

located at 100 W. Houston Street, Marshall, Texas 75670.

3. Defendant SEC is a corporation organized and existing under the laws of the Republic of Korea, with its principal place of business at 129 Samsung-Ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 443-742, Republic of Korea. Upon information and belief, SEC does business in Texas, directly or through intermediaries, and offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas, including in the Judicial District of the Eastern District of Texas.

4. Defendant SEA is a corporation organized under the laws of New York, with its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660. Upon information and belief, SEA has corporate offices in the Eastern District of Texas at 1303 East Lookout Drive, Richardson, Texas 75082 and 2800 Technology Drive, Suite 200, Plano, Texas 75074. SEA also maintains a 216,000 square-foot campus at 6625 Excellence Way, Plano, Texas 75023. SEA may be served with process through its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136.

5. Defendant SSI is a corporation organized under the laws of California, with its principal place of business at 3655 North First Street, San Jose, California, 95134. Upon information and belief, Samsung Semiconductor, Inc. has a research center and manufacturing facility located at 3900 San Clemente, Suite 300, North Capital of Texas Highway, Austin, Texas, 78746. SSI may be served with process through its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136.

6. Defendant SAS is a limited liability company organized and existing under the laws of Delaware, with its principal place of business at 12100 Samsung Boulevard, Austin, Texas 78754. SAS may be served with process through its registered agent, CT Corporation System,

1999 Bryan Street, Suite 900, Dallas, Texas 75201.

7. SAS is a wholly-owned subsidiary of SSI, which is a wholly-owned subsidiary of SEA, which is a wholly-owned subsidiary of SEC.

8. Defendants have admitted that they offer products and services, including the products accused of infringement in this Complaint, to customers and potential customers located in the Eastern District of Texas.¹

9. Defendants have authorized sellers and sales representatives that offer and sell products pertinent to this Complaint through the State of Texas, including in this Judicial District, and to consumers throughout this Judicial District, such as: Best Buy, 422 West TX-281 Loop, Suite 100, Longview, Texas 75605; AT&T Store, 1712 East Grand Avenue, Marshall, Texas 75670; Sprint Store, 1806 East End Boulevard North, Suite 100, Marshall, Texas 75670; T-Mobile, 900 East End Boulevard North, Suite 100, Marshall, Texas 75670; Verizon authorized retailers, including Russell Cellular, 1111 East Grand Avenue, Marshall, Texas 75670; Victra, 1006 East End Boulevard, Marshall, Texas 75670; and Cricket Wireless authorized retailer, 120 East End Boulevard South, Marshall, Texas 75670.

JURISDICTION

10. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Defendants. Defendants conduct business and have committed acts of patent infringement in this Judicial District, the State of

¹ See *Acorn Semi, LLC v. Samsung Electronics Co., Ltd., et al.*, No. 2:19-cv-00347, Dkt. 14 (E.D. Tex. Feb. 12, 2020).

Texas, and elsewhere in the United States.

12. Defendants are subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to their substantial business in this State and District, including (a) at least part of their past infringing activities, (b) regularly doing or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas. Upon information and belief, Defendants, directly or indirectly, participate in the stream of commerce that results and have resulted in products, including the accused products, being made, used, offered for sale, and/or sold in the State of Texas and/or imported into the United States to the State of Texas.

13. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, SEC is not a resident in the United States, and thus may be sued in any judicial district pursuant to 28 U.S.C. § 1391(c)(3).

PATENTS-IN-SUIT

14. On March 10, 2009, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,501,582 (the "'582 Patent") entitled "Electrical Device and Method for Making Same." A true and correct copy of the '582 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=07501582>.

15. On October 2, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,278,560 (the "'560 Patent") entitled "Electrical Device with Teeth Joining Layers and Method for Making the Same." A true and correct copy of the '560 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=08278560>.

16. On November 12, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,581,105 (the "'105 Patent") entitled "Electrical Device with Teeth

Joining Layers and Method for Making the Same.” A true and correct copy of the ’105 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=08581105>.

17. On June 21, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,374,912 (the “’912 Patent”) entitled “Electrical Device with Teeth Joining Layers and Method for Making the Same.” A true and correct copy of the ’912 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=09374912>.

