

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLORADO**

Civil Action No. 1:21cv-01751-NRN

**ALTAIR LOGIX LLC,**

Plaintiff,

v.

**SPARKFUN ELECTRONICS, INC.,  
a Colorado Corporation**

Defendant.

**JURY TRIAL DEMANDED**

**PATENT CASE**

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**PLAINTIFF ALTAIR LOGIX, LLC'S ANSWER TO DEFENDANT  
SPARKFUN ELECTRONICS INC.'S COUNTERCLAIMS**

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Plaintiff Altair Logix, LLC ("Altair") hereby answers the counterclaims (Dkt. 12) of Defendant SparkFun Electronics, Inc.'s ("Defendant" or "SparkFun") by corresponding paragraph number as follows:

**ANSWER TO SPARKFUN'S COUNTERCLAIMS**

**Parties**

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

**Answer:** Admitted.

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

**Answer:** Admitted.

3. Altair is a non-practicing entity.

**Answer:** Altair Logix is a licensing entity that does not manufacture or sell any products. Altair Logix denies the remaining allegations in the paragraph.

4. According to papers filed with the Texas Secretary of state, it appears that the sole managing member of Altair is Jason Nguyen.

**Answer:** Admitted.

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

**Answer:** Admitted.

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

**Answer:** Denied.

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

**Answer:** Altair Logix is the assignee of all right, title, and interest in U.S. Patent No. 6,289,434. Altair Logix does not own any other patents. Altair Logix denies the remaining allegations in the paragraph.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 8 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 9 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 10 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 11 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 12 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 13 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair admits that SparkFun is a corporation organized and existing under the laws of Colorado; however, Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 14 of the Counterclaim and therefore denies the same.

### **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.

**Answer:** Altair admits that Defendant’s counterclaims arise under the patent laws. Altair admits that this Court has jurisdiction over the counterclaims under at least one of the stated laws as a result of Altair filing the present action for patent infringement in this District. However, Altair denies that Defendant is entitled to any relief requested in the counterclaims. Altair denies all other allegations in the paragraph.

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.

**Answer:** Altair admits that personal jurisdiction for the asserted counterclaims exists for Altair in this Court because Altair commenced the present action for patent infringement in this District. Altair denies all other allegations in the paragraph.

17. Based on 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.

**Answer:** Altair admits that venue is proper in this jurisdiction for the counterclaims. Altair denies all other allegations in the paragraph.

**Defendant’s Count I – Invalidity**

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

**Answer:** Altair accuses at least the sale of the pcDuino Acadia Dev Board of infringing claim 1 of the ‘464 patent. Altair Logix admits that its accusation of infringement is directed to the Freescale i.MX6 SoC 1.2 GHz ARM Cortex A9 Quad Core CPU that includes a NEON coprocessor in each core. Altair denies all other allegations in the paragraph.

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

**Answer:** Altair Logix admits that ARM contends that the Neon technologies is a single instruction multiple data architecture. Altair lacks sufficient knowledge or information to admit or deny the remaining allegations of paragraph 19 of the Counterclaim and therefore denies the same.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 20 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 21 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 22 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 23 of the Counterclaim and therefore denies the same.

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.”

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 24 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 25 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 26 of the Counterclaim and therefore denies the same.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 27 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 28 of the Counterclaim and therefore denies the same.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 29 of the Counterclaim and therefore denies the same.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 30 of the Counterclaim and therefore denies the same.

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.”



**Answer:** Altair Logix does not dispute the quoted language comes from US Patent No. 4,775,952 to the extent it is quoted correctly. Altair Logix denies all other allegations in paragraph 31.

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".

**Answer:** Denied.

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.

**Answer:** Denied.

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

**Answer:** Denied.

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.

**Answer:** Denied.

**Defendant’s Count II – Patent Ineligibility 35 U.S.C. §101**

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

**Answer:** Altair 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”.

**Answer:** Altair Logix denies that this paragraph accurately characterizes the asserted claims. Altair denies the remaining allegations in paragraph 37.

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.

**Answer:** Denied.

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

**Answer:** Denied.

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.”).

**Answer:** To the extent that SparkFun has accurately quoted the public pleading, Altair admits that it stated the quoted language. Altair denies the remaining allegations in paragraph 40.

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

**Answer:** Altair Logix admits that the patent-in-suit claims the use of execution units arranged in an unconventional way. Altair denies the remaining allegations in paragraph 41.

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

**Answer:** Denied.

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.

**Answer:** Altair Logix does not dispute the quoted language comes from U.S. Patent No. 5,592,405 to the extent it is quoted correctly. Altair denies the remaining allegations in paragraph 43.

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.

**Answer:** Denied.

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

**Answer:** Denied.

**Defendant's Count III – Failure to Mark 35 U.S.C. 287(a)**

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

**Answer:** Altair 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.

**Answer:** Denied.

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.

**Answer:** Altair admits that Rupan Roy is the sole named inventor on the '434 patent and he executed an assignment dated on or about February 25, 1998 that assigned the entire title, interest and right, including the right of priority in, to and under the patent application titled "Apparatus and Method of Implementing Systems on Silicon Using Dynamic-Adaptive Run-Time Reconfigurable Circuits for Processing Multiple, Independent Data and Control Streams of Varying Rates" filed February 27, 1998, to Cognigine Corporation. Altair lacks sufficient knowledge or information to admit or deny the remaining allegations of paragraph 48 of the Counterclaim and therefore denies the same.

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.

**Answer:** Denied.

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

**Answer:** Altair admits that Cognigine Corporation assigned worldwide right, title and interest in, to and under U.S. Patent No. 6,289,434 and related applications on May 22, 2021. Altair denies the remaining allegations in paragraph 50.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 51 of the Counterclaim and therefore denies the same.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 52 of the Counterclaim and therefore denies the same.

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-pecs.240088.0.html> and <http://www.hisilicon.com/en/Products/ProductList/Kirin>.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 53 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 54 of the Counterclaim and therefore denies the same.

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

**Answer:** Denied.

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.

**Answer:** Denied.

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

**Answer:** Altair admits that Futureengine, LLC assigned all right, title, and interest in the '434 patent to Altair Logix LLC. Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 57 of the Counterclaim and therefore denies the same.

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.

**Answer:** Altair admits that the assignment from Futureengine LLC to Altair Logix LLC was signed on behalf of Futureengine, LLC by Ding Jianxin, who is identified as "Director of IP Dept." Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 58 of the Counterclaim and therefore denies the same.

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 1 of the '434 Patent pursuant to 35 U.S.C. section 287.

**Answer:** Denied.

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.

**Answer:** Denied.

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

**Answer:** Altair lacks sufficient knowledge or information to admit or deny the allegations of paragraph 61 of the Counterclaim and therefore denies the same.

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

**Answer:** Admitted.

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.

**Answer:** Denied.

**DEFENDANT'S PRAYER FOR RELIEF**

Altair denies that Defendant is entitled to any relief, including the relief requested in its Prayer for Relief.

Dated: September 24, 2021

Respectfully Submitted,

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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the above and foregoing document has been served on September 24, 2021, to all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system.

/s/ David R. Bennett  
David R. Bennett