IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

GLOBALFOUNDRIES U.S. INC. Plaintiff, v. TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD., TSMC NORTH AMERICA, TSMC TECHNOLOGY, INC., MEDIATEK INC., MEDIATEK USA INC., MSTAR SEMICONDUCTOR, INC., HISENSE CO., LTD., HISENSE ELECTRIC CO., LTD., HISENSE INTERNATIONAL CO., LTD., HISENSE GROUP CO., LTD., QINGDAO HISENSE COMMUNICATION CO., LTD., and HISENSE IMPORT & EXPORT CO. LTD. Defendants.	)	**Case No. 6:19-cv-00498** **JURY TRIAL DEMANDED**

COMPLAINT

Plaintiff Globalfoundries U.S. Inc. ("Globalfoundries" or "Plaintiff") brings this patent infringement action against Defendants Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, TSMC Technology, Inc. (collectively, "TSMC")), MediaTek Inc., MediaTek USA Inc., MStar Semiconductor, Inc. (collectively, "MediaTek"), Hisense Co., Ltd., Hisense Electric Co., Ltd., Hisense International Co., Ltd., Hisense Group Co., Ltd., Qingdao Hisense Communication Co., Ltd., and Hisense Import & Export Co. Ltd. (collectively, "Hisense") (collectively, "Defendants") as follows:

NATURE OF THE ACTION

1. This is a civil action for infringement of United States Patent Nos. 8,912,603 ("'603 patent"), 7,750,418 ("'418 patent"), and 8,936,986 ("'986 patent") (collectively, the "Asserted Patents") under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.

THE PARTIES

2. Plaintiff Globalfoundries U.S. Inc. is a Delaware corporation with its principal place of business at 2600 Great America Way, Santa Clara, California 95054.

3. Defendant Taiwan Semiconductor Manufacturing Company Ltd. is a company organized under the laws of Taiwan with its principal place of business at 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu 30078, Taiwan.

4. Defendant TSMC North America is a California corporation with its principal place of business at 2851 Junction Avenue, San Jose, California 95134. TSMC North America is a wholly-owned subsidiary of Taiwan Semiconductor Manufacturing Company Ltd.

5. Defendant TSMC Technology, Inc. is a Delaware corporation with its principal place of business at 2851 Junction Avenue, San Jose, California 95134. TSMC Technology, Inc. is a wholly owned subsidiary of Taiwan Semiconductor Manufacturing Company Ltd. TSMC Technology, Inc.'s registered agent, Corporation Service Company, is located at 251 Little Falls Drive, Wilmington, Delaware 19808.

6. Defendants Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, and TSMC Technology, Inc. are related entities that work in concert to design, manufacture, import, distribute, market, and/or sell the infringing devices.

7. Defendant MediaTek Inc. is a company organized under the laws of Taiwan with its principal place of business at No. 1, Dusing 1st Road, Hsinchu Science Park, Hsinchu 20078, Taiwan.

8. Defendant MediaTek USA Inc. is a Delaware corporation with its principal place of business at 2840 Junction Avenue, San Jose, California 95134.

9. Defendant MStar Semiconductor, Inc. is a company organized under the laws of Taiwan with its principal place of business at 4F-1, No. 26, Tai-yuan Street, Zhubei City, Hsinchu County 302, Taiwan.

10. Defendants MediaTek Inc., MediaTek USA Inc., and MStar Semiconductor, Inc. are related entities that work in concert to design, manufacture, import, distribute, and/or sell the infringing devices.

11. Defendant Hisense Co., Ltd. is a company organized under the laws of Hong Kong with its principal place of business at Room 3101-05 Singga Commercial Centre, 148 Connaught Road West, Sheung Wan, Hong Kong.

12. Defendant Hisense Electric Co., Ltd. (aka Qingdao Hisense Electronics Co., Ltd.) is a company organized under the laws of China with its principal place of business at Hisense Tower, No. 17 Donghaixi Road, Qingdao 266071, China. Hisense Electric Co., Ltd. is a subsidiary of Hisense Co., Ltd.

13. Defendant Hisense International Co., Ltd. is a company organized under the laws of China with its principal place of business at Hisense Tower, No. 17 Donghaixi Road, Qingdao 266071, China. Hisense International Co., Ltd. is a subsidiary of Hisense Co., Ltd.

14. Defendant Hisense Group Co., Ltd. is a company organized under the laws of China with its principal place of business at Hisense Tower, No. 17 Donghaixi Road, Qingdao 266071, China. Hisense Group Co., Ltd. is a subsidiary of Hisense International Co., Ltd.

15. Defendant Qingdao Hisense Communication Co., Ltd. is a company organized under the laws of China with its principal place of business at No. 18 Tuanjie Road, Huandao

Information Industry Park, Qingdao, Shandong, China. Qingdao Hisense Communication Co., Ltd. is a subsidiary of Hisense Group, Co.

16. Defendant Hisense Import & Export Co. Ltd. is a company organized under the laws of China with its principal place of business at Hisense Tower, No. 17 Donghaixi Road, Qingdao 266071, China.

17. Defendants Hisense Co., Ltd., Hisense Electric Co., Ltd., Hisense International Co., Ltd., Hisense Group Co., Ltd., Qingdao Hisense Communication Co., Ltd., and Hisense Import & Export Co. Ltd. are related entities that work in concert, along with other related entities, to design, manufacture, import, distribute, and/or sell the infringing devices.