18. Continental LLC is the sole and exclusive owner of all right, title, and interest of the ’582, ’560, ’105, and ’912 Patents (collectively, the “Patents-in-Suit”). Continental Texas is the exclusive licensee with respect to the Patents-in-Suit in Texas and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit in Texas, including the filing of this patent infringement lawsuit. Continental Texas has the right to recover all damages for past infringement of the Patents-in-Suit in the State of Texas as appropriate under the law. Continental LLC has the right to recover all damages for past infringement of the Patents-in-Suit except in the State of Texas as appropriate under the law.

19. Continental Circuits has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit. On information and belief, prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

FACTUAL ALLEGATIONS

20. The Patents-in-Suit generally cover systems and methods for multilayer electrical devices, such as a circuit board, having a roughened surface structure for joining at least one of the layers. The inventions described in the Patents-in-Suit were developed by Brian McDermott, Daniel McGown, Ralph Leo Spotts, Jr., and Sid Tryzbiak, employees of Continental Circuits Inc. For example, this technology is implemented in processors. Infringing products include processors

and/or associated methods of making processors for use in smartphones and similar devices including, but not limited to, the Exynos 9 series mobile processors, Exynos 7 series mobile processors, Exynos 5 series mobile processors, Exynos 8 Octa series mobile processors, Exynos 7 Octa series mobile processors, Exynos 7 Quad series mobile processors, and Exynos 7 Dual series mobile processors (the “Accused Products”).

21. Samsung has infringed the Patents-in-Suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import processors, that infringe the Patents-in-Suit. Further, Samsung has infringed the Patents-in-Suit by making, using, selling, offering to sell, and/or importing consumer electronics products that incorporate the Accused Products including, but not limited to, Samsung smartphones and tablets (the “Accused Devices”).

22. For example, infringing Samsung Exynos 9 series mobile processors (such as the Exynos 8895) were used in smartphones and tablets during the terms of the Patents-in-Suit:²

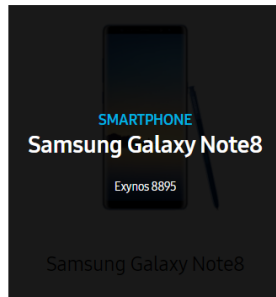
² <https://www.samsung.com/semiconductor/minisite/exynos/products/all-processors/>;
<https://www.samsung.com/semiconductor/minisite/exynos/products/mobileprocessor/exynos-9-series-8895/>

<h3>Exynos 9820</h3> <p>Process: 8nm LPP FinFET</p> <p>CPU (Primary): Custom CPU Dual</p> <p>GPU: Mali™-G76 MP12</p> <p>Display: WQXGA (3840x2400), 4K UHD (4096x2160)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>	<h3>Exynos 980</h3> <p>Process: 8nm FinFET</p> <p>CPU (Primary): Cortex®-A77 2.2GHz Dual</p> <p>GPU: Mali™-G76 MP5</p> <p>Display: WQHD+ (3360x1440)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>	<h3>Exynos 880</h3> <p>Process: 8nm FinFET</p> <p>CPU (Primary): Cortex®-A77 2.0GHz Dual</p> <p>GPU: Mali™-G76 MP5</p> <p>Display: Full HD+ (2520x1080)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>
<h3>Exynos 9810</h3> <p>Process: 10nm FinFET</p> <p>CPU (Primary): Custom CPU 2.9GHz Quad</p> <p>GPU: Mali™-G72 MP18</p> <p>Display: WQXGA (3840x2400), 4K UHD (4096x2160)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>	<h3>Exynos 8895</h3> <p>Process: 10nm FinFET</p> <p>CPU (Primary): Custom CPU 2.3GHz Quad</p> <p>GPU: Mali™-G71 MP20</p> <p>Display: WQXGA (3840x2400), 4K UHD (4096x2160)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>	<h3>Exynos 9611</h3> <p>Process: 10nm FinFET</p> <p>CPU (Primary): Cortex®-A73 2.3GHz Quad</p> <p>GPU: Mali™-G72 MP3</p> <p>Display: WQXGA+ (2560x1600)</p> <p>Application: Smartphone, Tablet</p> <p>LEARN MORE MORE SPEC</p>

