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

LONGITUDE LICENSING LTD., and MARLIN SEMICONDUCTOR LIMITED Plaintiffs, v. LENOVO GROUP LIMITED, MOTOROLA (WUHAN) MOBILITY TECHNOLOGIES COMMUNICATION COMPANY LIMITED, MOTOROLA MOBILE COMMUNICATION TECHNOLOGY LTD., ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD., and TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED Defendants.	)	C.A. No. 2:25-cv-171 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Longitude Licensing Ltd. and Marlin Semiconductor Limited (collectively, "Plaintiffs") bring this Complaint for patent infringement ("Complaint") against Defendants Lenovo Group Limited ("Lenovo Group"), Motorola (Wuhan) Mobility Technologies Communication Company Limited ("Motorola (Wuhan)"), Motorola Mobile Communication Technology LTD. ("Motorola Mobile") (Lenovo Group, Motorola (Wuhan), and Motorola Mobile, together "Lenovo Defendants"), OnePlus Technology (Shenzhen) Co., Ltd. ("OnePlus"), and Taiwan Semiconductor Manufacturing Company Limited ("TSMC") (Lenovo, Motorola, OnePlus, and TSMC together, "Defendants"). Plaintiffs allege as follows:

THE PARTIES

1. Plaintiff Longitude Licensing Ltd. ("Longitude") is an Irish limited liability company and has a principal place of business at Blanchardstown Corporate Park 2, Plaza 255, Suite 2A, Dublin D15 YH6H, Ireland.

2. Plaintiff Marlin Semiconductor Limited ("Marlin Semiconductor") is an Irish limited liability company and has a principal place of business at Blanchardstown Corporate Park 2, Plaza 255, Suite 2A, Dublin D15 YH6H, Ireland.

3. Marlin Semiconductor is the owner by way of assignment of U.S. Patent No. 7,745,847 ("the '847 Patent), attached as Exhibit A, U.S. Patent No. 9,093,473 ("the '473 Patent), attached as Exhibit B, U.S. Patent No. 9,147,747 ("the '747 Patent), attached as Exhibit C, U.S. Patent No. 9,184,292 ("the '292 Patent), attached as Exhibit D, and U.S. Patent No. 9,953,880 ("the '880 Patent), attached as Exhibit E. All aforementioned patents are collectively the "Asserted Patents."

Lenovo

4. Upon information and belief, Lenovo Group Limited ("Lenovo Group") is a corporation organized and existing under the laws of China, with a principal place of business at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong S.A.R. of China.

5. On information and belief, Lenovo Group's subsidiaries include Defendants Motorola Mobile Communication Technology Ltd. and Motorola (Wuhan) Mobility Technologies Communication Company Limited.

6. Upon information and belief, Motorola Mobile Communication Technology Ltd. ("Motorola Mobile") is a corporation organized and existing under the laws of China, with a principal place of business at Room 203A, Area A, No. 178 Xinfeng Road, Huizhi Space, Torch High-tech Zone, Xiamen, 361006, China. Additionally, Motorola Mobile is a wholly owned subsidiary of Lenovo Group organized and existing under the laws of China.

7. Upon information and belief, Motorola (Wuhan) Mobility Technologies Communication Company Limited ("Motorola (Wuhan)") is a corporation organized and existing

under the laws of China, with a principal place of business at No. 19, Gaoxin 4th Road, Donghu New Technology Development Zone Wuhan, Hubei, 430205 China. Additionally, Motorola (Wuhan) is a wholly owned subsidiary of Lenovo Group organized and existing under the laws of China.

8. Lenovo Group Limited, Motorola Mobile, and Motorola (Wuhan) (together, "Lenovo Defendants") engage in business in Texas. Pursuant to § 17.044 of the Texas Civil Practice & Remedies Code, Lenovo Group has designated the Secretary of State as its agent for service of process and may be served with process through the Secretary of State. The Secretary of State may forward service to Lenovo Group at its home office address located at 23rd Floor, Lincoln House, Taikoo Place, 979 King's Road, Quarry Bay, Hong Kong S.A.R. of China. Alternatively, Lenovo Group may be served with process by serving the Registered Agent of its wholly owned subsidiary Lenovo (United States) Inc., at 8001 Development Dr., ATT: Karen Jones, Morrisville, NC 27560-7416.

OnePlus

9. Upon information and belief, Defendant OnePlus Technology (Shenzhen) Co., Ltd. ("OnePlus") is a corporation organized and existing under the laws of China, with a principal place of business at Tairan 8th Road, Shenzhen, Guangdong 518000, China.

10. OnePlus engages in business in Texas. Pursuant to § 17.044 of the Texas Civil Practice & Remedies Code, TSMC has designated the Secretary of State as its agent for service of process and may be served with process through the Secretary of State. The Secretary of State may forward service to OnePlus at its home office address located at Tairan 8th Road, Shenzhen, Guangdong 518000, China. Alternatively, OnePlus may be served with process by serving the Registered Agent of its wholly owned subsidiary OnePlus USA Corp., Registered Agents Inc., at 5900 Balcones Drive, Suite 100, Austin, TX 78731.

TSMC

11. Upon information and belief, Defendant Taiwan Semiconductor Manufacturing Company Limited ("TSMC") is a Taiwanese company with a principal place of business at 8, Li Hsin Road 6, Hsinchu Science Park, Hsinchu City 30078, Taiwan, R.O.C.

12. TSMC engages in business in Texas. Pursuant to § 17.044 of the Texas Civil Practice & Remedies Code, TSMC has designated the Secretary of State as its agent for service of process and may be served with process through the Secretary of State. The Secretary of State may forward service to TSMC at its home office address located at 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu 300-78, Taiwan, R.O.C. Alternatively, TSMC may be served with process by serving the Registered Agent of its wholly owned subsidiary TSMC North America, Steven A. Schulman, at 2851 Junction Avenue, San Jose, CA 95134.

JURISDICTION AND VENUE

13. This is an action for patent infringement under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

14. This Court has specific personal jurisdiction over Defendants, at least in part, because Defendants conduct business in this judicial District, including the manufacture, use, sale, offer for sale, and/or importation of products that infringe, or that are made using processes that infringe, the Asserted Patents, and other activities related the design, manufacture, distribution, and/or support of those products and processes.

15. Plaintiffs' causes of action arise, at least in part, from Defendants' contacts with and activities in the State of Texas and this judicial District. Upon information and belief, each Defendant has committed acts of infringement within the State of Texas and this judicial District

by, *inter alia*, directly and/or indirectly making, having made, using, selling, offering to sell, and/or importing products that infringe, or that are manufactured using processes that infringe, one or more claims of the Asserted Patents.

16. Defendants have committed acts within this judicial District giving rise to this action, and have established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

17. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391 and 1400.

Lenovo Defendants

18. Venue in this district is proper under 28 U.S.C § 1391(c)(3) with respect to Lenovo Group. The subsidiary Lenovo Defendants are not residents in the United States and may be sued in this district, because suits against foreign entities are proper in any judicial District where they are subject to personal jurisdiction. The Lenovo Defendants have committed acts of infringement in this district.

19. This Court has personal jurisdiction over the Lenovo Defendants. The Lenovo Defendants are subject to this Court's specific personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute. Plaintiffs' cause of action arises, at least in part, from the Lenovo Defendants' contacts with and activities in the State of Texas and in this district. Upon information and belief, the Lenovo Defendants have committed act of infringement within the State of Texas and this district by, *inter alia*, making, having made, using, selling, offering to sell, and/or importing products that infringe (or products manufactured using infringing processes) one or more claims of the Asserted Patents, and also by inducing and contributing to such infringement by its subsidiaries, affiliates, retail partners, and customers, including, but not limited to, Best Buy, and end-users of devices sold by its customers, in violation of at least 35 U.S.C. §§ 271(a)-(c) and (g).

20. The Lenovo Defendants have conducted and do conduct business within the State of Texas. The Lenovo Defendants, directly or through corporate relatives, subsidiaries, or intermediaries (including distributors, retailers, and others), ship, distribute, make, have made, use, sell, offer for sale, import, and/or advertise (including by providing interactive web pages) their infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas and/or contribute to or actively induce their subsidiaries, affiliates, retail partners, and customers to ship, distribute, make, have made, use, offer to sell, sell, import, and/or advertise (including by providing interactive websites) infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas.

21. The Lenovo Defendants, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), have purposefully and voluntarily placed one or more of their infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. These infringing products, including those incorporated into the Lenovo Yoga Slim 7X laptops, are available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

22. On information and belief, the Lenovo Defendants manufacture, have manufactured, sell, offer for sale, and/or import products throughout the State of Texas, including

within this judicial District, and introduce infringing products into the stream of commerce knowing that they would be sold in the State of Texas and this judicial District.

23. On information and belief, the Lenovo Defendants, either themselves and/or through the activities of their subsidiaries, make, have made, use, sell, offer for sale, and/or import throughout the United States, including within this judicial District, products, such as laptops, smartphones, tablets, desktop computers, and personal computers, that infringe (or that are manufactured by processes that infringe) the Asserted Patents. *See* Lenovo Products, available at https://www.lenovo.com/us/en/pc/ (accessed February 10, 2025); Motorola Phones, available at https://www.motorola.com/us/en/smartphones/index.html (accessed February 10, 2025).

24. For example, on information and belief, the Lenovo Defendants make, have made, use, sell, offer for sale, and/or import the Lenovo Yoga Slim 7X laptop, incorporating the Qualcomm Snapdragon X Elite manufactured using TSMC's infringing 4 nm process node; and the Moto G Play smartphone, incorporating the Qualcomm Snapdragon 680 4G manufactured using TSMC's infringing 6 nm process node.

25. The Lenovo Defendants, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), have purposefully and voluntarily placed one or more infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. For example, the Lenovo Defendants sell and offers to sell infringing products through their websites Lenovo.com and Motorola.com

which are accessible to customers and/or consumers in the Eastern District of Texas and throughout the United States. Further, infringing products, including but not limited to the infringing Lenovo Yoga Slim 7X laptop, incorporating the Qualcomm Snapdragon X Elite processor which is manufactured by TSMC, and Moto G Play smartphone, incorporating the Qualcomm Snapdragon 680 4G processor which is manufactured by TSMC, and are available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

26. The Lenovo Defendants are thus subject to personal jurisdiction in this District. *See*, e.g., *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297–98 (1980) (holding that under the stream of commerce theory, a corporation subjects itself to personal jurisdiction in a forum when it "delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the forum."); *Commonwealth Sci. & Indus. Rsch. Org. v. Mediatek Inc.*, No. 6:12-CV-578, 2013 WL 12152471, at *2 (E.D. Tex. Sept. 12, 2013) (finding personal jurisdiction over Taiwanese chipmaker Realtek, which sold semiconductor chips "to foreign distributors outside the United States, which then s[old] the Realtek chips exclusively to foreign module makers and foreign original equipment manufacturers, which then integrate[d] Realtek's IC chips into products eventually sold worldwide, including in the Eastern District," including because allegedly "Realtek s[old] the accused products into distribution channels knowing that those products will be sold in the Eastern District of Texas."); *Largan Precision Co. v. Ability Opto-Elecs. Tech. Co.*, No. 4:19-CV-696, 2020 WL 569815, at *7 (E.D. Tex. Feb. 5, 2020) (finding personal jurisdiction over Taiwanese manufacturer of optical lenses then sold to "third-party module integrators," who sold to "system integrators," who sold to "original equipment manufacturer[s]….such as HP, who then turn[ed] around and s[old]…to an end customer"

because. . ."the Court has no problem concluding that AOET could have expected that those products [the final products containing its lenses] would be sold in Texas."); *Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.*, No. 2:21-CV-00378-JRG, 2022 WL 16856099, at *3 (E.D. Tex. Nov. 10, 2022); *Atlas Glob. Techs. LLC v. TP-Link Techs. Co.*, No. 2:21-CV-430-JRG-RSP, 2022 WL 18584501 (E.D. Tex. Dec. 28, 2022), report and recommendation adopted, No. 221CV00430JRGRSP, 2023 WL 1478451 (E.D. Tex. Feb. 2, 2023); *ICON Health & Fitness, Inc. v. Horizon Fitness, Inc.*, 2009 WL 1025467, *14 (E.D. Tex. Mar. 26, 2009).

