



September 12, 2022

VIA EDIS

The Honorable Lisa R. Barton
Secretary
U.S. International Trade Commission
500 E Street, S.W., Room 112
Washington, D.C. 20436

Re: Certain Semiconductor Devices, Mobile Devices Containing The Same, and Components Thereof, Inv. No. 337-TA-_____

Dear Secretary Barton:

In accordance with the Commission's Temporary Change to Filing Procedures dated March 16, 2020, Complainant Daedalus Prime LLC ("Daedalus" or "Complainant") submits the following documents in support of their request that the Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, concerning certain semiconductor devices, components thereof, and consumer products containing the same:

1. One (1) electronic copy of Complainant's verified Complaint, pursuant to Commission Rule 210.8(a)(1)(i) and 210.12(a).
2. One (1) electronic copy of the public exhibits to the Complaint, pursuant to Commission Rules 210.8(a)(1)(i) and 201.12(a)(9)¹, including:
 - a. One (1) electronic copy of the certified versions of U.S. Patent No. 9,831,306 ("the '306 Patent"), U.S. Patent No. 10,319,812 ("the '812 Patent"), U.S. Patent No. 10,700,178 ("the '178 Patent"), and U.S. Patent No. 11,251,281 ("the '281 Patent"), listed as Exhibits 1 through 4 to the Complaint, pursuant to Commission Rule 210.12(a)(9)(i), and
 - b. One (1) electronic copy of certified assignment records for the Asserted Patents, listed as Exhibits 5 through 8 to the Complaint, pursuant to Commission Rule 210.12(a)(9)(ii).
3. One (1) electronic copy of confidential Exhibits 34C, 39C, 40C, 41C, 42C, 50C, 51C, 93C, and 99C to the Complaint, pursuant to Commission Rules 201.6(c) and 210.8(a)(1)(ii).

¹ Due to the Commission's restrictions on in-person filings in response to COVID-19, Complainant's counsel has retained and will make available upon request samples of the covered products.

4. One (1) electronic copy of the certified prosecution histories for each of the Asserted Patents, included as Appendices A, C, E, and G to the Complaint, pursuant to Commission Rule 210.12(c)(1).
5. One (1) electronic copy of each of the patents and applicable pages of each technical reference identified in the prosecution histories of the Asserted Patents as Appendices B, D, F, and H to the Complaint, pursuant to Commission Rule 210.12(c)(2).
6. A letter certification requesting confidential treatment for the information contained in confidential Exhibits 34C, 39C, 40C, 41C, 42C, 50C, 51C, 93C, and 99C to the Complaint, pursuant to Commission Rules 201.6 and 210.5.
7. A Statement on the Public Interest regarding the remedial orders sought by the Complainants in the Complaint, pursuant to Commission Rule 210.8(b).

Please contact me with any questions regarding this submission. Thank you for your attention to this matter.

Very truly yours,

/s/ Michael T. Renaud

Michael T. Renaud

Enclosures



September 12, 2022

VIA EDIS

The Honorable Lisa R. Barton
Secretary
U.S. International Trade Commission
500 E Street, S.W., Room 112
Washington, D.C. 20436

**Re: Certain Semiconductor Devices, Mobile Devices Containing The Same, and
Components Thereof, Inv. No. 337-TA-_____**

Dear Secretary Barton:

Pursuant to Commission Rules 201.6 and 210.5, Complainant Daedalus Group LLC ("Daedalus" or "Complainant") respectfully requests confidential treatment of certain confidential business information contained in Confidential Exhibits 34C, 39C, 40C, 41C, 42C, 50C, 51C, 93C, and 99C of the Complaint filed contemporaneously with this letter.

The information contained in the Confidential Exhibits contain confidential data regarding (a) Daedalus' financial investments and expenditures, and (b) Daedalus' business operations including confidential license information. The information in the Confidential Exhibits qualifies as confidential information pursuant to 19 C.F.R. § 201.6 because:

1. it is not available to the public;
2. the unauthorized disclosure of such information could cause substantial harm to Daedalus' competitive position; and
3. its disclosure could impair the Commission's ability to obtain information necessary to perform its statutory function.

Non-confidential versions of these exhibits with the confidential information redacted are being filed concurrently.

Please contact me with any questions regarding this submission. Thank you for your attention to this matter.

Very truly yours,

/s/ Michael T. Renaud

Michael T. Renaud

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON DC**

IN THE MATTER OF

CERTAIN SEMICONDUCTOR DEVICES,
MOBILE DEVICES CONTAINING THE
SAME, AND COMPONENTS THEREOF

Investigation No. 337-TA-_____

**COMPLAINANT DAEDALUS PRIME LLC'S
STATEMENT ON THE PUBLIC INTEREST**

Complainant Daedalus Prime LLC (“Daedalus” or “Complainant”) hereby submits this Statement Regarding the Public Interest. 19 C.F.R. § 210.8(b). As discussed more fully below, the issuance of the relief requested in this Investigation, including a limited exclusion order and cease and desist orders, will have no meaningful impact on the public health, safety, or welfare conditions in the United States, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, or United States consumers. Daedalus is seeking remedies against the following proposed Respondents: Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung”) and Taiwan Semiconductor Manufacturing Company Limited and TSMC North America (“TSMC”) (collectively “Respondents”).

No compelling public interest would prevent the Commission’s issuance of the requested remedial orders. The scope of the requested remedial orders is limited to certain semiconductor devices provided by proposed Respondents, smartphones, tablets, and smartwatches containing the same, and components thereof. The affected products consist of smartphones, tablets, and smartwatches that are used for consumer entertainment, and the semiconductor devices and components used in those devices. The enumerated categories of accused products serve no public health, safety, or welfare purpose. The scope of the requested remedial orders is limited to (i) relevant TSMC and Samsung semiconductor devices and components thereof incorporated into

Samsung products outside the United States and subsequently imported into the United States; (ii) relevant TSMC semiconductor devices and components thereof (which are only imported in small volume into the United States); and (iii) relevant Samsung semiconductor devices and components thereof manufactured at Samsung front-end-of-line (“FEOL”) facilities outside of the United States. Thus, the requested remedial orders specifically exclude any Samsung semiconductor devices and components thereof manufactured at Samsung FEOL facilities in the United States, including at Samsung Austin Semiconductor facilities in the United States. Moreover, the downstream products of non-party technology companies, such as Apple, LG, Fitbit, Google, etc., comprise a significant portion of the smartphone, tablet, and smartwatch industries. Furthermore, Complainant’s licensee, Intel Corporation (“Intel”), who is an industry leader in integrated circuits and semiconductor devices, is authorized to practice the Asserted Patents and has substantial domestic manufacturing facilities that can meet the demand for the semiconductors of the named Respondents that would be subject to the requested remedial orders.

In addition, the remedial orders only seek exclusion of articles made from or incorporating foreign-fabricated finished wafers; thus, e.g., the remedial orders would not cover products made from finished wafers fabricated at Samsung Austin Semiconductor’s facility in Austin, Texas.

As other suppliers of mobile devices and semiconductor devices exist, there will be no shortage of products to replace the infringing components of the Accused Products, no disruption to any of the discrete portions of the relevant markets, and no shortage of like or directly competitive products in the United States. The uses of the subject articles, as well as the ample replacement and alternatives to the products, illustrate that the requested remedy does not implicate any public health, safety, or welfare concern. To the extent demand for TSMC semiconductor devices used in the Accused Products is reduced, surplus bandwidth at TSMC could be used to

manufacture semiconductor devices used in applications with significant impact on the public interest. As the requested remedial orders will have no significant impact on the public interest, the interest of preserving the resources of both the parties and the Commission would be best served by not delegating public interest fact-finding to the Administrative Law Judge.

I. The Requested Remedial Orders Will Serve the Public Interest

Granting the requested remedial orders would serve the public interest. The public interest in protecting intellectual property rights is very strong. In *re* Certain Baseband Processor Chips and Chipsets, Transmitter and Receiver (Radio) Chips, Power Control Chips, and Products Containing the Same, Including Cellular Telephone Handsets, Inv. No. 337-TA-543, Comm’n Op. (Pub. Version) at 150 (June 19, 2007). Further, “preservation of infringing activities of a respondent is not a public interest concern.” *In re Certain Magnetic Tape Cartridges and Components Thereof*, Inv. No. 337-TA-1058, Comm’n Op. (Pub. Version) at 68-69 (Apr. 9, 2019). The Commission has found that the public interest supports denial of an exclusion order only when articles critical to U.S. health and welfare would be unavailable in the U.S. market were an exclusion order granted. The Accused Products are not such articles.

II. The Accused Products Serve No Public Health, Safety, or Welfare Purpose

There are three tiers of articles potentially subject to the remedial measures requested in this Investigation: (1) system-on-chips (“SoCs”) supplied by Samsung (“Samsung Articles”); (2) SoCs supplied by TSMC (“TSMC Articles”); and (3) Samsung smartphones, tablets, and smartwatches that incorporate Samsung or TSMC Articles (“Accused Products”). The subject articles are not necessary for any public health, safety, or welfare purpose; and the relief requested would not adversely affect competitive conditions in the United States.

The issuance of the requested remedial orders would not adversely affect the public health, safety, or welfare in the United States. There are no health, safety, or welfare features that are

unique to Respondents' infringing products. The Accused Products are created for entertainment and convenience. Therefore, this Investigation does not present any compelling instances in which the public interest would weigh against issuing the requested remedies.

III. The Relief Requested Will Have No Significant Negative Impact on U.S. Consumers

The requested remedial orders would have no long-term impact on consumers or competitive conditions in the United States. There will be no disruption in the mobile device markets in which the Accused Products compete. Daedalus's licensee, Intel, as well as numerous other producers of SoCs, smartphones, tablets, and watches (such as, e.g., Apple, LG, Fitbit, Garmin, and Google), will be able to meet domestic market demand. Any change in pricing in the market for mobile devices is expected to be minimal and would be dispersed over large numbers of consumers without any material impact. *In re Certain Lens-Fitted Film Packages*, Inv. No. 337-TA-406, Comm'n Op. (Pub. Version) at 18 (June 28, 1999) ("The fact that some retailers and consumers may have to pay a higher price for LFFPs does not justify a determination that the public interest in protecting intellectual property rights is in any way outweighed.").

Complainant's requested relief would not adversely affect competitive conditions in the U.S. economy. In assessing competitive conditions, "the appropriate standard is not that no remedy should issue if every consumer cannot obtain the exact device desired that was found to infringe the patents at issue. Rather, the impact is assessed in the aggregate and consideration is given to whether there are reasonable substitutes for the devices subject to the exclusion order in terms of features, price points, and other pertinent factors." *In re Certain Elec. Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Comm'n Op. (Pub. Version) at 120 (Sept. 6, 2013).

With regard to smartphones, non-accused smartphones made by, e.g., Apple and others accounted for 78% of U.S. market share in Q4 2021.¹ With regard to tablets, non-accused tablets made by, e.g., Apple and others accounted for 80.6% of U.S. market share in April 2022.² With regard to smartwatches, non-accused smartwatches made by, e.g., Apple and others accounted for 84% of U.S. market share in 2021.³ Thus, the requested remedial orders would have a *de minimis* impact on the smartphone, tablet, and smartwatch markets.

Regarding semiconductor devices, as noted above and in Daedalus’s complaint, the remedial orders only seek exclusion of articles made from or incorporating foreign-fabricated finished wafers; thus, e.g., products made from finished wafers fabricated at Samsung Austin Semiconductor’s facility in Austin, Texas could be a source for replacement of the excluded semiconductor devices that would otherwise be fabricated overseas.

The limited effect on the relevant markets will not have a meaningful impact on U.S. consumers. The non-accused market participants—who have a collective majority share in each product category—will continue to supply consumers with competing products. Therefore, there will be no adverse effect on consumers as a result of the remedial measures.

IV. Conclusion

This Investigation does not present any special issues of public interest that would affect the Commission’s issuance of the requested limited exclusion orders and cease-and-desist orders, or that would necessitate discovery and trial on this issue by the ALJ. Accordingly, the Commission should not direct the ALJ to take unnecessary evidence on the public interest.

¹ “U.S. Smartphone Market Share: By Quarter,” published February 14, 2022, <https://www.counterpointresearch.com/us-market-smartphone-share/>.

² “Tablet Vendor Market Share United States Of America,” <https://gs.statcounter.com/vendor-market-share/tablet/united-states-of-america>.

³ “Apple Watch Leads U.S. Market,” published October 15, 2021, <https://www.statista.com/chart/25982/smartwatch-market-by-brand-us/>.