Devices



Meizu 15 Plus



Samsung Galaxy Note8



Samsung Galaxy S8



Samsung Galaxy S8 +

[VIEW ALL DEVICES >](#)

COUNT I (Infringement of the '582 Patent)

23. Paragraphs 1 through 22 are incorporated by reference as if fully set forth herein.

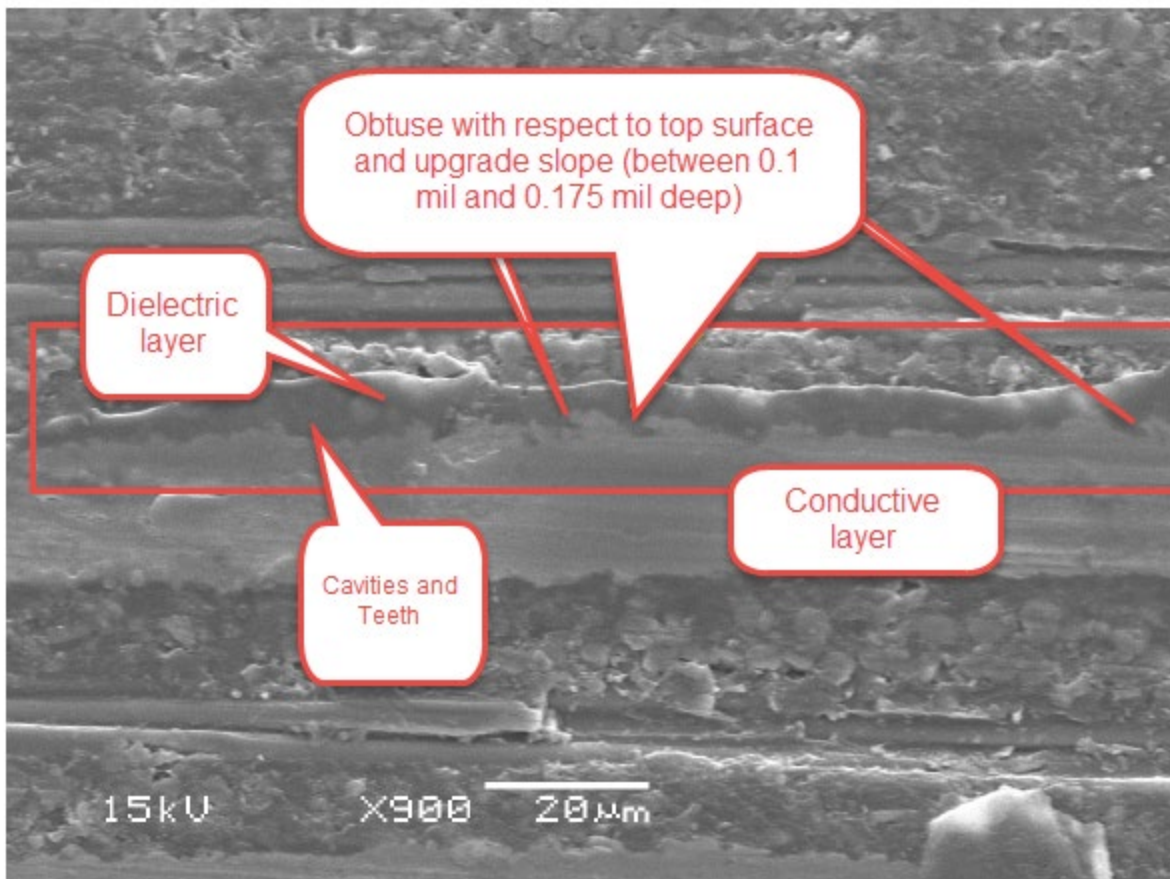
24. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '582 Patent.

25. Defendant has directly infringed the '582 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '582 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the processors included in Samsung smart phones and tablets, such as the Samsung S8.

26. For example, Defendant has infringed at least claim 83 of the '582 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which comprise electrical devices included in multilayer electric devices, products, and/or circuit boards.