27. The Lenovo Defendants have established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

OnePlus

28. Venue in this district is proper under 28 U.S.C § 1391(c)(3) with respect to OnePlus. OnePlus is not a resident in the United States and may be sued in this District, because suits against foreign entities are proper in any judicial District where they are subject to personal jurisdiction. OnePlus has committed acts of infringement in this District.

29. This Court has personal jurisdiction over OnePlus. OnePlus is subject to this Court's specific personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute. Plaintiffs' cause of action arises, at least in part, from OnePlus's contacts with and activities in the State of Texas and in this district. Upon information and belief, OnePlus has committed act of infringement within the State of Texas and this district by, *inter alia*, making, having made, using, selling, offering to sell, and/or importing products that infringe (or products manufactured using infringing processes) one or more claims of the Asserted Patents, and also by inducing and contributing to such infringement by its subsidiaries, affiliates, retail partners, and customers, including but not limited to Best Buy, and end-users of devices sold by its customers, in violation

of at least 35 U.S.C. §§ 271(a)-(c) and (g).

30. OnePlus has conducted and does conduct business within the State of Texas. OnePlus, directly or through corporate relatives, subsidiaries, or intermediaries (including distributors, retailers, and others), ships, distributes, makes, has made, uses, sells, offers for sale, imports, and/or advertises (including by providing interactive web pages) its infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas and/or contributes to or actively induces its subsidiaries, affiliates, retail partners, and its customers to ship, distribute, make, have made, use, offer to sell, sell, import, and/or advertise (including by providing interactive websites) infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas.

31. OnePlus, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. These infringing products, including those incorporated into the OnePlus 13, OnePlus 13R, and OnePlus Nord N30 5G smartphones, are available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

32. On information and belief, OnePlus manufactures, has manufactured, sells, offers

for sale, and/or imports products throughout the State of Texas, including within this judicial District, and introduces infringing products into the stream of commerce knowing that they would be sold in the State of Texas and this judicial District.

33. On information and belief, OnePlus, either itself and/or through the activities of its subsidiaries, makes, has made, uses, sells, offers for sale, and/or imports throughout the United States, including within this judicial District, products, such as smartphones, tablets, and wearables, that infringe (or that are manufactured by processes that infringe) the Asserted Patents. *See* OnePlus Store, available at https://www.oneplus.com/us/store (accessed February 10, 2025).

34. For example, on information and belief, OnePlus makes, has made, uses, sells, offers for sale, and/or imports the OnePlus 13, incorporating the Qualcomm Snapdragon 8 Elite manufactured using TSMC's infringing 3nm process node. On information and belief, OnePlus also makes, has made, uses, sells, offers for sale, and/or imports the OnePlus 13R, incorporating the Qualcomm Snapdragon 8 Gen 3 manufactured using TSMC's infringing 4nm process node. In addition, on information and belief, OnePlus makes, has made, uses, sells, offers for sale, and/or imports the OnePlus Nord N30 5G, incorporating the Qualcomm Snapdragon 695 5G manufactured using TSMC's infringing 6nm process node.

35. OnePlus, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by

customers and/or consumers in the Eastern District of Texas. For example, OnePlus sells and offers to sell infringing products through its website OnePlus.com which is accessible to customers and/or consumers in the Eastern District of Texas and throughout the United States. Further, infringing products, including but not limited to the infringing OnePlus 13, OnePlus 13R, and Nord N30 5G smartphones, incorporating the Qualcomm Snapdragon 8 Elite, Snapdragon 8 Gen 3, and Snapdragon 695 5G processors which are manufactured by TSMC, and is available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

36. OnePlus is thus subject to personal jurisdiction in this district. *See*, e.g., *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297–98 (1980) (holding that under the stream of commerce theory, a corporation subjects itself to personal jurisdiction in a forum when it "delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the forum."); *Commonwealth Sci. & Indus. Rsch. Org. v. Mediatek Inc.*, No. 6:12-CV-578, 2013 WL 12152471, at *2 (E.D. Tex. Sept. 12, 2013) (finding personal jurisdiction over Taiwanese chipmaker Realtek, which sold semiconductor chips "to foreign distributors outside the United States, which then s[old] the Realtek chips exclusively to foreign module makers and foreign original equipment manufacturers, which then integrate[d] Realtek's IC chips into products eventually sold worldwide, including in the Eastern District," including because allegedly "Realtek s[old] the accused products into distribution channels knowing that those products will be sold in the Eastern District of Texas."); *Largan Precision Co. v. Ability Opto-Elecs. Tech. Co.*, No. 4:19-CV-696, 2020 WL 569815, at *7 (E.D. Tex. Feb. 5, 2020) (finding personal jurisdiction over Taiwanese manufacturer of optical lenses then sold to "third-party module integrators," who sold to "system integrators," who sold to "original equipment manufacturer[s]….such as HP, who then

turn[ed] around and s[old]…to an end customer" because. . ."the Court has no problem concluding that AOET could have expected that those products [the final products containing its lenses] would be sold in Texas."); *Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.*, No. 2:21-CV-00378-JRG, 2022 WL 16856099, at *3 (E.D. Tex. Nov. 10, 2022); *Atlas Glob. Techs. LLC v. TP-Link Techs. Co.*, No. 2:21-CV-430-JRG-RSP, 2022 WL 18584501 (E.D. Tex. Dec. 28, 2022), report and recommendation adopted, No. 221CV00430JRGRSP, 2023 WL 1478451 (E.D. Tex. Feb. 2, 2023); *ICON Health & Fitness, Inc. v. Horizon Fitness, Inc.*, 2009 WL 1025467, *14 (E.D. Tex. Mar. 26, 2009).

37. OnePlus has established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

TSMC

38. Venue in this district is proper under 28 U.S.C § 1391(c)(3) with respect to TSMC. TSMC is not a resident in the United States and may be sued in this District, because suits against foreign entities are proper in any judicial District where they are subject to personal jurisdiction. TSMC has committed acts of infringement in this District.

39. This Court has personal jurisdiction over TSMC. TSMC is subject to this Court's specific personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute. Plaintiffs' cause of action arises, at least in part, from TSMC's contacts with and activities in the State of Texas and in this district. Upon information and belief, TSMC has committed act of infringement within the State of Texas and this district by, *inter alia*, making, having made, using, selling, offering to sell, and/or importing products that infringe (or products manufactured using infringing processes) one or more claims of the Asserted Patents, and also by inducing and contributing to such infringement by its subsidiaries, affiliates, and direct or indirect customers, including, but not

limited to, Qualcomm, Lenovo, OnePlus, and end-users of devices sold by them, in violation of at least 35 U.S.C. §§ 271(a)-(c) and (g). TSMC, for example, partners with electronic design automation (EDA) partners throughout the United States, including within this district, to "win business and stay competitive" using its "Open Innovation Platform." https://www.tsmc.com/english/dedicatedFoundry/grandAlliance (accessed Feb. 13, 2025). Specifically, TSMC's "EDA Alliance, a key component of TSMC Open Innovation Platform (OIP), reduces design barriers for customer's adoption of TSMC process technologies." https://www.tsmc.com/english/dedicatedFoundry/oip/eda_alliance (accessed Feb. 13, 2025). "By combining TSMC and EDA Alliance members R&D capability and resource, new generations of EDA solutions are enabled to be compliant to TSMC technology requirements." *Id*. "Selected EDA Alliance partners work closely with TSMC's design technology teams to address customer design needs through the enablement of new EDA tool features that align with TSMC advanced process development roadmap, as well as the implementation of TSMC's design methodology in Reference Flows." *Id*. Upon information and belief, TSMC's induces and contributes to the infringement of its customers by partnering with EDA alliance members on the development and certification of instructions, manuals, and design software, which are provided to TSMC's customers for the purpose of designing, using, selling, offering for sale, and importing products that use TSMC's infringing semiconductor manufacturing structures and processes. Among TSMC's EDA alliance partners is Siemens EDA, which TSMC recognized in 2021 as one of four "OIP Partner[s] of the Year," along with ANSYS, Cadence Design Systems, and Synopsis, for its work with TSMC on "Joint Development of 4nm Design Infrastructure." https://pr.tsmc.com/english/news/2875 (accessed Feb. 13, 2025). Upon information and belief, Siemens EDA is a division of Siemens Industry Software, which has its global corporate office in

this district, located at 5800 Granite Parkway, Suite 600, Plano, TX 75024.

40. TSMC has conducted and does conduct business within the State of Texas. TSMC, directly or through corporate relatives, subsidiaries, or intermediaries (including distributors, retailers, alliance partners, and others), ships, distributes, makes, has made, uses, sells, offers for sale, imports, and/or advertises (including by providing interactive web pages) its infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas and/or contributes to or actively induces its customers, subsidiaries, partners, affiliates, and/or other third parties to ship, distribute, make, have made, use, offer to sell, sell, import, and/or advertise (including by providing interactive websites and EDA tools, instructions, and manuals) infringing products (or products manufactured using infringing processes) and/or services in the United States and the Eastern District of Texas.

41. TSMC, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. These infringing products, including but not limited to the infringing TSMC semiconductor dies incorporated into Lenovo's Moto G Play smartphone (incorporating a TSMC 6nm semiconductor die in the Qualcomm Snapdragon 680 4G), Lenovo's Yoga Slim 7X laptop (incorporating a TSMC 4nm semiconductor die in the Qualcomm Snapdragon X Elite integrated circuit), OnePlus's OnePlus 13 smartphone

(incorporating a TSMC 3nm semiconductor die in the Qualcomm Snapdragon 8 Elite), OnePlus 13R smartphone (incorporating a TSMC 4nm semiconductor die in the Qualcomm Snapdragon 8 Gen 3), and Nord 30 5G smartphone (incorporating a TSMC 6nm semiconductor die in the Qualcomm Snapdragon 695 5G) are available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

42. On information and belief, TSMC manufactures, has manufactured, sells, offers for sale, and/or imports products throughout the State of Texas, including within this judicial District, and introduces infringing products into the stream of commerce knowing that they would be sold in the State of Texas and this judicial District.

43. On information and belief, TSMC, either itself and/or through the activities of its subsidiaries, makes, has made, uses, sells, offers for sale, and/or imports throughout the United States, including within this judicial District, products, such as semiconductor devices and integrated circuits, that infringe (or that are manufactured by processes that infringe) the Asserted Patents. TSMC's customers, and other downstream entities, such as the Lenovo Defendants', and OnePlus's suppliers, including but not limited to, Qualcomm, use TSMC's EDA software, manuals, and instructions to design, have manufactured, and incorporate these products into downstream products that are made, used, sold, offered for sale, and/or imported throughout the United States, including the State of Texas and within this judicial District. These downstream products may include, but are not limited to, integrated circuits, computers, smartphones, tablets, smartwatches, televisions, internet of things (IoT) devices, automobiles, and network units, that include semiconductor devices and integrated circuits.

44. As one example, on information and belief, TSMC uses its infringing 4 nm process node to fabricate the Qualcomm Snapdragon X Elite integrated circuit incorporated in Defendant

Lenovo's Yoga Slim 7X laptop and Qualcomm Snapdragon 8 Gen 3 integrated circuit incorporated into Defendant OnePlus's OnePlus 13R smartphone, its infringing 6 nm process node to fabricate the Qualcomm Snapdragon 680 4G in Defendant Lenovo's Moto G Play smartphone and the Qualcomm 695 5G integrated circuit incorporated in Defendant OnePlus's Nord N30 5G smartphone, and its infringing 3nm process node to fabricate the Qualcomm Snapdragon 8 Elite integrated circuit incorporated in Defendant OnePlus's OnePlus 13 smartphone.