JURISDICTION AND VENUE

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

19. The Court has personal jurisdiction over each of the TSMC Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each TSMC Defendant has regularly and systematically transacted business in Texas, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, and TSMC Technology, Inc. have also placed integrated circuits using TSMC's 28 nanometer and smaller technology[1] and

[1] TSMC 28 nanometer and smaller technology includes TSMC's 28 nanometer technology (including TSMC's High-k Metal Gate gate-last technology and high-performance compact technology) ("28 Nanometer"), TSMC's 22 nanometer technology (including TSMC's 22 nanometer ultra-low power, 22 nanometer ultra-low leakage, and 22 nanometer ultra-low leakage static random access memory technologies) ("22 Nanometer"), TSMC's 20 nanometer technology ("20 Nanometer"), TSMC's 16/12 nanometer technology (including TSMC's 16 nanometer Fin Field Effect Transistor ("FinFET") process, 16 nanometer FinFET Plus process, 16 nanometer

products containing these integrated circuits (the "Accused Products") into the stream of commerce by shipping Accused Products into Texas, shipping Accused Products knowing that those products would be shipped into Texas, and/or shipping Accused Products knowing that these Accused Products would be incorporated into other Accused Products that would be shipped into Texas. For example, through TSMC's multi-project wafer ("MPW") services, TSMC provides customized Accused Products to customers for testing, including customers in Texas. On information and belief, TSMC ships test wafers directly to the customers of its CyberShuttle MPW service and/or has knowledge of the final shipping address for customers of both its CyberShuttle MPW service and the MPW service TSMC offers in connection with Metal Oxide Semiconductor Implementation Service ("MOSIS"). The TSMC Defendants interact with customers in Texas, including through visits to customer sites in Texas. Through these interactions and visits, the TSMC Defendants directly infringe the Asserted Patents as set out in more particularity in ¶¶ 55, 71, and 89 of this Complaint. The TSMC Defendants also interact with customers who sell the Accused Products into Texas, knowing that these customers will sell the Accused Products into Texas, either directly or through intermediaries.

20. TSMC Technology, Inc. has an office in Austin, Texas that, on information and belief, engages in engineering, research, and development activities relating to the Accused Products. These activities directly infringe the Asserted Patents as set out in more particularity in ¶¶ 55, 71, and 89 of this Complaint. Taiwan Semiconductor Manufacturing Company Ltd.

FinFET Compact Technology, and 12 nanometer FinFET Compact Technology) ("16 Nanometer"), TSMC's 10 nanometer technology (including TSMC's 10 nanometer FinFET process) ("10 Nanometer"), TSMC's 7 nanometer technology (including TSMC's 7 nanometer FinFET process) ("7 Nanometer"). Globalfoundries reserves the right to accuse any forthcoming TSMC technology, such as TSMC's 7 nanometer extreme ultraviolet lithography technology and TSMC's 5 nanometer technology.

operates TSMC Technology, Inc.'s website and other online activities, including job postings for its Austin office. TSMC North America similarly has an office in Austin, Texas that engages in sales activities related to the Accused Products, including sales visits to customers in and around Austin. These activities directly infringe the Asserted Patents as set out in more particularity in ¶¶ 55, 71, and 89 of this Complaint. Taiwan Semiconductor Manufacturing Company Ltd. operates TSMC North America's website and other online activities, including job postings for its Austin office. Taiwan Semiconductor Manufacturing Company Ltd. also operates an annual Technology Symposium in the United States, including workshops in Austin. Both TSMC Technology, Inc. and TSMC North America are regular attendees and/or exhibitors at these workshops. The TSMC Defendants' activities at these workshops in Austin directly infringe the Asserted Patents as set out in more particularity in ¶¶ 55, 71, and 89 of this Complaint. The Court therefore has both general and specific personal jurisdiction over the TSMC Defendants.

21. The Court has personal jurisdiction over each of the MediaTek Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each MediaTek Defendant has regularly and systematically transacted business in Texas, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. MediaTek Inc., MediaTek USA Inc. and MStar Semiconductor, Inc. have placed Accused Products into the stream of commerce by shipping Accused Products into Texas, shipping Accused Products knowing that those products would be shipped into Texas, and/or shipping Accused Products knowing that these Accused Products would be incorporated into other Accused Products that would be shipped into Texas. MediaTek Inc. operates the website for MediaTek entities, including job postings for the Austin office of MediaTek USA Inc. MediaTek USA Inc. has an office in

Austin, Texas, that, on information and belief, engages in design, engineering, research, development, and sales activities relating to the Accused Products. These activities directly infringe the Asserted Patents as set out in more particularity in ¶¶ 63, 80, and 98 of this Complaint.

22. Alternatively, the Court has personal jurisdiction over MediaTek Inc. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, MediaTek Inc. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

23. Alternatively, the Court has personal jurisdiction over MStar Semiconductor, Inc. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, MStar Semiconductor, Inc. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution. The Court therefore has both general and specific personal jurisdiction over the MediaTek Defendants.

24. The Court has personal jurisdiction over each of the Hisense Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each Hisense Defendant has regularly and systematically transacted business in Texas, directly or through affiliates, subsidiaries, or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. Hisense Co., Ltd., Hisense Electric Co., Ltd., Hisense International Co., Ltd., Hisense Group Co., Ltd., Qingdao Hisense Communication Co., Ltd., Hisense Import & Export Co. Ltd. and/or their affiliates, subsidiaries, or intermediaries have also placed Accused Products into the stream of commerce by shipping Accused Products into Texas and/or shipping Accused Products knowing that those products would be shipped into Texas. For example, Qingdao Hisense Communication Co., Ltd. manufactures smartphones, including the Hisense Infinity F24,

containing Accused Products. As another example, Hisense USA Corp. is registered to do business in Texas.

25. Alternatively, the Court has personal jurisdiction over Hisense Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Hisense Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

26. Alternatively, the Court has personal jurisdiction over Hisense International, Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Hisense International Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

27. Alternatively, the Court has personal jurisdiction over Hisense Group Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Hisense Group Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

28. Alternatively, the Court has personal jurisdiction over Qingdao Hisense Communication Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Qingdao Hisense Communication Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution. The Court therefore has both general and specific personal jurisdiction over the Hisense Defendants.

29. With respect to Defendant Taiwan Semiconductor Manufacturing Company Ltd., a Taiwanese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

30. With respect to Defendant TSMC North America, venue is proper in this district under 28 U.S.C. § 1400(b) because Defendant TSMC North America has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant TSMC North America has a permanent office location at Stone Creek II, N. Mopac Expressway, Austin, Texas 78759, which is located in Travis County and within this district. Defendant TSMC North America also employs full-time personnel such as sales personnel and engineers in this district, including in Austin, Texas. Defendant TSMC North America has also committed acts of infringement in this district by commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

31. With respect to Defendant TSMC Technology, Inc., venue is proper in this district under 28 U.S.C. § 1400(b) because Defendant TSMC Technology, Inc. has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant TSMC Technology, Inc. has a permanent office location at 11921 N. Mopac Expressway, Austin, Texas 78759, which is located in Travis County and within this district. Defendant TSMC Technology, Inc. also employs full-time personnel such as engineers in this district, including in Austin, Texas. Defendant TSMC Technology, Inc. has also committed acts of infringement in this district by commercializing, distributing, testing, and servicing certain TSMC-branded devices, including but not limited to integrated circuits using TSMC 28 nanometer and smaller technology and products containing these integrated circuits, which are devices Globalfoundries accuses of infringement in this action.