Dated: September 12, 2022

Respectfully submitted,



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**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON DC**

IN THE MATTER OF

CERTAIN SEMICONDUCTOR DEVICES,
MOBILE DEVICES CONTAINING THE
SAME, AND COMPONENTS THEREOF

Investigation No. 337-TA-_____

**VERIFIED COMPLAINT UNDER SECTION 337
OF THE TARIFF ACT OF 1930, AS AMENDED**

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EXHIBIT LIST

Exhibit No.	Description	Designation
1	Certified Copy of U.S. Patent No. 9,831,306	Public
2	Certified Copy of U.S. Patent No. 10,319,812	Public
3	Certified Copy of U.S. Patent No. 10,700,178	Public
4	Certified Copy of U.S. Patent No. 11,251,281	Public
5	Certified Assignment Records for U.S. Patent No. 9,831,306	Public
6	Certified Assignment Records for U.S. Patent No. 10,319,812	Public
7	Certified Assignment Records for U.S. Patent No. 10,700,178	Public
8	Certified Assignment Records for U.S. Patent No. 11,251,281	Public
9	Intel 2021 Form 10-K	Public
10	Intel 2020 Form 10-K	Public
11	Intel 2019 Form 10-K	Public
12	Domestic Industry Claim Chart for U.S. Patent No. 9,831,306	Public
13	Domestic Industry Claim Chart for U.S. Patent No. 10,319,812	Public
14	Domestic Industry Claim Chart for U.S. Patent No. 10,700,178	Public
15	Domestic Industry Claim Chart for U.S. Patent No. 11,251,281	Public
16	Samsung Tablets (accessed August 19, 2022) (samsung.com)	Public
17	Samsung Smartphones (accessed August 19, 2022) (samsung.com)	Public
18	Bloomberg's Company Profile for Samsung Electronics Co., Ltd. (accessed August 19, 2022)	Public
19	Samsung 2020 Business Report	Public
20	Photographs for the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC, incorporated in Samsung's Galaxy S20 FE smartphone) and the First Samsung Representative Article (i.e., the Samsung Galaxy S20 FE Smartphone)	Public
21	TSMC's GIGAFAB Facilities (accessed August 18, 2022) (tsmc.com)	Public
22	TSMC's Fab Locations (accessed August 19, 2022) (tsmc.com)	Public
23	Photographs for the Second Samsung Representative Article (i.e., the Samsung Galaxy S21 FE 5G Smartphone)	Public
24	"Qualcomm Details the Snapdragon 888: 3 rd Gen 5G & Cortex-X1 on 5nm" (accessed August 19, 2022) (anandtech.com)	Public
25	"Samsung Foundry Update: 5nm SoCs in Production, HPC Shipments to Expand in Q4" (accessed August 19, 2022) (tomshardware.com)	Public
26	Photographs for the Third Samsung Representative Article (i.e., the Samsung Galaxy A71 5G Smartphone)	Public
27	"Snapdragon 865 vs. Snapdragon 765G – What's the Difference?" (accessed August 19, 2022) (knowyourmobile.com)	Public
28	"Qualcomm Snapdragon 865 SoC, Snapdragon 765, Snapdragon 765G SoC Specifications Detailed" (accessed August 19, 2022) (almerja.com)	Public

Exhibit No.	Description	Designation
29	“Samsung Begins Production in New EUV Line for 7-nm Chips” (accessed August 19, 2022) (zdnet.com)	Public
30	Bloomberg’s Company Profile for Samsung Electronics America, Inc. (accessed August 20, 2022)	Public
31	TSMC Annual Report 2021 (II) Financial Statements	Public
32	TSMC Annual Report 2021 (I)	Public
33	Craft’s Company Profile for TSMC North America (accessed August 19, 2022)	Public
34C	Confidential List of Entities Having Certain Rights in the Asserted Patents	Confidential
34	Public Version of List of Entities Having Certain Rights in the Asserted Patents	Public
35	Samsung Galaxy Tab S6 Lite Tablet Specifications (accessed August 20, 2022) (samsung.com)	Public
36	Samsung Galaxy Watch4 and Watch4 Classic Teardown (accessed August 20, 2022) (iFixit.com)	Public
37	Exynos 9611 Octa Mobile Processor (accessed August 20, 2022) (samsung.com)	Public
38	Exynos W920 Wearable Processor (accessed August 20, 2022) (samsung.com)	Public
39C	Infringement Claim Chart for U.S. Patent No. 9,831,306 and Samsung (5nm)	Confidential
39	Public Version of Infringement Claim Chart for U.S. Patent No. 9,831,306 and Samsung (5nm)	Public
40C	Infringement Claim Chart for U.S. Patent No. 10,319,812 and Samsung (5nm)	Confidential
40	Public Version of Infringement Claim Chart for U.S. Patent No. 10,319,812 and Samsung (5nm)	Public
41C	Infringement Claim Chart for U.S. Patent No. 10,700,178 and Samsung (7nm)	Confidential
41	Public Version of Infringement Claim Chart for U.S. Patent No. 10,700,178 and Samsung (7nm)	Public
42C	Infringement Claim Chart for U.S. Patent No. 11,251,281 and Samsung (7nm)	Confidential
42	Public Version of Infringement Claim Chart for U.S. Patent No. 11,251,281 and Samsung (7nm)	Public
43	Receipt for the Second Samsung Representative Article (i.e., the Samsung Galaxy S21 FE 5G Smartphone)	Public
44	Receipt for the Third Samsung Representative Article (i.e., the Samsung Galaxy A71 5G Smartphone)	Public
45	Infringement Claim Chart for U.S. Patent No. 9,831,306 and TSMC	Public
46	Infringement Claim Chart for U.S. Patent No. 10,319,812 and TSMC	Public
47	Infringement Claim Chart for U.S. Patent No. 10,700,178 and TSMC	Public

Exhibit No.	Description	Designation
48	Infringement Claim Chart for U.S. Patent No. 11,251,281 and TSMC	Public
49	Receipt for the First Samsung Representative Article (i.e., the Samsung Galaxy S20 FE Smartphone) and the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC, incorporated in Samsung's Galaxy S20 FE smartphone)	Public
50C	Intel-Daedalus Patent Agreement (April 21, 2022)	Confidential
50	Public Version of Intel-Daedalus Patent Agreement (April 21, 2022)	Public
51C	Amendment No. 1 to Intel-Daedalus Patent Agreement (April 21, 2022)	Confidential
51	Public Version of Amendment No. 1 to Intel-Daedalus Patent Agreement (April 21, 2022)	Public
52	Intel Announces Next U.S. Site with Landmark Investment in Ohio (January 21, 2022) (intel.com)	Public
53	"Intel's Oregon workforce hits new high" (accessed August 19, 2022) (Portland Business Journal)	Public
54	Jobs at Intel in Folsom, California (accessed August 19, 2022) (intel.com)	Public
55	Photographs of the Domestic Industry Representative Article (Intel i5-12500K (Alder Lake))	Public
56	"Intel Spends \$6 Million in a Month to Meet Vietnam Virus Rules" (accessed April 26, 2022) (bloomberg.com)	Public
57	Intel Around the World (accessed April 26, 2022) (intel.com)	Public
58	Intel Around the World (India) (accessed April 26, 2022) (intel.com)	Public
59	Intel Around the World (Europe) (accessed April 26, 2022) (intel.com)	Public
60	Intel Corporation (Argentina) (LinkedIn) (accessed April 26, 2022)	Public
61	Intel Corporation (Bangladesh) (LinkedIn) (accessed April 26, 2022)	Public
62	Intel Corporation (Brazil) (LinkedIn) (accessed April 26, 2022)	Public
63	Intel Corporation (Colorado) (LinkedIn) (accessed April 26, 2022)	Public
64	Intel Corporation (Dalian, China) (LinkedIn) (accessed April 26, 2022)	Public
65	Intel Corporation (Finland) (LinkedIn) (accessed April 26, 2022)	Public
66	Intel Corporation (France) (LinkedIn) (accessed April 26, 2022)	Public
67	Intel Corporation (Germany) (LinkedIn) (accessed April 26, 2022)	Public
68	Intel Corporation (Italy) (LinkedIn) (accessed April 26, 2022)	Public
69	Intel Corporation (Japan) (LinkedIn) (accessed April 26, 2022)	Public
70	Intel Corporation (Netherlands) (LinkedIn) (accessed April 26, 2022)	Public
71	Intel Corporation (Pakistan) (LinkedIn) (accessed April 26, 2022)	Public
72	Intel Corporation (Romania) (LinkedIn) (accessed April 26, 2022)	Public
73	Intel Corporation (Russia) (LinkedIn) (accessed April 26, 2022)	Public
74	Intel Corporation (South Korea) (LinkedIn) (accessed April 26, 2022)	Public
75	Intel Corporation (Sweden) (LinkedIn) (accessed April 26, 2022)	Public

Exhibit No.	Description	Designation
76	Intel Corporation (UAE) (LinkedIn) (accessed April 26, 2022)	Public
77	Intel Corporation (UK) (LinkedIn) (accessed April 26, 2022)	Public
78	Intel in Arizona (accessed April 26, 2022) (intel.com)	Public
79	Intel in California (accessed April 26, 2022) (intel.com)	Public
80	Intel in Costa Rica (accessed April 26, 2022) (intel.com)	Public
81	Intel in New Mexico (accessed April 26, 2022) (intel.com)	Public
82	Intel in Oregon (accessed April 26, 2022) (intel.com)	Public
83	Intel Malaysia (accessed April 26, 2022) (amcham.com)	Public
84	Intel Chengdu (accessed April 26, 2022) (exploreintel.com)	Public
85	Intel DI Product List	Public
86	Global Manufacturing at Intel (accessed August 23, 2022) (intel.com)	Public
87	“CPU Benchmarks – AMD vs. Intel Market Share” (accessed August 22, 2022) (cpubenchmark.net)	Public
88	Qualcomm Snapdragon 865 5G Mobile Platform	Public
89	Qualcomm Announces Snapdragon 865 and 765(G)	Public
90	Intel® Core™ i5-12500 Processor	Public
91	Qualcomm Snapdragon 888 5G Mobile Platform	Public
92	Qualcomm Details The Snapdragon 888 3rd Gen 5G & Cortex-X1 on 5nm	Public
93C	TechInsights Report ID: ACE-2101-801	Confidential
93	Public Version of TechInsights Report ID: ACE-2101-801	Public
94	Samsung Galaxy A71 5G Smartphone	Public
95	Samsung Galaxy A71 5G Specs, Features (Phone Scoop)	Public
96	Snapdragon 765G 5G Mobile Platform	Public
97	Qualcomm announces the Snapdragon 765 and 765G SoCs with 5G	Public
98	Samsung Announces Exynos 990	Public
99C	TechInsights Report ID: ACE-2003-801	Confidential
99	Public Version of TechInsights Report ID: ACE-2003-801	Public
100	Galaxy A71 Charging Board Replacement - iFixit Repair Guide	Public
101	Intel Product Information	Public
102	TechInsights, Qualcomm Snapdragon 865 TSMC N7 Pro GPU 6-Track SoC Design Analysis	Public
103	TSMC, Dedicated IC Foundry, Services, CyberShuttle	Public
104	TSMC University Collaboration Programs	Public
105	Intel’s Long Awaited Fab 42 is Fully Operational	Public
106	Samsung Coppel warehouse investing \$3.8 million in upgrades (Jan 24, 2020)	Public
107	What we know about Intel’s \$20 billion bet on Ohio (Jan 22, 2022)	Public
108	Notice Letter to Samsung re Patent Infringement (Sept 9, 2022)	Public
109	Notice Letter to TSMC re Patent Infringement (Sept 9, 2022)	Public

APPENDICES

Appendix No.	Description
A	Certified File History of U.S. Patent No. 9,831,306
B	Technical References cited in the File History for U.S. Patent No. 9,831,306
C	Certified File History of U.S. Patent No. 10,319,812
D	Technical References cited in the File History for U.S. Patent No. 10,319,812
E	Certified File History of U.S. Patent No. 10,700,178
F	Technical References cited in the File History for U.S. Patent No. 10,700,178
G	Certified File History of U.S. Patent No. 11,251,281
H	Technical References cited in the File History for U.S. Patent No. 11,251,281

I. INTRODUCTION

1. This Complaint is filed by Daedalus Prime LLC (“Daedalus” or “Complainant”) pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”) to remedy the unlawful and unauthorized importation, sale for importation, and/or sale within the United States after importation, into the United States, of certain semiconductor devices, mobile devices containing the same, and components thereof (the “Accused Products”) that directly infringe, contributorily infringe, and/or induce the infringement, literally, or under the doctrine of equivalents, of certain claims of U.S. Patent No. 9,831,306 (“the ’306 Patent”); U.S. Patent No. 10,319,812 (“the ’812 Patent”); U.S. Patent No. 10,700,178 (“the ’178 Patent”) and; U.S. Patent No. 11,251,281 (“the ’281 Patent”) (collectively, the “Asserted Patents”). Certified copies of the ’306, ’812, ’178, and ’281 Patents are attached hereto as **Exhibits** 1-4 respectively, and certified copies of the assignment records of each patent are attached hereto as **Exhibits** 5-8 respectively.

2. The proposed respondents are Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Samsung”), and Taiwan Semiconductor Manufacturing Company Limited and TSMC North America (collectively, “TSMC”). All of these proposed respondents are referred to collectively throughout this Complaint as “Respondents.” On information and belief, each of the Respondents imports, sells for importation, and/or sells in the United States after importation, into the United States, Accused Products that directly infringe, contributorily infringe, and/or induce the infringement of, literally or under the doctrine of equivalents, Daedalus’s Asserted Patents.

3. Pursuant to Commission Rules 210.10(b)(1) and 210.12(a)(12), categories of the Accused Products are (a) semiconductor devices, consisting of integrated circuits or wafers, manufactured at: (i) Samsung’s 14 nm and smaller process nodes; or (ii)

TSMC’s 16 nm and smaller process nodes; (b) mobile devices consisting of smartphones, tablets, and smartwatches containing the same; and (c) components of such semiconductor devices and mobile devices.

4. Pursuant to Commission Rule 210.12(a)(9)(vii), Daedalus asserts that the Accused Products infringe at least the following claims of the Asserted Patents (collectively, the “Asserted Patent Claims”)¹:

Patent	Asserted Claims
9,831,306	26-35
10,319,812	21-30
10,700,178	1-5, 11-20
11,251,281	1, 5-7, 12-20

5. To remedy Respondents’ continuing and unlawful violation of Section 337, Daedalus seeks, as permanent relief, a limited exclusion order pursuant to 19 U.S.C. § 1337(d) against each named Respondent and their subsidiaries, predecessors, affiliates, agents, successors, and assigns, barring from entry into the United States all articles (made from or incorporating foreign-fabricated wafers) that directly infringe, contributorily infringe, and/or induce the infringement of (and/or are made from processes that infringe), literally or under the doctrine of equivalents, the Asserted Patents. Daedalus also seeks cease and desist orders pursuant to 19 U.S.C. § 1337(f), prohibiting each Respondent and their subsidiaries, predecessors, affiliates, agents, successors, and assigns from engaging in the (a) importation, sale for importation, and/or sale within the United States after importation of such articles, (b) marketing, distributing, offering for sale, selling, or otherwise transferring (except for exportation) in the United States of such articles, (c) advertising of such imported articles, (d) soliciting U.S. agents, retailers, resellers, or distributors for such articles, and (e) aiding or

¹ Independent claims in the chart of asserted claims in each patent are in **bold**.

abetting other entities in the importation, sale for importation, sale after importation, transfer (except for exportation), or distribution of such articles.