45. TSMC, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products (or products manufactured using infringing processes) and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products (or products manufactured using infringing processes) and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. These infringing products, including but not limited to the infringing Lenovo Yoga Slim 7X laptop (incorporating a TSMC 4nm semiconductor die in the Qualcomm Snapdragon X Elite integrated circuit) and Moto G Play smartphone (incorporating a TSMC 4nm semiconductor die in the Qualcomm Snapdragon 680 4G), OnePlus's infringing OnePlus 13R smartphone (incorporating a TSMC 4nm semiconductor die in the Qualcomm Snapdragon 8 Gen 3 integrated circuit), and OnePlus's infringing Nord N30 5G smartphone (incorporating a TSMC 6nm semiconductor die in the Qualcomm 695 5G integrated circuit) and OnePlus 13 smartphone (incorporating a TSMC 3nm semiconductor die in the Qualcomm Snapdragon 8 Elite) which are available at least at Best Buy locations throughout this district, including but not limited to: 422 W Loop 281 STE 100, Longview, TX 75605.

46. On information and belief, TSMC has also placed integrated circuits using TSMC's process node technology and products containing these integrated circuits that infringe (or products manufactured using infringing processes) into the stream of commerce by shipping infringing products (or products manufactured using infringing processes) into Texas, shipping those products knowing that they would be shipped into Texas, and/or shipping them knowing that they would be incorporated into other infringing products that would be shipped into Texas.

47. According to TSMC's annual report, in 2023, 65.2% of TSMC's net revenue came from sales contracts with customers in the "United States," and 37.7% of TSMC's net revenue came from its "Smartphone" platform. *See* 2023 TSMC Annual Report, available at: https://investor.tsmc.com/sites/ir/annual-report/2023/2023_Annual_Report_E.pdf (accessed Feb. 13, 2025). As to TSMC's revenue, Texas is the second most populous state in the United States. TSMC therefore knows, expects, intends, and desires that the integrated circuits it manufactures, and products containing its integrated circuits, will be sold in Texas, including in this District, which includes some of the largest cities in Texas by population.

48. TSMC is thus subject to personal jurisdiction in this District. *See, e.g., World-Wide Volkswagen Corp. v. Woodson,* 444 U.S. 286, 297–98 (1980) (holding that under the stream of commerce theory, a corporation subjects itself to personal jurisdiction in a forum when it "delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the forum."); *Commonwealth Sci. & Indus. Rsch. Org. v. Mediatek Inc.,* No. 6:12-CV-578, 2013 WL 12152471, at *2 (E.D. Tex. Sept. 12, 2013) (finding personal jurisdiction over Taiwanese chipmaker Realtek, which sold semiconductor chips "to foreign distributors outside the United States, which then s[old] the Realtek chips exclusively to foreign module makers and foreign original equipment manufacturers, which then integrate[d] Realtek's IC chips into products

eventually sold worldwide, including in the Eastern District," including because allegedly "Realtek s[old] the accused products into distribution channels knowing that those products will be sold in the Eastern District of Texas."); *Largan Precision Co. v. Ability Opto-Elecs. Tech. Co.,* No. 4:19-CV-696, 2020 WL 569815, at *7 (E.D. Tex. Feb. 5, 2020) (finding personal jurisdiction over Taiwanese manufacturer of optical lenses then sold to "third-party module integrators," who sold to "system integrators," who sold to "original equipment manufacturer[s]….such as HP, who then turn[ed] around and s[old]…to an end customer" because. . ."the Court has no problem concluding that AOET could have expected that those products [the final products containing its lenses] would be sold in Texas."); *Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.,* No. 2:21-CV-00378-JRG, 2022 WL 16856099, at *3 (E.D. Tex. Nov. 10, 2022); *Atlas Glob. Techs. LLC v. TP-Link Techs. Co.,* No. 2:21-CV-430-JRG-RSP, 2022 WL 18584501 (E.D. Tex. Dec. 28, 2022), report and recommendation adopted, No. 221CV00430JRGRSP, 2023 WL 1478451 (E.D. Tex. Feb. 2, 2023); *ICON Health & Fitness, Inc. v. Horizon Fitness, Inc.,* 2009 WL 1025467, *14 (E.D. Tex. Mar. 26, 2009).

49. TSMC has established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

JOINDER

50. Joinder of Defendants is proper under 35 U.S.C. § 299. The allegations of patent infringement contained herein arise out of the same series of transactions or occurrences relating to the making (or having made), using (or inducing the use of), selling, or offering for sale within the United States, or importing (or having imported) into the United States, several of the same infringing products, including, e.g., the Lenovo Defendants' and OnePlus's products incorporating the semiconductor devices fabricated by TSMC.

51. Examples of such products include, but are not limited to, Lenovo's Yoga Slim 7X laptop (which is, on information and belief, a laptop containing a Qualcomm Snapdragon X Elite integrated circuit fabricated by TSMC's 4 nm process node) and Moto G Play smartphone (which is, on information and belief, a smartphone containing a Qualcomm Snapdragon 680 4G integrated circuit fabricated by TSMC's 6 nm process node), and OnePlus's Nord N30 5G smartphone (which is, on information and belief, is a smartphone containing a Qualcomm Snapdragon 695 5G integrated circuit fabricated by TSMC at TSMC's 6 nm process node) and OnePlus 13 smartphone (which is, on information and belief, is a smartphone containing a Qualcomm Snapdragon 8 Elite integrated circuit fabricated by TSMC at TSMC's 3nm process node). Therefore, the Lenovo Defendants' and OnePlus's products, on information and belief, contain and/or consist of chips fabricated by TSMC, and are designed, made, used, sold, offered for sale, and/or imported in this judicial District. *See, e.g.*, https://www.lenovo.com/us/en/pc/ (accessed Feb. 13, 2025); https://www.motorola.com/us/en/smartphones/index.html (accessed Feb. 13, 2025); https://www.oneplus.com/us/store (accessed Feb. 13, 2025).

ALLEGATIONS OF PATENT INFRINGEMENT

52. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully restated herein.

53. As set forth below, the infringing products consist of and/or incorporate, without any license from Plaintiffs, semiconductor devices protected by patents owned by Plaintiffs. Plaintiffs respectfully seek relief from this Court for Defendants' infringement.

54. Plaintiffs are the sole and exclusive owner of all right, title, and interest in and to the Asserted Patents, and hold the exclusive right to take all actions necessary to enforce their rights to the Asserted Patents, including the filing of this action. Plaintiffs also have the right to recover all damages for past, present, and future infringement of the Asserted Patents.

55. Plaintiffs, the present owner of the Asserted Patents, and the prior owner of the Asserted Patents, have complied with 35 U.S.C. §§ 286 and 287(a), and are therefore are entitled to past damages for Defendants' infringement beginning six years prior to the filing date of the present Complaint. Plaintiffs are also entitled to damages for Defendants' continuing infringement until the expiration of the last to expire of the Asserted Patents.

The Lenovo Defendants

56. The Lenovo Defendants, either themselves and/or through the activities of their subsidiaries or intermediaries (including distributors, retailers, and others), manufacture, have manufactured, make, have made, use, sell, offer for sale, import, have imported, test, design, and/or market in the United States semiconductor devices, integrated circuits, and products containing the same that infringe (or that are manufactured by processes that infringe) the Asserted Patents.

57. The Lenovo Defendants have directly infringed, and continue to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) and (g) by making, having made, using, selling and/or offering for sale, in this district and elsewhere in the United States, and/or importing into this district and elsewhere in the United States, certain semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in further described in Counts I-III *infra*.

58. The Lenovo Defendants have been placed on actual notice of the Asserted Patents at least as early as the filing of this Complaint, which constitutes notice of the Asserted Patents in accordance with 35 U.S.C. § 287.

59. The Lenovo Defendants have also indirectly infringed, and continue to indirectly infringe the Asserted Patents under 35 U.S.C. § 271(b) and (c). The Lenovo Defendants have knew and intended to induce the infringement of the Asserted Patents by their subsidiaries, affiliates, retail partners, customers, and/or other third parties. The infringing products (or products

manufactured by infringing processes) have no substantially non-infringing use. After receiving actual notice of the Asserted Patents, the Lenovo Defendants proceeded to actively induce infringement of the Asserted Patents by inducing their subsidiaries, affiliates, retail partners, customers, and/or other third parties to make, use, sell, offer for sale, market, advertise, and/or import semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-III *infra*.

60. Additionally, the Lenovo Defendants have indirectly infringed, and continue to indirectly infringe, the Asserted Patents under 35 U.S.C. § 271(c) by materially contributing to infringement of the Asserted Patents by making, using, selling, offering for sale, advertising, marketing, and/or importing semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-III *infra*.

61. The scope of infringing products includes, but is not limited to, all of the Lenovo Defendants' laptops, smartphones, tablets, desktop computers, and personal computers, and other products, or products incorporating products, manufactured by TSMC using any of TSMC's 16nm and smaller process nodes (e.g., 16nm, 12nm, 7nm, 6nm, 5nm, 4nmm and 3 nm), including, to the extent TSMC does not manufacture the entire final integrated circuit, the substantial portion of those integrated circuits that TSMC does manufacture. *See*, e.g., https://www.tsmc.com/english/dedicatedFoundry/technology/logic/l_16_12nm (accessed Feb. 13, 2025). Plaintiffs reserve the right to accuse any of Lenovo Defendants' forthcoming technology or products not yet commercially available, and any products about which it learns additional relevant information.

62. On information and belief, using an infringing 7nm/6nm process node, TSMC fabricates the Qualcomm Snapdragon 680 4G die, incorporated into Lenovo's Moto G Play

smartphone, sold throughout the United States. The Qualcomm Snapdragon 680 4G die, on information and belief, is manufactured by TSMC using the 6nm variation of the TSMC 7nm/6nm process node. On information and belief, TSMC also manufactures other devices incorporated into Lenovo Defendants' products using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

63. On information and belief, using an infringing 5nm/4nm process node, TSMC fabricates the Qualcomm Snapdragon X Elite integrated circuit, incorporated into the Lenovo Yoga Slim 7X laptop, sold throughout the United States. The Qualcomm Snapdragon X Elite integrated circuit, on information and belief, is manufactured by TSMC using the 4nm variation of the TSMC 5nm/4nm process node. TSMC also manufactures other devices incorporated into Lenovo Defendants' products using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

64. In particular, on information and belief, all devices manufactured by TSMC at a given "process node" are the same or essentially the same, and are created in the same or essentially the same way, with respect to aspects relevant to the claims of the Asserted Patents. If one product using a TSMC-based integrated circuit or other product manufactured by TSMC at a given process node infringes one of the Asserted Patents, as described in detail in Counts I-III *infra*, all other devices manufactured by TSMC at that process node infringe that Asserted Patent. Plaintiffs reserve the right to identify additional products that are produced at accused nodes, and to add nodes, as it learns more information.

65. The Lenovo Defendants' acts of infringement have caused damage to Plaintiffs. Plaintiffs are entitled to recover from the Lenovo Defendants the damages incurred by Plaintiffs as a result of the Lenovo Defendants' wrongful acts.

66. The Lenovo Defendants' acts of direct and indirect infringement are willful and have caused, and will continue to cause, substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law. The Lenovo Defendants performed and continue to perform the acts that constitute direct and/or indirect infringement, with knowledge or willful blindness that the acts would constitute direct and/or indirect infringement of the Asserted Patents. Notwithstanding the Lenovo Defendants' knowledge of the Asserted Patents since at least as early as the filing of the present Complaint, the Lenovo Defendants have and continue to willfully infringe the Asserted Patents.

OnePlus

67. OnePlus, either itself and/or through the activities of its subsidiaries or intermediaries (including distributors, retailers, and others), manufactures, has manufactured, makes, has made, uses, sells, offers for sale, imports, has imported, tests, designs, and/or markets in the United States semiconductor devices, integrated circuits, and products containing the same that infringe (or that are manufactured by processes that infringe) the Asserted Patents.