27. Upon information and belief, each Accused Product comprises a dielectric material comprising a surface with cavities remaining from removal of a portion of the dielectric material.

28. Upon information and belief, each Accused Product comprises a conductive layer built up on the dielectric material that fills the cavities and forms teeth set in and under the surface of the dielectric material.



SEM image of Accused Samsung Processor included in Samsung S8 with exemplary annotations

29. Upon information and belief, the conductive layer comprises a portion of the circuitry of an electrical device, and a plurality of the cavities are obtuse with respect to the top surface and are at least 1 tenth of a mil deep to 1.75 tenths of a mil deep.

30. Upon information and belief at least one of the cavities includes an upgrade slope with respect to the surface of the dielectric material, and one of the teeth engages a portion of the dielectric material at the slope.

31. Because of Defendant's infringement of the '582 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

COUNT II
(Infringement of the '560 Patent)

32. Paragraphs 1 through 22 are incorporated by reference as if fully set forth herein.

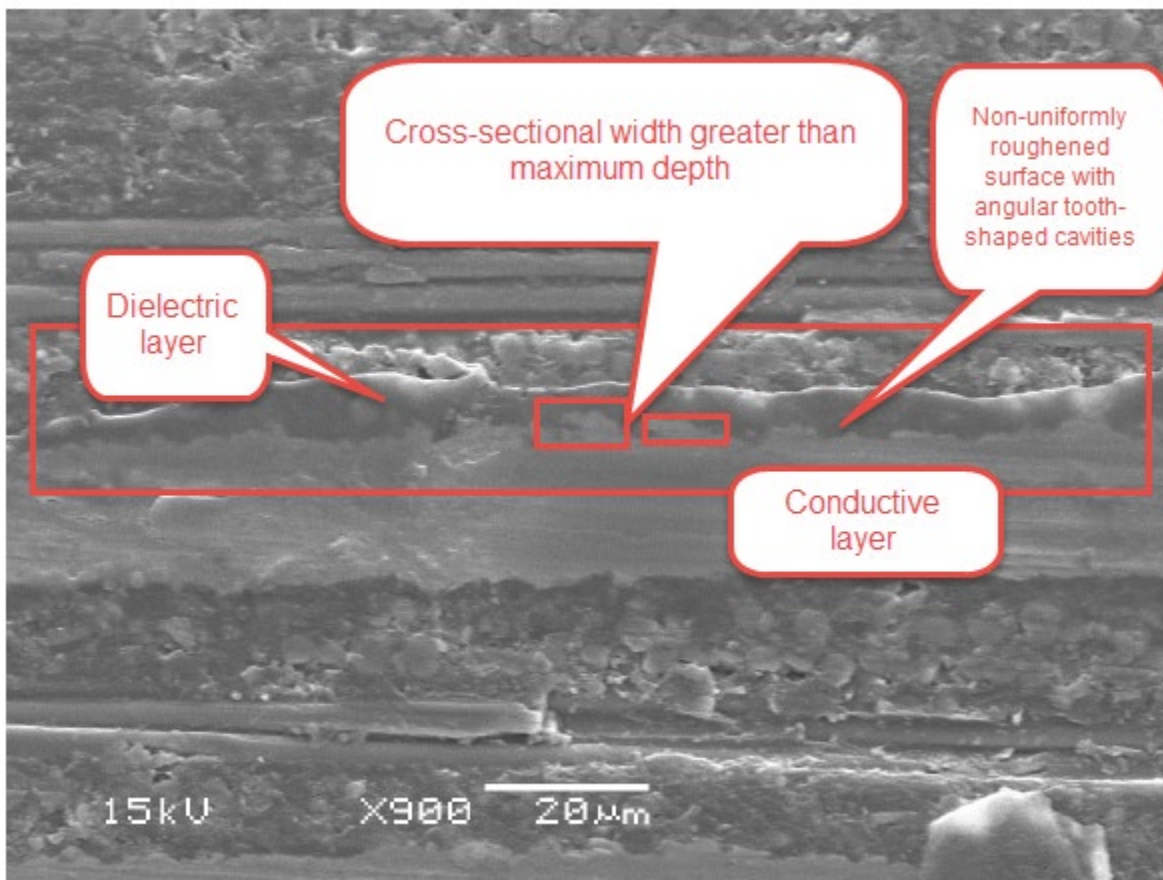
33. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '560 Patent.

