 1991 the CM-1/CM-2 hypercube design was superseded by the CM-5. Each in their day won the prestigious Gordon Bell Prize as the most powerful supercomputers in the world, the CM-2 in 1989 and the CM-5 in 1993.

26. The current era of SIMD processors grew out of the desktop-computer market rather than the supercomputer market. As desktop processors became powerful enough to support real-time gaming and audio/video processing during the 1990s, demand grew for this particular type of computing power, and microprocessor vendors turned to SIMD to meet the demand.

27. Hewlett-Packard introduced MAX instructions into PA-RISC 1.1 desktops in 1994 to accelerate MPEG decoding.

28. Sun Microsystems introduced SIMD integer instructions in its "VIS" instruction set extensions in 1995, in its UltraSPARC I microprocessor. MIPS followed suit with their similar MDMX system.

29. The first **widely deployed** desktop SIMD was with Intel's MMX extensions to the x86 architecture in 1996.

30. Texas Instruments had been filing patents covering SIMD's (and each of the claim limitations for Claim 1 of the '434 Patent) a decade before the priority date of the asserted '434 Patent. *See, e.g*, US Patent Nos.:

a. 5,592,405

b. 5,613,146

c. 6,038,584

d. 5,522,083

e. 5,761,726

f. 5,212,777

g. 5,613,146

31. And, General Electric, again more than a decade before the asserted '434 Patent, was filing patents covering the claimed "innovations". For example, US Patent No. 4,775,952 discloses, "Parallel processing system is used herein to describe a system in which a plurality of independent, interconnected arithmetical-logical processing elements operate in parallel to perform a multiplicity of processing functions."

32. The '952 Patent discloses all of the claimed elements of the '434, including (a) an addressable memory, (b) several media processing units ("MPUs" or microprocessors); each MPU has (i) a multiplier, (ii) an arithmetic unit; (ii) an arithmetic logic unit; and (iv) a bit manipulator. Further, (c) each MPU (i) receives an instruction from memory; (ii) received data from memory; (iii) processes the data in accordance with the instruction; and (iv) provides a result, all while the other CPUs are simultaneously performing "other operations".

33. The '083 Patent discloses all of the claimed elements of the '434, including (a) an addressable memory, (b) several media processing units ("MPUs" or microprocessors); each MPU has (i) a multiplier, (ii) an arithmetic unit; (ii) an arithmetic logic unit; and (iv) a bit

manipulator. Further, (c) each MPU (i) receives an instruction from memory; (ii) received data from memory; (iii) processes the data in accordance with the instruction; and (iv) provides a result, all while the other CPUs are simultaneously performing "other operations". *See* Exhibit A.

34. The Texas Instrument patents, cited in paragraph 31, *supra*, alone and together teach all elements of asserted Claim 1.

35. Each of the ideas in asserted Claim 1, and their combinations and architecture, were well known more than a decade before the priority date of the asserted '434 Patent.

COUNTERCLAIM 2: PATENT INELIGIBILITY

35 U.S.C. §101

36. SparkFun incorporates by reference paragraphs 1-35, *supra*.

37. Asserted Claim 1, covers a CPU with (a) an addressable memory, (b) several media processing units ("MPUs" or microprocessors); each MPU has (i) a multiplier, (ii) an arithmetic unit; (ii) an arithmetic logic unit; and (iv) a bit manipulator. Further, (c) each MPU (i) receives an instruction from memory; (ii) received data from memory; (iii) processes the data in accordance with the instruction; and (iv) provides a result, all while the other CPUs are simultaneously performing "other operations".

38. At step 1 of *Alice*, Claim 1 of the '434 Patent recites a data processing apparatus and method consisting solely of admittedly "conventional" components (e.g., addressable memory for storing data and media processing units) described in functional terms.

39. At step 2 of *Alice*, each of these operations and their architecture was conventional by February 28, 1997. *See* Exhibit A, attached and incorporated by reference herein; *see also* references *supra*, paragraph nos. 1-36.

40. In at least one public pleading, Altair has admitted that each of the "execution

units" are "conventional". Case No. 1:21-cv-0236, Dkt. No. 18, at 10 ("Although the media processing unit uses conventional execution units (multiplier, AU, ALU, and BMU), they are arranged in an unconventional way.")

41. Altair alleges, without support, that the execution units are "arranged" in an unconventional way. *See id.*

42. Altair's allegations are contradicted by the '434 specification and the teachings of the prior art. *See* Exhibit A, paras. 1-36, *supra*.

