

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION**

E-SYSTEM DESIGN, INC., a Delaware  
corporation,

Plaintiff,

v.

MENTOR GRAPHICS CORP., an Oregon  
corporation, and

SEIMENS INDUSTRY INC., a Delaware  
corporation,

Defendants.

Case No. 1:17-CV-01127-TCB

**JURY TRIAL DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

E-SYSTEM DESIGN, INC. (“E-System Design”) files this First Amended Complaint against MENTOR GRAPHICS CORP. (“Mentor Graphics”) and SIEMENS INDUSTRY, INC (“Siemens,” and together collectively referred to as “Defendants”). E-System files this Amended Complaint a matter of course under Rule 15(1)(B), and alleges as follows:

**I. THE PARTIES**

1. E-System Design, Inc. is a Delaware corporation having its principal place of business at 1318 Walthour Rd., Savannah, GA 31410.

2. Mentor Graphics Corp. is an Oregon corporation having its principal place of business at 8005 S.W. Boeckman Rd., Wilsonville, OR 97070. The registered

agent listed for Mentor Graphics Corp. is Dean M. Freed, at 8005 S.W. Boeckman Rd., Wilsonville, OR 97070.

3. Mentor Graphics Corp. is also registered with the State of Georgia to do business within this state. Mentor Graphics' registered agent in Georgia is listed as CT Corporation System, at 289 S Culver St, Lawrenceville, GA 30046. This registered agent address is located within this District.

4. Siemens Industry, Inc. is a Delaware corporation that having a principal office address of 100 Technology Drive, Alpharetta, GA 30005. This office location is within this District.

5. Siemens Industry, Inc. entered into a merger with Mentor Graphics Corp., in which Mentor Graphics Corp. survives as a wholly-owned subsidiary of Siemens Industry, Inc. The merger closed on March 30, 2017.

## **II. JURISDICTION AND VENUE**

6. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code, §§ 271 and 281, et seq. Accordingly, this Court has subject matter jurisdiction over this cause of action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. Personal jurisdiction over Defendant Mentor Graphics is proper in this Court and judicial district pursuant to 28 U.S.C. § 1391 because Defendant has sufficient minimum contacts with this state by engaging in activities giving rise to

these claims for patent infringement that were and are directed at this judicial district.

8. Personal jurisdiction over Defendant Siemens is proper in this Court and judicial district pursuant to 28 U.S.C. § 1391 because Siemens has sufficient minimum contacts with this state by engaging in activities giving rise to these claims for patent infringement that were and are directed at this judicial district.

9. Venue over both Defendants is proper in this Court and judicial district, pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b). Both Defendants have committed acts of infringement in this judicial district and have a regular and established place of business in this judicial district.

10. Mentor Graphics has a regular and established place of business in this judicial district based on Siemens offices and a totality of circumstances. These circumstances include Siemens offices in the district, Mentor Graphics holding itself out as Siemens business both in branding and press releases, Siemens marketing and selling accused Mentor Graphics products on Mentor Graphics' behalf, Siemens controlling Mentor Graphics' business activities, Mentor Graphics being registered to do business in the state, Mentor Graphics having a registered agent located in this judicial district, and Mentor Graphics targeting and receiving benefit from this judicial district.

11. Siemens a regular and established place of business in this judicial district based on its offices located in this judicial district. Siemens also markets and sells accused Mentor Graphics products in this district. Siemens provides the accused products together with other Siemens products as a wider product offering.

12. Venue is also proper based on conveniences to the Parties. Plaintiff resides in this state and has its principal place of business in this state. Several key witnesses for E-System Design reside in the Atlanta metropolitan area, including Madhavan Swaminathan and developers. Georgia Tech Research Corporation (“GTRC”), assignee of the patent at issue, is also located in Atlanta, GA. Moreover, a substantial part of the events giving rise to Plaintiff’s claims have occurred and, unless enjoined, will continue to occur within this judicial district. Siemens offices are also located within this judicial district.