6. As noted above, the scope of the requested remedial orders in this Investigation is limited to semiconductor devices (including integrated circuits), and components thereof, that are made from foreign-fabricated finished wafers² that are manufactured outside the United States, as well as Respondents' downstream mobile devices (i.e., smartphones, tablets, and smartwatches) that incorporate such semiconductor devices (including integrated circuits). In other words, the requested remedial orders would not seek exclusion of semiconductor devices (and products containing the same) that are made from domestically-fabricated finished wafers manufactured inside the United States, e.g., at Samsung's fabrication plant in Austin, Texas.

7. Further, Daedalus requests that the Commission impose a bond upon Respondents' importation of such infringing articles during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j) to prevent further injury to Daedalus and its licensee's domestic industry relating to each of the Asserted Patents.

II. THE PARTIES

A. The Complainant

8. Pursuant to Commission Rule 210.12(a)(7), Complainant Daedalus Prime LLC is a Delaware limited liability company, and has a principal place of business at 51 Pondfield Road, Suite 3, Bronxville, New York 10708, and registered agent located at 555 E.

² Prior to becoming completed integrated circuits, semiconductor devices are first made into finished wafers. Each wafer contains multiple chips. Finished wafers are then cut into dies, tested, and then packaged to become finished integrated circuits.

Loockerman Street, Suite 120, Dover, DE 19901. Pursuant to Commission Rule 210.12(a)(7), Daedalus is a patent management and licensing company.

9. Daedalus is the sole owner by assignment of all right, title, and interest in each Asserted Patent. **Exhibits 5-8.**

10. Daedalus's domestic licensee is Intel Corporation ("Intel"). Intel is headquartered at 2200 Mission College Boulevard, Santa Clara, California. Intel is the predecessor-in-interest of each of the Asserted Patents, and has a non-exclusive license to practice each of the Asserted Patents.

11. The Asserted Patents stem from Intel's significant investments in advancing semiconductor manufacturing technology. Intel's semiconductor manufacturing technology produces chips that provide the computer processing brains used by over 77% of laptops, 97% of servers, and over 55% of desktop PCs sold around the world. *See, e.g., Exhibit 87 at 3-6, https://www.cpubenchmark.net/market_share.html* (accessed August 22, 2022).

12. Founded in 1968, Intel is a multinational company and pioneer of cutting-edge semiconductor manufacturing technology. Intel is one of the few companies in the United States that continues to manufacture its chips in large volumes at its own massive semiconductor fabs in Arizona, New Mexico, and Oregon. **Exhibit 9 at 12** (Intel 2021 Form 10-K). Intel has made, and continues to make, substantial investments in the research, development, and manufacturing of high-quality semiconductor devices, integrated circuits (e.g., Intel's 12th Generation product families), and system products containing the same (e.g., computing devices and servers) that practice, or are made from processes that practice, the Asserted Patents. *See Exhibits 9-11* (Intel Form 10-K, 2021, 2020, 2019); **Exhibits 12-15** (Intel claim charts).

B. The Proposed Respondents

1. Samsung

13. The Samsung Respondents in this action, themselves and/or through their subsidiaries and corporate relatives, import, sell for importation, and/or sell in the United States after importation, products made from foreign-fabricated wafers that infringe (or manufactured by processes that infringe) directly or indirectly the Asserted Patents, including semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof.

(a) Samsung Electronics Co., Ltd.

14. Pursuant to Commission Rule 210.12(a)(4), proposed Respondent Samsung Electronics Co., Ltd. is a South Korean corporation with a principal place of business at 129 Samsung-Ro, Maetan-3dong, Yeongtong-Gu, Suwon, Gyeonggi-do, Korea 16677, and has as its wholly-owned U.S. subsidiary proposed Respondent Samsung Electronics America, Inc., a New York corporation with a principal place of business at 85 Challenger Rd, Ridgefield Park, New Jersey, 07660-2112, United States.

15. Upon information and belief, Samsung Electronics Co., Ltd. is engaged in the manufacturing, research, development, testing, marketing, distribution, shipping, importation, sale for importation, and/or sale within the United States after importation of products that infringe (or manufactured by processes that infringe), including semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof, that are manufactured outside of the United States. *See, e.g., Exhibit 16, <https://www.samsung.com/us/tablets/> (accessed August 19, 2022); Exhibit 17, <https://www.samsung.com/us/smartphones/> (accessed August 19, 2022).* Upon information

and belief, Samsung Electronics Co., Ltd. is also engaged in contributing to (or instructing others regarding) the use, manufacture, sale, and/or importation of such articles.

16. According to Bloomberg's Company Profile, "Samsung Electronics Co., Ltd. manufactures a wide range of consumer and industrial electronic equipment and products such as semiconductors, personal computers, [and] peripherals The Company also produces Internet access network systems and telecommunications equipment including mobile phones." **Exhibit** 18 at 1, <https://www.bloomberg.com/profile/company/BC94:LN> (accessed August 19, 2022). According to Samsung's 2020 Business Report, Samsung's "IM Division operates the Mobile Communication Business, which produces and sells smart mobile devices such as smartphones, tablets, and wearables." **Exhibit** 19 at 5, https://images.samsung.com/is/content/samsung/assets/global/ir/docs/2020_Business_Report.pdf (accessed August 18, 2022).

17. On information and belief, Respondent Samsung's Galaxy S20 FE smartphone, manufactured overseas (*see* **Exhibit** 20 at 5), incorporates the Qualcomm Snapdragon 865 chip (*see* **Exhibit** 20 at 8-9), which on information and belief is fabricated by at least proposed respondent TSMC's infringing 7 nm process node in Taiwan. *See* **Exhibit** 24 at 1-2, <https://www.anandtech.com/show/16271/qualcomm-snapdragon-888-deep-dive> (accessed August 19, 2022) (identifying TSMC's 7 nm for Snapdragon 865); **Exhibit** 21 at 1, <https://www.tsmc.com/english/dedicatedFoundry/manufacturing/gigafab> (accessed August 18, 2022) (noting Fabs 12, 14, and 15 manufacture at 7 nm); **Exhibit** 22 at 1, https://www.tsmc.com/english/aboutTSMC/TSMC_Fabs (accessed August 19, 2022) (noting Fabs 12, 14, and 15 are each located in Taiwan).

18. Also, for example, on information and belief, Respondent Samsung's Galaxy S21 FE 5G smartphone, manufactured overseas (*see* **Exhibit** 23 at 4), incorporates the Qualcomm Snapdragon 888 5G chip (*see* **Exhibit** 23 at 7-8), which, on information and belief, is fabricated by at least Samsung's 5 nm (5LPE) process node in Korea. *See* **Exhibit** 24 at 1-2, <https://www.anandtech.com/show/16271/qualcomm-snapdragon-888-deep-dive> (accessed August 19, 2022) (identifying Samsung 5 nm (5LPE) for Snapdragon 888); **Exhibit** 25 at 4, <https://www.tomshardware.com/news/samsung-foundry-update-5nm-socs-in-production-hpc-shipments-to-expand-in-q4> (accessed August 19, 2022) ("Samsung Foundry's first 5LPE chips are made at its first EUV-dedicated V1 line in Hwaseong, South Korea. Eventually, it will also be used at Samsung Foundry's upcoming production line in Pyeongtaek, South Korea, starting in the second half of 2021.").

19. As another example, on information and belief, Respondent Samsung's Galaxy A71 5G smartphone, manufactured overseas (*see* **Exhibit** 26 at 6), incorporates the Qualcomm Snapdragon 765 5G SoC (*see* **Exhibit** 26 at 12-13), which on information and belief is fabricated by at least Samsung's 7 nm process node in Hwaseong, Korea. *See* **Exhibit** 27 at 3-4, <https://www.knowyourmobile.com/phones/snapdragon-865-vs-snapdragon-765g-specs-differences/> (accessed August 19, 2022) (showing fabrication of Snapdragon 765G by Samsung 7nm EUV); **Exhibit** 28 at 4, <https://almerja.com/en/more.php?pid=2052> (accessed August 19, 2022) ("The Snapdragon 765 SoC and the Snapdragon 765G SoC...are also being built using the 7nm process, but by Samsung, instead of TSMC."); **Exhibit** 29 at 1-2, <https://www.zdnet.com/article/samsung-begins-production-in-new-euv-line-for-7-nm-chips/> (accessed August 19, 2022) (showing production of Samsung's 7nm chips in Hwaseong, Korea).

20. Upon information and belief, Samsung Electronics Co., Ltd. is engaged in the instruction or encouragement of others, including customers in the United States, to use, make, sell, and/or import such products and/or processes of manufacture in a directly infringing manner.

(b) Samsung Electronics America, Inc.

21. Upon information and belief, Samsung Electronics America, Inc. is engaged in the manufacturing, research, development, testing, marketing, distribution, shipping, importation, sale for importation, and/or sale within the United States after importation of, and/or contributing to (or instructing others regarding) the use, manufacture, sale, and/or importation of products that infringe (or manufactured by processes that infringe), including semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof, that are manufactured outside of the United States.

22. According to Bloomberg's Company Profile, "Samsung Electronics America, Inc. manufactures electronic products," including "cell phones, storage device ... smartwatches, and computer products." **Exhibit 30** at 1, <https://www.bloomberg.com/profile/company/2868Z:US#xj4y7vzkg/> (accessed August 20, 2022). According to Samsung's 2020 Business Report, the "[m]ajor business" of Samsung Electronics America, Inc. is "[e]lectronic goods sales[.]" **Exhibit 19** at 7; *see also*, ¶¶ 15-18, *supra*.

23. Upon information and belief, Samsung Electronics America, Inc. is engaged in the instruction or encouragement of others, including customers in the United States, to use, make, sell, and/or import such products and/or processes of manufacture in a directly infringing manner.

2. TSMC

24. The TSMC Respondents in this action, themselves and/or through their subsidiaries and corporate relatives, import, sell for importation, and/or sell in the United States after importation, products that infringe (or manufactured by processes that infringe), including semiconductor devices and integrated circuits (and components thereof).

(a) Taiwan Semiconductor Manufacturing Company Limited

25. Pursuant to Commission Rule 210.12(a)(4), proposed Respondent 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, and has as a wholly-owned direct U.S. subsidiary proposed respondent TSMC North America, a California corporation with a principal place of business at 2851 Junction Avenue, San Jose, California 95134, United States.

26. Upon information and belief, TSMC Ltd. is engaged in the manufacturing, research, development, testing, marketing, distribution, shipping, importation, sale for importation, and/or sale within the United States after importation of articles that infringe (or made by processes that infringe) the Asserted Patents. Upon information and belief, TSMC Ltd. is engaged in the contributing to (or instructing others regarding) the use, manufacture, sale, and/or importation of, articles that infringe (or manufactured by processes that infringe) the Asserted Patents, including semiconductor devices, mobile devices containing the same, and components thereof, that are manufactured outside the United States.

27. According to TSMC Ltd.’s annual report, in 2021, 64% of TSMC’s net revenue came from sales contracts with customers in the “United States,” and 44% of TSMC’s net revenue came from its “Smartphone” platform. **Exhibit 31**, TSMC Annual Report 2021

(II) Financial Statements at 51,

https://investor.tsmc.com/static/annualReports/2021/english/pdf/2021_tsmc_ar_e_financial.pdf (accessed August 19, 2022). In addition, TSMC collaborates closely with Stanford, MIT, and UC Berkeley 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.” **Exhibit 32** at 095, https://investor.tsmc.com/static/annualReports/2021/english/pdf/e_all.pdf (accessed August 19, 2022) (TSMC Annual Report 2021 (I)). Also, TSMC “provides customer support, account management and engineering services throughout offices in North America[.]” **Exhibit 32** at 012 (TSMC Annual Report 2021 (I)).

28. TSMC reports that one of its customers in the U.S. is Qualcomm Incorporated. **Exhibit 32** at 100 (TSMC Annual Report 2021 (I)). On information and belief, TSMC fabricates the Qualcomm Snapdragon 865 chip using TSMC’s infringing 7 nm process node, which is manufactured overseas and incorporated into Respondent Samsung’s Galaxy S20 FE smartphone. *See* ¶ 17, *supra*.

29. Upon information and belief, Taiwan Semiconductor Manufacturing Company Limited is engaged in the instruction or encouragement of others, including customers in the United States, to use, make, sell, and/or import such products, and processes for manufacture, in a directly infringing manner.

(b) TSMC North America

30. Pursuant to Commission Rule 210.12(a)(4), proposed respondent TSMC North America is a California corporation, with a principal place of business at 2851 Junction Avenue, San Jose, California 95134.

31. Upon information and belief, TSMC North America is engaged in the

manufacturing, research, development, testing, marketing, distribution, shipping, importation, sale for importation, and/or sale within the United States after importation of articles that infringe (or made by processes that infringe) the Asserted Patents. Upon information and belief, TSMC North America is engaged in the contributing to (or instructing others regarding) the use, manufacture, sale, and/or importation of, articles that infringe (or manufactured by processes that infringe) the Asserted Patents, including semiconductor devices, mobile devices containing the same, and components thereof, that are manufactured outside the United States. *See* ¶¶ 17, 27-28, *supra*.