32. With respect to Defendant MediaTek Inc., a Taiwanese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

33. With respect to Defendant MediaTek USA Inc., venue is proper under 28 U.S.C. § 1400(b) because Defendant MediaTek USA Inc. has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant MediaTek USA Inc. has its principal place of business at 5914 West Courtyard Drive, Austin, Texas 78730, which is located in Travis County and within this district. Defendant MediaTek USA Inc. also employs full-time personnel such as engineers in this district, including in Austin, Texas. Defendant MediaTek USA Inc. has also committed acts of infringement in this district by developing, commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

34. With respect to Defendant MStar Semiconductor, Inc., a Taiwanese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

35. With respect to Defendant Hisense Co., Ltd., a company organized under the laws of Hong Kong, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

36. With respect to Defendant Hisense Electric Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

37. With respect to Defendant Hisense International Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction .

38. With respect to Defendant Hisense Group Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

39. With respect to Defendant Qingdao Hisense Communication Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

40. With respect to Defendant Hisense Import & Export Co. Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

JOINDER

41. 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 importing into the United States and/or making, using, selling, or offering for sale within the United States, the same Accused Products, including MediaTek's system on a chip devices ("SoCs") fabricated using, for example, TSMC's 28 Nanometer or 16 Nanometer processes.

42. Common questions of fact relating to Defendants' infringement will arise in this action. For example, common questions of fact concerning TSMC's, MediaTek's, and Hisense's infringement of the '603, '418, and '986 patents will arise in this action. Additionally, common questions of fact as to the profits and revenues derived by TSMC, MediaTek, and Hisense will arise, as well as common questions of fact related to Globalfoundries' damages for the same. On information and belief, common questions of fact will also exist with regard to TSMC's, MediaTek's, and Hisense's defenses in this litigation, if any.

FACTUAL BACKGROUND

43. Globalfoundries is a U.S. company with manufacturing facilities that use and develop some of the world's most advanced semiconductor devices available today. Building on IBM's world-class semiconductor technology heritage, Globalfoundries, the acquirer of IBM's semiconductor division, has been accredited as a Category 1A Microelectronics Trusted Source

for fabrication, design, and testing of microelectronics by the U.S. Department of Defense (DOD).[2] Globalfoundries' East Fishkill, New York facility is currently the most advanced Trusted Foundry, and as such is the only facility of its kind that can provide certain advanced circuits to satisfy the DOD's requirements. As the second-largest foundry in the world and the only advanced Trusted Foundry, Globalfoundries is uniquely equipped to efficiently and quickly meet the DOD's advanced and highly classified manufacturing and production needs—and is also equipped to do the same for its private-sector clients.

44. Globalfoundries is the most advanced pure-play foundry in the U.S. and Europe, and employs thousands of people in the U.S. and worldwide. While other companies were abandoning semiconductor manufacturing in the U.S., Globalfoundries bucked this trend by investing billions of dollars on advanced technology and research in the United States. Globalfoundries originated from another leading U.S. semiconductor company, Advanced Micro Devices' semiconductor manufacturing arm in 2009 and expanded globally through acquisition and organic investment. Its largest expenditure by far is its $15 billion organic U.S. investment in its leading-edge, 300 acre facility known as Fab 8 in Malta, New York. Globalfoundries broke ground for that state of the art facility in 2009 and produces leading edge technology from that location to customers worldwide. A major U.S. acquisition took place in 2015 when Globalfoundries acquired IBM's microelectronics facilities and personnel in Burlington, Vermont and East Fishkill, New York—facilities that became Fab 9 and Fab 10, respectively. Globalfoundries acquired not just IBM's facilities and personnel, but also the fruits of IBM's decades of industry-leading investment in U.S. semiconductor fabrication capacity and

[2] "Aerospace and Defense," https://www.globalfoundries.com/market-solutions/aerospace-and-defense.

technology. Specifically, Globalfoundries obtained 16,000 IBM patents and applications (including the '418 patent asserted in this action); numerous world-class technologists; decades of experience and expertise in semiconductor development, device expertise, design, and manufacturing; and an expanded manufacturing footprint. The acquisition cemented Globalfoundries' role as a global leader in world-class semiconductor manufacturing and advanced process technologies.[3]

45. Globalfoundries' U.S. manufacturing facilities in Burlington, Vermont; East Fishkill, New York; and Malta, New York use and develop some of the most advanced process nodes and differentiated technologies (inclusive of its 12/14nm FinFET, RF and Silicon Photonics technology solutions) available today. Fab 8 is a leading fabrication facility for advanced manufacturing in the U.S., with 40,875 square meters of cleanroom space and continued expansion, and over 3,000 total employees as of June 2019. The current capital investment for the Fab 8 campus stands at more than $15 billion, making Fab 8 the largest public-private sector industrial investment in New York State's history. The significance of this investment and its importance to advanced manufacturing in the U.S. have been recognized by top government officials, including by the President of the U.S. during a 2012 visit to New York hosted in part by Globalfoundries.[4]

46. Globalfoundries' investment from the Champlain Valley through the Hudson Valley makes it the spine of the Northeast's Tech Valley. Three out of Globalfoundries' five fabs

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[3] "Globalfoundries Completes Acquisition of IBM Microelectronics Business," https://www.globalfoundries.com/news-events/press-releases/globalfoundries-completes-acquisition-of-ibm-microelectronics-business.

[4] "Globalfoundries Welcomes President Barack Obama to NY's Capital Region," https://blog.globalfoundries.com/globalfoundries-welcomes-president-barack-obama-to-nys-capital-region/.

are in the U.S., but investment does not stop at its manufacturing capacity. Globalfoundries' manufacturing footprint is supported by facilities for research, development, sales, and design enablement located near hubs of semiconductor activity, including in Santa Clara, California; Dallas, Texas; Austin, Texas; Rochester, Minnesota; Endicott, New York; and Raleigh, North Carolina. Of its 16,000 employees worldwide, approximately 7,200 are employed in the U.S.