### **III. BACKGROUND**

13. Sopworx, Inc. was a provider of analysis and verification software for chips, IC packages, and printed circuit board (“PCB”). Sopworx, Inc. developed electronic design automation (“EDA”) tools for use in analyzing and validating chip, IC package, and PCB design.

14. While developing its technology, Sopworx, Inc. entered into a License Agreement with GTRC pertaining to U.S. patent application no. 12/288,616 (“the

'616 application”), which had been filed by GTRC. GTRC is located in Atlanta, GA. In the License Agreement, GTRC granted Sopworx, Inc. an exclusive license to the technology described in the '616 application, including an exclusive right to sublicense.

15. Madhavan Swaminathan, originally president and CEO of Sopworx, Inc. and now CTO of E-System Design, Inc., is a named inventor in the '616 application. Mr. Swaminathan is also a professor at the Georgia Institute of Technology (“Georgia Tech”).

16. On January 8, 2013, the '616 application issued as United States Patent No. 8,352,232, entitled “Modeling Electrical Interconnections in Three-Dimensional Structures” (hereinafter “the '232 Patent”). The '232 Patent names GTRC as the assignee. A true and correct copy of the '232 Patent is attached hereto as Exhibit A.

17. Sopworx, Inc. subsequently changed its name to E-System Design, Inc., making E-System Design the exclusive licensee of the '232 Patent. E-System Design and GTRC also entered into a series of Amendments to the License Agreement. Some of these added rights with regard to other GTRC patents and patent applications. But in Amendment No. 5 to the License Agreement, GTRC explicitly granted E-System Design, Inc. the exclusive right to sue for infringement

of the '232 Patent. Consequently, E-System Design, Inc. is the owner of the entire right to sue for past and present infringements of the '232 Patent.

18. Defendant Mentor Graphics designs, manufactures, and markets software, hardware, products, and services to facilitate industrial microchip design and testing for the semiconductor, automotive, and transportation industries, including EDA software that verifies chip, IC package, and PCB design by analyzing vertical interconnects (collectively "Mentor Graphics interconnect solutions"). Mentor Graphics' Calibre xACT and xACT 3D are among Mentor Graphics' interconnect solutions.

19. Defendant Mentor Graphics and its customers and distribution partners advertise, market, support, maintain, distribute, provide, and/or disseminate instructions for the use of Mentor Graphics' interconnect solutions, including the Calibre xACT and xACT 3D software.

20. On August 17, 2011, E-System Design CEO, Gene Jakubowski, sent an email to Mentor Graphics CEO, Wally Rhines, about the possibility of integrating E-System Design's 3D EXT product into Mentor's interconnect solutions. The 3D EXT product included interconnect analysis functionality developed around the licensed technology from GTRC. Emails from Mr. Jakubowski to Mr. Rhines indicated that E-System Design is a spinoff of Georgia Tech's Package Research Center. The emails further state that 3D EXT product

includes interconnect technology based on work done at Georgia Tech and exclusively licensed to E-System Design. Mr. Rhines did not respond to these emails.

21. On December 12th-14th, 2011, Mr. Swaminathan attended a conference in China where Mentor Graphics was presenting. The presenter from Mentor Graphics described an interconnect analysis methodology similar to that of E-System Design.

22. In April of 2013, Gene Jakubowski attended a conference in Monterey, CA. At the conference, Dusan Petranovic of Mentor Graphics was presenting. Mr. Petranovic mentioned in his presentation that his work on Mentor Graphics interconnect technology was based on research done by Georgia Tech. After the presentation, Mr. Petranovic engaged in conversation with Mr. Jakubowski regarding the Mentor Graphics interconnect methodology. Mr. Jakubowski informed Mr. Petranovic that E-System Design was exclusively licensing a recently issued patent from GTRC that covered this technology. Mr. Jakubowski asked whether Mentor Graphics would consider working with E-System Design to bring the patented methodology to the marketplace.

