IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INVENSAS CORPORATION, Plaintiff, v. SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG AUSTIN SEMICONDUCTOR, LLC, Defendants.	Civil Action No.: _____ JURY TRIAL DEMANDED

COMPLAINT

Plaintiff Invensas Corporation ("Invensas" or "Plaintiff") brings this patent infringement action against Defendants Samsung Electronics Co., Ltd. ("SEC") and Samsung Austin Semiconductor, LLC ("SAS") (collectively, "Samsung" or "Defendants") as follows:

NATURE OF THE ACTION

1. This is a civil action for infringement of United States Patent Nos. 6,232,231 ("'231 patent") and 6,849,946 ("'946 patent") (collectively, the "Asserted Patents") under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.

THE PARTIES

2. Plaintiff Invensas is a Delaware corporation with its principal place of business at 3025 Orchard Parkway, San Jose, California 95134.

3. Defendant SEC is a company organized under the laws of the Republic of Korea with its principal place of business located at 129 Samsung-ro, Maetan-3dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742 in the Republic of Korea.

4. Defendant SAS is a Delaware limited liability company with its principal place of business at 12100 Samsung Boulevard, Austin, Texas 78754. SAS is a wholly-owned subsidiary of Samsung Semiconductor, Inc., which is a wholly-owned subsidiary of Samsung Electronics America, Inc., which is a wholly-owned subsidiary of SEC. SAS's registered agent, The Corporation Trust Company, is located at Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801.

5. Defendants SEC and SAS are related entities that work in concert to design, manufacture, import, distribute, and/or sell the infringing devices.

JURISDICTION AND VENUE

6. The Court has subject matter jurisdiction over these claims under 28 U.S.C. §§ 1331 and 1338(a) and the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

7. The Court has personal jurisdiction over each of the Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Delaware Long Arm Statute. On information and belief, each Defendant has regularly and systematically transacted business in Delaware, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Delaware as alleged more particularly below. Samsung has also placed infringing products into the stream of commerce by shipping those products into Delaware or knowing that the products would be shipped into Delaware. In addition, SAS is organized and exists under the laws of Delaware.

8. Venue is proper in this district under 28 U.S.C. 1400(b) because SAS, as a Delaware corporation, resides in this district. Venue is proper for defendant SEC, a Korean company, because suits against foreign entities are proper in any judicial district.

THE ASSERTED PATENTS

9. The ’231 patent is entitled “Planarized Semiconductor Interconnect Topography and Method For Polishing a Metal Layer To Form Interconnect,” and issued on May 15, 2001, to inventors Anantha R. Sethuraman and Christopher A. Seams. Invensas owns the entire right, title, and interest in and to the ’231 patent. A true and correct copy of the ’231 patent is attached as Exhibit A.

10. The ’946 patent is entitled “Planarized Semiconductor Interconnect Topography and Method For Polishing a Metal Layer To Form Interconnect,” and issued on February 1, 2005, to inventors Anantha R. Sethuraman and Christopher A. Seams. Invensas owns the entire right, title, and interest in and to the ’946 patent. A true and correct copy of the ’946 patent, including a certificate of correction dated February 1, 2005, is attached as Exhibit B.

CLAIMS FOR PATENT INFRINGEMENT

11. The allegations provided below are exemplary and without prejudice to Plaintiff’s infringement contentions provided pursuant to the Court’s scheduling order and local rules. In providing these allegations, Plaintiff does not convey or imply any particular claim constructions or the precise scope of the claims. Plaintiff’s claim construction contentions regarding the meaning and scope of the claim terms will be provided under the Court’s scheduling order and local rules.

12. The accused products include, but are not limited to, Samsung’s Galaxy S6, S7, and S8 devices. On information and belief, the accused products include infringing Exynos processors and other infringing semiconductor components. *See Showcase: Latest Smartphones Powered by Samsung Exynos Processor*, SAMSUNG EXYNOS MINISITE, http://www.samsung.com/semiconductor/minisite/Exynos/Showcase/Smartphone/index.html

(last visited Sept. 26, 2017). As detailed below, each element of at least one claim of each of the Asserted Patents is literally present in the accused products. To the extent that any element is not literally present, each such element is present under the doctrine of equivalents.

13. Plaintiff has sued Samsung affiliates in another judicial district on the ’231 and ’946 patents. Each Complaint accuses distinct components/functionalities of infringing Samsung smartphones, and also accuses a different Samsung affiliate of infringement. Based on Plaintiff’s present understanding of venue considerations, Plaintiff is required to file each Complaint in a different judicial district.