47. The TSMC Defendants, however, have taken a different approach and have decided to simply use Globalfoundries' patented inventions without payment or permission. TSMC is a competing semiconductor foundry with manufacturing facilities located primarily in Hsinchu, Taiwan. TSMC has recently expressed an interest in building a new manufacturing facility in the U.S., but has not reported any tangible steps towards implementing its ostensible interest. In contrast, TSMC completed building the most advanced manufacturing facility of its kind in mainland China last year. By bringing advanced 16nm FinFet to China, TSMC has positioned itself to benefit further from the shift in global supply chains out of the U.S. and Europe into Greater China. TSMC develops, manufactures, imports, and sells for importation into the U.S. semiconductor devices, including to the other Defendants. But TSMC does these things on the back of Globalfoundries, using Globalfoundries' patented technologies to make its products. Indeed, although its infringing chips have flooded the U.S. market, it appears that TSMC has attempted to avoid being subject to patent infringement allegations in the U.S. through creative legal and tax structuring. As set forth below, the Accused Products incorporate, without any license from Globalfoundries, many technologies developed by Globalfoundries and protected by patents owned by Globalfoundries. TSMC's, and/or its customers', importation of infringing articles into the U.S. from Greater China and elsewhere abroad directly harms Globalfoundries

and its billions in U.S. investments in manufacturing. Globalfoundries respectfully seeks relief from this Court for Defendants' infringement.

THE ASSERTED PATENTS

48. The '603 patent is entitled "Semiconductor device with stressed fin sections," and issued on December 16, 2014, to inventors Scott Luning and Frank Scott Johnson. Globalfoundries owns the entire right, title, and interest in and to the '603 patent. A copy of the '603 patent is attached to this Complaint as Exhibit A.

49. The '418 patent is entitled "Introduction of metal impurity to change workfunction of conductive electrodes," and issued on July 6, 2010 to inventors Michael P. Chudzik, Bruce B. Doris, Supratik Guha, Rajarao Jammy, Vijay Narayanan, Yun Y. Wang, and Keith Kwong Hon Wong. Globalfoundries owns the entire right, title, and interest in and to the '418 patent. A copy of the '418 patent is attached to this Complaint as Exhibit B.

50. The '986 patent is entitled "Methods of forming finfet devices with a shared gate structure," and issued on January 20, 2015 to inventors Andy C. Wei and Dae Geun Yang. Globalfoundries owns the entire right, title, and interest in and to the '986 patent. A copy of the '986 patent is attached to this Complaint as Exhibit C.

CLAIMS FOR PATENT INFRINGEMENT

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

52. As detailed below, each element of at least one claim of each of the Asserted Patents is literally present in the Accused Products, or is literally practiced by the process through which each of the Accused Products is made. To the extent that any element is not literally present or practiced, each such element is present or practiced under the doctrine of equivalents.

COUNT I
INFRINGEMENT OF THE '603 PATENT

53. Globalfoundries incorporates by reference the allegations set forth in paragraphs 1 through 52 as though fully set forth herein.

54. On information and belief, TSMC has infringed and continues to infringe and/or has induced infringement of one or more claims of the '603 patent, including at least claim 15, literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, integrated circuits manufactured by TSMC using, for example, TSMC's 16 Nanometer technology and products containing these integrated circuits (collectively, the "'603 Accused Products"), in violation of 35 U.S.C. § 271.

55. On information and belief, TSMC has directly infringed and continues to infringe one or more claims of the '603 patent, including at least claim 15, literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering to sell in the United States, without authority or license, '603 Accused Products, in violation of 35 U.S.C. § 271(a). On information and belief, TSMC uses the '603 Accused Products through at least testing, evaluations, and demonstrations. For example, as part of its sales and customer-service activities, TSMC performs infringing demonstrations, evaluations, and testing of the '603 Accused Products at customer sites in the United States, at TSMC's sites in the United States, and at TSMC's annual Technology Symposium and related workshops. On information and belief,

TSMC imports the '603 Accused Products for the aforementioned uses. On information and belief, TSMC also imports the '603 Accused Products through its CyberShuttle and MOSIS MPW services. For example, TSMC imports the '603 Accused Products for distribution to CyberShuttle customers located in the United States and imports the '603 Accused Products to MOSIS in Marina Del Ray, California. On information and belief, TSMC sells the '603 Accused Products. For example, TSMC sells '603 Accused Products to customers in the United States through its CyberShuttle MPW service. On information and belief, TSMC offers the '603 Accused Products for sale. For example, TSMC engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

56. The '603 Accused Products meet all the limitations of at least claim 15 of the '603 patent. Specifically, claim 15 of the '603 patent claims a semiconductor device comprising: a semiconductor fin extending along a first direction and having an upper surface interrupted by gaps to form discontinuous upper surface segments, wherein each upper surface segment ends at a respective first end sidewall and a respective second end side wall, and wherein each gap is bounded in the first direction by a selected first end sidewall and an adjacent second end sidewall; and a stress/strain inducing material at least partially filling the gaps and in contact with each second end sidewall and each first end sidewall.

57. The '603 Accused Products are semiconductor devices. Each is an integrated circuit fabricated using, for example, TSMC's 16 Nanometer semiconductor process.

58. The '603 Accused Products have a semiconductor fin extending along a first direction and having an upper surface interrupted by gaps to form discontinuous upper surface segments, wherein each upper surface segment ends at a respective first end sidewall and a respective second end side wall, and wherein each gap is bounded in the first direction by a selected

first end sidewall and an adjacent second end sidewall. Each is an integrated circuit fabricated using, for example, TSMC's 16 Nanometer semiconductor process such that the circuit includes fins extending along a first direction and having an upper surface interrupted by gaps to form discontinuous upper surface segments, wherein each upper surface segment ends at a respective first end sidewall and a respective second end side wall, and wherein each gap is bounded in the first direction by a selected first end sidewall and an adjacent second end sidewall.