32. According to its Craft company profile, “TSMC North America is a supplier of semiconductor products. It sells and markets integrated circuits and other semiconductor devices. The company caters to the computer, communications, consumer, industrial, mobile devices, high-performance computing, automotive electronics, and the Internet of things (IoT) markets.” **Exhibit 33** at 1, <https://craft.co/tsmc-north-america> (accessed August 19, 2022). Further, according to TSMC’s annual report, TSMC North America’s business activities include “[s]ales and marketing of integrated circuits and semiconductor devices.” **Exhibit 32**, TSMC Annual Report 2021 (I) at 167; *see also*, ¶¶ 25-26, *supra*.

33. Upon information and belief, TSMC North America is engaged in the instruction or encouragement of others, including customers in the United States, to use, make, sell, and/or import such products, and/or processes for manufacture, in a directly infringing manner.

III. THE PATENTS

34. The Asserted Patents disclose novel semiconductor devices and methods for fabricating the same.³ These semiconductor devices and processes are incorporated in, or used in the manufacture of, integrated circuits. Integrated circuits (often referred to as “chips”) are produced in special manufacturing facilities called “foundries” or “fabs.”

35. The Asserted Patents are all directed toward the design and manufacture of transistors used in semiconductor devices for integrated circuits. For decades, the scaling of features in integrated circuits has been a driving force in the semiconductor industry to pack more and more functional units within the limited real estate of semiconductor chips. The fabrication of semiconductors is based on particular sizes that create unique semiconductor device architecture called “process nodes,” which have tangible benefits on device capacity and functionality.

36. Over the years, the sizes of the individual elements in process nodes, also known as feature sizes, have shrunk from being measured in micrometers (μm) (millionth of a meter) to nanometers (nm) (billionth of a meter). Despite theoretical performance gains that might be achieved from smaller transistors—including improvements in power consumption, speed, and density—shrinking the size of a transistor requires significant innovation. For example, in modern process nodes, feature sizes range from 5 nanometers to hundreds of nanometers. To put this into perspective, the size of a silicon atom is roughly 0.2 nanometers, meaning that the minimum feature size at the 5 nanometer process node is equivalent to only 25 silicon atoms. The Asserted Patents are foundational to designing and manufacturing semiconductor devices at these

³ The non-technical description of the patented technology is provided herein for compliance with the Commission Rules and is not intended to define, limit, or otherwise affect the construction and/or application of any of the Asserted Patents.

increasingly small geometries.

37. Pursuant to Commission Rule 210.12(a)(9)(iii), Complainant has attached as **Confidential Exhibit** 34C a list of entities that are parties to one or more confidential agreements with Intel that may, but do not necessarily, incorporate a grant of limited non-exclusive license rights under and/or restrictive covenant with respect to the Asserted Patents. Complainant provides this list, which may be over-inclusive, to ensure compliance with Commission Rule 210.12(a)(9)(iii). By including an entity on this list, however, Daedalus makes no representation concerning the scope of licensed rights and/or restrictive covenants, if any exist, or that such licensed rights or restrictive covenants ultimately extend to any proposed Respondent, Accused Product, or Asserted Patent in this Investigation.

A. THE ASSERTED '306 PATENT

1. Ownership and Asserted Claims of the '306 Patent

38. United States Patent No. 9,831,306 is entitled “Self-Aligned Gate Edge and Local Interconnect and Method to Fabricate Same,” and issued on November 28, 2017 to inventors Milton Clair Webb, Mark Bohr, Tahir Ghani, and Szuya S. Liao. The '306 Patent issued from United States Patent Application No. 15/024,750, which was filed on March 24, 2016, and is a continuation of PCT No. PCT/US2013/076673, filed on December 19, 2013.

39. By way of assignment, Complainant Daedalus owns all rights, title, and interest to the '306 Patent. As required by Commission Rules 210.12(a)(9)(i)–(ii), certified copies of the '306 Patent and its assignment records are attached as **Exhibits** 1 and 5 respectively.

40. In accordance with Commission Rules 210.12(c)(1)–(2), **Appendix A** to this Complaint includes one certified copy of the United States Patent and Trademark Office prosecution history for the '306 Patent. **Exhibit** 1 includes one certified copy of the '306 Patent,

and **Appendix B** includes applicable pages of each technical reference mentioned in the prosecution history of the '306 Patent.

41. All fees for the '306 Patent have been timely paid, and there are no fees currently due. In accordance with Commission Rule 210.12(a)(9)(xi), the expiration date of the '306 Patent is December 19, 2033.

42. The '306 Patent has 45 claims, including six independent claims (1, 9, 15, 19, 26 and 38), and 39 dependent claims. Complainant is asserting at least claims 26-35 of the '306 Patent (the "Asserted '306 Patent Claims") against Samsung and TSMC.

2. Foreign Counterparts to the '306 Patent

43. In accordance with Commission Rule 210.12(a)(9)(v), Complainant has listed in the table below the only known foreign counterparts to the '306 Patent.

Application Number	Publication Number	Status
CN201380081048	CN106415800	Granted
EP13899890	EP3084815	Granted
JP2016526912	JP6325669	Granted
KR20167013147	KR102131379	Granted
KR20207019078	KR102241166	Granted
TW103137443	TWI565057	Granted
TW105134078	TWI599042	Granted
TW106120024	TWI628795	Granted
TW107113364	TWI662705	Granted
TW108111023	TWI705567	Granted
TW109128110	TWI755033	Granted
PCT/US2013/076673	WO2015094305	Complete

3. Non-Technical Description of the '306 Patent

44. Pursuant to Commission Rule 210.12(a)(9)(vi), the '306 Patent is directed toward fin-shaped field-effect transistors (FinFETs) with gate edge isolation structures. The semiconductor industry has been driven by scaling to smaller and smaller features in integrated circuits to enable increased densities of functional units on the limited real estate of

semiconductor chips. **Exhibit 1**, '306 Patent at 1:24-35. However, there may be a trade-off between the smallest dimension of a feature patterned in the semiconductor stack and the spacing between such features. *Id.*

45. One of the challenges the industry faced was how to best scale gate endcap and trench contact (TCN) endcap regions. *Id.* at 2:64-3:32. Typically, gate and TCN endcap dimensions include an allowance for mask registration error to ensure robust transistor operation for worst case mask mis-registration, leaving an end-to-end spacing. *Id.* But the additional endcap length to allow for mask registration error leads to increased gate capacitance values and results in increased product dynamic energy consumption and degraded performance. *Id.* Solutions prior to the '306 Patent focused on improving registration budget and patterning, or resolution improvements to enable shrinkage of both gate endcap and trench contact endcap dimensions and endcap-to-endcap spacing. *Id.*

46. The '306 Patent addresses this problem by disclosing, in some embodiments, one or more gate edge structures (e.g., as gate isolation regions) of gate electrodes without any need to allow for mask registration. *Id.* at 2:51-55, 3:33-36. Such approaches do not require lithographic patterning at previously required stages since the gate and TCN endcap dimensions remain fixed, resulting in reduction in device-to-device variability in electrical parameters. *Id.* at 3:44-48. As a result, the patented technology enables FinFETs that have improved transistor layout area and density.

B. THE ASSERTED '812 PATENT

1. Ownership and Asserted Claims of the '812 Patent

47. United States Patent No. 10,319,812 is entitled "Self-Aligned Gate Edge and Local Interconnect and Method to Fabricate Same," and issued on June 11, 2019 to inventors Milton Clair Webb, Mark Bohr, Tahir Ghani, and Szuya S. Liao. The '812 Patent

issued from United States Patent Application No. 15/789,315, which was filed on October 20, 2017, and is a continuation of United States Patent Application No. 15/024,750, filed as PCT No. PCT/US2013/076673 on December 19, 2013 (now U.S. Patent No. 9,831,306).

48. By way of assignment, Complainant Daedalus owns all rights, title, and interest to the '812 Patent. As required by Commission Rules 210.12(a)(9)(i)–(ii), certified copies of the '812 Patent and its assignment records are attached as **Exhibits 2** and **6** respectively.

49. In accordance with Commission Rules 210.12(c)(1)–(2), **Appendix C** to this Complaint includes one certified copy of the United States Patent and Trademark Office prosecution history for the '812 Patent. **Exhibit 2** includes one certified copy of the '812 Patent, and **Appendix D** includes applicable pages of each technical reference mentioned in the prosecution history of the '812 Patent.

50. All fees for the '812 Patent have been timely paid, and there are no fees currently due. In accordance with Commission Rule 210.12(a)(9)(xi), the expiration date of the '812 Patent is December 19, 2033.

51. The '812 Patent has 30 claims, including three independent claims (1, 11 and 21), and 27 dependent claims. Complainant is asserting at least claims 21-30 of the '812 Patent (the “Asserted '812 Patent Claims”) against Samsung and TSMC.

2. Foreign Counterparts to the '812 Patent

52. In accordance with Commission Rule 210.12(a)(9)(v), Complainant has listed below the only known foreign counterparts to the '812 Patent.

Application Number	Publication Number	Status
CN201380081048	CN106415800	Granted
EP13899890	EP3084815	Granted
JP2016526912	JP6325669	Granted

Application Number	Publication Number	Status
KR20167013147	KR102131379	Granted
KR20207019078	KR102241166	Granted
TW103137443	TWI565057	Granted
TW105134078	TWI599042	Granted
TW106120024	TWI628795	Granted
TW107113364	TWI662705	Granted
TW108111023	TWI705567	Granted
TW109128110	TWI755033	Granted
PCT/US2013/076673	WO2015094305	Complete

3. Non-Technical Description of the '812 Patent

53. Pursuant to Commission Rule 210.12(a)(9)(vi), the '812 Patent is directed toward fin-shaped field-effect transistors (FinFETs) with gate edge isolation structures. The semiconductor industry has been driven by scaling to smaller and smaller features in integrated circuits to enable increased densities of functional units on the limited real estate of semiconductor chips. **Exhibit 2**, '812 Patent at 1:26-37. However, there may be a trade-off between the smallest dimension of a feature patterned in the semiconductor stack and the spacing between such features. *Id.*

54. One of the challenges the industry faced was how to best scale gate endcap and trench contact (TCN) endcap regions. *Id.* at 2:66-3:33. Typically, gate and TCN endcap dimensions include an allowance for mask registration error to ensure robust transistor operation for worst case mask mis-registration, leaving an end-to-end spacing. *Id.* But the additional endcap length to allow for mask registration error leads to increased gate capacitance values and results in increased product dynamic energy consumption and degraded performance. *Id.* Solutions prior to the '812 Patent focused on improving registration budget and patterning or resolution improvements to enable shrinkage of both gate endcap and trench contact endcap dimensions and endcap-to-endcap spacing. *Id.*

55. The '812 Patent addresses this problem by disclosing, in some embodiments, one or more gate edge structures (e.g., as gate isolation regions) of gate electrodes without any need to allow for mask registration. *Id.* at 2:53-57, 3:34-37. Such approaches do not require lithographic patterning at previously required stages since the gate and TCN endcap dimensions remain fixed, resulting in reduction in device-to-device variability in electrical parameters. *Id.* at 3:44-48. As a result, the patented technology enables FinFETs that have improved transistor layout area and density.

C. THE ASSERTED '178 PATENT

1. Ownership and Asserted Claims of the '178 Patent

56. United States Patent No. 10,700,178 is entitled “Contact Resistance Reduction Employing Germanium Overlayer Pre-Contact Metalization,” and issued on June 30, 2020 to inventors Glenn A. Glass, Anand S. Murthy, and Tahir Ghani. The '178 Patent issued from United States Patent Application No. 16/416,445, which was filed on May 20, 2019 and is a continuation of United States Patent Application No. 15/339,308, filed on October 31, 2016 (now U.S. Patent No. 10,297,670), which is a continuation of United States Patent Application No. 14/673,143, filed on March 30, 2015 (now U.S. Patent No. 9,484,432), which is a continuation of United States Patent Application No. 13/990,224, filed as PCT No. PCT/US2011/054198 on September 30, 2011 (now U.S. Patent No. 8,994,104), which is a continuation-in-part of United States Patent Application No. 12/975,278, filed on December 21, 2010 (now U.S. Patent No. 8,901,537).

57. By way of assignment, Complainant Daedalus owns all rights, title, and interest to the '178 Patent. As required by Commission Rules 210.12(a)(9)(i)–(ii), certified copies of the '178 Patent and its assignment records are attached as **Exhibits 3 and 7** respectively.

58. In accordance with Commission Rules 210.12(c)(1)–(2), **Appendix E** to this Complaint includes one certified copy of the United States Patent and Trademark Office prosecution history for the '178 Patent. **Exhibit 3** includes one certified copy of the '178 Patent, and **Appendix F** includes applicable pages of each technical reference mentioned in the prosecution history of the '178 Patent.

59. All fees for the '178 Patent have been timely paid, and there are no fees currently due. In accordance with Commission Rule 210.12(a)(9)(xi), the expiration date of the '178 Patent is December 21, 2030.

60. The '178 Patent has 20 claims, including three independent claims (1, 6 and 11), and 17 dependent claims. Complainant is asserting at least claims 1-5 and 11-20 of the '178 Patent (the “Asserted '178 Patent Claims”) against Samsung, and at least claims 1-5 of the '178 Patent against TSMC.

2. Foreign Counterparts to the '178 Patent

61. In accordance with Commission Rule 210.12(a)(9)(v), Complainant has listed below the only known foreign counterparts to the '178 Patent.