34. Defendant has directly infringed the '560 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '560 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the processors included in Samsung smart phones and tablets, such as the Samsung S8.

35. For example, Defendant has directly infringed at least claim 1 of the '560 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which comprise an article of manufacture.

36. Upon information and belief, the Accused Products comprise an epoxy dielectric material delivered with solid content sufficient that etching the epoxy forms a non-uniformly roughened surface of angular tooth-shaped cavities located in and underneath an initial surface of the dielectric material, sufficient that the etching of the epoxy uses non-homogeneity with the solid content in bringing about formation of the non-uniformly roughened surface of the angular tooth-shaped cavities and sufficient that the etching of the epoxy is such that a plurality of the cavities have a cross-sectional width that is greater than a maximum depth with respect to the initial surface, wherein the etching forms the non-uniformly roughened surface of angular tooth-shaped cavities, and a conductive material, a portion of the conductive material in the cavities thereby

forming angular teeth in the cavities, and wherein the conductive material forms a portion of circuitry of an electrical device.



SEM image of Accused Samsung Processor included in Samsung S8 with exemplary annotations

37. Because of Defendant's infringement of the '560 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

COUNT III
(Infringement of the '105 Patent)

38. Paragraphs 1 through 22 are incorporated by reference as if fully set forth herein.

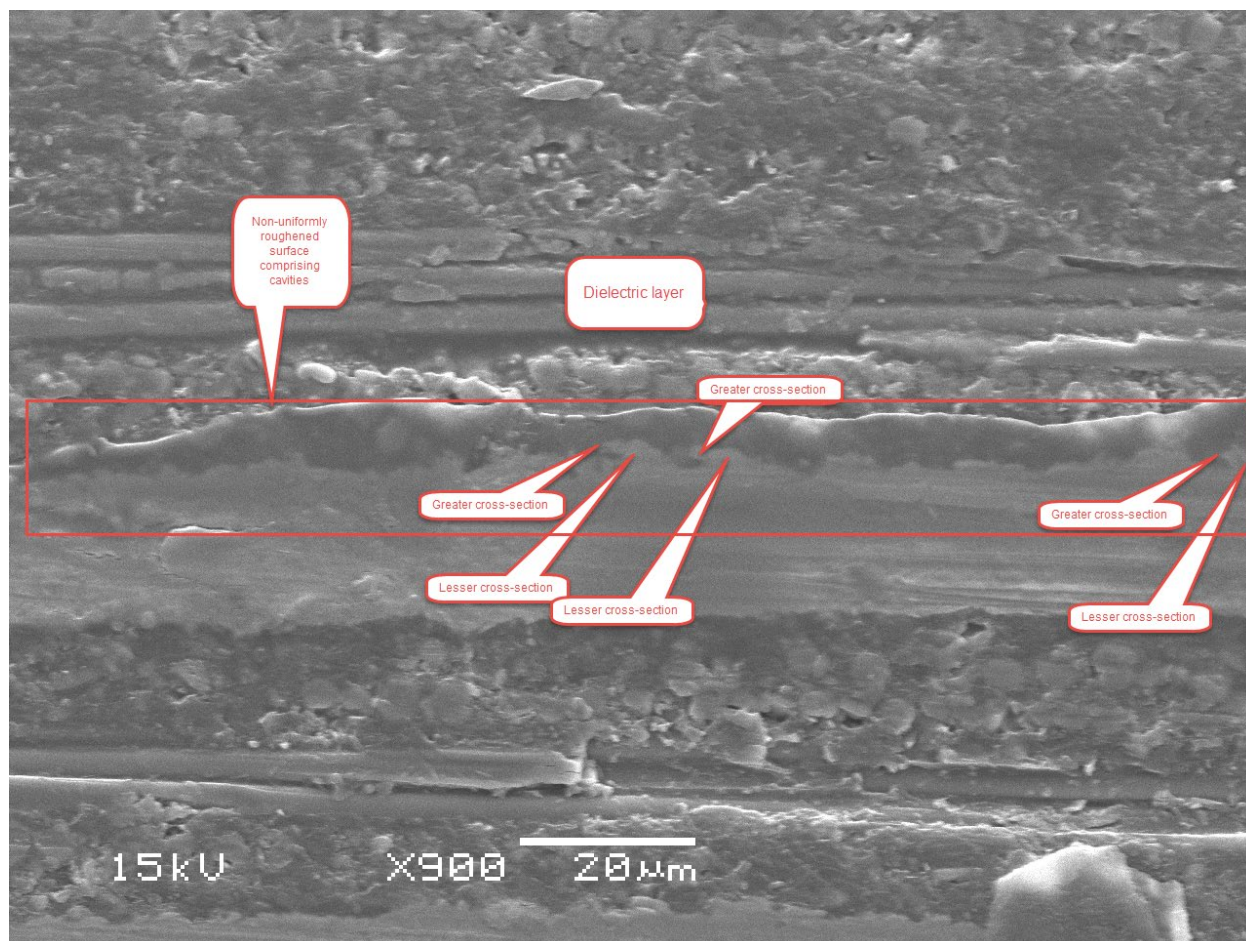
39. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '105 Patent.