68. OnePlus has directly infringed, and continues to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) and (g) by making, having made, using, selling and/or offering for sale, in this district and elsewhere in the United States, and/or importing into this district and elsewhere in the United States, certain semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in further described in Counts I-V *infra*.

69. OnePlus has been placed on actual notice of the Asserted Patents at least as early as the filing of this Complaint, which constitutes notice of the Asserted Patents in accordance with 35 U.S.C. § 287.

70. OnePlus has also indirectly infringed, and continues to indirectly infringe the

Asserted Patents under 35 U.S.C. § 271(b) and (c). OnePlus knew and intended to induce the infringement of the Asserted Patents by its subsidiaries, affiliates, retail partners, customers, and/or other third parties. The infringing products (or products manufactured by infringing processes) have no substantially non-infringing use. After receiving actual notice of the Asserted Patents, OnePlus proceeded to actively induce infringement of the Asserted Patents by inducing its subsidiaries, affiliates, retail partners, customers, and/or other third parties to make, use, sell, offer for sale, market, advertise, and/or import semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-V *infra*.

71. Additionally, OnePlus has indirectly infringed, and continues to indirectly infringe, the Asserted Patents under 35 U.S.C. § 271(c) by materially contributing to infringement of the Asserted Patents by making, using, selling, offering for sale, advertising, marketing, and/or importing semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-V *infra*.

72. The scope of infringing products includes, but is not limited to, all OnePlus smartphones, tablets, and wearables other products, or products incorporating products, manufactured by TSMC using of TSMC's 16nm and smaller process nodes (e.g., 16nm, 12nm, 7nm, 6nm, 5nm, 4nmm and 3 nm), including, to the extent TSMC does not manufacture the entire final integrated circuit, the substantial portion of those integrated circuits that TSMC does manufacture. *See*, e.g., https://www.tsmc.com/english/dedicatedFoundry/technology/logic/l_16_12nm (accessed Feb. 13, 2025). Further patent-specific assertions are below. Plaintiffs reserve the right to accuse any forthcoming TSMC technology or products not yet commercially available, and any products

about which it learns additional relevant information.

73. On information and belief, using an infringing 7nm/6nm process node, TSMC fabricates the Qualcomm Snapdragon 695 5G semiconductor die, incorporated into OnePlus's Nord N30 5G smartphone, sold throughout the United States. The Qualcomm Snapdragon 695 5G integrated circuit, on information and belief, is manufactured by TSMC using the 6nm variation of the TSMC 7nm/6nm process node. On information and belief, TSMC also manufactures other devices incorporated into OnePlus products using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

74. On information and belief, using an infringing 5nm/4nm process node, TSMC fabricates the Qualcomm Snapdragon 8 Gen 3 semiconductor die, incorporated into OnePlus's OnePlus 13R smartphone, sold throughout the United States. The Qualcomm Snapdragon 8 Gen 3 integrated circuit, on information and belief, is manufactured by TSMC using the 4nm variation of the TSMC 5nm/4nm process node. On information and belief, TSMC also manufactures other devices incorporated into OnePlus products using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

75. On information and belief, using an infringing 3nm process node, TSMC fabricates the Qualcomm Snapdragon 8 Elite die, incorporated into the OnePlus 13 smartphone, sold throughout the United States. On information and belief, TSMC also manufactures other devices incorporated into OnePlus products using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

76. In particular, on information and belief, all devices manufactured by TSMC at a given "process node" are the same or essentially the same, and are created in the same or essentially the same way, with respect to aspects relevant to the claims of the Asserted Patents. If one product

using a TSMC-based integrated circuit or other product manufactured by TSMC at a given process node infringes one of the Asserted Patents, as described in detail in Counts I-V *infra*, all other devices manufactured by TSMC at that process node infringe that Asserted Patent. Plaintiffs reserve the right to identify additional products that are produced at accused nodes, and to add nodes, as it learns more information.

77. OnePlus's acts of infringement have caused damage to Plaintiffs. Plaintiffs are entitled to recover from OnePlus the damages incurred by Plaintiffs as a result of OnePlus's wrongful acts.

78. OnePlus's acts of direct and indirect infringement are willful and have caused, and will continue to cause, substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law. OnePlus performed and continues to perform the acts that constitute direct and/or indirect infringement, with knowledge or willful blindness that the acts would constitute direct and/or indirect infringement of the Asserted Patents. Notwithstanding OnePlus's knowledge of the Asserted Patents since at least as early as the filing of the present Complaint, OnePlus has and continues to willfully infringe the Asserted Patents.

TSMC

79. TSMC, either itself and/or through the activities of its subsidiaries or intermediaries (including distributors, retailers, EDA alliance partners, and others), manufacturers, has manufactured, makes, has made, uses, sells, offers to sell, imports, has imported, tests, designs, and/or markets in the United States semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents.

80. TSMC has directly infringed, and continues to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) and (g) by making, using, selling and/or offering for sell, in this district and elsewhere in the United States, and/or importing into this district and elsewhere in the

United States, certain semiconductor devices that infringe the Asserted Patents (or that are manufactured by processes that infringe), as described in further described in Counts I-V *infra*.

81. With notice of the Asserted Patents, TSMC has proceeded to directly infringe by making, having made, using, testing, designing, selling, offering for sale, and/or importing in this district and elsewhere in the United States, semiconductor devices, integrated circuits, products containing the same, and components thereof that infringe the Asserted Patents.

82. Prior to initiating litigation, since March 8, 2023, Plaintiffs sought to negotiate a license with TSMC and its customers. Subsequent to the first notice letter on March 8, 2023, Plaintiffs conducted extensive discussions with TSMC, and its customers, to reach an amicable license. These discussions included at least seven virtual meetings, numerous email exchanges, and two in-person meetings in Hsinchu with TSMC. Neither TSMC nor its customers have ever made an offer to purchase a license to the MSL patents.

83. Specifically, on March 8, 2023, Plaintiffs sent a notice letter to TSMC's customer that its products infringe twelve of Marlin's patents, including the '847 patent and the '473 patent, based on its incorporation of infringing TSMC products. In a second notice letter dated December 7, 2023, Plaintiffs informed TSMC's customer that its various products infringed an additional twelve Marlin patents, including the '292 Patent. Of the twenty-four patents identified in Plaintiffs' two notice letters to TSMC's customer, twenty-two are directed to semiconductor structures and fabrication, while the other two patents are directed to circuit structures and operation. On information and belief, TSMC was aware that the infringing instrumentalities identified by the notice letters in its customer's products were fabricated and/or included components fabricated by TSMC.

84. TSMC was on actual notice of at least the '847 Patent and '473 Patent at least as

early as October 2023, when, upon information and belief, TSMC's customer forwarded Marlin's notice letters to TSMC. On October 31, 2023, Plaintiffs conducted a virtual meeting (over zoom) with TSMC's customer, during which Plaintiffs mentioned that its representative would be in Hsinchu, Taiwan in November 2023, and offered to meet with TSMC to discuss a possible license at that time. TSMC emailed Plaintiffs on October 31, 2023, and declined the meeting with Plaintiffs' representative. On December 22, 2023, TSMC's customer transmitted a letter to Plaintiffs, indicating that it is coordinating with TSMC on its response to Plaintiffs' notice letters.

85. After subsequent email exchanges, Plaintiffs representatives traveled to Hsinchu, Taiwan on May 21-22, 2024 to meet with TSMC. In those meetings, TSMC referred expressly to the twenty-two patents, including '847 Patent, '473 Patent, and '292 Patent, regarding semiconductor structures and fabrication which were asserted by Plaintiffs against TSMC's customers. At the meeting, TSMC claimed to have prepared *inter partes review* petitions against all 22 patents that Plaintiffs identified to TSMC's customer, and presented to Plaintiffs portions of the purported draft petitions for several of the patents, including at least the '473 Patent. Thus, TSMC was placed on actual notice of at least the '847 Patent, '473 Patent, and '292 Patent at least as early as May 21, 2024, by way of the meeting between Plaintiffs and TSMC in Hsinchu, Taiwan.

86. Additionally, filing of this Complaint also constitutes notice of the Asserted Patents in accordance with 35 U.S.C. § 287.

87. On information and belief, within the United States including in this district, TSMC conducts sales activities, negotiations, design and development work, and other activities related to its semiconductor devices and sales thereof.

88. On information and belief, TSMC at least imports its semiconductor devices to the United States to its customers and its subsidiaries. Moreover, TSMC sells to U.S. companies, such

as Qualcomm, Broadcom, and Apple, and 65.2% of its revenue comes from sales to the U.S., as explained above. *See TSMC 2023 Annual Report, Consolidated Financial Statements* at 52 available at: https://investor.tsmc.com/sites/ir/annual-report/2023/2023_Annual_Report_E.pdf (accessed Feb. 13, 2025). Also, TSMC "provides customer support, account management, and engineering services through offices in North America[.]" *Id.* at 16.

89. Further, according to TSMC's annual report, TSMC operates subsidiaries in the United States, such as TSMC North America, whose business activities include "[s]ales and marketing of integrated circuits and other semiconductor devices." *Id.* at 181. Thus, TSMC's sales and offers for sale, even if they include some foreign activity, are "in the United States." *See, e.g., Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1308-1309 (Fed. Cir. 2015) (finding that a reasonable jury could conclude that sales of chips manufactured outside the United States were "in the United States" under § 271(a) where fabless chip designer Marvell's design activities were in the U.S., and there was "sales activity by Marvell within the United States, even for chips manufactured, delivered, and used entirely abroad"); *Godo Kaisha IP Bridge 1 v. Broadcom Ltd.*, No. 2:16-CV-00134-JRG, 2017 WL 2869332, at *3 (E.D. Tex. May 18, 2017); *Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013).

90. On information and belief, TSMC imports its infringing semiconductor devices directly into the United States in connection with its CyberShuttle and/or Multi-Project Wafer ("MPW") program. *See* https://www.tsmc.com/english/dedicatedFoundry/services/cyberShuttle (accessed Feb. 13, 2025). TSMC's CyberShuttle program provides a "prototyping service [that] significantly reduces NRE costs by covering the widest technology range (from 0.5um to 7nm) and the most frequent launch schedule (up to 10 shuttles per month)." *Id.* Further, TSMC has a

university program ("TSMC University FinFET Program") which "offers the industry's most successful fin field-effect transistor (FinFET) technologies with multi-project wafer (MPW) services and design col-lateral, for TSMC's 16-nanometer (16nm) and 7-nanometer (7nm) processes, covering both logic designs and radio frequency (RF) designs." https://www.tsmc.com/english/dedicatedFoundry/services/university_program (accessed Feb. 13, 2025). In addition, TSMC collaborates closely with Stanford, MIT, Princeton, and UCSD on the "TSMC University Collaboration Program," and offers the "TSMC University Shuttle Program" which provides "access to TSMC silicon process technologies for digital and analog/mixed signal circuits, RF designs, non-volatile memory design and ultra-low power designs." (TSMC 2023 Annual Report) at 104.

91. In addition to whatever volumes of infringing products TSMC imports into the United States through the CyberShuttle and MPW programs, on information and belief, those shipments further result in TSMC securing a "design win" to mass-produce the design incorporated in the CyberShuttle prototype. Thus significant sales that are "within the United States" even if certain aspects of the sale or performance thereof take place in other countries.

92. TSMC has also indirectly infringed, and continues to indirectly infringe the Asserted Patents under 35 U.S.C. § 2871(b) and (c). TSMC knew and intended to induce the infringement of the Asserted Patents by its direct or indirect customers, subsidiaries, partners, affiliates, and/or other third parties. The infringing products (or are manufactured by processes that infringe) have no substantially non-infringing use. After receiving actual notice of the Asserted Patents, TSMC proceeded to actively induce infringement of the Asserted Patents by inducing its customers, subsidiaries, partners, affiliates, and/or other third parties to make, use, sell, offer for sale, market, advertise, and/or import semiconductor devices, integrated circuits, and/or products

containing the same that infringe (or are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-V *infra*.