59. The '603 Accused Products have a stress/strain inducing material at least partially filling the gaps and in contact with each second end sidewall and each first end sidewall. Each is an integrated circuit fabricated using, for example, TSMC's 16 Nanometer semiconductor process such that, for example, a SiGe epitaxial layer for embedded strain technology at least partially fills the gaps and is in contact with each second end sidewall and each first end sidewall.

60. On information and belief, TSMC actively, knowingly, and intentionally induces infringement of one or more claims of the '603 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, '603 Accused Products or products containing the infringing semiconductor components of the '603 Accused Products. For example, TSMC representatives travel to customer sites in the United States for sales and support activity that includes working with customers to facilitate these customers' infringing testing, marketing, importation, and sales activity. On information and belief, TSMC supplies customers with '603 Accused Products. Certain TSMC semiconductor components are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States. Additionally, the majority of TSMC's net revenue in 2018 was generated from contracts with customers in the United States. TSMC Annual

Report 2018 (I) at 61. On information and belief, TSMC maintains internal projections and analyses of potential markets for specific end-user products, including for certain of the '603 Accused Products. TSMC additionally hosts an Open Innovation Platform Forum in the United States with the goal of facilitating partnerships and collaborations, in addition to an annual symposium and workshops across the United States. *Case Study: Open Innovation Platform*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.tsmc.com/csr/en/update/innovationAndService/caseStudy/1/index.html (last visited July 17, 2019); *Events*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.tsmc.com/english/newsEvents/events.htm (last visited July 17, 2019). TSMC leverages these events to publicize technological advances and design updates to potential customers and partners in the United States and provide training opportunities to facilitate familiarity with TSMC products, including '603 Accused Products.

61. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint and other Complaints involving the Asserted Patents, the existence of the '603 patent and identified at least some of TSMC's and others' activities that infringe the '603 patent. Thus, based on this disclosure, TSMC had knowledge of the '603 patent and that its activities infringe the '603 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, TSMC has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the '603 Accused Products are infringing the '603 patent at least because TSMC has known that it is infringing the '603 patent.

62. On information and belief, since the filing of this Complaint, TSMC has continued to use, sell, and/or offer for sale the '603 Accused Products in the United States, and/or import the '603 Accused Products into the United States despite its knowledge of the '603 patent and its

infringement of that patent, and has continued to induce infringement of the '603 patent. TSMC's on-going infringement is willful.

63. Other entities directly infringe the '603 patent by making, using, offering to sell, and/or selling at least some '603 Accused Products in the United States and by importing '603 Accused Products into the United States. For example, TSMC's customer MediaTek has infringed and continues to infringe one or more claims of the '603 patent, including at least claim 1, literally or under the doctrine of equivalents, at least under 35 U.S.C. § 271(a) by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, semiconductor devices fabricated using, for example, TSMC's 16 Nanometer process, such as MediaTek's Helio P22 SoCs (the "MediaTek '603 Accused Products"). On information and belief, MediaTek imports the MediaTek '603 Accused Products into the United States for sales and distribution to customers located in the United States, including sales and distribution through MediaTek USA Inc. On information and belief, MediaTek sells MediaTek '603 Accused Products in the United States. For example, MediaTek hires permanent sales personnel located throughout the United States. In particular, MediaTek has at least seven offices throughout the United States. On information and belief, each of these offices engages in sales activities. On information and belief, these sales activities include direct sales by MediaTek to original equipment manufacturers, including original equipment manufacturers based in the United States. On information and belief, MediaTek offers the MediaTek '603 Accused Products for sale in the United States. For example, MediaTek engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

64. On information and belief, MediaTek actively, knowingly, and intentionally induces infringement of one or more claims of the '603 patent under 35 U.S.C. § 271(b) by actively

encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, MediaTek '603 Accused Products or products containing the infringing semiconductor components of the MediaTek '603 Accused Products. For example, MediaTek actively promotes the sale, use, and importation of the MediaTek '603 Accused Products in marketing materials, technical specifications, data sheets, white papers, product briefs, demonstrative videos, web pages on its website (www.mediatek.com), press releases, development platforms, online forums, and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the MediaTek '603 Accused Products. On information and belief, MediaTek supplies customers with MediaTek '603 Accused Products so that they may be used, sold, or offered for sale by those customers. MediaTek also seeks and obtains certifications from United States governmental organizations for MediaTek '603 Accused Products. For example, MediaTek's Helio P60 has been granted Federal Information Processing Standard ("FIPS") certification by the National Institute of Standards and Technology of the United States of America. As another example, certain MediaTek '603 Accused Products are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States.

65. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint, the existence of the '603 patent and identified at least some of MediaTek's and others' activities that infringe the '603 patent. Thus, based on this disclosure, MediaTek had knowledge of the '603 patent and that its activities infringe the '603 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, MediaTek has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the

MediaTek '603 Accused Products are infringing the '603 patent at least because MediaTek has known that it is infringing the '603 patent.

66. MediaTek's customers, for example BLU Products, Inc., have also infringed and continue to infringe one or more claims of the '603 patent, including at least claim 15, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(a) by importing into the United States and/or making, using, selling, and/or offering for sale in the United States, without any authority or license, smartphones, for example the VIVO XL4, that include MediaTek '603 Accused Products. These products are offered for sale at various retail locations throughout the United States.

67. Globalfoundries has suffered and continues to suffer damages as a result of Defendants' infringement of the '603 patent.

68. Defendants' continuing acts of infringement are a basis of consumer demand for the '603 Accused Products. Defendants' continuing acts of infringement are therefore irreparably harming and causing damage to Globalfoundries, for which Globalfoundries has no adequate remedy at law, and will continue to suffer such irreparable injury unless Defendants' continuing acts of infringement are enjoined by the Court. The hardships that an injunction would impose are less than those faced by Globalfoundries should an injunction not issue. The public interest would be served by issuance of an injunction.

COUNT II
INFRINGEMENT OF THE '418 PATENT

69. Globalfoundries incorporates by reference the allegations set forth in paragraphs 1 through 68 as though fully set forth herein.

70. On information and belief, TSMC has infringed and continues to infringe and/or has induced infringement of one or more claims of the '418 patent, including at least claim 27,

literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, integrated circuits manufactured by TSMC using, for example, TSMC's 28 Nanometer or 16 Nanometer technology and products containing these integrated circuits (collectively, the "'418 Accused Products"), in violation of 35 U.S.C. § 271.