40. Defendant has directly infringed the '105 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '105 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the processors included in Samsung smart phones and tablets, such as the Samsung S8.

41. For example, Defendant has directly infringed at least claim 80 of the '105 Patent by making, using offering to sell, selling, and/or importing into the United States the Accused Products which are multilayer electric devices, products, and/or circuit boards.

42. Upon information and belief, the Accused Products comprise circuitry with conductive material being part of the circuitry and configured as angular teeth in filling cavities.

43. Upon information and belief, the Accused Products comprise an epoxy dielectric material disposed in combination with the circuitry and coupled with the conductive material in a configuration where the dielectric material comprises a non-uniformly roughened surface comprising cavities located in and underneath an initial surface of the dielectric material delivered with solid content being non-homogeneous and configured to bring about the formation of the non-uniformly roughened surface by etching of the epoxy.



SEM image of Accused Samsung Processor included in Samsung S8 with exemplary annotations

44. Upon information and belief, at least some of the cavities of the Accused Products have a first cross-sectional distance proximate the initial surface, and a substantially greater cross-sectional distance distant from the initial surface.

45. Because of Defendant's infringement of the '105 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

COUNT IV
(Infringement of the '912 Patent)

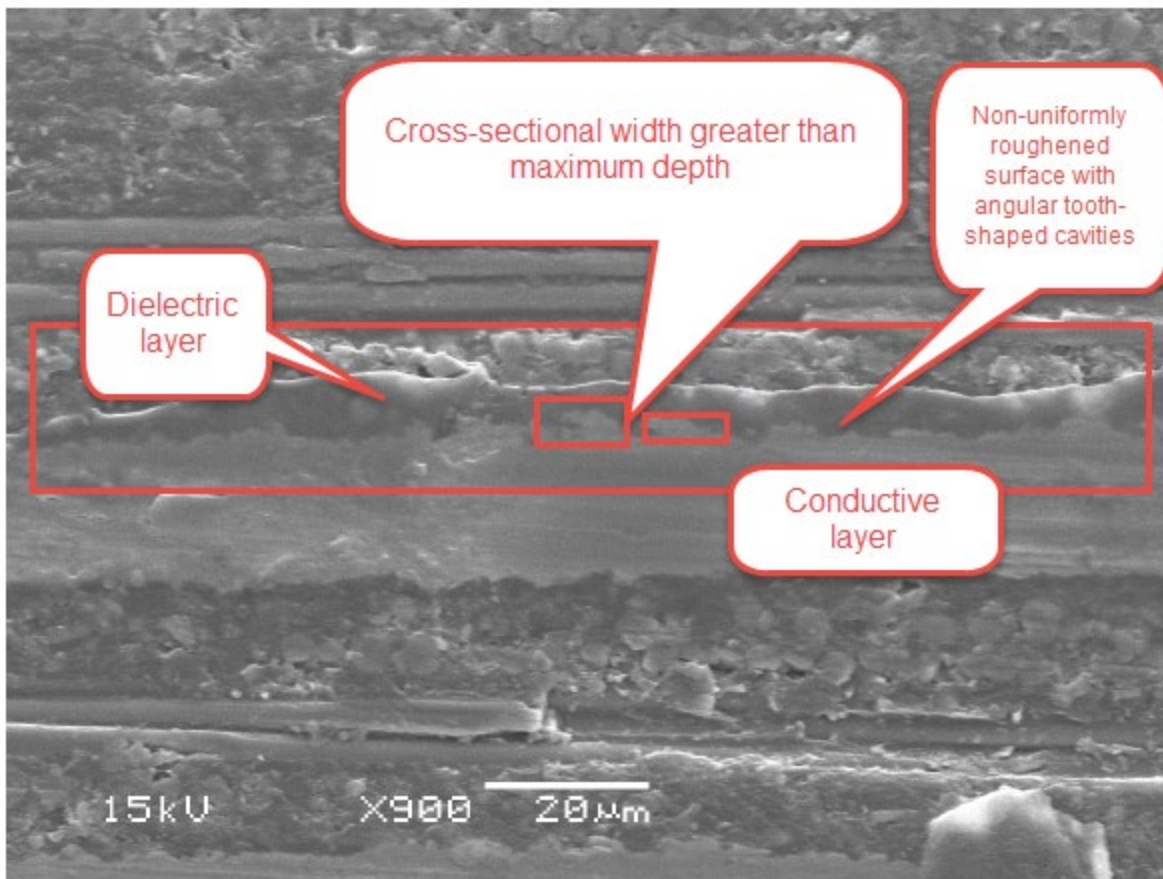
46. Paragraphs 1 through 22 are incorporated by reference as if fully set forth herein.

47. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '912 Patent.

48. Defendant has directly infringed the '912 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '912 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the processors included in Samsung smart phones and tablets, such as the Samsung S8.

49. For example, Defendant has directly infringed at least claim 17 of the '912 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which are products produced by the process of claim 1 of the '912 Patent.