93. Additionally, TSMC has indirectly infringed, and continues to indirectly infringe, the Asserted Patents under 35 U.S.C. § 271(c) by materially contributing to infringement of the Asserted Patents by making, using, selling, offering for sale, advertising, marketing, and/or importing semiconductor devices that infringe (or that are manufactured by processes that infringe) the Asserted Patents, as described in detail in Counts I-V *infra*.

94. The scope of infringing products includes, but is not limited to, all TSMC semiconductor devices, integrated circuits, and other products manufactured by TSMC using any of TSMC's 16nm and smaller process nodes (e.g., 16nm, 12nm, 7nm, 6nm, 5nm, 4nmm and 3 nm), including, for example, the semiconductor devices and integrated circuits incorporated into Lenovo and OnePlus products, and to the extent TSMC does not manufacture the entire final integrated circuit, the substantial portion of those integrated circuits that TSMC does manufacture. *See*, e.g., https://www.tsmc.com/english/dedicatedFoundry/technology/logic/l_16_12nm (accessed Feb. 13, 2025). The scope of infringing products also includes downstream products that incorporate those TSMC's products, such as computers, smartphones, tablets, smart watches, network units, and other electronic devices. Further patent-specific assertions are below. Plaintiffs reserve the right to accuse any forthcoming TSMC technology or products not yet commercially available, and any products about which it learns additional relevant information.

95. On information and belief, using an infringing 7nm/6nm process node, TSMC fabricates the, semiconductor die incorporated into, at least, the Qualcomm Snapdragon 680 4G in the Lenovo Moto G Play smartphone and Qualcomm Snapdragon 695 5G in the OnePlus Nord N30 5G smartphone, sold throughout the United States. On information and belief, TSMC

manufactures the Qualcomm Snapdragon 680 4G and Qualcomm Snapdragon 695 5G semiconductor dies using the 6nm variation of the its 7nm/6nm process node. TSMC also manufactures other TSMC devices using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

96. On information and belief, using an infringing 5nm/4nm process node, TSMC fabricates the semiconductor die incorporated into, at least, the Qualcomm Snapdragon X Elite processor in the Lenovo Yoga Slim 7X laptop and Qualcomm Snapdragon 8 Gen 3 processor in the OnePlus 13R smartphone, sold throughout the United States. On information and belief, TSMC manufactures the Qualcomm Snapdragon X Elite and Qualcomm Snapdragon 8 Gen 3 semiconductor dies using the 4nm variation of the its 5nm/4nm process node. TSMC also manufactures other TSMC devices using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

97. On information and belief, using an infringing 3nm process node, TSMC also fabricates the semiconductor die, incorporated into, at least, the Qualcomm Snapdragon 8 Elite integrated circuit in the OnePlus 13 smartphone, sold throughout the United States. TSMC also manufactures other devices using this process node, which thus infringe and are incorporated into other electronic devices sold to end user customers in the United States.

98. In particular, on information and belief, all devices manufactured by TSMC at a given "process node" are the same or essentially the same, and are created in the same or essentially the same way, with respect to aspects relevant to the claims of the Asserted Patents. If one product using a TSMC-based integrated circuit or other product manufactured by TSMC at a given process node infringes one of the Asserted Patents, as described in detail in Counts I-V *infra*, all other devices manufactured by TSMC at that process node infringe that Asserted Patent. Plaintiffs

reserve the right to identify additional products that are produced at accused nodes, and to add nodes, as it learns more information.

99. TSMC specifically intends that third parties, such as its direct and indirect customers (such as Qualcomm, Lenovo, and OnePlus) and intermediaries thereof, resellers, retailers, and end users infringe the Asserted Patents, and knows that these others perform acts that constitute direct infringement. For example, TSMC designed and/or manufactured the products such that they would each infringe the Asserted Patents if used, sold, offered for sale, or imported in the United States, and specifically intended that they be used, sold, offered for sale, and imported into the United States. TSMC provided, directly or indirectly, infringing products to others, such as, direct and indirect customers and intermediaries thereof, resellers, retailers, and end users knowing and intending that those others would use, sell, offer for sale, and/or import in and into the United States, downstream products that incorporate TSMC's infringing semiconductor products, thereby directly infringing one or more claims of the Asserted Patents.

100. Upon information and belief, TSMC knowingly and actively aided and abetted the direct infringement of the Asserted Patents by directly and indirectly instructing and encouraging its direct and indirect customers and other downstream manufacturers and implementers, purchasers, users, and developers to use and/or adopt the Asserted Patent's technology in the form of TSMC's products. These instructions and encouragement include, but are not limited to, manufacturing infringing products for its customers' and other downstream entities' infringing use, sale, offer for sale, and importing of, advertising of, and promoting the use of the infringing products, and directly and indirectly providing instructions, support, and technical information regarding infringing products to direct infringers described above.

101. In addition, TSMC partners with EDA partners throughout the United States,

including within this district, to "win business and stay competitive" using its "Open Innovation Platform." https://www.tsmc.com/english/dedicatedFoundry/grandAlliance (accessed Feb. 13, 2025). Specifically, TSMC's "EDA Alliance, a key component of TSMC Open Innovation Platform (OIP), reduces design barriers for customer's adoption of TSMC process technologies." https://www.tsmc.com/english/dedicatedFoundry/oip/eda_alliance (accessed Feb. 13, 2025). "By combining TSMC and EDA Alliance members R&D capability and resource, new generations of EDA solutions are enabled to be compliant to TSMC technology requirements." *Id*. "Selected EDA Alliance partners work closely with TSMC's design technology teams to address customer design needs through the enablement of new EDA tool features that align with TSMC advanced process development roadmap, as well as the implementation of TSMC's design methodology in Reference Flows." *Id*. Upon information and belief, TSMC's induces and contributes to the infringement of its customers , subsidiaries, partners, affiliates, and/or other third parties, by partnering with EDA alliance members on the development and certification of instructions, manuals, and design software, which are provided to TSMC's customers for the purpose of designing, using, selling, offering for sale, and importing products that use TSMC's infringing semiconductor manufacturing structures and processes. Among TSMC's EDA alliance partners is Siemens EDA, which TSMC recognized in 2021 as one of four "OIP Partner[s] of the Year," along with ANSYS, Cadence Design Systems, and Synopsis, for its work with TSMC on "Joint Development of 4nm Design Infrastructure." https://pr.tsmc.com/english/news/2875 (accessed Feb. 13, 2025).

102. TSMC's acts of infringement have caused damage to Plaintiffs. Plaintiffs are entitled to recover from TSMC the damages incurred by Plaintiffs as a result of TSMC's wrongful acts.

103. TSMC's acts of direct and indirect infringement are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law. TSMC performed and continues to perform the acts that constitute direct and/or indirect infringement, with knowledge or willful blindness that the acts would constitute direct and/or indirect infringement of the Asserted Patents. Notwithstanding TSMC's knowledge of the Asserted Patents and TSMC's infringement thereof since before, and no later than the filing of, the present Complaint, TSMC has and continues to willfully infringe the Asserted Patents.

COUNT I

Infringement of the '847 Patent

104. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully restated herein.

105. Plaintiff Marlin Semiconductor is the assignee and lawful owner of all rights, title, and interest in and to the '847 Patent. The '847 Patent is valid and enforceable.

106. The '847 Patent is entitled "Metal Oxide Semiconductor Transistor," and issued on June 29, 2010 to inventors Chu-Yin Tseng, Shih-Chieh Hsu, Chih-Chiang Wu, Shyh-Fann Ting, Po-Lun Cheng, and Hsuan-Hsu Chen. The '847 Patent issued from U.S. Patent Application No. 11/836,772, which was filed on Aug. 9, 2007.

107. Defendants have directly and indirectly infringed, and continue to directly and indirectly infringe, the '847 Patent by making, having made, using, selling, offering for sale, and/or importing into the United States products that infringe (or that are manufactured using processes that infringe) the '847 Patent including, but not limited to semiconductor devices manufactured using TSMC's 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. The products that infringe one or more claims of the '847 Patent include, but are not limited to, at least the products identified herein. Further discovery may reveal additional infringing products and/or models.

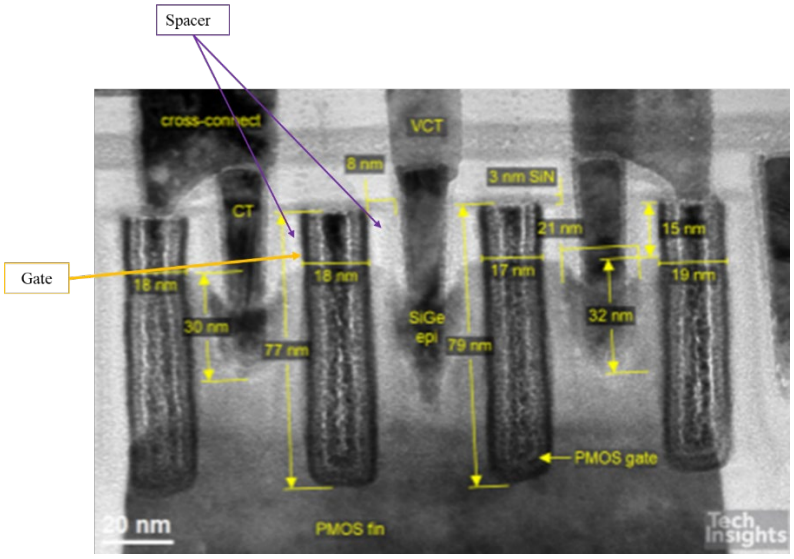
108. For example, and without limitation, the infringing products infringe one or more claims of the ’847 Patent, including but not limited to claim 1. The infringing products fall within the scope of and include, either literally or under the doctrine of equivalents, all of the elements of at least claim 1 of the ’847 Patent.

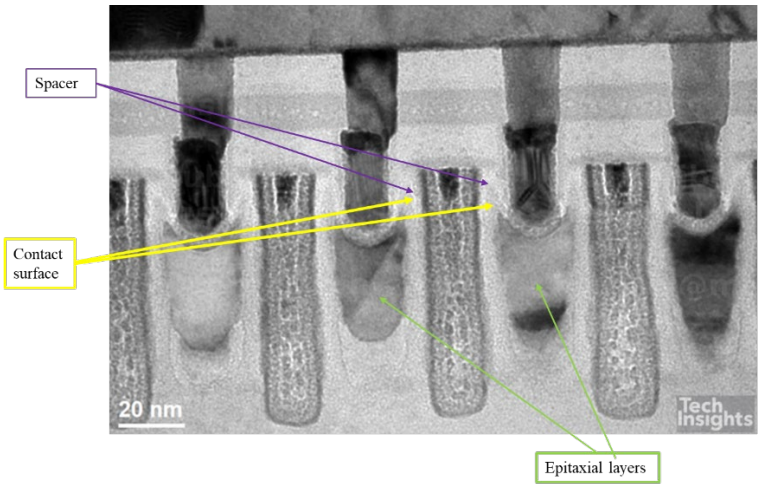
109. The infringing products include all the limitations of at least claim 1 of the ’847 Patent. Specifically, the ’847 Patent claims, e.g., A MOS transistor structure, comprising: a gate formed on a semiconductor substrate; two raised epitaxial layers positioned respectively in the semiconductor substrate next to the relative sides of the gate and above the surface of the semiconductor substrate; a spacer formed on the sidewall of the gate and extending laterally upon a portion of the raised epitaxial layers, and a contact surface of the raised epitaxial layers and a bottom of the spacer is above the surface of the semiconductor substrate; and two doped region formed respectively in the semiconductor substrate next to the relative sides of the gate.