71. On information and belief, TSMC has directly infringed and continues to infringe one or more claims of the '418 patent, including at least claim 27, literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering to sell in the United States, without authority or license, '418 Accused Products, in violation of 35 U.S.C. § 271(a) and (g). On information and belief, TSMC uses the '418 Accused Products through at least testing, evaluations, and demonstrations. For example, as part of its sales and customer-service activities TSMC performs infringing demonstrations, evaluations, and testing of the '418 Accused Products at customer sites in the United States, at TSMC's sites in the United States, and at TSMC's annual Technology Symposium and related workshops. On information and belief, TSMC imports the '418 Accused Products for the aforementioned uses. On information and belief, TSMC also imports the '418 Accused Products through its CyberShuttle and MOSIS MPW services. For example, TSMC imports the '418 Accused Products for distribution to CyberShuttle customers located in the United States and imports the '418 Accused Products to MOSIS in Marina Del Ray, California. On information and belief, TSMC sells the '418 Accused Products. For example, TSMC sells '418 Accused Products to customers in the United States through its CyberShuttle MPW service. On information and belief, TSMC offers the Accused Products for sale. For example, TSMC engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

72. The ’418 Accused Products are manufactured by a process including all of the limitations of at least claim 27 of the ’418 patent. Specifically, claim 27 of the ’418 patent claims a method of changing workfunction of a conductive stack comprising: providing a material stack that comprises a dielectric having a dielectric constant of greater than silicon dioxide, a metal-containing material located above said dielectric, and a conductive electrode located directly on an upper surface of said metal-containing material; and introducing at least one workfunction altering metal impurity into said metal-containing material wherein said at least one workfunction altering metal impurity is introduced during forming of a metal impurity containing layer or after formation of a layer containing said metal-containing material.

73. The ’418 Accused Products are made by a method of changing workfunction of a conductive stack. TSMC’s manufacture of each of the ’418 Accused Products involves changing workfunction for at least some conductive stacks in the product.

74. During the manufacture of the ’418 Accused Products, a material stack is provided that comprises a dielectric having a dielectric constant of greater than silicon dioxide, a metal-containing material including located above said dielectric, and a conductive electrode located directly on an upper surface of said metal-containing material. TSMC’s manufacture of at least one p-type FET in each of the ’418 Accused Products includes creating a material stack that comprises HfO (a dielectric having a dielectric constant of greater than silicon dioxide), interfacial TiN (a metal-containing material located above said dielectric), and TiN WF (a conductive electrode located directly on an upper surface of said metal-containing material).

75. During the manufacture of the ’418 Accused Products, at least one workfunction altering metal impurity is introduced into said metal-containing material wherein said at least one workfunction altering metal impurity is introduced during forming of a metal impurity containing

layer or after formation of a layer containing said metal-containing material. TSMC's manufacture of at least one p-type FET in each of the '418 Accused Products includes introducing TiAlCOClF fill (at least one workfunction altering metal impurity) into said metal-containing material wherein said at least one workfunction altering metal impurity is introduced after formation of a layer containing said metal-containing material.

76. On information and belief, the '418 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

77. On information and belief, TSMC actively, knowingly, and intentionally induces infringement of one or more claims of the '418 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, '418 Accused Products or products containing the infringing semiconductor components of the '418 Accused Products. For example, TSMC representatives travel to customer sites in the United States for sales and support activity that includes working with customers to facilitate these customers' infringing testing, marketing, importation, and sales activity. On information and belief, TSMC supplies customers with '418 Accused Products. Certain TSMC semiconductor components are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States. Additionally, the majority of TSMC's net revenue in 2018 was generated from contracts with customers in the United States. TSMC Annual Report 2018 (I) at 61. On information and belief, TSMC maintains internal projections and analyses of potential markets for specific end-user products, including for certain of the '418 Accused Products. TSMC additionally hosts an Open Innovation Platform Forum in the United

States with the goal of facilitating partnerships and collaborations, in addition to an annual symposium and workshops across the United States. *Case Study: Open Innovation Platform*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.TSMC.com/csr/en/update/innovationAndService/caseStudy/1/index.html (last visited July 17, 2019); *Events*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.TSMC.com/english/newsEvents/events.htm (last visited July 17, 2019). TSMC leverages these events to publicize technological advances and design updates to potential customers and partners in the United States and provide training opportunities to facilitate familiarity with TSMC products, including '418 Accused Products.

78. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint and other Complaints involving the Asserted Patents, the existence of the '418 patent and identified at least some of TSMC's and others' activities that infringe the '418 patent. Thus, based on this disclosure, TSMC had knowledge of the '418 patent and that its activities infringe the '418 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, TSMC has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the '418 Accused Products are infringing the '418 patent at least because TSMC has known that it is infringing the '418 patent.

79. On information and belief, since the filing of this Complaint, TSMC has continued to use, sell, and/or offer for sale the '418 Accused Products in the United States, and/or import the '418 Accused Products into the United States despite its knowledge of the '418 patent and its infringement of that patent, and has continued to induce infringement of the '418 patent. TSMC's on-going infringement is willful.

80. Other entities directly infringe the '418 patent by using, offering to sell, and/or selling at least some '418 Accused Products in the United States and by importing '418 Accused Products into the United States. For example, TSMC's customer MediaTek has infringed and continues to infringe one or more claims of the '418 patent, including at least claim 27, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(a) and (g) by importing into the United States and/or using, selling, and/or offering for sale in the United States, without any authority or license, semiconductor devices fabricated using, for example, TSMC's 28 Nanometer or 16 Nanometer process, such as MediaTek's 6737, 1602, and Helio P22 SoCs, (the "MediaTek '418 Accused Products"). On information and belief, MediaTek imports MediaTek '418 Accused Products into the United States for sales and distribution to customers located in the United States, including sales and distribution through MediaTek USA Inc. On information and belief, MediaTek sells MediaTek '418 Accused Products in the United States. For example, MediaTek hires permanent sales personnel located throughout the United States. In particular, MediaTek has at least seven offices throughout the United States. On information and belief, each of these offices engages in sales activities. On information and belief, these sales activities include direct sales by MediaTek to original equipment manufacturers, including original equipment manufacturers based in the United States. On information and belief, MediaTek offers the MediaTek '418 Accused Products for sale in the United States. For example, MediaTek engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

