IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

CHIEN-MIN SUNG, Plaintiff, v. SAMSUNG ELECTRONICS CO. LTD., SAMSUNG ELECTRONICS AMERICA, INC., SAMSUNG SEMICONDUCTOR, INC., and SAMSUNG AUSTIN SEMICONDUCTOR LLC, Defendant.	Civil Action No. 4:23-cv-752 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Chien-Min Sung, Ph.D. ("Dr. Sung" or "Plaintiff"), for his Complaint against Defendant Samsung Electronics Co. Ltd., ("SEC"), Samsung Electronics America Inc. ("SEA"), Samsung Semiconductor Inc., ("SSI"), and Samsung Austin Semiconductor LLC ("SAS") (individually each a "Defendant" and collectively "Defendants" or "Samsung") alleges the following:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq*.

THE PARTIES

2. Plaintiff Dr. Sung is an individual residing at No. 4, Lane 32, Chung Cheng Road, Tansui, Taipei, Taiwan.

3. Upon information and belief, SEC is a Joint Stock Company organized and existing under the laws of the Republic of Korea, with a place of business at 129 Samsung-Ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742, Republic of Korea.Upon information and belief, SEC sells and offers to sell products and services throughout the United States, including in this judicial district, and introduces products and services that into the stream of commerce and that incorporate infringing technology knowing that they would be sold in this judicial district and elsewhere in the United States.

4. Upon information and belief, SEA is a corporation organized and existing under the laws of New York, with a principal place of business in the Eastern District of Texas at 6625 Excellence Way, Plano, TX 75023, and can be served through its registered agent, CT Corporation, 1999 Bryan St. Suite 900, Dallas, Texas 75201. SEA is a wholly owned subsidiary of SEC. Upon information and belief, SEA sells and offers to sell products and services throughout the United States, including in this judicial district, and introduces products and services into the stream of commerce and that incorporate infringing technology knowing that they would be sold in this judicial district and elsewhere in the United States.

5. Upon information and belief, SSI is a corporation organized and existing under the laws of the State of California, with its principal place of business at 3665 North First Street, San Jose, California 95134 and can be served through its registered agent, CT Corporation, 1999 Bryan St. Suite 900, Dallas, Texas 75201. Upon information and belief, SEA sells and offers to sell products and services throughout the United States, including in this judicial district, and introduces products and services into the stream of commerce and that incorporate infringing technology knowing that they would be sold in this judicial district and elsewhere in the United States.

6. Upon information and belief, SAS is limited liability company organized and existing under the laws of Delaware, with its principal place of business at 12100 Samsung Boulevard, Austin, Texas 78754 and can be served with process through its registered agent , CT Corporation, 1999 Bryan St. Suite 900, Dallas, Texas 75201. Upon information and belief, SEA sells and offers to sell products and services throughout the United States, including in this judicial district, and introduces products and services into the stream of commerce and that incorporate infringing technology knowing that they would be sold in this judicial district and elsewhere in the United States.

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. Defendant Samsung owns, operates, or controls semiconductor fabrication plants ("fabs") within and/or outside of the United States, including in Austin (Texas). *See, e.g.*, https://semiconductor.samsung.com/us/foundry/manufacturing/.

9. Samsung is also in the process of constructing a 17 billion dollar facility in Taylor Texas, just to the north of Austin. *See,* Samsung, "Building a Bright Future Together at Our Taylor, Texas Fab" *available at* https://www.samsung.com/us/sas/Taylor.

10. On information and belief, Defendant Samsung, directly or indirectly, has a contractual relationship with certain pad conditioner manufacturers that design, develop, or manufacture chemical mechanical polishing/planarization ("CMP") pad conditioners implicated in this Action to Samsung, including at least one of EHWA Diamond Industrial Co Ltd. ("EHWA"), Minnesota Mining and Manufacturing Company (or "3M"), Seasol Diamond Ind. Co., Ltd. ("Seasol"), Shinhan Diamond Ind. Co., Ltd. ("Shinhan"), and/or Abrasive Technology, LLC ("AT"). For example, Samsung purchases and uses pad conditioners manufactured by

EHWA. *See* U.S. Patent Nos. 10,525,566 and 9,421,668 (Samsung and EHWA are joint assignees on patent to use of pad conditioning disks). As another example, Samsung was publicly disclosed as one of "3M's clients." (*See, e.g.*, https://focustaiwan.tw/business/202204030010). As yet another example, Saesol discloses establishing enterprise resource planning ("ERP") and supply chain management ("SCM") with Samsung in connection with Saesol's pad conditioners, and being "[s]elected as the best partner for environmental safety manufacturing by Samsung Electronics." (*See, e.g.*, http://www.saesoldia.com/bbs/content.php?co_id=history; *see also* http://www.saesoldia.com/bbs/content.php?co_id=exporting (map showing Samsung as a customer to which Saesol exports its products)). As yet another example, Samsung formed a strategic collaboration alliance with GlobalFoundries (which contracts Shinhan and 3M for the use of some of the accused instrumentalities; *see, e.g.*, https://nccavs-usergroups.avs.org/wp-content/uploads/CMPUG2016/CMP2016_7yang.pdf) for the manufacture or fabrication of the Accused Products. (*See, e.g.*, https://www.gasworld.com/story/globalfoundries-samsung-electronics-tsmc-join-sustainable-semiconductors-programme).

11. Upon information and belief, Defendant Samsung uses certain pad conditioners manufactured by third-party pad conditioner manufacturers at its manufacturing facilities for manufacturing or fabricating the accused products, including at least one of 3M's Trizact and Diamond pad conditioners; Saesol's Standard/Hive pad conditioners; Shinhan's Diamond pad conditioners; AT's Infinity II pad conditioners; or EHWA's pad conditioners.