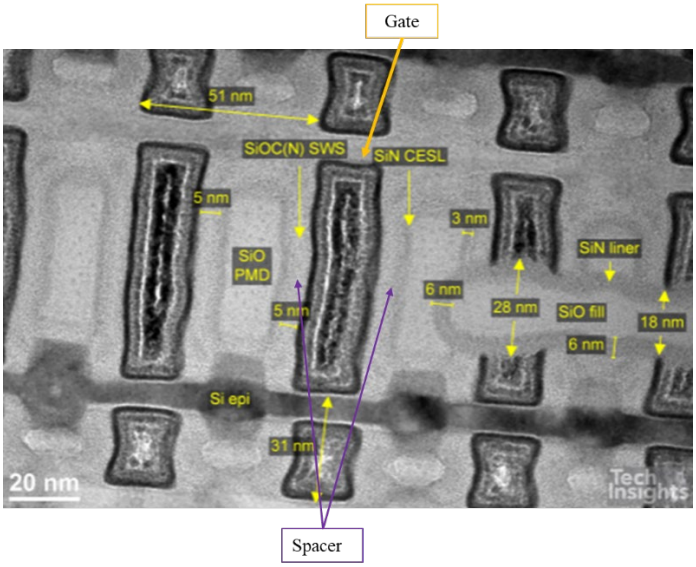
110. With respect to exemplary devices, the semiconductor die incorporated in the Qualcomm Snapdragon X Elite integrated circuit, which is incorporated in the Lenovo Yoga Slim 7X laptop, is manufactured by TSMC using its 4nm process node. *See* Tomshardware.com, *Snapdragon X Elite Outperforms Intel, AMD, Apple CPUs (In Vendor Benchmarks)*, at https://www.tomshardware.com/news/snapdragon-x-elite-outperforms-intel-amd-apple-cpus-in-vendor-benchmarks (accessed Feb. 13, 2025). The semiconductor die incorporated in the Qualcomm Snapdragon 8 Gen 3 integrated circuit, which is incorporated in OnePlus 13R smartphone, is manufactured by TSMC using its 4nm process node. *See* https://nanoreview.net/en/soc/qualcomm-snapdragon-8-gen-3 (accessed Feb. 13, 2025).

111. The other products produced by TSMC at the same node size also infringe for the same reasons as above, as explained in ¶ 96.

112. These exemplary devices directly infringe at least claim 1 of the '847 Patent. Specifically, the TSMC 4nm semiconductor dies incorporated in the Lenovo Yoga Slim 7X laptop and OnePlus 13R smartphone comprise all elements of claim 1 of the '847 Patent. Upon information and belief, these exemplary devices are substantially similar in materials, structures, and features as semiconductor dies that TSMC manufactures using its 5nm process node, which is representative of the exemplary devices and other semiconductor devices manufactured using TSMC's 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. Furthermore, as shown in the images below of an example semiconductor die made using TSMC's 5 nm process node (a TSMC 5 nm semiconductor die incorporated in an Apple A15 Bionic APLW07 integrated circuit), the example semiconductor die comprises all elements of claim 1 of the '847 Patent.

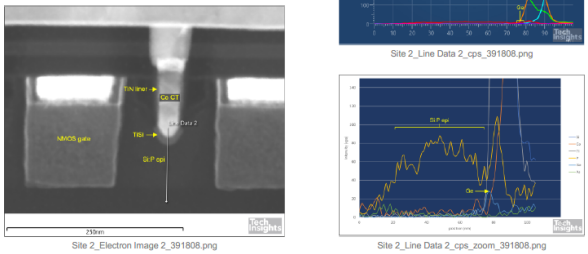






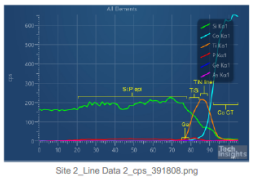
NMOS S/D Epi and Contact Composition

- The NMOS S/D epi is doped with phosphorus, with Ge detected at the top of the epi, near the silicide.
- A Ti silicide is used at the epi-contact interface.
- The S/D CT contact has a TiN liner and is filled with Co.



Site 2_Electron Image 2_391808.png

Linescan Across S/D in I/O Region – HAADF STEM Cross Section Across Gates



Site 2_Line Data 2_cps_391808.png

Site 2_Line Data 2_cps_zoom_391808.png

EDS Linescan (Top) and Zoom on Selected Elements (Bottom)

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Tech Insights

113. As a result of Defendants' infringement of the '847 Patent, Plaintiffs are entitled to monetary damages in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

114. Defendants' acts of direct and indirect infringement of the '847 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law.

COUNT II

Infringement of the '473 Patent

115. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully restated herein.

116. Plaintiff Marlin Semiconductor is the assignee and lawful owner of all rights, title, and interest in and to the '473 Patent. The '473 Patent is valid and enforceable.

117. The '473 Patent is entitled "Method for Fabricating Metal-Oxide Semiconductor Transistor," and issued on July 28, 2015 to inventors Ming-Te Wei, Wen-Chen Wu, Lung-En Kuo, and Po-Chao Tsao. The '473 Patent issued from U.S. Patent Application No. 14/331,229, which was filed on July 15, 2014, and is a division of U.S. Patent Application No. 12/837,475, which was filed on July 15, 2010, now U.S. Patent No. 8,816,409.

118. Defendants have directly and indirectly infringed, and continue to directly and indirectly infringe, the '473 Patent by making, having made, using, selling, offering for sale, and/or importing into the United States products that infringe the '473 Patent including, but not limited to semiconductor devices manufactured using TSMC's 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. The products that infringe one or more claims of the '473 Patent include, but are not limited to, at least the products identified herein. Further discovery may reveal additional

infringing products and/or models.

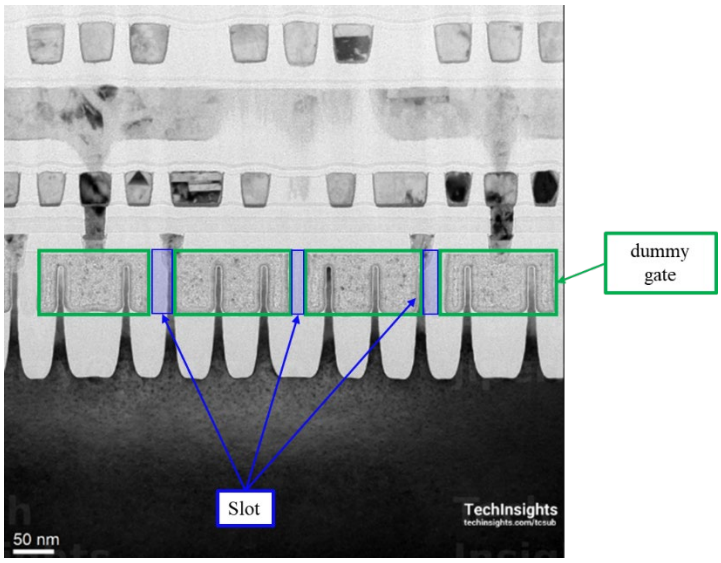
119. For example, and without limitation, the infringing products infringe one or more claims of the ’473 Patent, including but not limited to claim 1. The infringing products fall within the scope of and include, either literally under the doctrine of equivalents, all of the elements of at least claim 1 of the ’473 Patent.

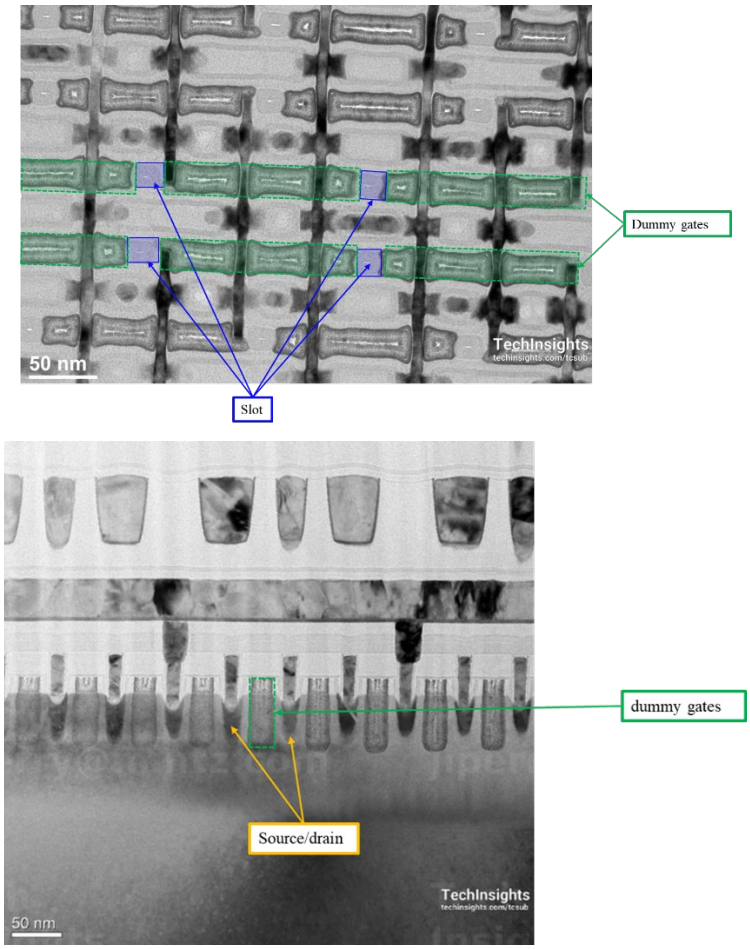
120. The infringing products include all the limitations of at least claim 1 of the ’473 Patent. Specifically, the ’473 Patent claims, e.g., a method for fabricating a metal-oxide semiconductor (MOS) transistor, comprising: providing a semiconductor substrate; forming a silicon layer on the semiconductor substrate; performing a first photo-etching process on the silicon layer for forming a gate pattern; forming an epitaxial layer in the semiconductor substrate adjacent to two sides of the gate pattern; and after forming the epitaxial layer, performing a second photo-etching process on the gate pattern to form a slot in the gate pattern while using the gate pattern to physically separate the gate pattern into two gates.

121. With respect to exemplary devices, the semiconductor die incorporated in the Qualcomm Snapdragon 680 4G, which is incorporated in the Lenovo Yoga Slim 7X laptop, is manufactured by TSMC using its 6nm process node. *See GMS Arena, Motorola Moto G Play*, at https://www.gsmarena.com/motorola_moto_g_play_(2024)-12798.php (accessed Feb. 13, 2025); Gizmochina.com, *New Qualcomm mid-range chips on the way, will support 144Hz refresh rate*, at https://www.gizmochina.com/2021/09/11/new-qualcomm-mid-range-chips-on-the-way-will-support-144hz-refresh-rate/ (accessed on Feb. 13, 2025). The semiconductor die incorporated in the Qualcomm Snapdragon 695 5G, which is incorporated in the OnePlus Nord N30 5G smartphone, is manufactured by TSMC using its 6nm process node. *See* https://nanoreview.net/en/soc/qualcomm-snapdragon-695 (accessed Feb. 13, 2025).

122. The other products produced by TSMC at the same node size also infringe for the same reasons as above, as explained in ¶ 96.

123. The exemplary devices infringe at least claim 1 of the ’473 Patent. Specifically, the TSMC 6nm semiconductor dies incorporated into the Lenovo Yoga Slim 7X laptop and OnePlus 13R smartphone comprise all elements of claim 1 of the ’473 Patent. Upon information and belief, these exemplary devices are substantially similar in materials, structures, and features as semiconductor dies that TSMC manufactures using its 7nm process node, which is representative of the exemplary devices and other semiconductor devices manufactured using TSMC’s 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. Furthermore, as shown in the images below of an example semiconductor die made using TSMC’s 7nm process node (a TSMC 7nm semiconductor die incorporated in an Apple A13 Bionic APLW85 integrated circuit), the example semiconductor die comprises all elements of claim 1 of the ’743 Patent.





124. As a result of Defendants' infringement of the '473 Patent, Plaintiffs are entitled to monetary damages in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

125. Defendants' acts of direct infringement of the '473 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law.

COUNT III

Infringement of the '292 Patent

126. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully

restated herein.

127. Plaintiff Marlin Semiconductor is the assignee and lawful owner of all rights, title, and interest in and to the ’292 Patent. The ’292 Patent is valid and enforceable.