81. On information and belief, MediaTek actively, knowingly, and intentionally induces infringement of one or more claims of the '418 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, MediaTek '418 Accused Products or products containing the infringing

semiconductor components of the MediaTek '418 Accused Products. For example, MediaTek actively promotes the sale, use, and importation of the MediaTek '418 Accused Products in marketing materials, technical specifications, data sheets, white papers, product briefs, demonstrative videos, web pages on its website (www.mediatek.com), press releases, development platforms, online forums, and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the MediaTek '418 Accused Products. On information and belief, MediaTek supplies customers with MediaTek '418 Accused Products so that they may be used, sold, or offered for sale by those customers. MediaTek also seeks and obtains certifications from United States governmental organizations for MediaTek '418 Accused Products. For example, MediaTek's Helio P60 has been granted Federal Information Processing Standard ("FIPS") certification by the National Institute of Standards and Technology of the United States of America. As another example, certain MediaTek '418 Accused Products are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States.

82. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint, the existence of the '418 patent and identified at least some of MediaTek's and others' activities that infringe the '418 patent. Thus, based on this disclosure, MediaTek had knowledge of the '418 patent and that its activities infringe the '418 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, MediaTek has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the MediaTek '418 Accused Products are infringing the '418 patent at least because MediaTek has known that it is infringing the '418 patent.

83. MediaTek's customers, for example, Hisense, TCL Corp. (including its affiliates), and BLU Products, Inc. have also infringed and continue to infringe one or more claims of the '418 patent, including at least claim 27, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(a) and (g) by importing into the United States and/or using, selling, and/or offering for sale in the United States, without any authority or license, televisions and smartphones, for example the Hisense Infinity F24, TCL 50DC600, and BLU VIVO XL4, that include MediaTek '418 Accused Products. These products are offered for sale at various retail locations throughout the United States.

84. On information and belief, Hisense, through one or more affiliates or subsidiaries, imports, sells, and/or offers to sell at least televisions and smartphones, for example the Hisense Infinity F24, and/or actively, knowingly, and intentionally induces infringement of one or more claims of the '418 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or use, sell, and/or offer to sell in the United States, MediaTek '418 Accused Products or products containing the infringing semiconductor components of the MediaTek '418 Accused Products. For example, Hisense actively, knowingly, and intentionally induces distributors such as Breed Products, Inc. to import into the United States, and/or sell, and/or offer to sell in the United States at least smartphones such as the Hisense Infinity F24, containing MediaTek '418 Accused Products.

85. Globalfoundries has suffered and continues to suffer damages as a result of Defendants' infringement of the '418 patent.

86. Defendants' continuing acts of infringement are a basis of consumer demand for the '418 Accused Products. Defendants' continuing acts of infringement are therefore irreparably harming and causing damage to Globalfoundries, for which Globalfoundries has no adequate

remedy at law, and will continue to suffer such irreparable injury unless Defendants' continuing acts of infringement are enjoined by the Court. The hardships that an injunction would impose are less than those faced by Globalfoundries should an injunction not issue. The public interest would be served by issuance of an injunction.

COUNT III
INFRINGEMENT OF THE '986 PATENT

87. Globalfoundries incorporates by reference the allegations set forth in paragraphs 1 through 86 as though fully set forth herein.

88. On information and belief, TSMC has infringed and continues to infringe and/or has induced infringement of one or more claims of the '986 patent, including at least claim 1, literally or under the doctrine of equivalents, by importing into the United States and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, integrated circuits manufactured by TSMC using, for example, TSMC's 16 Nanometer technology and products containing these integrated circuits (collectively, the "'986 Accused Products"), in violation of 35 U.S.C. § 271.

89. On information and belief, TSMC has directly infringed and continues to infringe at least claim 1 of the '986 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering to sell in the United States, without authority or license, '986 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, TSMC uses the '986 Accused Products through at least testing, evaluations, and demonstrations. For example, as part of its sales and customer-service activities TSMC performs infringing demonstrations, evaluations, and testing of the '986 Accused Products at customer sites in the United States, at TSMC's sites in the United States, and at TSMC's annual Technology Symposium and related workshops. On information and belief, TSMC imports the '986 Accused

Products for the aforementioned uses. On information and belief, TSMC also imports the '986 Accused Products through its CyberShuttle and MOSIS MPW services. For example, TSMC imports the '986 Accused Products for distribution to CyberShuttle customers located in the United States and imports the '986 Accused Products to MOSIS in Marina Del Ray, California. On information and belief, TSMC sells the '986 Accused Products. For example, TSMC sells '986 Accused Products to customers in the United States through its CyberShuttle MPW service. On information and belief, TSMC offers the Accused Products for sale. For example, TSMC engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

90. The '986 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '986 patent. Specifically, claim 1 of the '986 patent claims a method, comprising: forming a shared sacrificial gate structure above at least one first fin for a first type of FinFET device and at least one second fin for a second type of FinFET device, said second type being opposite to said first type; and forming a first sidewall spacer around an entire perimeter of said shared sacrificial gate structure in a single deposition process operation and a single etching process operation.

91. The '986 Accused Products are made by a method. Each is an integrated circuit fabricated using, for example, TSMC's 16 Nanometer semiconductor process.

92. During the manufacture of the '986 Accused Products, a shared sacrificial gate structure is formed above at least one first fin for a first type of FinFET device and at least one second fin for a second type of FinFET device, said second type being opposite to said first type. TSMC's manufacture of the '986 Accused Products, in at least some instances, forms a gate above

at least one first NMOS fin for an N-type FinFET device and at least one second PMOS fin for a P-type FinFET device, using a gate-last process.

93. During the manufacture of the '986 Accused Products, a first sidewall spacer is formed around an entire perimeter of said shared sacrificial gate structure in a single deposition process operation and a single etching process operation. TSMC's manufacture of the '986 Accused Products, in at least some instances, forms a sidewall spacer around an entire perimeter of said shared sacrificial gate structure, indicating single deposition and etch processes.