12. On information and belief, Defendant Samsung uses or employs these third-party pad conditioners to design, develop, or manufacture one or more of the accused products either domestically or for importation into the United States for use, sale, and/or offer for sale in this

district and throughout the United States, including, but not limited to, memory, mobile devices (e.g., mobile phones), smart devices (e.g., smart watches), LED panels, solid-state drives, processors, image sensors, virtual reality headsets, computing devices and tablets, security/monitoring systems, TVs and displays, home appliances, audio systems and devices, and other semiconductor system, products, devices, and integrated circuits ("Accused Products").

13. For example, on information and belief, Defendant Samsung uses or employs at least one of 3M's Trizact or Diamond pad conditioners, Saesol's Standard/Hive pad conditioners, Shinhan's Diamond pad conditioners, AT's Infinity II pad conditioners, and/or EHWA's CVD CMP pad conditioners to manufacture or fabricate the Accused Products (or integrated circuits contained therein) either domestically or for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States. Samsung also assists third parties, directly or through others, to import third-party systems, products, and/or devices that incorporate the Accused Products into the United States and offer to sell, and sell, such third-party products in the United States.

JURISDICTION AND VENUE

14. This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.

15. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

16. Defendant Samsung is subject to this Court's general personal jurisdiction at least because Samsung is a resident of Texas as defined by Texas law. On information and belief, Samsung is headquartered in Texas.

17. Defendant Samsung is additionally subject to this Court's general and specific personal jurisdiction because Samsung has sufficient minimum contacts within the State of Texas and this District, pursuant to due process and/or the Texas Long Arm Statute, Tex. Civ.

Prac. & Rem. Code § 17.042. On information and belief, Defendant Samsung contracted with one or more Texas residents in this District and one or both parties performed the contract at least in part in the State of Texas and this District; Samsung committed the tort of patent infringement in State of Texas and this District; Samsung purposefully availed itself of the privileges of conducting business in the State of Texas and in this District; Samsung regularly conducts and solicits business within the State of Texas and within this District; Samsung recruits residents of the State of Texas and this District for employment inside or outside the State of Texas; Plaintiff's causes of action arise directly from Samsung's business contacts and other activities in the State of Texas and this District; and Samsung distributes, makes available, imports, sells and offers to sell products and services throughout the United States, including in this judicial District, and introduces infringing products and services that into the stream of commerce knowing that they would be used and sold in this judicial district and elsewhere in the United States.

18. On information and belief, Defendant Samsung designs, develops, manufactures, sells, offers to sell, and/or imports products, devices, systems, and/or components of systems through certain accused instrumentalities that either infringe or support the infringement of the patents asserted in this action.

19. On information and belief, Samsung sells and offers to sell products and services throughout the United States and in Texas, including in this District, through the accused instrumentalities, through major electronics retailers in the United States, and in concert and partnership with third parties.

20. Furthermore, personal jurisdiction over Samsung in this action comports with due process. Samsung has conducted and regularly conducts business within the United States and

this District. Samsung has purposefully availed itself of the privileges of conducting business in the United States, and more specifically in the State of Texas and this District. Samsung has sought protection and benefit from the laws of the State of Texas by making available products and services, including websites and associated web pages, that infringe the Asserted Patents with the awareness and/or intent that they will be used (or visited) by consumers in this District. Having purposefully availed itself of the privilege of conducting business within this District, Samsung should reasonably and fairly anticipate being brought into court here.

21. Venue is proper in this judicial district under 28 U.S.C. § 1391 and 28 U.S.C. §1400(b). On information and belief, Samsung has a regular and established place of business in this District, including at least an office at 1301 East Lookout Drive, Richardson, Texas 75080, and an office at 6625 Declaration Drive, Plano, Texas 75023. On information and belief, Samsung's acts of infringement have taken place within this District. On information and belief, Samsung's presence in this District is substantial, including at least at the locations identified above.

22. Additionally, Samsung—directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents—ships, distributes, offers for sale, and/or sells its products and services in the United States and this District. Samsung has purposefully and voluntarily placed one or more of its products into the stream of commerce through the accused instrumentalities that infringe the patents asserted in this action with the awareness and/or intent that they will be purchased by consumers in this District. Samsung knowingly and purposefully ships infringing products into, and within, this District. These infringing products have been, and continue to be, purchased by consumers and businesses in this District.

THE ASSERTED PATENTS

23. On September 22, 2015, U.S. Patent No. 9,138,862 ("the '862 patent"), entitled "CMP Pad Dresser Having Leveled Tips and Associated Methods" was duly and legally issued by the United States Patent and Trademark Office. A true and correct copy of the '862 patent is attached as Exhibit 1.

24. Plaintiff is the assignee and owner of the right, title and interest in and to the '862 patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

25. On August 8, 2017, U.S. Patent No. 9,724,802 ("the '802 patent"), entitled "CMP Pad Dressers Having Leveled Tips and Associated Methods" was duly and legally issued by the United States Patent and Trademark Office. A true and correct copy of the '802 patent is attached as Exhibit 2.

26. Plaintiff is the assignee and owner of the right, title and interest in and to the '802 patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

27. On March 10, 2015, U.S. Patent No. 8,974,270 ("the '270 patent"), entitled "CMP Pad Dresser Having Leveled Tips and Associated Methods" was duly and legally issued by the United States Patent and Trademark Office. A true and correct copy of the '270 patent is attached as Exhibit 3.

28. Plaintiff is the assignee and owner of the right, title and interest in and to the '270 patent, and holds the right to sue and recover damages for infringement thereof, including past infringement.

29. The ’862, ’802, and ’270 patents (collectively, “Asserted Patents”) generally relate to chemical mechanical polishing/planarization (“CMP”) pad dressers and dressing and conditioning methods associated with pad conditioning (e.g., smoothing, polishing, and dressing), and the CMP polishing of a work piece such as an integrated circuit or semiconductor wafer.