128. The ’292 Patent is entitled “Semiconductor Structure with Different Fins of FinFETs,” and issued on Nov. 10, 2015 to inventors Chin-Fu Lin, Chin-Cheng Chien, Chun-Yuan Wu, Teng-Chun Tsai, and Chih-Chien Liu. The ’292 Patent issued from U.S. Patent Application No. 14/340,267, which was filed on July 24, 2014, and is a division of U.S. Patent Application No. 13/370,231, which was filed on Feb. 9, 2012, now U.S. Patent No. 8,822,284.

129. Defendants have directly and indirectly infringed, and continue to directly and indirectly infringe, the ’292 Patent by making, having made, using, selling, offering for sale, and/or importing into the United States products that infringe the ’292 Patent including but not limited to semiconductor devices manufactured using TSMC’s 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. The products that infringe one or more claims of the ’292 Patent include, but are not limited to, at least the products identified herein. Further discovery may reveal additional infringing products and/or models.

130. For example, and without limitation, the infringing products infringe one or more claims of the ’292 Patent, including but not limited to claim 1. The infringing products fall within the scope of and include, either literally under the doctrine of equivalents, all of the elements of at least claim 1 of the ’292 Patent.

131. The infringing products include all the limitations of at least claim 1 of the ’292 Patent. Specifically, the ’292 Patent claims, e.g., A semiconductor structure for forming FinFETs, comprising: a semiconductor substrate, wherein a top portion of the semiconductor substrate comprises a semiconductor material; a plurality of odd fins of the FinFETs on the semiconductor

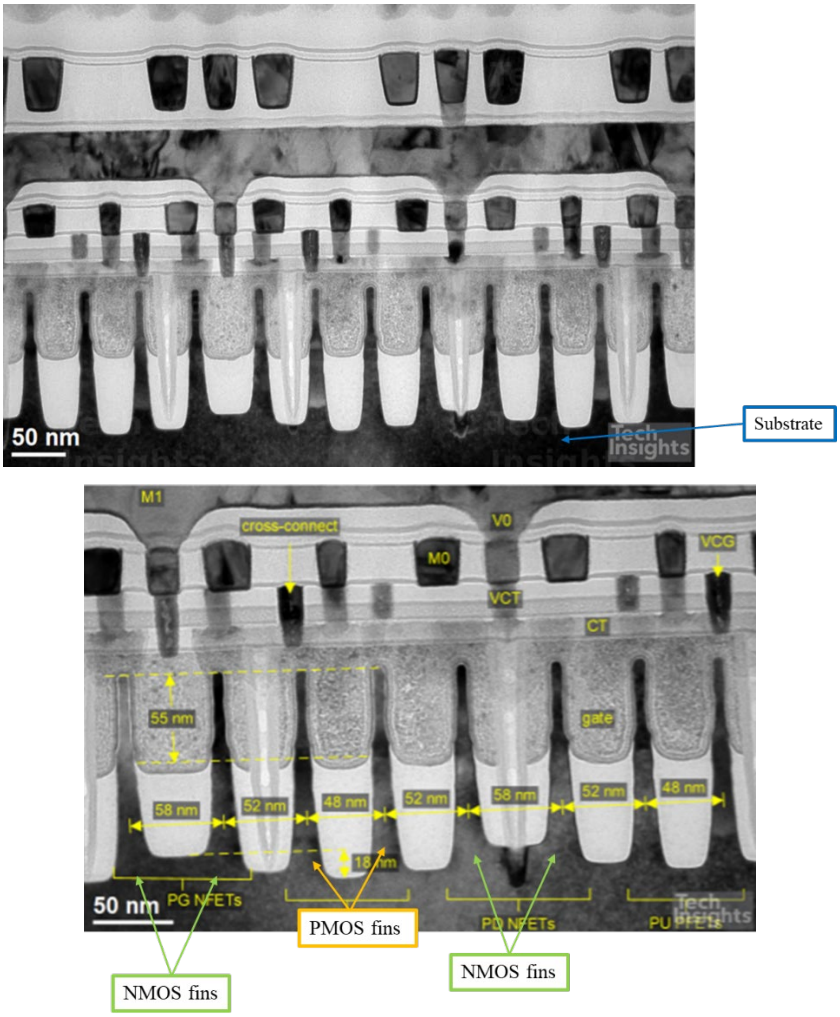
substrate, being defined from the semiconductor substrate and being formed of the semiconductor material; and a plurality of even fins of the FinFETs on the semiconductor substrate between the odd fins of the FinFETs, being different from the odd fins of the FinFETs in at least one of width and material, wherein the plurality of even fins are in direct contact with the semiconductor material.

132. With respect to exemplary devices, the semiconductor die incorporated in the Qualcomm Snapdragon X Elite is manufactured by TSMC using its 4nm process node. *See* Tomshardware.com, *Snapdragon X Elite Outperforms Intel, AMD, Apple CPUs (In Vendor Benchmarks)*, at https://www.tomshardware.com/news/snapdragon-x-elite-outperforms-intel-amd-apple-cpus-in-vendor-benchmarks(accessed Feb. 13, 2025). The semiconductor die incorporated in the Qualcomm Snapdragon 8 Gen 3 integrated circuit, which is incorporated in OnePlus 13R smartphone, is manufactured by TSMC using its 4nm process node. *See* https://nanoreview.net/en/soc/qualcomm-snapdragon-8-gen-3 (accessed Feb. 13, 2025).

133. The other products produced by TSMC at the same node size also infringe for the same reasons as above, as explained in ¶ 96.

134. These exemplary devices directly infringe at least claim 1 of the ’292 Patent. Specifically, the TSMC 4nm semiconductor dies incorporated in the Lenovo Yoga Slim 7X laptop and OnePlus 13R smartphone comprise all elements of claim 1 of the ’292 Patent. Upon information and belief, these exemplary devices are substantially similar in materials, structures, and features as semiconductor dies that TSMC manufactures using its 5nm process node, which is representative of the exemplary devices and other semiconductor devices manufactured using TSMC’s 16nm, 12nm, 7nm, 6nm, 5nm, 4nm, and 3nm process nodes. Furthermore, as shown in the images below of an example semiconductor die made using TSMC’s 5 nm process node (a

TSMC 5 nm semiconductor die incorporated in an Apple A15 Bionic APLW07 integrated circuit), the example semiconductor die comprises all elements of claim 1 of the ’292 Patent.



135. As a result of Defendants’ infringement of the ’292 Patent, Plaintiffs are entitled to monetary damages in an amount adequate to compensate for Defendants’ infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

136. Defendants’ acts of direct infringement of the ’292 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law.

COUNT IV

Infringement of the '747 Patent

137. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully restated herein.

138. Plaintiff Marlin Semiconductor is the assignee and lawful owner of all rights, title, and interest in and to the '747 Patent. The '747 Patent is valid and enforceable.

139. The '747 Patent is entitled "Semiconductor Structure with Hard Mask Disposed on the Gate Structure," and issued on Sept. 29, 2015 to inventors Ching-wen Hung and Chih-sen Huang. The '747 Patent issued from U.S. Patent Application No. 13/875,293, which was filed on May 2, 2013.

140. Defendants have directly and indirectly infringed, and continue to directly and indirectly infringe, the '747 Patent by making, having made, using, selling, offering for sale, and/or importing into the United States products that infringe the '747 Patent including, but not limited to semiconductor devices manufactured using TSMC's 3nm process node. The products that infringe one or more claims of the '747 Patent include, but are not limited to, at least the products identified herein. Further discovery may reveal additional infringing products and/or models.

141. For example, and without limitation, the infringing products infringe one or more claims of the '747 Patent, including but not limited to claim 1. The infringing products fall within the scope of and include, either literally under the doctrine of equivalents, all of the elements of at least claim 1 of the '747 Patent.

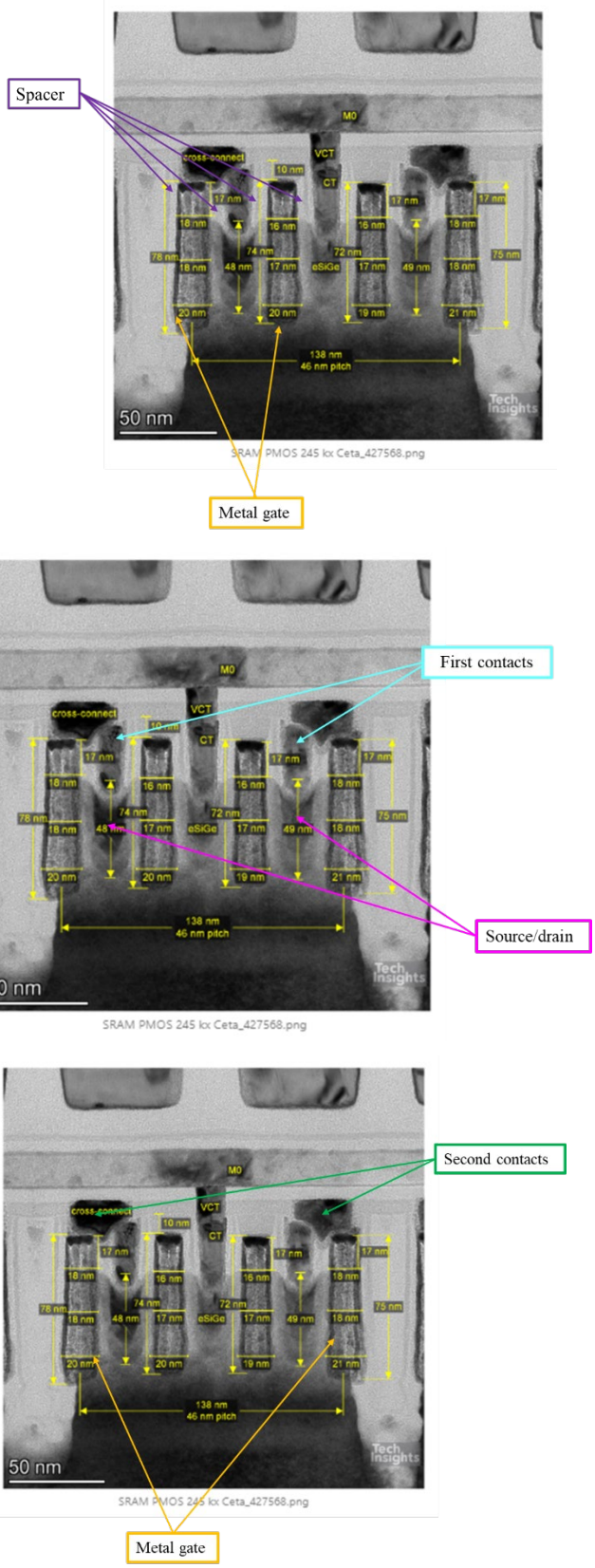
142. The infringing products include all the limitations of at least claim 1 of the '747 Patent. Specifically, the '747 Patent claims, e.g., a semiconductor structure, comprising: a substrate; a first dielectric layer disposed on the substrate; at least two metal gates disposed in the first dielectric layer; a spacer disposed on two sides of the metal gate, wherein the spacer has a truncated

top surface; a source/drain region (S/D region) disposed between two metal gates; a plurality of first contacts disposed in the first dielectric layer that are electrically connected to parts of the S/D region; a plurality of second contacts disposed in the first dielectric layer that are electrically connected to one of the metal gates, wherein at least one of the first contacts directly connects at least one of the second contacts; and a hard mask disposed on one of the metal gates, wherein the top surface of the hard mask and the top surface of the first dielectric layer are on the same level.

143. With respect to exemplary devices, the semiconductor die incorporated in the Qualcomm Snapdragon 8 Elite integrated circuit, which is incorporated in the OnePlus 13, is manufactured by TSMC using its 3nm process node. *See* NSane Forums, *Qualcomm announces Snapdragon 8 Elite flagship smartphone SoC with major improvements*, at https://nsaneforums.com/news/mobile-news/qualcomm-announces-snapdragon-8-elite-flagship-smartphone-soc-with-major-improvements-r26125/ (accessed Feb. 13, 2025).