50. Upon information and belief, the Accused Products are made by implementing a circuit design for an electrical device by coupling a dielectric material delivered with solid content, the dielectric material and the solid content being non-homogeneous materials sufficient that etching the dielectric material forms a non-uniformly roughened surface of cavities located in, and underneath an initial surface of, the dielectric material, sufficient that the etching of the dielectric material uses non-homogeneity with the solid content in bringing about formation of the non-uniformly roughened surface of the cavities and sufficient that the etching of the dielectric material is such that a plurality of the cavities have a cross-sectional width that is greater than a maximum depth with respect to the initial surface, wherein the etching forms the non-uniformly roughened surface of cavities, with a conductive material, a portion of the conductive material in the cavities thereby forming numerous sized and shaped teeth in the cavities, in circuitry of the electrical device.



SEM image of Accused Samsung Processor included in Samsung S8 with exemplary annotations

51. Because of Defendant's infringement of the '912 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Continental Circuits prays for relief against Defendant as follows:

- a. Entry of judgment declaring that Defendant infringed one or more claims of each of the Patents-in-Suit;
- b. An order awarding damages sufficient to compensate Continental Circuits for Defendant's infringement of the Patents-in-Suit, but in no event less than a

reasonable royalty, together with pre-judgment and post-judgment interest and costs;

- c. Enhanced damages pursuant to 35 U.S.C. § 284;
- d. Entry of judgment declaring that this case is exceptional and awarding Continental Circuits its costs and reasonable attorney fees under 35 U.S.C. § 285;
- e. An accounting for acts of infringement;
- f. Such other equitable relief which may be requested and to which Plaintiff is entitled; and
- g. Such other and further relief as the Court deems just and proper.

Dated: May 28, 2021

Respectfully submitted,

/s/ Alfred R. Fabricant

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CONTINENTAL CIRCUITS OF TEXAS LLC***