Application Number	Publication Number	Status
CN201180062107A	<u>CN103270597</u>	Granted
CN201180062116A	<u>CN103270598</u>	Granted
CN201180062124A	<u>CN103270599</u>	Granted
CN201180061440A	<u>CN103329274</u>	Granted
CN201610088996A	<u>CN105720091</u>	Granted
CN201610313170A	<u>CN105826390</u>	Granted
CN201610340122A	<u>CN105932063</u>	Granted
CN201610552470A	<u>CN106684148</u>	Granted
EP11850136A	<u>EP2656389</u>	Granted
EP11850350A	<u>EP2656391</u>	Granted
EP11851579A	<u>EP2656392</u>	Denied
EP11852027A	<u>EP2656393</u>	Granted
EP17193291A	<u>EP3312886</u>	Published/Pending
EP18164957A	<u>EP3361512</u>	Granted

Application Number	Publication Number	Status
EP19188924A	<u>EP3582265</u>	Granted
EP19191370A	<u>EP3588579</u>	Published/Pending
EP20177754A	<u>EP3726588</u>	Published/Pending
JP2013543323A	<u>JP2014504453</u>	Published/Pending
JP2018080942A	<u>JP2018113484</u>	Denied
JP2019189786A	<u>JP2020074389</u>	Denied
JP34529999A	<u>JP3863330</u>	Granted/Expired
JP2013546134A	<u>JP5714721</u>	Granted
JP2013546324A	<u>JP5714722</u>	Granted
JP2013546135A	<u>JP5732142</u>	Granted
JP2017064009A	<u>JP6329294</u>	Granted
KR20000056966A	<u>KR100512501</u>	Granted/Expired
KR20137016072A	<u>KR101489611</u>	Granted
KR20137016371A	<u>KR101510029</u>	Granted
KR20157012018A	<u>KR101691115</u>	Granted
KR20167036162A	<u>KR101784226</u>	Granted
KR20157012262A	<u>KR101812389</u>	Granted
KR20177027385A	<u>KR101949894</u>	Granted
KR20177036360A	<u>KR101978085</u>	Granted
KR20197004261A	<u>KR102079356</u>	Granted
KR20207004353A	<u>KR102123036</u>	Granted
KR20207016569A	<u>KR102168550</u>	Granted
KR20137016008A	<u>KR20130088179</u>	Published/Pending
KR20137015944A	<u>KR20130111592</u>	Denied
PL18164957T	<u>PL3361512</u>	Pending
SG2013043252A	<u>SG190998</u>	Pending
SG2013043310A	<u>SG191003</u>	Pending
SG2013043328A	<u>SG191004</u>	Pending
SG2013043336A	<u>SG191005</u>	Pending
TW89117847A	<u>TW497266</u>	Granted/Expired
TW100145538A	<u>TWI544630</u>	Granted
TW101148097A	<u>TWI556439</u>	Granted
TW105122618A	<u>TWI643342</u>	Granted
TW107102233A	<u>TWI690084</u>	Granted
TW108107651A	<u>TWI756520</u>	Granted
US2011054198W	<u>WO2012087403</u>	Complete
US2011054202W	<u>WO2012087404</u>	Complete
US2011063813W	<u>WO2012087581</u>	Complete
US2011066129W	<u>WO2012088097</u>	Complete

3. Non-Technical Description of the '178 Patent

62. Pursuant to Commission Rule 210.12(a)(9)(vi), the '178 Patent is directed toward transistor devices having reduced contact resistance relative to conventional devices. **Exhibit 3**, '178 Patent at 2:33-49. It is generally desirable in transistor design to increase driver current, which can be achieved by reducing device resistance. *Id.* In a conventional transistor contact stack that includes, for example, a silicon or SiGe source/drain layer, a nickel silicide layer, a titanium nitride adhesion layer, and a tungsten contact/pad, the contact resistance is effectively limited by the silicon or SiGe valence band alignment to the pinning level in the silicide metal and results in a band misalignment of about 0.5 eV. *Id.*

63. The '178 Patent discloses transistor structures that provide an improvement over conventional structures with respect to reducing the band misalignment value and contact resistance. *Id.* at 2:63-66. In some embodiments, each source/drain region comprises two or more facets and a top surface. *Id.* at 18:27-48, 18:61-19:15. Each source/drain region also comprises silicon and germanium having a germanium concentration that is graded from a base level concentration to a high concentration in excess of 50 atomic %. *Id.*

D. THE ASSERTED '281 PATENT

1. Ownership and Asserted Claims of the '281 Patent

64. United States Patent No. 11,251,281 is entitled "Contact Resistance Reduction Employing Germanium Overlayer Pre-Contact Metalization," and issued on February 15, 2022 to inventors Glenn A. Glass, Anand S. Murthy, and Tahir Ghani. The '281 Patent issued from United States Patent Application No. 16/881,541, which was filed on May 22, 2020, and is a continuation of United States Patent Application No. 16/416,445, filed on May 20, 2019 (now U.S. Patent No. 10,700,178), which is a continuation of United States Patent Application No. 15/339,308, filed on October 31, 2016 (now U.S. Patent No. 10,297,670),

which is a continuation of United States Patent Application No. 14/673,143, filed on March 30, 2015 (now U.S. Patent No. 9,484,432), which is a continuation of United States Patent Application No. 13/990,224, filed as PCT No. PCT/US2011/054198 on September 30, 2011 (now U.S. Patent No. 8,994,104), which is a continuation-in-part of United States Patent Application No. 12/975,278, filed on December 21, 2010 (now U.S. Patent No. 8,901,537).

65. By way of assignment, Complainant Daedalus owns all rights, title, and interest to the '281 Patent. As required by Commission Rules 210.12(a)(9)(i)–(ii), certified copies of the '281 Patent and its assignment records are attached as **Exhibits 4 and 8** respectively.

66. In accordance with Commission Rules 210.12(c)(1)–(2), **Appendix G** to this Complaint includes one certified copy of the United States Patent and Trademark Office prosecution history for the '281 Patent. **Exhibit 4** includes one certified copy of the '281 Patent, and **Appendix H** includes applicable pages of each technical reference mentioned in the prosecution history of the '281 Patent.

67. All fees for the '281 Patent have been timely paid, and there are no fees currently due. In accordance with Commission Rule 210.12(a)(9)(xi), the expiration date of the '281 Patent is December 21, 2030.

68. The '281 Patent has 20 claims, including three independent claims (1, 8, and 12), and 17 dependent claims. Complainant is asserting at least claims 1, 5-7, and 12-20 of the '281 Patent (the “Asserted '281 Patent Claims”) against Samsung, and at least claims 1 and 5-7 of the '281 Patent against TSMC.

2. Foreign Counterparts to the '281 Patent

69. In accordance with Commission Rule 210.12(a)(9)(v), Complainant has listed below the only known foreign counterparts to the '281 Patent.

Application Number	Publication Number	Status
CN201180062107A	<u>CN103270597</u>	Granted
CN201180062116A	<u>CN103270598</u>	Granted
CN201180062124A	<u>CN103270599</u>	Granted
CN201180061440A	<u>CN103329274</u>	Granted
CN201610088996A	<u>CN105720091</u>	Granted
CN201610313170A	<u>CN105826390</u>	Granted
CN201610340122A	<u>CN105932063</u>	Granted
CN201610552470A	<u>CN106684148</u>	Granted
EP11850136A	<u>EP2656389</u>	Granted
EP11850350A	<u>EP2656391</u>	Granted
EP11851579A	<u>EP2656392</u>	Denied
EP11852027A	<u>EP2656393</u>	Granted
EP17193291A	<u>EP3312886</u>	Published/Pending
EP18164957A	<u>EP3361512</u>	Granted
EP19188924A	<u>EP3582265</u>	Granted
EP19191370A	<u>EP3588579</u>	Published/Pending
EP20177754A	<u>EP3726588</u>	Published/Pending
JP2013543323A	<u>JP2014504453</u>	Published/Pending
JP2018080942A	<u>JP2018113484</u>	Denied
JP2019189786A	<u>JP2020074389</u>	Denied
JP34529999A	<u>JP3863330</u>	Granted/Expired
JP2013546134A	<u>JP5714721</u>	Granted
JP2013546324A	<u>JP5714722</u>	Granted
JP2013546135A	<u>JP5732142</u>	Granted
JP2017064009A	<u>JP6329294</u>	Granted
KR20000056966A	<u>KR100512501</u>	Granted/Expired
KR20137016072A	<u>KR101489611</u>	Granted
KR20137016371A	<u>KR101510029</u>	Granted
KR20157012018A	<u>KR101691115</u>	Granted
KR20167036162A	<u>KR101784226</u>	Granted
KR20157012262A	<u>KR101812389</u>	Granted
KR20177027385A	<u>KR101949894</u>	Granted
KR20177036360A	<u>KR101978085</u>	Granted
KR20197004261A	<u>KR102079356</u>	Granted
KR20207004353A	<u>KR102123036</u>	Granted
KR20207016569A	<u>KR102168550</u>	Granted
KR20137016008A	<u>KR20130088179</u>	Published/Pending
KR20137015944A	<u>KR20130111592</u>	Denied
PL18164957T	<u>PL3361512</u>	Pending
SG2013043252A	<u>SG190998</u>	Pending
SG2013043310A	<u>SG191003</u>	Pending

Application Number	Publication Number	Status
SG2013043328A	<u>SG191004</u>	Pending
SG2013043336A	<u>SG191005</u>	Pending
TW89117847A	<u>TW497266</u>	Granted/Expired
TW100145538A	<u>TWI544630</u>	Granted
TW101148097A	<u>TWI556439</u>	Granted
TW105122618A	<u>TWI643342</u>	Granted
TW107102233A	<u>TWI690084</u>	Granted
TW108107651A	<u>TWI756520</u>	Granted
US2011054198W	<u>WO2012087403</u>	Complete
US2011054202W	<u>WO2012087404</u>	Complete
US2011063813W	<u>WO2012087581</u>	Complete
US2011066129W	<u>WO2012088097</u>	Complete

3. Non-Technical Description of the '281 Patent

70. Pursuant to Commission Rule 210.12(a)(9)(vi), the '281 Patent is directed toward transistor devices having reduced contact resistance relative to conventional devices. **Exhibit 4**, '281 Patent at 2:40-56. It is generally desirable in transistor design to increase driver current, which can be achieved by reducing device resistance. *Id.* In a conventional transistor contact stack that includes, for example, a silicon or SiGe source/drain layer, a nickel silicide layer, a titanium nitride adhesion layer, and a tungsten contact/pad, the contact resistance is effectively limited by the silicon or SiGe valence band alignment to the pinning level in the silicide metal and results in a band misalignment of about 0.5 eV. *Id.*

71. The '281 Patent discloses transistor structures that provide an improvement over conventional structures with respect to reducing the band misalignment value and contact resistance. *Id.* at 3:3-6. In some embodiments, each source/drain region comprises two or more facets. *Id.* at 19:53-56. Each source/drain region also comprises silicon and germanium having a germanium concentration that is graded from a base level concentration to a high concentration in excess of 50 atomic %. *Id.* at 18:40-19:12, 19:57-20:31, 20:58-22:4.

IV. UNFAIR ACTS OF PROPOSED RESPONDENTS – PATENT INFRINGEMENT AND IMPORTATION

72. Pursuant to Commission Rules 210.12(a)(2) and 210.12(a)(3), the unfair acts of the Respondents involve the design, manufacture, and importation, sale for importation, and/or sale within the United States after importation, into the United States, of certain products that infringe (or manufactured by processes that infringe), including semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof, including, without limitation, the Accused Products.

73. Pursuant to Commission Rule 210.12(b), physical samples of the representative imported articles identified in this section (Section IV (Infringement), e.g., a smartphone mobile device containing a SoC) and the domestic industry representative article identified in Section VII ((Domestic Industry), e.g., an Intel processor), are available for inspection at Complainant's outside counsel's offices. Upon request of the Commission, Complainant will provide samples to the Commission. Complainant has also included charts and photographs with this Complaint depicting the representative involved articles.

74. Upon information and belief, the Accused Products identified herein directly and/or indirectly infringe at least the Asserted Patent Claims. Discovery may reveal that these products infringe additional claims of the Asserted Patents. In addition, Complainant anticipates that discovery may reveal that additional products of Respondents infringe the Asserted Patents, including but not limited to unreleased products that will become substantially fixed in design and are likely to be imported into the United States prior to the conclusion of this Investigation.

75. Upon information and belief, Respondents have had, and have, knowledge of, or were willfully blind to, the Asserted Patents. Respondents have knowledge

of the Asserted Patents as a result of the filing and/or service of this Complaint or related district court action. Additionally, prior to, or contemporaneous with, the filing of this Complaint, Respondents have had actual knowledge of the Asserted Patents by way of a notice letter. **Exhibits 108-109.**

76. Upon information and belief, Respondents knowingly induced and induce direct infringing acts by others with specific intent to encourage infringement by its customers. For example, Respondents actively induce customers' direct infringement by contracting with and encouraging customers to make, have made, use, sell, sell for importation, market, advertise, and/or import in the United States products that infringe (or for use in manufacturing processes that infringe) the Asserted Patents, including for further example, customers contracting with TSMC to make, have made, use, sell, sell for importation, market, advertise, and/or import in the United States semiconductor devices and components thereof, including through the CyberShuttle program. Respondents know, or should have known, that these induced acts directly infringe the Asserted Patents because of, for example, the infringement allegations and evidence provided in connection with this Complaint, and the aforementioned notice letters to Respondents.

77. Respondents also contribute to the foregoing infringement by customers by their making, having made, using, selling, selling for importation into the United States, marketing, advertising, and/or importing into the United States products that constitute a material part of the articles that practice the Asserted Patents (or a material or apparatus for use in practicing a patented process). Respondents know, or should have known, that such products have no substantial non-infringing uses, are a material part of the invention of each Asserted Patent, are especially made or especially adapted for use in an infringement of such patent, and

are not a staple article or commodity of commerce suitable for substantial non-infringing use.

A. Samsung

1. Representative Involved Articles

78. On information and belief, Samsung is engaged in the design, manufacture, and importation, sale for importation, and/or sale within the United States after importation, into the United States, of Accused Products that infringe literally or by equivalence at least the Asserted Patent Claims.

79. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of Samsung that violates Section 337. Complainant has obtained a Samsung Galaxy S20 FE 5G smartphone, a Samsung Galaxy S21 FE 5G smartphone,⁴ and a Samsung Galaxy A71 5G smartphone⁵ (collectively the “Samsung Representative Articles”), each of which includes a system-on-a-chip (SoC) apparatus. The Samsung Galaxy S20 FE 5G smartphone contains a Qualcomm Snapdragon 865 SoC, which is manufactured using proposed Respondent TSMC’s infringing 7 nm process. The Samsung Galaxy S21 FE 5G smartphone includes the Qualcomm Snapdragon 888 5G SoC, which is manufactured by using Samsung’s infringing 5 nm process. The Samsung Galaxy A71 5G smartphone includes the Qualcomm Snapdragon 765 5G SoC, which is manufactured by using Samsung’s infringing 7 nm process. Samsung imported, sold for importation, and/or sold within the United States after importation, into the United States, the Samsung Representative Articles.

⁴ The Samsung Galaxy S21 FE 5G smartphone is only offered as a “representative involved article” with respect to the ’306 and the ’812 Patents and is not offered as a “representative involved article” with respect to the ’178 and ’281 Patents.

⁵ The Samsung Galaxy A71 5G smartphone is only offered as a “representative involved article” with respect to the ’178 and the ’281 Patents and is not offered as a “representative involved article” with respect to the ’306 and ’812 Patents.

80. Complainant believes that the Samsung Representative Articles are exemplary of numerous other Accused Products imported into the United States, sold for importation into the United States, or sold within the United States after importation by Samsung, because such other devices feature the same or substantially similar infringing functionality, and/or are manufactured by similar infringing processes. For example, the Samsung Galaxy Tab S6 Lite contains a Samsung Exynos 9611 SoC (*see* **Exhibit** 35 at 3, <https://www.samsung.com/us/mobile/tablets/tab-s6-lite/specs/> (accessed August 20, 2022)), and the Samsung Galaxy Watch4 smartwatch contains a Samsung Exynos W920 SoC (*see* **Exhibit** 36 at 3, 7, https://ifixit-guide-pdfs.s3.amazonaws.com/pdf/ifixit/guide_144595_en.pdf (accessed August 20, 2022)). On information and belief, the Samsung Exynos 9611 manufactured at Samsung's 10 nm process node (**Exhibit** 37 at 7, <https://semiconductor.samsung.com/processor/mobile-processor/exynos-9611/> (accessed August 20, 2022)) is substantially similar to, and/or made by processes substantially similar to, the Qualcomm Snapdragon 765 5G SoC incorporated in the Samsung Representative Article (i.e., the Galaxy A71 5G smartphone). On information and belief, the Samsung Exynos W920 manufactured at Samsung's 5 nm process node (**Exhibit** 38 at 2, 3, <https://semiconductor.samsung.com/processor/wearable-processor/exynos-w920/> (accessed August 20, 2022)) is substantially similar to, and/or made by processes substantially similar to, the Qualcomm Snapdragon 888 5G SoC incorporated in the Samsung Representative Article (i.e., the Galaxy S21 FE 5G smartphone). Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent Claims have been imported, sold for importation, or sold within the United States after importation, into the United States, by Samsung.

81. Pursuant to Commission Rule 210.12(a)(9)(x), **Exhibit 20** contains photographs of a first Samsung Representative Article, i.e., the Samsung Galaxy S20 FE 5G smartphone; **Exhibit 23** contains photographs of a second Samsung Representative Article, i.e., the Samsung Galaxy S21 FE 5G smartphone; and **Exhibit 26** contains photographs of a third Samsung Representative Article, i.e., the Samsung Galaxy A71 5G smartphone. As set forth below, the charts in **Exhibits 39C–42C** and 45-48 demonstrate that these Samsung Representative Articles violate Section 337.

2. Infringement of the '306 Patent

82. **Exhibits 45** and 39C include charts comparing independent claim 26 of the '306 Patent to the Samsung Representative Articles (i.e., the Samsung Galaxy S20 FE 5G smartphone and the Samsung Galaxy S21 FE 5G smartphone). **Exhibits 45** and 39C show that the Samsung Representative Articles are covered by at least claim 26 of the '306 Patent.

3. Infringement of the '812 Patent

83. **Exhibits 46** and 40C include charts comparing independent claim 21 of the '812 Patent to the Samsung Representative Articles (i.e., the Samsung Galaxy S20 FE 5G smartphone and the Samsung Galaxy S21 FE 5G smartphone). **Exhibits 46** and 40C show that the Samsung Representative Articles are covered by at least claim 21 of the '812 Patent.

4. Infringement of the '178 Patent

84. **Exhibits 47** and 41C include charts comparing independent claims 1 and 11 of the '178 Patent to the Samsung Representative Articles (i.e., the Samsung Galaxy S20 FE 5G smartphone and the Samsung Galaxy A71 5G smartphone). **Exhibits 47** and 41C show that the Samsung Representative Articles (i.e., the Samsung Galaxy S20 FE 5G smartphone and the Samsung Galaxy A71 5G smartphone) are covered by at least claims 1 and 11 of the '178 Patent.

5. Infringement of the '281 Patent

85. **Exhibits** 48 and 42C include charts comparing independent claims 1 and 12 of the '281 Patent to the Samsung Representative Articles (i.e., the Samsung Galaxy S20 FE 5G smartphone and the Samsung Galaxy A71 5G smartphone). **Exhibits** 48 and 42C show that the Samsung Representative Articles are covered by at least claims 1 and 12 of the '281 Patent.

6. Specific Instance of Sale and Importation

86. Samsung imports, sells for importation, and/or sells within the United States after importation, into the United States, the Samsung Representative Articles depicted in **Exhibit** 20, **Exhibit** 23, and **Exhibit** 26.

87. Pursuant to Commission Rule 210.12(a)(3), **Exhibit** 49 contains the receipt showing a sale of a first Samsung Representative Article (i.e., the Samsung Galaxy S20 FE 5G smartphone), within the United States after importation into the United States. Complainant's counsel purchased a Samsung S20 FE 5G smartphone online in the United States on March 22, 2022 for shipment to its office in Boston, MA. **Exhibit** 49. The shipping label of this product shows that Samsung shipped the Samsung Galaxy S20 FE 5G smartphone from its warehouse located in Coppell, TX, and the product arrived in Boston, Massachusetts on March 30, 2022. **Exhibit** 20 at 1. Upon receipt of the Samsung Representative Article, Complainant's counsel photographed the packaging, which shows that the Samsung Galaxy S20 FE 5G smartphone was made in Vietnam. **Exhibit** 20 at 5. Therefore, the first Samsung Representative Article was imported.

88. Pursuant to Commission Rule 210.12(a)(3), **Exhibit** 43 contains the receipt from Samsung showing a sale of a second Samsung Representative Article (i.e., the Samsung Galaxy S21 FE 5G) within the United States after importation into the United States. Complainant's counsel purchased a Samsung S21 FE 5G smartphone online in the United States

on March 22, 2022 for shipment to its office in Boston, MA. **Exhibit 43**. The shipping label of this product shows that Samsung shipped the product from its warehouse located in Coppell, TX, and the product arrived in Boston, Massachusetts on March 30, 2022. **Exhibit 23** at 1. Upon receipt of the shipment in Boston, Complainant's counsel photographed the product packaging, which shows that the product was made in Vietnam. **Exhibit 23** at 4. Therefore, the second Samsung Representative Article (i.e., the Samsung Galaxy S21 FE 5G) was imported.

89. Pursuant to Commission Rule 210.12(a)(3), **Exhibit 44** contains the receipt from Boost Mobile showing a sale of a third Samsung Representative Article, (i.e., the Samsung Galaxy A71 5G) within the United States after importation into the United States. Complainant's counsel purchased a Samsung A71 5G smartphone online in the United States on March 23, 2022 for shipment to its office in Boston, MA. **Exhibit 44**. The shipping label of this product shows that Boost Mobile shipped the product from its warehouse located in Plainfield, IN, and the product arrived in Boston, Massachusetts on March 29, 2022. **Exhibit 26** at 1. Upon receipt of the shipment in Boston, Complainant's counsel photographed the product packaging, which shows that the product was made in Vietnam. **Exhibit 26** at 6. Therefore, the third Samsung Representative Article (i.e., the Samsung Galaxy A71 5G) was imported.

90. Thus, Samsung is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and/or selling within the United States after importation, into the United States, the Samsung Representative Articles, as well as other Accused Products that infringe the Asserted Patents.

B. TSMC

1. Representative Involved Article

91. On information and belief, TSMC is engaged in the design, manufacture, and importation, sale for importation, and/or sale within the United States after importation, into the United States, of Accused Products that infringe, literally or by equivalence, at least the Asserted Patent Claims.

92. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of TSMC that violates Section 337. Complainant has obtained a Samsung Galaxy S20 FE 5G smartphone, which includes an SoC apparatus (the “TSMC Representative Article”). The Samsung Galaxy S20 FE 5G smartphone contains a Qualcomm Snapdragon 865 SoC (the “TSMC Representative Article”), which is manufactured using TSMC’s infringing 7 nm process. TSMC imported, sold for importation, and/or sold within the United States after importation, into the United States the TSMC Representative Articles.

93. Complainant believes that the TSMC Representative Article is exemplary of numerous other Accused Products imported into the United States, sold for importation into the United States, or sold within the United States after importation by TSMC, because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent Claims have been imported, sold for importation, or sold within the United States after importation, into the United States, by TSMC.

94. Pursuant to Commission Rule 210.12(a)(9)(x), **Exhibit 20** contains photographs of the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE

5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC). As set forth below, the charts in **Exhibits 45-48** demonstrate that the TSMC Representative Article violates Section 337.

2. Infringement of the '306 Patent

95. **Exhibit 45** includes a chart comparing independent claim 26 of the '306 Patent to the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC). **Exhibit 45** shows that the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC) is covered by at least claim 26 of the '306 Patent.

3. Infringement of the '812 Patent

96. **Exhibit 46** includes a chart comparing independent claim 21 of the '812 Patent to the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC). **Exhibit 46** shows that the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC) is covered by at least claim 21 of the '812 Patent.

4. Infringement of the '178 Patent

97. **Exhibit 47** includes a chart comparing independent claim 1 of the '178 Patent to the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC). **Exhibit 47** shows that the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC) is covered by at least claim 1 of the '178 Patent.

5. Infringement of the '281 Patent

98. **Exhibit 48** includes a chart comparing independent claim 1 of the '281 Patent to the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC). **Exhibit 48** shows that the TSMC

Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC) is covered by at least claim 1 of the '281 Patent.

6. Specific Instance of Sale and Importation

99. TSMC imports, sells for importation, and/or sells within the United States after importation, into the United States, integrated circuits, including the TSMC Representative Article depicted in **Exhibit 20**.

100. Pursuant to Commission Rule 210.12(a)(3), **Exhibit 49** contains the receipt showing a sale of a Samsung Galaxy S20 FE 5G smartphone, incorporating the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC), within the United States after importation into the United States. Complainant's counsel purchased a Samsung S20 FE 5G smartphone online in the United States on March 22, 2022 for shipment to its office in Boston, MA. **Exhibit 49**. The shipping label of this product shows that Samsung shipped the Samsung Galaxy S20 FE 5G smartphone containing the TSMC-fabricated Qualcomm Snapdragon 865 SoC from its warehouse located in Coppell, TX, and the product arrived in Boston, Massachusetts on March 30, 2022. **Exhibit 20** at 1. Upon receipt of the TSMC Representative Article, Complainant's counsel photographed the packaging, which shows that the Samsung Galaxy S20 FE 5G smartphone was made in Vietnam, thereby evidencing the incorporation of the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC) into a Samsung product prior to importation into the United States. **Exhibit 20** at 5. Complainant's counsel photographed the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC) incorporated in the Samsung Galaxy S20 FE 5G smartphone, which was marked "Qualcomm SM8250." **Exhibit 20** at 8-9. On information and belief, the TSMC Representative Article (i.e., the Qualcomm Snapdragon 865 SoC) is manufactured by TSMC. See **Exhibit 102** at 1, <https://www.techinsights.com/products/sda-2007-802> (accessed Sept. 9, 2022). Furthermore,

on information and belief, the Qualcomm 865 SoC is fabricated by TSMC's infringing 7 nm process node. See **Exhibit** 102 at 1, <https://www.techinsights.com/products/sda-2007-802> (accessed Sept. 9, 2022). On information and belief, TSMC only manufactures its 7nm process node in Taiwan. See **Exhibit** 21 at 1, <https://www.tsmc.com/english/dedicatedFoundry/manufacturing/gigafab> (accessed August 18, 2022) (noting only Fabs 12, 14, and 15 manufacture at 7 nm); **Exhibit** 22 at 1, https://www.tsmc.com/english/aboutTSMC/TSMC_Fabs (accessed August 19, 2022) (noting Fabs 12, 14, and 15 are each located in Taiwan). Therefore, the TSMC Representative Article incorporated in the Samsung Galaxy S20 FE 5G smartphone (i.e., the Qualcomm Snapdragon 865 SoC) was imported.

101. In addition, TSMC imports its infringing semiconductor devices directly into the United States in connection with its CyberShuttle and/or Multi-Project Wafer ("MPW") program. **Exhibit** 103 at 1, <https://www.tsmc.com/english/dedicatedFoundry/services/cyberShuttle> (accessed Sept. 9, 2022). 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)." **Exhibit** 103 at 1, <https://www.tsmc.com/english/dedicatedFoundry/services/cyberShuttle> (accessed Sept. 9, 2022). Further, TSMC has a university program ("TSMC University Shuttle Program") which "was established to provide professors at leading research universities worldwide with access to the advanced silicon process technologies needed to research and develop innovative circuit design concepts, and is one of the world's most important research and development platforms in the semiconductor industry." **Exhibit** 104 at 1,

<https://esg.tsmc.com/en/update/innovationAndService/caseStudy/2/index.html> (accessed Sept. 9, 2022).

102. Thus, TSMC is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and/or selling within the United States after importation, into the United States, the TSMC Representative Articles, as well as other Accused Products that infringe the Asserted Patents.