30. In manufacturing semiconductor wafers, one important physical trait is their surface flatness and smoothness. To achieve these important physical characteristics, CMP techniques, which involve pad polishing and conditioning, are generally used to planarize the wafer surface through both chemical and mechanical reactions, whereby protrusions and residues existing on the surface of a wafer chemically react with a slurry supplied to the wafer at the same time when they are planarized mechanically by rotation of a polishing pad. In CMP, the quality of the polishing pad dictates the removal rate, planarization, and uniformity, and thus plays a key role in the overall performance of the polishing process.

31. To optimize the condition and minimize deformation of the pad, a pad dresser is used to dress the pad so as to remove debris and by-products in the pad (e.g., deglazing the pad) and to regenerate new pad surface sufficient to open up asperities in the pad surface to capture and hold chemical slurry for cleaning the semiconductor wafer.

32. As discussed above, the pad dresser is used to create and form pad asperities in the pad, which in turn polish the semiconductor wafer. In polishing, the dresser’s tips profile generally dictates the pad asperities profile. Due to the miniaturization of transistors and advancement of manufacturing technologies, these tips must be stringently coordinated (e.g., in terms of count, configuration, spacing, and cutting depth) to avoid any possibility of damaging the semiconductor wafer (e.g., via scratches on wafer surface or underlying metal-interconnect).

The Asserted Patents are generally directed to providing a pad dresser with optimized tips for performing CMP polishing and conditioning using the same.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 9,138,862

33. Plaintiff incorporates and realleges the preceding paragraphs as if fully set forth herein.

34. At least as of September 7, 2022, Dr. Sung placed Samsung on actual notice of the ’862 patent and actual notice that its actions constituted and continued to constitute infringement of the ’862 patent. Samsung has had actual knowledge of the ’862 patent and its own infringement of the ’862 patent since at least that time.

35. On information and belief, Defendant Samsung has directly infringed and continues to infringe at least claim 1 of the ’862 patent literally or under the doctrine of equivalents, by importing into the United States, and/or making, using, and/or selling, and/or offering for sale in the United States, without authority or license, semiconductor devices and/or integrated circuits that are/were fabricated and/or manufactured using certain CMP pad conditioners, including 3M’s pad conditioners, Saesol’s CMP pad conditioners, Shinhan’s CMP pad conditioners, AT’s CMP pad conditioners, EHWA’s pad conditioners, and/or similar pad conditioners (e.g., pad conditioners with the same claimed structural characteristics and manufactured by other pad conditioner manufacturers) (“’862 Accused Instrumentalities”), and systems, products, and/or devices containing these semiconductor devices and/or integrated circuits including at least the Accused Products in violation of 35 U.S.C. § 271(a). The Accused Products are/were manufactured and/or fabricated using pad conditioners with the claimed structural characteristics. Each such product includes an integrated circuit fabricated or manufactured using, for example, at least one of 3M’s Trizact or Diamond pad conditioners,

Seasol's Standard/Hive pad conditioners, Shinhan's Diamond pad conditioners, AT's Infinity II pad conditioners; and/or EHWA's CVD CMP pad conditioners.

36. On information and belief, Samsung sells and/or offers for sale the Accused Products in the United States. For example, Samsung provides direct sales through its own sales channels and/or its distributors and sells the Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the Accused Products in the United States. For example, Samsung engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

37. Discovery is expected to uncover the full extent of Samsung's infringement of the '862 patent beyond the Accused Products already identified herein.

38. Additionally, on information and belief, Samsung has directly infringed and continues to infringe at least claim 1 of the '862 patent literally or under the doctrine of equivalents, by importing into the United States, and/or making, using, and/or selling, and/or offering for sale in the United States, without authority or license, the Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Defendant Samsung imports the Accused Products into the United States for sales and distribution to customers located in and outside the United States. On information and belief, Defendant Samsung sells and/or offers for sale the Accused Products in the United States. For example, Defendant Samsung provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the Accused Products in the United States. For example, Defendant Samsung engages in

sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

39. The Accused Products are/were manufactured by a process including all of the limitations of at least claim 1 of the ’862 patent. The Accused Products are/were made by a claimed method. The Accused Products are made by a claimed method. Each of the Accused Products, for example, is or contains an integrated circuit fabricated or manufactured using, for example, at least one of the ’862 Accused Instrumentalities, such as 3M’s pad conditioners (e.g., Trizact or Diamond), Saesol’s pad conditioners (Standard/Hive), Shinhan’s pad conditioners (e.g., Diamond), AT’s pad conditioners (e.g., Infinity II), or EHWA’s pad conditioners (e.g., CVD CMP).

40. For example, during the manufacture of the Accused Products, Defendant Samsung uses the ’862 Accused Instrumentalities to perform the steps of: pressing a CMP pad dresser (e.g., any of 3M’s Trizact or Diamond pad conditioner, Saesol’s Standard/Hive pad conditioner, Shinhan’s Diamond pad conditioner, AT’s Infinity II pad conditioner, or EHWA’s CVD CMP pad conditioner) against a CMP pad, the dresser including a monolayer of a plurality of superabrasive particles protruding from a matrix layer, wherein the difference in protrusion distance between the highest protruding tip and the second highest protruding tip of the monolayer of superabrasive particles is less than or equal to about 10 microns and the difference in protrusion distance between the highest 10 protruding tips of the monolayer of superabrasive particles are within about 20 microns or less; and rotating the dresser against the CMP pad such that asperities are cut into the CMP pad having a maximum cutting depth of about 60 microns. On information and belief, Samsung contracted and continues to contract with at least one of 3M, Seasol, Shinhan, AT and/or EWHA to purchase and use the ’862 Accused Instrumentalities

with the claimed structural characteristics for the manufacture or fabrication of the Accused Products by or on behalf of Samsung.