144. The other products produced by TSMC at the same node size also infringe for the same reasons as above, as explained in ¶ 96.

145. These exemplary devices directly infringe at least claim 1 of the ’747 Patent. Specifically, the TSMC 3nm semiconductor die incorporated in the OnePlus 13 smartphone comprises all elements of claim 1 of the ’747 Patent. Upon information and belief, these exemplary devices are substantially similar in materials, structures, and features as semiconductor dies that TSMC manufactures using its 3nm process node, which is representative of the exemplary devices and other semiconductor devices manufactured using TSMC’s 3nm process node. Furthermore, as shown in the images below of an example semiconductor die made using TSMC’s 3nm process node (a TSMC 3nm semiconductor die incorporated in the Apple A17 Pro APL1V02 integrated circuit), the example semiconductor die comprises all elements of claim 1 of the ’747 Patent.



146. As a result of Defendants' infringement of the '747 Patent, Plaintiffs are entitled to

monetary damages in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

147. Defendants' acts of direct infringement of the '747 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law.

COUNT V

Infringement of the '880 Patent

148. Plaintiffs incorporate the allegations of all of the foregoing paragraphs as if fully restated herein.

149. Plaintiff Marlin Semiconductor is the assignee and lawful owner of all rights, title, and interest in and to the '880 Patent. The '880 Patent is valid and enforceable.

150. The '880 Patent is entitled "Semiconductor Device and Method for Fabricating the Same," and issued on Apr. 24, 2018 to inventors Chun-Hao Lin, Hsin-Yu Chen, and Shou-Wei Hsieh. The '880 Patent issued from U.S. Patent Application No. 15/660,991, which was filed on July 27, 2017.

151. Defendants have directly and indirectly infringed, and continue to directly and indirectly infringe, the '880 Patent by making, having made, using, selling, offering for sale, and/or importing into the United States products that infringe the '880 Patent including, but not limited to semiconductor devices manufactured using TSMC's 3nm process node. The products that infringe one or more claims of the '880 Patent include, but are not limited to, at least the products identified herein. Further discovery may reveal additional infringing products and/or models.

152. For example, and without limitation, the infringing products infringe one or more claims of the '880 Patent, including but not limited to claim 1. The infringing products fall within

the scope of and include, either literally under the doctrine of equivalents, all of the elements of at least claim 1 of the ’880 Patent.

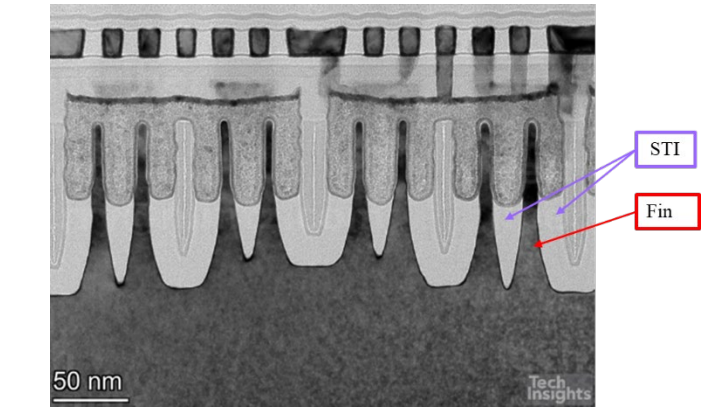
153. The infringing products include all the limitations of at least claim 1 of the ’880 Patent. Specifically, the ’880 Patent claims, *e.g.*, a method for fabricating semiconductor device, comprising: forming a fin-shaped structure on a substrate; forming a shallow trench isolation (STI) around the fin-shaped structure; forming a gate layer on the fin-shaped structure and the STI; removing part of the gate layer, part of the fin-shaped structure, and part of the STI to form a trench; forming a dielectric layer into the trench to form a single diffusion break (SDB) structure; and after forming the SDB structure forming an interlayer dielectric (ILD) layer on the SDB structure.

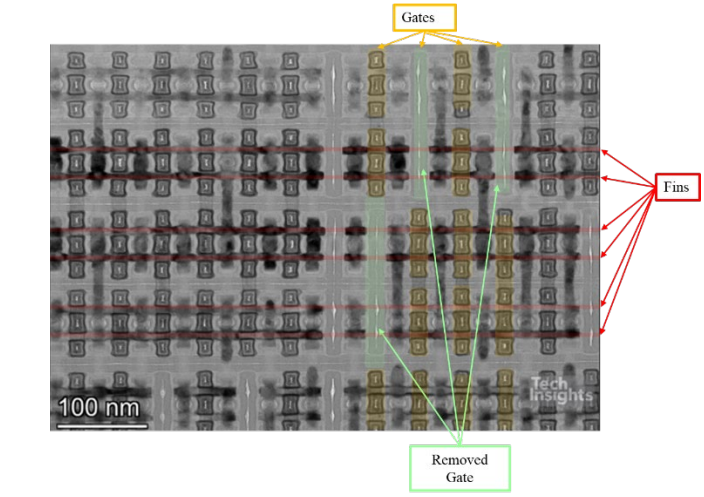
154. With respect to exemplary devices, the semiconductor die incorporated in the Qualcomm Snapdragon 8 Elite integrated circuit, which is incorporated in the OnePlus 13, is manufactured by TSMC using its 3nm process node. *See* NSane Forums, *Qualcomm announces Snapdragon 8 Elite flagship smartphone SoC with major improvements*, at https://nsaneforums.com/news/mobile-news/qualcomm-announces-snapdragon-8-elite-flagship-smartphone-soc-with-major-improvements-r26125/ (accessed Feb. 13, 2025).

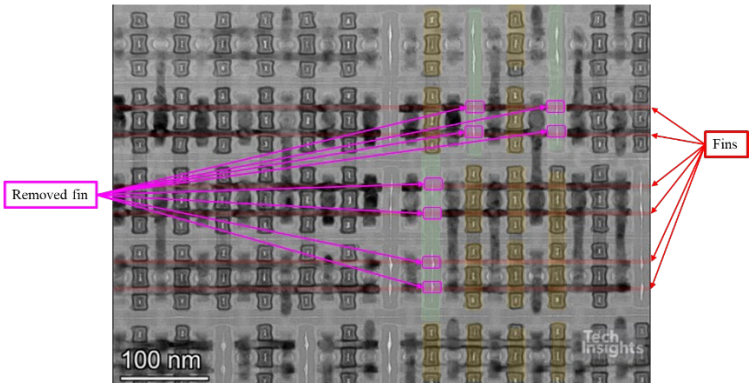
155. The other products produced by TSMC at the same node size also infringe for the same reasons as above, as explained in ¶ 96.

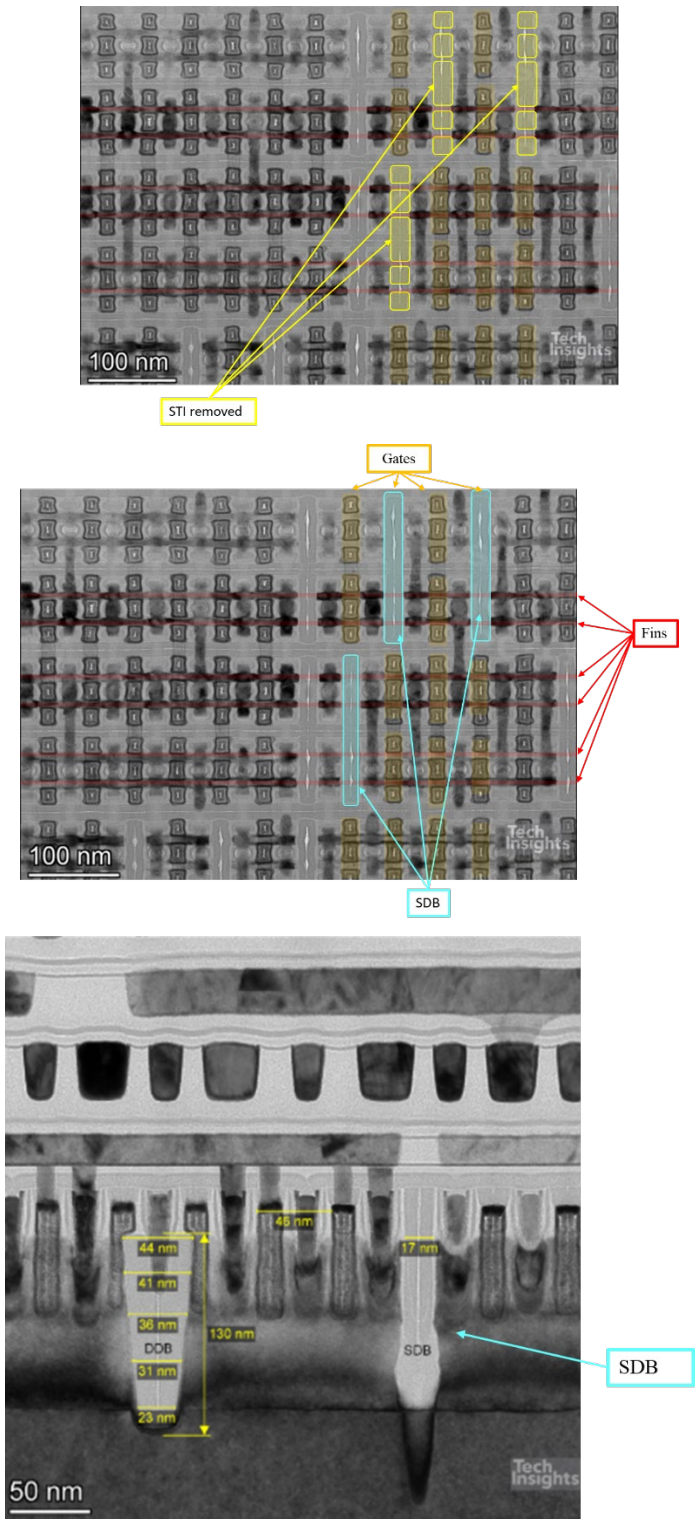
156. These exemplary devices directly infringe at least claim 1 of the ’880 Patent. Specifically, the TSMC 3nm semiconductor die incorporated in the OnePlus 13 smartphone comprises all elements of claim 1 of the ’880 Patent. Upon information and belief, these exemplary devices are substantially similar in materials, structures, and features as semiconductor dies that TSMC manufactures using its 3nm process node, which is representative of the exemplary devices and other semiconductor devices manufactured using TSMC’s 3nm process node. Furthermore, as

shown in the images below of an example semiconductor die made using TSMC's 3nm process node (a TSMC 3nm semiconductor die incorporated in the Apple A17 Pro APL1V02 integrated circuit), the example semiconductor die comprises all elements of claim 1 of the '880 Patent.









157. As a result of Defendants' infringement of the '880 Patent, Plaintiffs are entitled to monetary damages in an amount adequate to compensate for Defendants' infringement, but in no

event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

158. Defendants' acts of direct infringement of the '880 Patent are willful, and have caused and will continue to cause substantial damage and irreparable harm to Plaintiffs, and Plaintiffs have no adequate remedy at law.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs request the Court grant the relief set forth below:

a. Enter a judgment that the Defendants have directly or indirectly infringed, and continue to directly or indirectly infringe one or more claims of each of the Asserted Patents;

b. Enter a judgment that Defendants' acts of patent infringement are willful;

c. Order Defendants to account for and pay damages caused to Plaintiffs by Defendants' unlawful acts of patent infringement;

d. Award Plaintiffs increased damages and attorney fees pursuant to 35 U.S.C. §§ 284 and 285;

e. Award Plaintiffs the interest and costs incurred in action; and

f. Grant Plaintiffs other and further relief, including equitable relief, as the Court finds just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38, Plaintiffs hereby demand a jury trial for all claims and issues deemed to be triable by a jury.

Dated: February 13, 2025

Respectfully submitted,

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