V. HARMONIZED TARIFF SCHEDULE INFORMATION

103. On information and belief, the articles subject to this Complaint are classifiable under at least the following headings and subheadings of the Harmonized Tariff Schedule (“HTS”) of the United States: 8517.13.00 (Smartphones); 8517.62.90 (Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus: Other); 8471.30.01 (Portable automatic data processing machines, weighing not more than 10 kg, consisting of at least a central processing unit, a keyboard and a display); 8542 (Electronic integrated circuits); 8541.21.00 (Transistors, other than photosensitive transistors); 8541.50.00 (Other semiconductor devices); 8542.31.00 (Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits); 8471.49.00 (Other automatic data processing machines entered in the form of systems); and 8471.50.01 (Processing units other than those of subheading 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units).

104. These HTS identifications are for illustrative purposes only, in compliance with the Commission Rules, and are not intended to restrict the scope of the Investigation.

VI. RELATED LITIGATION

105. Pursuant to Commission Rule 210.12(a)(5), Complainant is also asserting all Asserted Patents against the proposed Respondents in district court proceedings before the United States District Court for the Eastern District of Texas, styled as: *Daedalus Prime LLC v. Samsung Elecs. Co., Ltd., et al.*, 2:22-cv-00352 (E.D. Tex.). No responsive pleadings have been filed in these district court proceedings. To Complainant's knowledge, the alleged unfair methods of competition and unfair acts, or the subject matter thereof, are not, and have not been, the subject of any court or agency litigation.

VII. DOMESTIC INDUSTRY RELATING TO THE ASSERTED PATENTS

106. Pursuant to Commission Rule 210.12(a)(6)(i), a domestic industry as defined in Section 337(a)(3) exists in the United States as the result of Intel's domestic activities related to the technology of the Asserted Patents and products that practice the Asserted Patents. In addition, a domestic industry is in the process of being established.

107. Pursuant to Commission Rule 210.12(a)(9)(iv), Complainant has attached a copy of the Daedalus license agreement with Intel (**Confidential Exhibit 50C**), and Amendment No. 1 to the same (**Confidential Exhibit 51C**). *See, e.g., Confidential Exhibit 50C at § 5.1.*

108. Pursuant to Commission Rule 210.12(a)(7), Daedalus is a patent management and licensing company.

A. Intel Corporation

109. Intel is a corporation duly organized and existing under the laws of the State of Delaware with a principal place of business located at 2200 Mission College Boulevard, Santa Clara, California.

110. Intel designs, develops, manufactures, and sells domestic industry

products that practice the technology claimed by the Asserted Patents in the United States and/or are or were manufactured by Intel using the methods claimed by the Asserted Patents (collectively, the “DI Products”). The DI Products are and/or have been designed, developed, and/or manufactured as the result of significant and substantial levels of investments by Intel in the United States. These investments include significant and continuous investments in plant and equipment, and employment of labor or capital; and substantial and ongoing investments in engineering, research, and development of Intel’s products that practice the Asserted Patents.⁶ Sections VII.B-VII.E, *infra*.⁷

111. Intel’s investments in products presently under development constitute not only (i) an existing domestic industry, but also (ii) a domestic industry in the process of being established. For example, Intel’s investments in products not yet commercialized or presently under development constitute necessary tangible steps to establish an industry in the United States. Also, there is a significant likelihood that the industry requirement will be satisfied in the future as to those products due to the projected demand and market for those products upon commercialization. For example, on January 21, 2022, Intel “announced plans for an initial investment of more than \$20 billion in the construction of two new leading-edge chip factories in Ohio” and announced that this “investment will help boost production to meet the surging demand for advanced semiconductors, powering a new generation of innovative products from Intel and serving the needs of foundry customers as part of the company’s IDM 2.0 strategy.”

Exhibit

52

at

9,

⁶ On information and belief, the Intel products practicing the Asserted Patents comprise at least the following product families: Alder Lake (10 nm “Intel 7”); Rocket Lake (14 nm); Tiger Lake (10 nm); Ice Lake (10 nm); and Denverton (14 nm).

⁷ Daedalus intends to promptly seek discovery from Intel to verify the investments and allocations thereof detailed in Sections VII.B-VII.E, *infra*. See also, Exhibit 50C at § 4.4(b) and Exhibit 51C at ¶ 3.

<https://www.intel.com/content/www/us/en/newsroom/news/intel-announces-next-us-site-landmark-investment-ohio.html#gs.uv1cbl> (accessed August 19, 2022). Intel announced that the new factory in Ohio is expected to create 3,000 Intel jobs. **Exhibit** 52 at 10. The Ohio fabs are expected to manufacture advanced chips at 2 nm and below, including Intel’s 18A process node. **Exhibit** 107 at 4, <https://www.theverge.com/2022/1/22/22895447/intel-ohio-chip-fab-manufacturing-cpu-processor-explained> (accessed Sept. 9, 2022). Upon information and belief, the technology disclosed in the Asserted Patents will facilitate continued scaling down of transistor sizes, and will therefore be used in Intel’s future process nodes.

112. As a result of these investments, a domestic industry exists and is in the process of being established in the United States: under Section 337(a)(3)(A) due to Intel’s significant investment in plant and equipment; under Section 337(a)(3)(B) due to Intel’s significant employment of labor or capital; and under Section 337(a)(3)(C) due to Intel’s substantial investment in research and development with respect to each of the Asserted Patents.

B. Intel’s U.S. Investments

113. Intel currently employs approximately 113,452 global employees, about 52,365 (46.16%) of which are located in the United States, and about 61,087 (53.84%) of which are located outside the United States. *See, e.g., Exhibits* 56-84. In the year 2018, Intel was reported as employing 102,700 global employees, of which about 51,000 were in the U.S. *See Exhibit* 53 at 2, <https://www.bizjournals.com/portland/news/2018/03/29/intels-oregon-workforce-number-hits-new-high.html> (accessed August 19, 2022).

114. Of Intel’s 52,365 employees currently in the U.S., approximately 17,565 (33.54%) are located in Intel’s U.S. non-fab locations (e.g. California, Texas, Colorado, and Massachusetts), and approximately 34,800 (66.46%) are located in its U.S. fab locations (e.g. Oregon, Arizona, and New Mexico). *See, e.g., Exhibits* 56-84. Thus, based on these headcount

totals, approximately 33.54% of Intel's investments in the U.S. relate to, or support, R&D whereas 66.46% of Intel's investments in the U.S. relate to, or support, manufacturing. Further, Intel's new factories in Ohio are expected to create 3,000 Intel jobs, thereby increasing the U.S. employee headcount to approximately 55,365 and the fab location headcount to approximately 37,800 (68.27%), and increasing Intel's investments related to, or support, manufacturing to 68.27%. *See, e.g., Exhibits 52, 56-84.*

115. During its fiscal years 2017-2021, and Q1 2022, Intel offered a range of products, including (i) products having a release date of 2017 onwards, and (ii) products released as early as 2012 but still designated as "Launched" (i.e., not "Discontinued") on Intel's website. These included 1,922 products: 1,079 processors (784 with release date of 2017 onwards and 295 released since 2012 and still "launched"), 254 FPGAs (100 with release date of 2017 onwards and 154 released since 2012 and still "launched"), 79 chipsets (68 with release date of 2017 onwards and 11 released since 2012 and still "launched"), 106 servers (95 with release date of 2017 onwards and 11 released since 2012 and still "launched"), 12 structured ASICs, 149 NUCs (148 with release date of 2017 onwards and 1 released since 2012 and still "launched"), 8 GPUs, 24 Wireless products (18 with release date of 2017 onwards and 6 released since 2012 and still "launched"), 75 Ethernet products (44 with release date of 2017 onwards and 6 released since 2012 and still "launched"), and 136 Memory and Storage products (all released since 2017). *See Exhibit 85; see generally, <https://www.intel.com/content/www/us/en/products/overview.html>.*

116. Intel also offers several product families which, on information and belief, practice one or more of the Asserted Patents, five of which are: (i) Alder Lake; (ii) Rocket Lake; (iii) Tiger Lake; (iv) Ice Lake; and (v) Denverton. For purposes of this complaint,

Daedalus identifies these product families as the “Exemplary DI Families” and reserves all rights to identify additional domestic industry products in the future.

117. Of the aforementioned 1,922 product releases since 2017 (and products released since 2012 and not discontinued according to Intel’s website), at least 56 are in the Alder Lake family (47 processors and 9 chipsets), at least 41 are in the Rocket Lake family (29 processors and 12 chipsets), at least 40 are in the Tiger Lake family (38 processors and 2 chipsets), at least 91 are in the Ice Lake family (91 processors), and at least 20 are in the Denverton family (20 processors). See **Exhibit 85**; see generally, <https://www.intel.com/content/www/us/en/products/overview.html>

118. Based on a straight-line proportion of Intel’s 1,922 products, those Exemplary DI Families comprise 12.90% (248/1,922) of Intel’s products launched on or after January 1, 2017. These figures are broken down by processor family code name, below.

Product Family Codename / Process	Number of Products Released Since 2017	Percentage of Total Intel Product Releases since 2017 and Launched Products since 2012
Alder Lake	56	2.91%
Rocket Lake	41	2.13%
Tiger Lake	40	2.08%
Ice Lake	91	4.73%
Denverton	20	1.04%
Total Exemplary DI Families:	248	12.9%
Total Intel Products:	1,922	

119. Intel’s annual report list its cost of sales across all product lines for fiscal years 2019-2021. **Exhibit 9** at 37 (Intel 2021 Form 10-K).

120. Based on the percentages of the Exemplary DI Families listed above (totaling 12.9%), plus taking into account Intel’s U.S. headcount percentage of 46.16% (an estimated 33.54% of which are dedicated to R&D in the U.S. and approximately 66.46% of

which are dedicated to manufacturing in the U.S.), the cost of sales attributable to the Exemplary

DI Products since 2019 in the U.S. are as follows:

Cost of Sales⁸	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021	Total
Alder Lake	\$400,626,102	\$460,132,343	\$472,947,005	\$1,553,612,013
Rocket Lake	\$293,241,786	\$336,797,900	\$346,177,705	\$1,137,257,953
Tiger Lake	\$286,358,176	\$328,891,846	\$338,051,468	\$1,110,557,808
Ice Lake	\$651,189,506	\$747,912,708	\$768,742,039	\$2,525,244,978
Denverton	\$143,179,088	\$164,445,923	\$169,025,734	\$555,278,904
Cost of Sales Allocable to Exemplary DI Products (U.S.)	\$1,774,594,658	\$2,038,180,721	\$2,094,943,950	\$6,881,951,656
Exemplary DI Families R&D U.S. Total (estimated):	\$595,199,048	\$683,605,814	\$702,644,201	\$2,308,206,585
Exemplary DI Families Manufacturing U.S. Total (estimated):	\$1,179,395,610	\$1,354,574,907	\$1,392,299,749	\$4,573,745,070
Cost of Sales (Total U.S.)	\$13,767,220,000	\$15,812,108,000	\$16,252,474,400	\$50,036,516,800
Cost of Sales (Total W.W.)	\$29,825,000,000	\$34,255,000,000	\$35,209,000,000	\$108,398,000,000

C. Intel's Significant Investment in Plant and Equipment

1. Square Footage of Buildings Owned

121. Intel's annual reports from fiscal years 2019-2021 disclose that Intel owned approximately 32,000,000 sq. ft. of buildings in the U.S., which equated to 52.5% of Intel's global footprint of 61,000,000 sq. ft. in 2021. **Exhibits 9-11** (Intel Form 10-K, 2021, 2020, 2019).

122. Using the same percentages listed above in ¶¶ 113-114 and 118, the chart below shows the U.S.-based square-footage of buildings allocable to the five Exemplary DI Families (approx. 4,124,800 sq. ft. in 2021, which is approx. 6.76% of Intel's overall footprint in 2021).

⁸ Cost of Sales includes investments that would likely qualify under all three subsections 337(a)(3)(A), (B), and (C).

Plant (sq. ft.)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	934,110	931,200	931,200
Rocket Lake	683,730	681,600	681,600
Tiger Lake	667,680	665,600	665,600
Ice Lake	1,518,330	1,513,600	1,513,600
Denverton	333,840	332,800	332,800
Sq. Ft. Allocable to DI Products (U.S.)	4,137,690	4,124,800	4,124,800
Exemplary DI Families R&D U.S. Total (estimated):	1,387,781	1,383,458	1,383,458
Exemplary DI Families Manufacturing U.S. Total (estimated):	2,749,909	2,741,342	2,741,342
Intel (Total U.S.)	32,100,000	32,000,000	32,000,000
Intel (Total W.W.)	59,800,000	60,000,000	61,000,000

123. Intel invests significant sums, and is in the process of investing additional significant sums, in domestic plant and equipment relating to the DI Products. “The majority of [Intel’s] logic wafer manufacturing is conducted in the U.S.” **Exhibit 9** at 12 (Intel 2021 Form 10-K). Intel’s “Main U.S. Activities” are “logic wafer manufacturing; microprocessor manufacturing; R&D; enterprise platform design; hardware and software engineering.” *Id.*

124. Intel owns and operates semiconductor fabrication facilities in, e.g., Chandler, Arizona; Rio Rancho, New Mexico; and Hillsboro, Oregon; and has a planned future site in Ohio. **Exhibit 86** (<https://www.intel.com/content/www/us/en/architecture-and-technology/global-manufacturing.html>) (accessed August 23, 2022).

125. Intel also owns and operates research and development facilities across the United States. For example, in Folsom, California, Intel reports that “[w]ith seven buildings totaling over 1.5 million square feet of office, test floor, and lab space, Intel Folsom is one of our largest Intel sites and one of the largest private sector employers in the area[, and] as a research and development campus, Folsom employees create, test, and validate the next generation of chips and chipsets, including desktop, mobile, and server processor products.”