41. Attached hereto as Exhibits 4-8, and incorporated by reference herein, are claim charts detailing how the ’862 Accused Instrumentalities are used to manufacture or fabricate the Accused Products and satisfy each element of at least claim 1 of the ’862 patent, literally or under the doctrine of equivalents. For example, each chart illustrates a representative pad conditioner from 3M, Saesol, Shinhan, AT, and EHWA (e.g., 3M’s Trizact pad conditioner, Saesol’s Standard/Hive pad conditioner, Shinhan’s Diamond pad conditioner, AT’s Infinity II pad conditioner, and EHWA’s CVD CMP pad conditioner), which is representative of the remaining ’862 Accused Instrumentalities (including any pad conditioners that remain unknown to Plaintiff) because the representative pad conditioner has the same claimed structural characteristics as these remaining ’862 Accused Instrumentalities.

42. On information and belief, at least as of September 7, 2022, Samsung has induced and continues to induce others, including third-party pad conditioner manufacturers, to infringe one or more claims of the ’862 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging or inducing them to make, use, sell and/or offer to sell in the United States, the ’862 Accused Instrumentalities with the claimed characteristics for the manufacture of the Accused Products, through Samsung’s commitment to purchase the ’862 Accused Instrumentalities and actual order placement for the ’862 Accused Instrumentalities.

43. On information and belief, at least as of September 7, 2022, Defendant Samsung also has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the ’862 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging

others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the Accused Products or systems, devices, or products containing the Accused Products, by actively inducing others to infringe the ’862 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the ’862 patent, and by instructing others to infringe the ’862 patent.

44. For example, Samsung actively promotes the sale and importation of the Accused Products in marketing materials, technical specifications, data sheets, web pages on its website (e.g., https://www.samsung.com), press releases, training tutorials, development and design tools, user manuals, and developer forums as well as at trade shows (e.g., the Consumer Technology Association’s Consumer Electronics Show (“CES”)) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the Accused Products. As another example, Samsung’s representatives travel to customer sites in and outside the United States for sales, support, and/or importation activities that include working with customers to facilitate these customers’ infringing testing, marketing, importation, and sales activity. On information and belief, Samsung supplies customers with Accused Products so that they may be imported, sold, or offered for sale by those customers, and/or incorporated into third-party products (more below). For example, Samsung provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in and outside the United States. Samsung also promotes, publicly on its website, uses of the Accused Products by customers in the United States. Samsung additionally provides a wide range of technical support to its customers and businesses in connection with the Accused Products made using the ’862

Accused Instrumentalities by or on behalf of Samsung, including product-specific solutions (*see, e.g.*, https://www.samsung.com/us/aboutsamsung/samsung-customer-and-community-response/#:~:text=As%20always%2C%20we're%20ready,at%201%2D800%2DSAMSUNG.; https://www.samsung.com/us/support/; https://order-help.us.samsung.com/hc/en-us/articles/360055938274-How-do-I-find-product-support-information-; https://www.samsung.com/us/support/service/) and community forums (e.g., https://us.community.samsung.com/t5/Samsung-Community/ct-p/us?page=1&tab=recent_topics; https://r1.community.samsung.com/t5/community/ct-p/ca-community?page=1&tab=recent_topics; https://r2.community.samsung.com/t5/India/ct-p/in?page=1&tab=recent_topics).

45. On information and belief, Samsung also actively encourages third-party pad conditioner manufacturers so that the ’862 Accused Instrumentalities may be designed, developed, used, imported, sold, or offered for sale to Samsung with the claimed structural characteristics. On information and belief, Samsung assisted and continues to assist these third-party manufacturers, directly and/or through intermediaries, in the design, development or manufacture of the ’862 Accused Instrumentalities, provides technical support or supports the sales and importation of the ’862 Accused Instrumentalities (as well as the Accused Products that are/were manufactured using the ’862 Accused Instrumentalities).

46. Additionally, on information and belief, Samsung sells or offers for sale the Accused Products to third parties that incorporate the Accused Products into third party products (“the ’862 Third Party Products”).

47. On information and belief, Samsung assists third parties, directly and/or through intermediaries, in the development and manufacture of the ’862 Third Party Products and

provides technical support and supports the sales and importation of the ’862 Third Party Products.

48. On information and belief, the ’862 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States (“Imported ’862 Third Party Products”).

49. On information and belief, to the extent any entity other than Samsung, including but not limited to any of Samsung’s third-party importers, imports the Accused Products and/or ’862 Third-Party Products into the United States for or on behalf of Samsung (“Third Party Importer”), Samsung is liable for inducement of infringement by the Third Party Importer. Samsung has encouraged the Third Party Importer to infringe the ’862 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the Accused Products and/or ’862 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Samsung first became aware of the ’862 patent and the infringement thereof.

50. On information and belief, to the extent any entity other than Samsung, including but not limited to any foundry contracted or engaged by Samsung, uses the patented method to fabricate or manufacture the Accused Products and/or Imported ’862 Third-Party Products in the United States for or on behalf of Samsung (“Third Party Manufacturer”), Samsung is liable for inducement of infringement by the Third Party Manufacturer. Samsung has encouraged the Third Party Manufacturer to infringe the ’862 patent and intended that it do so. This encouragement includes, without limitation, ordering or seeking the importation of the Accused

Products from the Third Party Manufacturer since Samsung first became aware of the ’862 patent, , or instructing the Third Party Manufacturer to use the ’862 Accused Instrumentalities for the manufacture or fabrication of the Accused Products.

51. For example, by providing technical specification and development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products (and/or third party pad conditioner manufacturers), including instructing such Third Party Manufacturer to use any of the ’862 Accused Instrumentalities in order to accomplish or achieve such criteria, Samsung has induced, and continues to induce, third parties to infringe using the claimed methods and the ’862 Accused Instrumentalities. Specifically, by providing technical specification and/or design/development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products using the claimed methods and the ’862 Accused Instrumentalities, Samsung has induced, and continues to induce, third parties to infringe the ’862 patent (e.g., to ensure that the Accused Products are/were manufactured without errors or flaws or that the Accused Products meet Samsung’s stringent technical/design/development criteria).