23. In the spring of 2014, Gene Jakubowski attended another conference where Mentor Graphics employees, including John Park, were present. E-System Design was showing a presentation at their booth that identified E-System

Design's exclusive license of the '232 Patent. Mentor Graphics employees including Mr. Park approached the E-System Design booth. They wrote down the patent number of the '232 Patent and left the booth.

24. Siemens acquired Mentor Graphics with a merger that officially closed on March 30, 2017. According to Siemens, "[w]ith the addition of Mentor Graphics, Siemens now delivers the most comprehensive digital design portfolio." Ex B. The acquisition "expands Siemens' digital product design portfolio with the entry into the adjacent Integrated Circuit (IC) design tool segment." *Id.* Siemens purchased Mentor Graphics because "Siemens sees IC design as an integral part of [their] business as [they] aim at market expansion." Ex C.

#### **IV. INFRINGEMENT OF U.S. PATENT NO. 8,352,232**

25. E-System Design repeats and re-alleges the allegations of paragraphs 1 through 11 of the Complaint as if fully set forth herein.

26. Mentor Graphics has been and now is directly infringing the '232 Patent in this judicial district, and elsewhere in the United States. Infringements by Mentor Graphics include, without limitation, making, using, offering for sale, and/or selling within the United States, and/or importing into the United States, a method and system for modeling electrical connections in three-dimensional structures, including at least Mentor Graphics' interconnect solutions incorporating the patented inventions that are described and claimed in the '232 Patent.



27. Defendants' interconnect solutions, including Calibre xACT and xACT 3D, enable Defendants' customers to model electrical connections in three-dimensional structures, such as vertical interconnects between layers of a microchip. By making, using, importing, offering for sale, and/or selling Mentor Graphics or Siemens solutions, including without limitation the Calibre xACT and xACT 3D software, and all like systems and methods that are covered by at least claims 1-5, 7-11, and 13-17 of the '232 Patent, Defendants are, therefore, liable for infringement of the '232 Patent pursuant to 35 U.S.C. § 271(a).

28. Mentor Graphics is and has been willfully infringing the '232 Patent since at least 2013. Mentor Graphics has admitted that their analysis of vertical interconnects is based on work done by Georgia Tech.

29. Mentor Graphics, through its employees, has admitted that their interconnect analysis methodology developed around the Georgia Tech solution was incorporated into the Calibre xACT 3D software.

30. Mentor Graphics was directly told that this technology was patented by GTRC and exclusively licensed by E-System Design. Further, the patent was identified to Mentor Graphics as the '232 Patent.

31. Employees of Mentor Graphics even wrote the patent number down in response to learning that the '232 Patent applied to the vertical interconnect technology.

32. Mentor Graphics' interconnect solutions, including Calibre xACT and xACT 3D, incorporate the vertical interconnect analysis methodology claimed in the '232 Patent.

33. Because Mentor Graphics' infringement is willful and deliberate, E-System Design is entitled to enhanced damages and reasonable attorneys' fees and costs.

34. On April 13, 2017, "Mentor, a Siemens business, . . . announced that Silicon Creations . . . is using . . . the Calibre® family of products to verify their silicon IP portfolio." Ex D. Silicon Creations has development centers in Atlanta, GA. Atlanta, GA is within this judicial district.

35. Defendants also supply the Calibre® family of products to Georgia Tech, which is within this judicial district.

36. Defendants are actively and knowingly inducing infringement of the '232 Patent in this judicial district, and elsewhere in the United States. Mentor Graphics has had notice of the '232 Patent since at least 2013, prior to the filing of this Complaint. In connection with Defendants' advertising, marketing, sales, distribution, product manuals, and information dissemination concerning Mentor Graphics' interconnect analysis solutions, including without limitation the Calibre xACT and xACT 3D software, Defendants have caused third parties, such as Defendants' customers, to practice the inventions claimed in the '232 Patent since

at least 2013. Upon information and belief, Mentor Graphics has known since at least 2013 that its customers' use of Mentor Graphics' interconnect solutions, including without limitation Calibre xACT and xACT 3D software, constitutes infringement of the '232 Patent. Therefore, Mentor Graphics is acting or has acted with knowledge that the induced acts constitute patent infringement, and Mentor Graphics intends or has intended to cause patent infringement. Accordingly, Defendants are liable for infringement of the '232 Patent pursuant to 35 U.S.C. § 271(b).