43. For example, US Patent No. 5,592,405 (Assignee Texas Instruments) discloses: "There is thus a need in the art for a system which handles multi-processors having multi-memories such that the address space from all of the memories is available to one or more processors concurrently[.]" 2:5-9.

44. That is, Texas Instruments disclosed the allegedly novel architecture of Claim of the '434 Patent in 1989, almost a decade before the alleged priority date of the asserted '434 Patent. By 1997, that architecture was assuredly conventional.

45. Asserted Claim 1 is patent ineligible under 35 U.S.C. §101.

COUNTERCLAIM 3: FAILURE TO MARK

35 U.S.C. 287(a)

46. SparkFun incorporates by reference paragraphs 1-45, *supra*.

47. Altair is not entitled to damages because its predecessors did not mark products licensed under the '434 Patent.

48. Upon information and belief, Rupan Roy, the sole named inventor of the '434 Patent, assigned his interest in the '434 Patent to Cognigine Corporation ("Cognigine") on or about February 25, 1998.

49. Upon information and belief, Cognigine made, sold, offered for sale, or imported

into the United States a product embodying Claim 1 of the '434 Patent.

50. Upon information and belief, Cognigine assigned its interest in the '434 Patent to FutureEngine, LLC ("FuturEngine") on or about May 20, 2003.

51. FuturEngine is or was an affiliate or subsidiary of Futurewei Technologies, Inc. ("Futurewei"), which in turn is an affiliate or subsidiary of Huawei Technologies Co., Ltd. ("Huawei"), either directly, or through Huawei Technologies Coöperatief U.A.

52. Futurewei acquired Cognigine on or about June 10, 2003.

53. Upon information and belief, HiSilicon Technologies Co., Ltd. ("HiSilicon") is an affiliate or subsidiary of Huawei. HiSilicon developed multicore processors under the KIRIN name, utilizing an ARM Cortex-based architecture. As an example, the HiSilicon Kirin 920 is an octacore processor that includes four Cortex-A15 cores and four Cortex-A7 cores, as disclosed in https://www.notebookcheck.net/HiSilicon-Kirin-920-SoC-Benchmarks-and-Specs.240088.0.html and http://www.hisilicon.com/en/Products/ProductList/Kirin .

54. Upon information and belief, Huawei and/or Futurewei imported, sold and/or offered for sale in the United States products incorporating Kirin multicore processors. For example, the Huawei Honor 6 smartphone utilizes the HiSilicon Kirin 920 processor.

55. Upon information and belief, HiSilicon, Futurewei and/or Huawei would have had a license to practice the issued claim of the '434 Patent.

56. In view of the above, FuturEngine's licensees HiSilicon, Futurewei and/or Huawei made, sold, offered for sale, or imported into the United States a product embodying Claim 1 of the '434 patent and subject to the requirements of 35 U.S.C. section 287.

57. FuturEngine assigned its interest in the '434 Patent to Plaintiff on or about June 29, 2018.

58. The assignment was executed on behalf of FuturEngine by Ding Jianxin, identified

in the assignment as "Director of IP Dept." Mr. Jianxin is Head of Global Intellectual Property at Huawei.

59. Upon information and belief, Cognigine, FutureEngine, HiSilicon, Futurewei, and/or Huawei failed to mark, on a substantially consistent and continuous basis, products embodying Claim 1of the '434 Patent pursuant to 35 U.S.C. section 287.

60. Because of such failure to mark, Altair is not entitled to recover damages prior to the date of actual notice of the '434 Patent.

61. SparkFun did not have actual notice of the '434 Patent until on or about June 30, 2021.

62. The '434 Patent expired February 27, 2018.

63. Because SparkFun did not have actual notice of the '434 Patent until after it had expired, Altair is not entitled to recover damages in this action.

PRAYER FOR RELIEF

SparkFun respectfully seeks an order(s) declaring:

1. The asserted '434 Patent invalid, not infringed, and patent ineligible;
2. Altair is not entitled to any damages for its failure to mark;
3. An award of attorney's fees and any relevant sanctions.

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Dated: September 2, 2021

LAMKIN IP DEFENSE

By: /s/ Rachael D. Lamkin

Rachael D. Lamkin
Lamkin IP Defense

Attorneys for Defendant
SparkFun Electronics, Inc.

CERTIFICATE OF SERVICE

On this date, September 3, 2021, the following documents were served upon Altair Logix's counsel of record through the Court's ECF system:

DEFENDANT SPARKFUN ELECTRONICS, INC'S ANSWER, AFFIRMATIVE DEFENSE, AND COUNTERCLAIMS

/Rachael D Lamkin/

Rachael D. Lamkin
LAMKIN IP DEFENSE