52. Despite having notice of the ’862 patent prior to the filing of this Complaint, Samsung has made a decision to continue the alleged inducement post-service of the Complaint. Indeed, following the filing of this Complaint, on information and belief, Samsung—acting with knowledge of the ’862 patent—used and continues to use the ’862 Accused Instrumentalities in the manufacture or fabrication of the Accused Products, and/or submitted and continues to submit purchase orders for the ’862 Accused Instrumentalities to third-party pad conditioner manufacturers with the intent of using the ’862 Accused Instrumentalities for manufacturing or fabricating the Accused Products.

53. Samsung has benefitted and continues to benefit from the importation into the United States of the Accused Products, '862 Third Party Products, and Imported '862 Third Party Products.

54. Dr. Sung has suffered, and continues to suffer, damages as a result of Samsung's infringement of the '862 patent.

55. Samsung has continued to infringe the '862 patent since at least September 7, 2022, despite being on notice of the '862 patent and its infringement. Samsung has therefore infringed the '862 patent knowingly, willfully, deliberately, and in disregard of Dr. Sung's patent rights since at least September 7, 2022, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

56. Dr. Sung reserves the right to modify its infringement theories as discovery progresses in this case. Dr. Sung shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Dr. Sung intends the claim charts for the '862 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Dr. Sung's preliminary or final infringement contentions or preliminary or final claim construction positions.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 9,724,802

57. Plaintiff incorporates and realleges the preceding paragraphs as if fully set forth herein.

58. At least as of September 7, 2022, Dr. Sung placed Samsung on actual notice of the '802 patent and actual notice that its actions constituted and continued to constitute

infringement of the ’802 patent. Samsung has had actual knowledge of the ’802 patent and its own infringement of the ’802 patent since at least that time.

59. On information and belief, Defendant Samsung has directly infringed and continues to infringe at least claim 1 of the ’802 patent literally or under the doctrine of equivalents, by using in the United States, or importing into the United States, without authority or license, certain CMP pad conditioners, including 3M’s pad conditioners, Saesol’s CMP pad conditioners, Shinhan’s CMP pad conditioners, AT’s CMP pad conditioners, EHWA’s pad conditioners, and/or similar pad conditioners (e.g., pad conditioners with the same claimed structural characteristics and manufactured by other pad conditioner manufacturers) (“’802 Accused Instrumentalities”) to design, develop, manufacture or fabricate semiconductor devices and/or integrated circuits, and systems, products, and/or devices containing these semiconductor devices and/or integrated circuits, including at least the Accused Products, in violation of 35 U.S.C. § 271(a)..

60. On information and belief, Samsung also sells and/or offers for sale the Accused Products in the United States. For example, Samsung provides direct sales through its own sales channels and/or its distributors and sells the Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the Accused Products in the United States. For example, Samsung engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

61. Discovery is expected to uncover the full extent of Samsung’s infringement of the ’802 patent beyond the Accused Products already identified herein.

62. The Accused Products are/were manufactured by using a pad conditioner that includes all of the limitations of at least claim 1 of the ’802 patent. For example, each of the Accused Products is/was fabricated or manufactured using, for example, at least one of the ’802 Accused Instrumentalities, such as 3M’s pad conditioners (e.g., Trizact or Diamond), Saesol’s pad conditioners (Standard/Hive), Shinhan’s pad conditioners (e.g., Diamond), AT’s pad conditioners (e.g., Infinity II), or EHWA’s pad conditioners (e.g., CVD CMP).

63. For example, during the manufacture of the Accused Products, Defendant Samsung uses a CMP pad dresser (e.g., any of 3M’s Trizact or Diamond pad conditioner, Saesol’s Standard/Hive pad conditioner, Shinhan’s Diamond pad conditioner, AT’s Infinity II pad conditioner, or EHWA’s CVD CMP pad conditioner) that includes a rigid support substrate; and a monolayer of a plurality of superabrasive particles coupled to the support substrate, wherein each superabrasive particle in the monolayer extends away from the support substrate to a protrusion distance, wherein a tip of each of the plurality of superabrasive particles aligns along a designated profile with a tip variation of from about 5 microns to about 100 microns, and wherein the difference in protrusion distance between the highest protruding tip and the second highest protruding tip of the monolayer of superabrasive particles is less than or equal to about 50 microns, and the difference in protrusion distance between the highest 1% of the protruding tips of the monolayer of superabrasive particles are within about 80 microns or less. On information and belief, Samsung contracted and continues to contract with at least one of 3M, Seasol, Shinhan, AT and/or EWHA to purchase and use the ’802 Accused Instrumentalities with the claimed structural characteristics for the manufacture or fabrication of the Accused Products by or on behalf of Samsung.

64. Attached hereto as Exhibits 9-13, and incorporated by reference herein, are claim

charts detailing how the ’802 Accused Instrumentalities used to manufacture or fabricate the Accused Products satisfy each element of at least claim 1 of the ’802 patent, literally or under the doctrine of equivalents. Each chart illustrates a representative pad conditioner from each of the pad conditioner manufacturers, including 3M, Saesol, Shinhan, AT, and EHWA (e.g., 3M’s Trizact pad conditioner, Saesol’s Standard/Hive pad conditioner, Shinhan’s Diamond pad conditioner, AT’s Infinity II pad conditioner, and EHWA’s CVD CMP pad conditioner), which is representative of the remaining ’802 Accused Instrumentalities (including any pad conditioners that remain unknown to Plaintiff) manufactured by these manufacturers because it has the same claimed structural characteristics as these remaining ’802 Accused Instrumentalities.

65. On information and belief, at least as of September 7, 2022, Samsung has induced and continues to induce others, including third-party pad conditioner manufacturers, to infringe one or more claims of the ’802 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging or inducing them to make, use, sell and/or offer to sell in the United States, the ’802 Accused Instrumentalities with the claimed characteristics for the manufacture of the Accused Products, through Samsung’s commitment to purchase the ’802 Accused Instrumentalities and actual order placement for the ’802 Accused Instrumentalities.