37. Defendants are contributing to the infringement by others of the '232 Patent in this judicial district, and elsewhere in the United States, by making, using, offering for sale, and selling the Mentor Graphics interconnect solutions, including without limitation Calibre xACT and xACT 3D software, which are a material part of practicing the inventions claimed in the '232 Patent. Upon information and belief, Defendants have acted with the knowledge that its interconnect solutions perform as claimed by the '232 Patent, and for that same reason, its interconnect solutions are not a staple article or commodity of commerce suitable for substantial noninfringing use. Defendants advertise, market, sell, distribute, and/or disseminate information about Mentor Graphics' interconnect solutions to third parties, such as customers of Defendants, including without limitation the Calibre xACT and xACT 3D software, through its

www.mentor.com and www.siemens.com websites. Mentor Graphics has had notice of the '232 Patent since at least 2013, prior to the filing of this Complaint. Accordingly, Defendants are liable for infringement of the '232 Patent pursuant to 35 U.S.C. § 271(c).

38. Third parties, such as customers of Defendants, directly infringe the '232 Patent by using Defendants' interconnect solutions, including without limitation Calibre xACT and xACT 3D software, which are manufactured, marketed, and/or sold by Defendants to function in a manner that practices the inventions claimed in the '232 Patent.

39. Defendants aware that such third parties thereby directly infringe the '232 Patent.

40. The activities of Defendants have been without an express or implied license from E-System Design or GTRC.

41. Defendants' infringement of E-System Design's exclusive rights under the '232 Patent will continue to damage E-System Design's business, as well as the business of GTRC, causing irreparable harm for which there is no adequate remedy at law. Accordingly, E-System Design is entitled to injunctive relief against such infringement.

42. As a result of Defendants' infringement of the '232 Patent, E-System Design is entitled to recover from Defendants the damages sustained by E-System

Design as a result of Defendants' wrongful acts in an amount subject to proof at trial.

43. Defendants' continued infringement subsequent to notice of the '232 Patent is willful and deliberate, entitling E-System Design to enhanced damages and reasonable attorneys' fees and costs.

## **V. PRAYER FOR RELIEF**

WHEREFORE, E-System Design respectfully requests that this court enter:

a. A judgment in favor of Plaintiff E-System Design that Defendants have infringed the asserted patents;

b. A temporary, preliminary, and permanent injunction enjoining Defendants and their officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement, including directly or indirectly infringing, or inducing or contributing to the infringement by others of the asserted patents;

c. A judgment and order requiring Defendants to pay E-System Design its damages, costs, expenses, and prejudgment and post-judgment interest for their infringement of the asserted patents as provided under 35 U.S.C. § 284;

d. A judgment and order finding that the damages awarded to E-System Design be increased up to three times in view of Defendants' willful infringement of the asserted patents as provided under 35 U.S.C. § 284;

e. A judgment and order declaring that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to E-System Design its reasonable attorneys' fees and other expenses incurred in connection with this action;

f. Any and all other relief as this Court may deem just and proper be awarded to Plaintiff E-System Design.

## **VI. DEMAND FOR JURY TRIAL**

Pursuant to Federal Rules of Civil Procedure 38(b), E-System Design hereby demands a trial by jury of any issues so triable by right.

Dated: July 24, 2017

Respectfully submitted,

CLAYTON, MCKAY & BAILEY P.C.



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