94. On information and belief, the '986 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

95. On information and belief, TSMC actively, knowingly, and intentionally induces infringement of one or more claims of the '986 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or use, sell, and/or offer to sell in the United States, '986 Accused Products or products containing the infringing semiconductor components of the '986 Accused Products. For example, TSMC representatives travel to customer sites in the United States for sales and support activity that includes working with customers to facilitate these customers' infringing testing, marketing, importation, and sales activity. On information and belief, TSMC supplies customers with '986 Accused Products. Certain TSMC semiconductor components are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States. Additionally, the majority of TSMC's net revenue in 2018 was generated from contracts with customers in the United States. TSMC Annual Report 2018 (I) at 61. On information and belief, TSMC maintains internal projections and

analyses of potential markets for specific end-user products, including for certain of the '986 Accused Products. TSMC additionally hosts an Open Innovation Platform Forum in the United States with the goal of facilitating partnerships and collaborations, in addition to an annual symposium and workshops across the United States. *Case Study: Open Innovation Platform*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.TSMC.com/csr/en/update/innovationAndService/caseStudy/1/index.html (last visited July 17, 2019); *Events*, Taiwan Semiconductor Manufacturing Company Ltd. Website, https://www.TSMC.com/english/newsEvents/events.htm (last visited July 17, 2019). TSMC leverages these events to publicize technological advances and design updates to potential customers and partners in the United States and provide training opportunities to facilitate familiarity with TSMC products, including '986 Accused Products.

96. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint and other Complaints involving the Asserted Patents, the existence of the '986 patent and identified at least some of TSMC's and others' activities that infringe the '986 patent. Thus, based on this disclosure, TSMC had knowledge of the '986 patent and that its activities infringe the '986 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, TSMC has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the '986 Accused Products are infringing the '986 patent at least because TSMC has known that it is infringing the '986 patent.

97. On information and belief, since the filing of this Complaint, TSMC has continued to use, sell, and/or offer for sale the '986 Accused Products in the United States, and/or import the '986 Accused Products into the United States despite its knowledge of the '986 patent and its

infringement of that patent, and has continued to induce infringement of the '986 patent. TSMC's on-going infringement is willful.

98. Other entities directly infringe the '986 patent by making, using, offering to sell, and/or selling at least some '986 Accused Products in the United States and by importing '986 Accused Products into the United States. For example, TSMC's customer MediaTek has infringed and continues to infringe one or more claims of the '986 patent, including claim 1, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(g) by importing into the United States and/or using, selling, and/or offering for sale in the United States, without any authority or license, semiconductor devices fabricated using, for example, TSMC's 16 Nanometer process, such as MediaTek's Helio P22 SoCs (the "MediaTek '986 Accused Products"). On information and belief, MediaTek imports MediaTek '986 Accused Products into the United States for sales and distribution to customers located in the United States, including sales and distribution through MediaTek USA Inc. On information and belief, MediaTek sells MediaTek '986 Accused Products in the United States. For example, MediaTek hires permanent sales personnel located throughout the United States. In particular, MediaTek has at least seven offices throughout the United States. On information and belief, each of these offices engages in sales activities. On information and belief, these sales activities include direct sales by MediaTek to original equipment manufacturers, including original equipment manufacturers based in the United States. On information and belief, MediaTek offers the MediaTek '986 Accused Products for sale in the United States. For example, MediaTek engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

99. On information and belief, MediaTek actively, knowingly, and intentionally induces infringement of one or more claims of the '986 patent under 35 U.S.C. § 271(b) by actively

encouraging others to import into the United States, and/or use, sell, and/or offer to sell in the United States, MediaTek '986 Accused Products or products containing the infringing semiconductor components of the MediaTek '986 Accused Products. For example, MediaTek actively promotes the sale, use, and importation of the MediaTek '986 Accused Products in marketing materials, technical specifications, data sheets, white papers, product briefs, demonstrative videos, web pages on its website (www.mediatek.com), press releases, development platforms, online forums, and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the MediaTek '986 Accused Products. On information and belief, MediaTek supplies customers with MediaTek '986 Accused Products so that they may be used, sold, or offered for sale by those customers. MediaTek also seeks and obtains certifications from United States governmental organizations for MediaTek '986 Accused Products. For example, MediaTek's Helio P60 has been granted Federal Information Processing Standard ("FIPS") certification by the National Institute of Standards and Technology of the United States of America. As another example, certain MediaTek '986 Accused Products are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States.

100. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint, the existence of the '986 patent and identified at least some of MediaTek's and others' activities that infringe the '986 patent. Thus, based on this disclosure, MediaTek had knowledge of the '986 patent and that its activities infringe the '986 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, MediaTek has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the

MediaTek '986 Accused Products are infringing the '986 patent at least because MediaTek has known that it is infringing the '986 patent.

101. MediaTek's customers, for example, BLU Products, Inc., have also infringed and continue to infringe one or more claims of the '986 patent, including claim 1, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(g) by importing into the United States and/or using, selling, and/or offering for sale in the United States, without any authority or license, smartphones, for example the VIVO XL4, that include MediaTek '986 Accused Products. These products are offered for sale at various retail locations throughout the United States.

102. Globalfoundries has suffered and continues to suffer damages as a result of Defendants' infringement of the '986 patent.

103. Defendants' continuing acts of infringement are a basis of consumer demand for the '986 Accused Products. Defendants' continuing acts of infringement are therefore irreparably harming and causing damage to Globalfoundries, for which Globalfoundries has no adequate remedy at law, and will continue to suffer such irreparable injury unless Defendants' continuing acts of infringement are enjoined by the Court. The hardships that an injunction would impose are less than those faced by Globalfoundries should an injunction not issue. The public interest would be served by issuance of an injunction.

JURY DEMAND

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

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully prays for relief as follows:

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

(b) An Order permanently enjoining Defendants and their respective officers, agents, employees, and those acting in privity or in active concert or participation with them, from further infringement of the Asserted Patents;

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

(d) Pre-judgment interest;

(e) Post-judgment interest;

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

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

(h) Costs and expenses in this action; and

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

Dated: August 26, 2019

Respectfully submitted,

/s/ Raymond W. Mort, III

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