66. On information and belief, at least as of September 7, 2022, Defendant Samsung also has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the ’802 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the Accused Products or systems, devices, or products containing the Accused Products,

by actively inducing others to infringe the ’802 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the ’802 patent, and by instructing others to infringe the ’802 patent.

67. For example, Samsung actively promotes the sale and importation of the Accused Products in marketing materials, technical specifications, data sheets, web pages on its website (e.g., https://www.samsung.com), press releases, training tutorials, development and design tools, user manuals, and developer forums as well as at trade shows (e.g., the Consumer Technology Association’s Consumer Electronics Show (“CES”)) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the Accused Products. As another example, Samsung’s representatives travel to customer sites in and outside the United States for sales, support, and/or importation activities that include working with customers to facilitate these customers’ infringing testing, marketing, importation, and sales activity. On information and belief, Samsung supplies customers with Accused Products so that they may be imported, sold, or offered for sale by those customers, and/or incorporated into third-party products (more below). For example, Samsung provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in and outside the United States. Samsung also promotes, publicly on its website, uses of the Accused Products by customers in the United States.

68. On information and belief, and as discussed above, Samsung also actively encourages third-party pad conditioner manufacturers so that the ’802 Accused Instrumentalities may be designed, developed, used, imported, sold, or offered for sale to Samsung with the

claimed structural characteristics. On information and belief, Samsung assisted and continues to assist these third-party manufacturers, directly and/or through intermediaries, in the design, development or manufacture of the '802 Accused Instrumentalities, provides technical support or supports the sales and importation of the '802 Accused Instrumentalities (as well as the Accused Products that are/were manufactured using the '802 Accused Instrumentalities). Samsung additionally provides a wide range of technical support to its customers and businesses in connection with the Accused Products made using the '802 Accused Instrumentalities by or on behalf of Samsung, including product-specific solutions (*see, e.g.*, https://www.samsung.com/us/aboutsamsung/samsung-customer-and-community-response/#:~:text=As%20always%2C%20we're%20ready,at%201%2D800%2DSAMSUNG.; https://www.samsung.com/us/support/; https://order-help.us.samsung.com/hc/en-us/articles/360055938274-How-do-I-find-product-support-information-; https://www.samsung.com/us/support/service/) and community forums (e.g., https://us.community.samsung.com/t5/Samsung-Community/ct-p/us?page=1&tab=recent_topics; https://r1.community.samsung.com/t5/community/ct-p/ca-community?page=1&tab=recent_topics; https://r2.community.samsung.com/t5/India/ct-p/in?page=1&tab=recent_topics).

69. Additionally, on information and belief, Samsung sells or offers for sale the Accused Products to third parties that incorporate the Accused Products into third party products ("the '802 Third Party Products").

70. On information and belief, Samsung assists third parties, directly and/or through intermediaries, in the development and manufacture of the '802 Third Party Products and

provides technical support and supports the sales and importation of the ’802 Third Party Products.

71. On information and belief, the ’802 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States (“Imported ’802 Third Party Products”).

72. On information and belief, to the extent any entity other than Samsung, including but not limited to any of Samsung’s third-party importers, imports the ’802 Accused Instrumentalities, the Accused Products and/or ’802 Third-Party Products into the United States for or on behalf of Samsung (“Third Party Importer”), Samsung is liable for inducement of infringement by the Third Party Importer. Samsung has encouraged the Third Party Importer to infringe the ’802 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the ’802 Accused Instrumentalities, Accused Products and/or ’802 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Samsung first became aware of the ’802 patent and the infringement thereof.

73. On information and belief, to the extent any entity other than Samsung, including but not limited to any foundry contracted or engaged by Samsung, uses the ’802 Accused Instrumentalities to fabricate or manufacture the Accused Products and/or Imported ’802 Third-Party Products in the United States for or on behalf of Samsung (“Third Party Manufacturer”), Samsung is liable for inducement of infringement by the Third Party Manufacturer. Samsung has encouraged the Third Party Manufacturer to infringe the ’802 patent and intended that it do

so. This encouragement includes, without limitation, ordering or seeking the importation of the Accused Products from the Third Party Manufacturer since Samsung first became aware of the ’802 patent, or instructing the Third Party Manufacturer to use the ’802 Accused Instrumentalities for the manufacture or fabrication of the Accused Products.

74. For example, by providing technical specification and development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products (and/or third party pad conditioner manufacturers), Samsung has induced, and continues to induce, third parties to infringe using the ’802 Accused Instrumentalities. Specifically, by providing technical specification and/or design/development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products or to third-party pad conditioner manufacturers for designing, developing and/or configuring the ’802 Accused Instrumentalities for manufacturing such products, Samsung has induced, and continues to induce, third parties to infringe the ’802 patent (e.g., to ensure that the Accused Products are manufactured without errors or flaws or that the Accused Products meet Samsung’s stringent technical/design/development criteria).

75. Despite having notice of the ’802 patent prior to the filing of this Complaint, Samsung has made a decision to continue the alleged inducement post-service of the Complaint. Indeed, following the filing of this Complaint, on information and belief, Samsung —acting with knowledge of the ’802 patent—used and continues to use the ’802 Accused Instrumentalities in the manufacture or fabrication of the Accused Products, and/or submitted and continues to submit purchase orders for the ’802 Accused Instrumentalities to third-party pad conditioner manufacturers with the intent of using the ’802 Accused Instrumentalities for manufacturing or fabricating the Accused Products.

76. Through active inducement, Samsung has benefitted and continues to benefit from using the ’802 Accused Instrumentalities in the United States, or importing them into the United States, for the manufacture and fabrication of the Accused Products and third-party products that incorporate the Accused Products.