COUNT I
INFRINGEMENT OF THE ’231 PATENT

14. Plaintiff incorporates by reference the allegations set forth in paragraphs 1 through 13 as though fully set forth herein.

15. On information and belief, Samsung has directly infringed and continues to infringe, and/or has induced the infringement of, one or more claims of the ’231 patent, including claim 1 and other claims that depend from claim 1, literally or under the doctrine of equivalents, by making within the United States without authority or license, at least the Exynos processors in the Samsung Galaxy S6, S7, S8, and other devices, and other semiconductor chips made in a substantially similar way (collectively, the “’231 Accused Products”), using a process practicing all of the limitations of one or more claims of the ’231 patent, in violation of 35 U.S.C. § 271.

16. On information and belief, Samsung has infringed and continues to infringe, and/or has induced the infringement of, one or more claims of the ’231 patent, including claim 1 and other claims that depend from claim 1, literally or under the doctrine of equivalents, at least under 35 U.S.C. § 271(g) by importing into the United States and/or offering to sell, selling, and/or using within the United States without authority or license, at least the ’231 Accused

Products, where the Exynos application processors and other semiconductor chips are made by a process practicing all of the limitations of one or more claims of the ’231 patent.

17. Claim 1 of the ’231 patent recites a “method for providing a substantially planar semiconductor topography which extends above a plurality of electrically conductive features that form an integrated circuit[.]” On information and belief, the ’231 Accused Products include certain semiconductor chips with a substantially planar semiconductor topography that extends above a plurality of electrically conductive features that form an integrated circuit. For example, a cross section of an Exynos application processor from the ’231 Accused Products shows a substantially planar layer extending over a layer below that contains a plurality of electrically conductive features that form an integrated circuit.

18. Claim 1 of the ’231 patent requires “etching a plurality of laterally spaced dummy trenches into a dielectric layer between a first trench and a series of second trenches[.]” On information and belief, the ’231 Accused Products include certain semiconductor chips that are made by a process that includes etching a plurality of laterally spaced dummy trenches into a dielectric layer between a first trench and a series of second trenches. For example, in the Exynos application processors of the ’231 Accused Products, there are multiple dummy trenches laterally spaced between a first interconnect and a series of second interconnects, each of which was formed in part by etching trenches into a layer of insulating material.

19. Claim 1 of the ’231 patent further requires that “a lateral dimension of said first trench is greater than a lateral dimension of said second trenches[.]” On information and belief, the lateral dimension of a first trench is greater than a lateral dimension of a series of second trenches (i.e., the first trench is wider than at least one of the second trenches) in certain semiconductor chips of the ’231 Accused Products. For example, in the Exynos application

processors of the ’231 Accused Products, a cross section of the first and second trenches shows that the width of the first trench is greater than the width of one or more of the second trenches.

20. Claim 1 of the ’231 patent further requires “filling said dummy trenches and said first and second trenches with a conductive material[.]” On information and belief, in certain semiconductor chips of the ’231 Accused Products, the first, second, and dummy trenches are filled with a conductive material. For example, in the Exynos application processors of the ’231 Accused Products, the first interconnect, second interconnects, and dummy connectors are formed from copper that was filled into trenches etched into the insulating layer.

21. Claim 1 of the ’231 patent further requires “polishing said conductive material to form dummy conductors exclusively in said dummy trenches and interconnect exclusively in said first and second trenches[.]” On information and belief, in certain semiconductor chips of the ’231 Accused Products, the interconnects and dummy conductors are made by a process that includes polishing the conductive material deposited in the first, second, and dummy trenches until the conductive material is exclusively in those trenches (i.e., the conductive material in the first, second, and dummy trenches has been polished such that the copper in the dummy trenches does not connect to the copper in either of the first or second trenches). For example, in the Exynos application processors of the ’231 Accused Products, a cross section shows that copper deposited in the dummy trenches has been polished so that it is separate from the copper deposited in the first and second trenches.

22. Claim 1 of the ’231 patent further requires “said dummy conductors are electrically separate from said plurality of electrically conductive features and co-planar with said interconnect.” On information and belief, in certain semiconductor chips of the ’231 Accused Products, the dummy conductors are co-planar with the interconnect and electrically

separate from the plurality of electrically conductive features. For example, in the Exynos application processors of the ’231 Accused Products, a cross section shows that the upper surfaces of the interconnects are coplanar with the upper surfaces of the dummy conductors, and that the dummy conductors are electrically separate from the active or passive electrical components below the dummy conductors.