77. Dr. Sung has suffered, and continues to suffer, damages as a result of Samsung’s infringement of the ’802 patent.

78. Samsung has continued to infringe the ’802 patent since at least September 7, 2022, despite being on notice of the ’802 patent and its infringement. Samsung has therefore infringed the ’802 patent knowingly, willfully, deliberately, and in disregard of Dr. Sung’s patent rights since at least September 7, 2022, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys’ fees and costs under 35 U.S.C. § 285.

79. Dr. Sung reserves the right to modify its infringement theories as discovery progresses in this case. Dr. Sung shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Dr. Sung intends the claim charts for the ’802 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Dr. Sung’s preliminary or final infringement contentions or preliminary or final claim construction positions.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 8,974,270

80. Plaintiff incorporates and realleges the preceding paragraphs as if fully set forth herein.

81. At least as of September 7, 2022, Dr. Sung placed Samsung on actual notice of the ’270 patent and actual notice that its actions constituted and continued to constitute infringement of the ’270 patent. Samsung has had actual knowledge of the ’270 patent and its own infringement of the ’270 patent since at least that time.

82. On information and belief, Defendant Samsung has directly infringed and continues to infringe at least claim 1 of the ’270 patent literally or under the doctrine of equivalents, by using in the United States, or importing into the United States, without authority or license, certain CMP pad conditioners, including 3M’s pad conditioners (e.g., Diamond pad conditioners and pad conditioners with the same claimed structural characteristics and manufactured by other pad conditioner manufacturers not presently known) (“’270 Accused Instrumentalities”) to design, develop, manufacture or fabricate semiconductor devices and/or integrated circuits, and systems, products, and/or devices containing these semiconductor devices and/or integrated circuits, including at least the Accused Products, in violation of 35 U.S.C. § 271(a).

83. Additionally, on information and belief, Samsung sells and/or offers for sale the Accused Products in the United States. For example, Samsung provides direct sales through its own sales channels and/or its distributors and sells the Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the Accused Products in the United States. For example, Samsung engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

84. Discovery is expected to uncover the full extent of Samsung’s infringement of the ’270 patent beyond the Accused Products already identified herein.

85. The Accused Products are/were manufactured by a process including all of the limitations of at least claim 1 of the ’270 patent. The Accused Products are/were made by the claimed methods. Each of the Accused Products, for example, is or contains an integrated circuit fabricated or manufactured using, for example, at least one of the ’270 Accused Instrumentalities, such as 3M’s pad conditioners (e.g., Diamond).

86. For example, during the manufacture of the Accused Products, Defendant Samsung uses a CMP pad dresser (e.g., 3M’s Diamond pad conditioner) that includes a first monolayer of superabrasive particles disposed on and protruding from one side of a metal support layer, wherein the difference in protrusion distance between the highest protruding tip and the second highest protruding tip of the monolayer of superabrasive particles is less than or equal to about 50 microns; a second monolayer of superabrasive particles disposed on the metal support layer on an opposite side from the first monolayer, wherein the superabrasive particles of the second monolayer are positioned to have substantially the same distribution as the superabrasive particles of the first monolayer; and a rigid support coupled to the second monolayer of superabrasive particles opposite the first monolayer. On information and belief, Samsung contracted and continues to contract with 3M and/or other pad conditioner vendors to purchase and use the ’802 Accused Instrumentalities with the claimed structural characteristics for the manufacture or fabrication of the Accused Products by or on behalf of Samsung.

87. Attached hereto as Exhibit 14, and incorporated by reference herein, are claim charts detailing how the ’270 Accused Instrumentalities used to manufacture or fabricate the Accused Products satisfy each element of at least claim 1 of the ’270 patent, literally or under the doctrine of equivalents. The chart illustrates a representative pad conditioner from 3M, which is representative of the remaining ’270 Accused Instrumentalities (including any pad conditioners

that remain unknown to Plaintiff) because it has the same claimed structural characteristics as these remaining ’270 Accused Instrumentalities.

88. On information and belief, at least as of September 7, 2022, Samsung has induced and continues to induce others, including third-party pad conditioner manufacturers, to infringe one or more claims of the ’270 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging or inducing them to make, use, sell and/or offer to sell in the United States, the ’270 Accused Instrumentalities with the claimed characteristics for the manufacture of the Accused Products, through Samsung’s commitment to purchase the ’270 Accused Instrumentalities and actual order placement for the ’270 Accused Instrumentalities.

89. On information and belief, at least as of September 7, 2022, Samsung also has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the ’270 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the Accused Products or systems, devices, or products containing the Accused Products, by actively inducing others to infringe the ’270 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the ’270 patent, and by instructing others to infringe the ’270 patent.

90. For example, Samsung actively promotes the sale and importation of the Accused Products in marketing materials, technical specifications, data sheets, web pages on its website (e.g., https://www.samsung.com), press releases, training tutorials, development and design tools, user manuals, and developer forums as well as at trade shows (e.g., the Consumer

Technology Association's Consumer Electronics Show ("CES")) and through its sales and distribution channels that encourage infringing sales, offers to sell, and importation of the Accused Products. As another example, Samsung's representatives travel to customer sites in and outside the United States for sales, support, and/or importation activities that include working with customers to facilitate these customers' infringing testing, marketing, importation, and sales activity. On information and belief, Samsung supplies customers with Accused Products so that they may be imported, sold, or offered for sale by those customers, and/or incorporated into third-party products (more below). For example, Samsung provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in and outside the United States. Samsung also promotes, publicly on its website, uses of the Accused Products by customers in the United States. Samsung additionally provides a wide range of technical support to its customers and businesses in connection with the Accused Products made using the '270 Accused Instrumentalities by or on behalf of Samsung, including product-specific solutions (*see, e.g.*, https://www.samsung.com/us/aboutsamsung/samsung-customer-and-community-response/#:~:text=As%20always%2C%20we're%20ready,at%201%2D800%2DSAMSUNG.; https://www.samsung.com/us/support/; https://order-help.us.samsung.com/hc/en-us/articles/360055938274-How-do-I-find-product-support-information-; https://www.samsung.com/us/support/service/) and community forums (e.g., https://us.community.samsung.com/t5/Samsung-Community/ct-p/us?page=1&tab=recent_topics; https://r1.community.samsung.com/t5/community/ct-p/ca-community?page=1&tab=recent_topics; https://r2.community.samsung.com/t5/India/ct-p/in?page=1&tab=recent_topics).

91. On information and belief, and as discussed above, Samsung also actively encourages third-party pad conditioner manufacturers so that the ’270 Accused Instrumentalities may be designed, developed, used, imported, sold, or offered for sale to Samsung with the claimed structural characteristics. On information and belief, Samsung assisted and continues to assist these third-party manufacturers, directly and/or through intermediaries, in the design, development or manufacture of the ’270 Accused Instrumentalities and provides technical support or supports the sales and importation of the ’270 Accused Instrumentalities (as well as the Accused Products that are/were manufactured using the ’270 Accused Instrumentalities).

92. Additionally, on information and belief, Samsung sells or offers for sale the Accused Products to third parties that incorporate the Accused Products into third party products (“the ’270 Third Party Products”).

93. On information and belief, Samsung assists third parties, directly and/or through intermediaries, in the development and manufacture of the ’270 Third Party Products and provides technical support and supports the sales and importation of the ’270 Third Party Products.

94. On information and belief, the ’270 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States (“Imported ’270 Third Party Products”).

95. On information and belief, to the extent any entity other than Samsung, including but not limited to any of Samsung’s third-party importers, imports the ’270 Accused Instrumentalities, the Accused Products and/or ’270 Third-Party Products into the United States for or on behalf of Samsung (“Third Party Importer”), Samsung is liable for inducement of infringement by the Third Party Importer. Samsung has encouraged the Third Party Importer to

infringe the ’270 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the ’270 Accused Instrumentalities, Accused Products and/or ’270 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Samsung first became aware of the ’270 patent and the infringement thereof.

96. On information and belief, to the extent any entity other than Samsung, including but not limited to any foundry contracted or engaged by Samsung, uses the ’270 Accused Instrumentalities to fabricate or manufacture the Accused Products and/or Imported ’270 Third-Party Products in the United States for or on behalf of Samsung (“Third Party Manufacturer”), Samsung is liable for inducement of infringement by the Third Party Manufacturer. Samsung has encouraged the Third Party Manufacturer to infringe the ’270 patent and intended that it do so. This encouragement includes, without limitation, ordering or seeking the importation of the Accused Products from the Third Party Manufacturer since Samsung first became aware of the ’270 patent, or instructing the Third Party Manufacturer to use the ’270 Accused Instrumentalities for the manufacture or fabrication of the Accused Products.

97. For example, by providing technical specification and development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products (and/or third party pad conditioner manufacturers), Samsung has induced, and continues to induce, third parties to infringe using the ’270 Accused Instrumentalities. Specifically, by providing technical specification and/or design/development criteria of the Accused Products to the Third Party Manufacturer for manufacturing such products or to third-party pad conditioner manufacturers

for designing, developing and/or configuring the ’270 Accused Instrumentalities for manufacturing such products, Samsung has induced, and continues to induce, third parties to infringe the ’270 patent (e.g., to ensure that the Accused Products are/were manufactured without errors or flaws or that the Accused Products meet Samsung’s stringent technical/design/development criteria).

98. Despite having notice of the ’270 patent prior to the filing of this Complaint, Samsung has made a decision to continue the alleged inducement post-service of the Complaint. Indeed, following the filing of this Complaint, on information and belief, Samsung —acting with knowledge of the ’270 patent—used and continues to use the ’270 Accused Instrumentalities in the manufacture or fabrication of the Accused Products, and/or submitted and continues to submit purchase orders for the ’270 Accused Instrumentalities to third-party pad conditioner manufacturers with the intent of using the ’270 Accused Instrumentalities for manufacturing or fabricating the Accused Products.

99. Through active inducement, Samsung has benefitted and continues to benefit from using the ’270 Accused Instrumentalities for the manufacture and fabrication of the Accused Products and third-party products that incorporate the Accused Products.

100. Dr. Sung has suffered, and continues to suffer, damages as a result of Samsung’s infringement of the ’270 patent.

101. Samsung has continued to infringe the ’270 patent since at least September 7, 2022, despite being on notice of the ’270 patent and its infringement. Samsung has therefore infringed the ’270 patent knowingly, willfully, deliberately, and in disregard of Dr. Sung’s patent rights since at least September 7, 2022, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of

its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

102. Dr. Sung reserves the right to modify its infringement theories as discovery progresses in this case. Dr. Sung shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Dr. Sung intends the claim charts for the '270 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Dr. Sung's preliminary or final infringement contentions or preliminary or final claim construction positions.

JURY DEMAND

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Dr. Sung demands judgment for itself and against Defendant Samsung as follows:

A. A judgment that Defendant Samsung has directly infringed, and continues to infringe, one or more claims of each of the Asserted Patents;

B. A judgment that Defendant Samsung has induced infringement, and continues to induce infringement, of one or more claims of the Asserted Patents;

C. A judgment awarding Plaintiff damages to be paid by Defendant Samsung in an amount to be proven at trial adequate to compensate Plaintiff for Samsung's past infringement and any continuing or future infringement through the date such judgment is entered, but in no event less than a reasonable royalty for Samsung's infringement;

D. A judgment awarding Plaintiff treble damages pursuant to 35 U.S.C. § 284 as a result of Defendant Samsung's willfulness;

E. A judgment and order finding that this case is exceptional and awarding Plaintiff its reasonable attorneys' fees to be paid by Defendant Samsung as provided by 35 U.S.C. § 285;

F. A judgment awarding expenses, costs, and disbursements in this action against Defendant Samsung, including pre-judgment and post-judgment interest; and

G. A judgment awarding Plaintiff such other relief as the Court may deem just and equitable.

Dated: August 21, 2023

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