23. The infringing semiconductor chips of the ’231 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

24. By at least April 20, 2016, Invensas disclosed the existence of the ’231 patent to Samsung and identified at least some of Samsung’s activities that infringe the ’231 patent. Thus, Samsung has had knowledge of the ’231 patent and that its activities infringe the ’231 patent since at least April 20, 2016. Based on Invensas’s disclosures, Samsung has also known or should have known since at least April 20, 2016 that its customers, distributors, and other purchasers of the ’231 Accused Products are infringing the ’231 patent at least because Samsung has known that it is infringing the ’231 patent.

25. On information and belief, Samsung has continued to make, use, offer for sale, and/or sell the ’231 Accused Products in the United States and/or import the ’231 Accused Products into the United States despite its knowledge of the ’231 patent and its infringement of that patent. Samsung’s infringement has been and continues to be willful.

26. On information and belief, Samsung actively, knowingly, and intentionally induces infringement of one or more claims of the ’231 patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, offer to sell, sell, and/or import ’231 Accused Products or products containing infringing chips in the ’231 Accused Products, in this judicial district and

elsewhere in the United States. For example, Samsung actively promotes the sale, use, and importation of its infringing chips in marketing materials, technical specifications, data sheets, web pages on its website (e.g., www.samsung.com), press releases, and user manuals, as well as at trade shows (e.g., CES and Mobile World Congress) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the '231 Accused Products or products containing infringing chips in the '231 Accused Products. *See, e.g.*, *Showcase: Latest Mobile Devices Powered by Samsung Exynos Processor*, SAMSUNG EXYNOS MINISITE, http://www.samsung.com/semiconductor/minisite/Exynos/Showcase/all/index.html (last visited Sept. 26, 2017); *Application Processor*, SAMSUNG SEMICONDUCTOR GLOBAL WEBSITE, http://www.samsung.com/semiconductor/products/exynos-solution/application-processor (last visited Sept. 26, 2017).

27. Invensas has suffered and continues to suffer damages as a result of Samsung's infringement of the '231 patent.

COUNT II
INFRINGEMENT OF THE '946 PATENT

28. Plaintiff incorporates by reference the allegations set forth in paragraphs 1 through 27 as though fully set forth herein.

29. On information and belief, Samsung has directly infringed and continues to infringe, and/or has induced the infringement of, one or more claims of the '946 patent, including claim 16 and other claims that depend from claim 16, literally or under the doctrine of equivalents, by making, using, importing, selling, and/or offering to sell in the United States without authority or license, at least the Exynos processors in the Samsung Galaxy S6, S7, S8, and other devices, and substantially similar semiconductor chips (collectively, the "'946 Accused Products"), in violation of 35 U.S.C. § 271.

30. Claim 16 of the ’946 patent recites “[a] substantially planar semiconductor topography[.]” On information and belief, the ’946 Accused Products include a substantially planar semiconductor topography. For example, in the Exynos processors of the ’946 Accused Products, a cross section shows that the upper surfaces of the first trench, plurality of laterally spaced dummy trenches, series of second trenches, and the dielectric layer are substantially planar.

31. Claim 16 of the ’946 patent requires “a plurality of laterally spaced dummy trenches in a dielectric layer, between a first trench and a series of second trenches[.]” On information and belief, the ’946 Accused Products include semiconductor chips containing a plurality of laterally spaced dummy trenches in a dielectric layer between a first trench and a series of second trenches. For example, in the Exynos processors of the ’946 Accused Products, there are multiple laterally spaced dummy trenches in insulating material that are between a first relatively wide trench and a series of second relatively narrow trenches.

32. Claim 16 of the ’946 patent further requires that “each of the second trenches is relatively narrow compared to the first trench” and “a lateral dimension of at least one of the laterally spaced dummy trenches is less than a lateral dimension of the first trench and greater than a lateral dimension of at least one of the series of second trenches[.]” On information and belief, the second trenches in certain semiconductor chips of the ’946 Accused Products are relatively narrow compared to the first trench (i.e., each of the relatively narrow trenches is narrower than the relatively wide trench), and a lateral dimension of at least one of the laterally spaced dummy trenches is less than a lateral dimension of the first trench and greater than a lateral dimension of at least one of the series of second trenches. For example, in the Exynos processors of the ’946 Accused Products, a cross section shows that the width of one or more of

the dummy trenches is less than the width of the relatively wide trench, and greater than the width of one or more of the relatively narrow trenches.

33. Claim 16 of the ’946 patent further requires “dummy conductors in said laterally spaced dummy trenches and electrically separate from electrically conductive features below said dummy conductors[.]” On information and belief, in certain semiconductor chips of the ’946 Accused Products, dummy conductors in the laterally spaced dummy trenches are electrically separate from electrically conductive features below the dummy conductors. For example, in the Exynos processors of the ’946 Accused Products, a cross section shows that the copper-based dummy conductors in the dummy trenches are electrically separate from the copper-based conductive lines in the first trench and the series of second trenches, and from active or passive electrical components below the dummy conductors.

34. Claim 16 of the ’946 patent further requires “conductive lines in said series of second trenches and said first trench, wherein upper surfaces of said conductive lines are substantially coplanar with dummy conductor upper surfaces.” On information and belief, the upper surfaces of the conductive lines in certain semiconductor chips of the ’946 Accused Products are substantially coplanar with the dummy conductor upper surfaces. For example, a cross section shows that the upper surfaces of the copper-based interconnects in the Exynos processors of the ’946 Accused Products are substantially coplanar with the upper surfaces of the dummy conductors.

35. The infringing chips of the ’946 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

36. By at least April 20, 2016, Invensas disclosed the existence of the ’946 patent to Samsung and identified at least some of Samsung’s activities that infringe the ’946 patent. Thus,

Samsung has had knowledge of the ’946 patent and that its activities infringe the ’946 patent since at least April 20, 2016. Based on Invensas’s disclosures, Samsung has also known or should have known since at least April 20, 2016 that its customers, distributors, and other purchasers of the ’946 Accused Products are infringing the ’946 patent at least because Samsung has known that it is infringing the ’946 patent.

37. On information and belief, Samsung has continued to make, use, offer for sale, and/or sell the ’946 Accused Products in the United States and/or import the ’946 Accused Products into the United States despite its knowledge of the ’946 patent and its infringement of that patent. Samsung’s infringement has been and continues to be willful.

38. On information and belief, Samsung also actively, knowingly, and intentionally induces infringement of one or more claims of the ’946 patent under 35 U.S.C. § 271(b) by actively encouraging others to make, use, offer to sell, sell, and/or import ’946 Accused Products or products containing infringing chips in the ’946 Accused Products, in this judicial district and elsewhere in the United States. For example, Samsung actively promotes the sale, use, and importation of its infringing chips in marketing materials, technical specifications, data sheets, web pages on its website (e.g., www.samsung.com), press releases, and user manuals, as well as at trade shows (e.g., CES and Mobile World Congress) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the ’946 Accused Products or products containing infringing chips in the ’946 Accused Products. *See, e.g.*, *Showcase: Latest Mobile Devices Powered by Samsung Exynos Processor*, SAMSUNG EXYNOS MINISITE, http://www.samsung.com/semiconductor/minisite/Exynos/Showcase/all/index.html (last visited Sept. 26, 2017); *Application Processor*, SAMSUNG SEMICONDUCTOR GLOBAL

WEBSITE, http://www.samsung.com/semiconductor/products/exynos-solution/application-processor (last visited Sept. 26, 2017).

39. Invensas has suffered and continues to suffer damages as a result of Samsung's infringement of the '946 patent.

JURY DEMAND

40. Plaintiff demands a jury trial as to all issues that are triable by a jury in this action.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully prays for relief as follows:

(a) Judgment that each defendant is liable for infringement and/or inducing the infringement of one or more claims of the Asserted Patents;

(b) Compensatory damages in an amount according to proof, and in any event no less than a reasonable royalty;

(c) Treble damages for willful infringement pursuant to 35 U.S.C. § 284;

(d) Pre-judgment interest;

(e) Post-judgment interest;

(f) Attorneys' fees based on this being an exceptional case pursuant to 35 U.S.C. § 285, including pre-judgment interest on such fees;

(g) An accounting and/or supplemental damages for all damages occurring after any discovery cutoff and through final judgment;

(h) Costs and expenses in this action; and

(i) Any further relief that the Court deems just and proper.

Dated: September 28, 2017

FARNAN LLP

/s/ Brian E. Farnan

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