Exhibit 54 at 1, <https://www.intel.com/content/www/us/en/jobs/locations/united-states/sites/folsom.html> (accessed August 19, 2022).

2. Value of Land and Buildings

126. According to Intel's annual reports from fiscal years 2019-2021, Intel's net value of land and buildings was \$37.7 billion in 2019, \$37.5 billion in 2020, and \$40.0 billion in 2021. **Exhibit** 9 at 86 (Intel 2021 Form 10-K).

127. In taking a headcount allocation of 46.16% to account for Intel's U.S.-based employees vs. Intel's non-U.S.-based employees, Intel's net value of land and buildings was \$17.4 billion in 2019, \$17.3 billion in 2020, and \$18.4 billion in 2021.⁹ **Exhibits** 9-11 (Intel Form 10-K, 2021, 2020, 2019).

128. Based on a straight-line proportion of Intel's 1,922 products, the U.S.-based net value of land and buildings allocable to the five Exemplary DI Families are as follows (approx. \$2.3 billion in 2021, which is approx. 5.95% of Intel's overall net value of land and buildings in 2021).

129. Using the same percentages listed above in ¶¶ 113-114 and 118, of the estimated \$2.3 billion of the net value of land and buildings allocable to the five Exemplary DI Families, approximately \$799 million, or 33.54%, is estimated to be dedicated to U.S.-based R&D; and approximately \$1.5 billion, or 66.46%, is estimated to be dedicated to U.S.-based manufacturing:

⁹ These amounts exclude accumulated depreciation.

Plant (\$ (Land, Buildings)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	\$506,985,112	\$504,204,572	\$537,826,270
Rocket Lake	\$371,092,195	\$369,056,955	\$393,666,651
Tiger Lake	\$362,381,111	\$360,393,646	\$384,425,650
Ice Lake	\$824,068,584	\$819,549,012	\$874,198,714
Denver-ton	\$181,190,556	\$180,196,823	\$192,212,825
Exemplary DI Families U.S. Total (estimated)	\$2,245,717,558	\$2,233,401,009	\$2,382,330,109
Exemplary DI Families R&D U.S. Total (estimated):	\$753,213,669	\$749,082,698	\$799,033,519
Exemplary DI Families Manufacturing U.S. Total (estimated):	\$1,492,503,889	\$1,484,318,310	\$1,583,296,591
Plant (Total U.S.)	\$17,422,168,800	\$17,326,617,600	\$18,482,002,400
Plant (Total W.W.)	\$37,743,000,000	\$37,536,000,000	\$40,039,000,000

130. Additionally, Intel's annual reports show that Intel spent significant amounts on construction in the United States during this same period. **Exhibit 9** at 86 (Intel 2021 Form 10-K).

131. Using the same percentages listed above in ¶¶ 113-114 and 118, the chart below shows the amounts per family of the five Exemplary DI Families using the same allocation methodology (approx. \$1.28 billion, which is approx. 5.95% of Intel's overall net of construction in 2021).

Plant (\$ (Land, Buildings)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	\$215,767,211	\$232,504,181	\$289,404,505
Rocket Lake	\$157,932,701	\$170,183,473	\$211,832,164
Tiger Lake	\$154,225,361	\$166,188,556	\$206,859,578
Ice Lake	\$350,714,402	\$377,919,167	\$470,406,636
Denver-ton	\$77,112,680	\$83,094,278	\$103,429,789
Exemplary DI Families U.S. Total (estimated)	\$955,752,355	\$1,029,889,654	\$1,281,932,671
Exemplary DI Families R&D U.S. Total (estimated):	\$320,559,340	\$345,424,990	\$429,960,218
Exemplary DI Families Manufacturing U.S. Total (estimated):	\$635,193,015	\$684,464,664	\$851,972,453
Construction (Total U.S.)	\$7,414,680,800	\$7,989,834,400	\$9,945,172,000
Construction (Total W.W.)	\$16,063,000,000	\$17,309,000,000	\$21,545,000,000

3. Investments in Machinery and Equipment

132. Intel has also made significant investments in the machinery and equipment used to manufacture and test the domestic industry products in the United States.

Exhibit 9 at 86 (Intel 2021 Form 10-K).

133. Using the same percentages listed above in ¶¶ 113-114 and 118, from 2019–2021, Intel invested the following estimated amounts based upon the same methodology:

Machinery and Equipment (\$)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	\$1,006,112,177	\$1,066,330,343	\$1,168,028,255
Rocket Lake	\$736,432,624	\$780,509,839	\$854,948,516
Tiger Lake	\$719,145,473	\$762,188,012	\$834,879,302
Ice Lake	\$1,635,364,466	\$1,733,244,853	\$1,898,547,644
Denverton	\$359,572,737	\$381,094,006	\$417,439,651
DI Product Total (estimated)	\$4,456,627,476	\$4,723,367,052	\$5,173,843,369
Exemplary DI Families R&D U.S. Total (estimated):	\$1,494,752,856	\$1,584,217,309	\$1,735,307,066
Exemplary DI Families Manufacturing U.S. Total (estimated):	\$2,961,874,621	\$3,139,149,743	\$3,438,536,303
Machinery/Equipment Investments (Total U.S.)	\$34,574,301,600	\$36,643,654,400	\$40,138,428,000
Machinery/Equipment Investments (Total W.W.)	\$74,901,000,000	\$79,384,000,000	\$86,955,000,000

D. Intel's Significant Investment in Labor and/or Capital

1. Number of Employees

134. A domestic industry as defined by 19 U.S.C. § 1337(a)(3)(B) exists in the United States with respect to the articles protected by the Asserted Patents by reason of Intel's significant employment of labor and/or capital. As noted above, Intel currently employs approximately 113,452 global employees, about 52,365 (46.16%) of which are located in the United States, and about 61,087 (53.84%) of which are located outside the United States. *See, e.g., Exhibits 56-84.*

135. Significant numbers of Intel employees work in the United States relating to, or supporting, R&D (approx. 33.54%) and relating to, or supporting, manufacturing (approx. 66.46%). *See, e.g., Exhibits 56-84.* For example, in taking 12.9% of Intel’s overall costs associated with the five product families as part of the DI Products, an estimated 7,211 of Intel’s 55,900 U.S. employees are dedicated to those five product families.

136. Using the same percentages listed above in ¶¶ 113-114 and 118, the chart below shows the approximate number of U.S.-based employees dedicated to the five Exemplary DI Families.

Labor (Headcount)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	1,488	1,486	1,627
Rocket Lake	1,089	1,087	1,191
Tiger Lake	1,064	1,062	1,163
Ice Lake	2,419	2,415	2,644
Denverton	532	531	581
Headcount Allocable to DI Products (U.S.)	6,593	6,581	7,205
Exemplary DI Families R&D U.S. Total (estimated):	2,211	2,207	2,417
Exemplary DI Families Manufacturing U.S. Total (estimated):	4,381	4,374	4,789
Total Intel Headcount (Total U.S.)	51,145	51,053	55,900
Total Intel Headcount (Total W.W.)	110,800	110,600	121,100

2. Marketing and G&A Expenses

137. Intel has also made significant investments in marketing the Exemplary DI Families, as well as in general and administrative (“G&A”) expenses related to the Exemplary DI Families. **Exhibit 9** at 37, 40 (Intel 2021 Form 10-K).

138. Using the same percentages listed above in ¶¶ 113-114 and 118, the chart below shows the approximate amount of investment Intel has made in these areas related to the five Exemplary DI Families using the same in-line product allocation.

Marketing and G&A (\$)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	\$85,296,756	\$83,013,221	\$87,889,240
Rocket Lake	\$62,433,708	\$60,762,254	\$64,331,299
Tiger Lake	\$60,968,128	\$59,335,910	\$62,821,175
Ice Lake	\$138,643,868	\$134,932,142	\$142,857,768
Denverton	\$30,484,064	\$29,667,955	\$31,410,588
Marketing and G&A \$ Allocable to Exemplary DI Products (U.S.)	\$377,826,524	\$367,711,483	\$389,310,070
Marketing and G&A (Total U.S.)	\$2,931,160,000	\$2,852,688,000	\$3,020,248,800
Marketing and G&A (Total W.W.)	\$6,350,000,000	\$6,180,000,000	\$6,543,000,000

139. These marketing and G&A numbers alone demonstrate that Intel's employment of labor and capital comprise a domestic industry in the United States with respect to the Asserted Patents.

E. Intel's Substantial Investment in the Exploitation of the Asserted Patents

1. R&D Expenditures

140. A domestic industry as defined by 19 U.S.C. § 1337(a)(3)(C) exists in the United States with respect to the Asserted Patents by reason of Intel's substantial investment in its engineering, research, and development ("R&D") directed to its products covered by the Asserted Patents.

141. Intel's total investment in research and development for fiscal years 2019-2021 and Q1 2022 was \$46,508,000,000. **Exhibit 9** at 37 (Intel 2021 Form 10-K). The approximate U.S. portion of that expenditure was \$21,468,092,800.

142. Using the same percentages listed above in ¶¶ 113-114 and 118, allocating the approximate U.S. R&D expenditure to the products covered by the Asserted Patents, using the same in-line allocation by processor family shows the following:

R&D (\$)	Q1-Q4 2019	Q1-Q4 2020	Q1-Q4 2021
Alder Lake	\$179,485,867	\$182,091,783	\$204,040,586
Rocket Lake	\$131,376,253	\$133,283,676	\$149,349,295
Tiger Lake	\$128,292,303	\$130,154,952	\$145,843,443
Ice Lake	\$291,741,632	\$295,977,366	\$331,653,599
Denverton	\$64,146,152	\$65,077,476	\$72,921,722
R&D \$ Allocable to Exemplary DI Products (U.S.)	\$795,042,207	\$806,585,253	\$903,808,646
R&D (Total U.S.)	\$6,167,899,200	\$6,257,449,600	\$7,011,704,000
R&D (Total W.W.)	\$13,362,000,000	\$13,556,000,000	\$15,190,000,000

143. In sum, Intel has expended, and will continue to expend, significant and substantial domestic resources in plant and equipment, labor or capital, research and development, and engineering, in connection with the design, development, support, and manufacture of the DI Products including the Exemplary DI Products. A domestic industry therefore exists, and is in the process of being established, in connection with the Asserted Patents.

144. Pursuant to Commission Rule 210.12(a)(9)(ix), Complainant is required to chart “a representative involved domestic article” of Intel to an exemplary claim of each involved Asserted Patent. As described above, Complainant believes that at least the Intel 12th Generation Intel Core i5-12500K processor (also sometimes referred to by its code name “Alder Lake”) (the “DI Representative Article”), is exemplary of numerous other DI Products because such other devices feature the same or substantially similar functionality. Pursuant to Commission Rule 210.12(a)(9)(x), **Exhibit 55** contains photographs of the DI Representative Article.

F. The DI Representative Article Practices each of the Asserted Patents.

145. **Exhibit 12** includes a chart comparing independent claim 26 of the '306 Patent to the DI Representative Article. **Exhibit 12** shows that the DI Representative Article practices at least one claim of the '306 Patent.

146. **Exhibit 13** includes a chart comparing independent claim 21 of the '812 Patent to the DI Representative Article. **Exhibit 13** shows that the DI Representative Article practices at least one claim of the '812 Patent.

147. **Exhibit 14** includes a chart comparing independent claim 1 of the '178 Patent to the DI Representative Article. **Exhibit 14** shows that the DI Representative Article practices at least one claim of the '178 Patent.

148. **Exhibit 15** includes a chart comparing independent claim 1 of the '281 Patent to the DI Representative Article. **Exhibit 15** shows that the DI Representative Article practices at least one claim of the '281 Patent.

VIII. REQUESTED REMEDIAL ORDERS

A. Limited Exclusion Order

149. Pursuant to Section 337(d), Daedalus respectfully requests that a limited exclusion order be entered against each named Respondent and its subsidiaries, predecessors, affiliates, agents, successors, and assigns, in order to remedy the Respondents' violation of Section 337 and to prevent such future violations by Respondents, barring from entry into the United States all articles (made from or incorporating foreign-fabricated wafers) that directly infringe, contributorily infringe, and/or induce the infringement of (or made by processes that infringe), literally or under the doctrine of equivalents, the Asserted Patents.

B. Cease and Desist Order

150. Cease and desist orders against all named Respondents are appropriate under Section 337(f), which provides that the Commission may issue a cease and desist order against any person violating Section 337, prohibiting each Respondent and their subsidiaries, predecessors, affiliates, agents, successors, and assigns from engaging in the (a) importation, sale for importation, and/or sale within the United States after importation of such articles, (b)

marketing, distributing, offering for sale, selling, or otherwise transferring (except for exportation) in the United States such articles, (c) advertising such imported articles, (d) soliciting U.S. agents, retailers, resellers, or distributors for such articles, and (e) aiding or abetting other entities in the importation, sale for importation, sale after importation, transfer (except for exportation), or distribution of such articles. On information and belief, TSMC and Samsung maintain or may maintain by the conclusion of the evidentiary hearing (or are involved in the direction of others in maintaining) commercially significant inventory of semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof, including at least at Samsung's warehouse facility located at 240 Dividend Drive, Coppel, TX. **Exhibit** 106 at 2, <https://coppelstudentmedia.com/94779/news/samsung-coppel-warehouse-investing-3-8-million-in-upgrades/> (accessed Sept. 9, 2022). In particular, at least certain Samsung products ordered directly from Samsung's U.S. website, <https://www.samsung.com/us/>, have been shipped from the Samsung warehouse facility located at 240 Dividend Drive, Coppel, TX. **Exhibit** 20 at 1; **Exhibit** 23 at 1; **Exhibit** 43 at 1; **Exhibit** 49 at 1. Moreover, upon information and belief, although TSMC may import wafers into the United States through the CyberShuttle program in low volumes, those shipments and inventories are nonetheless commercially significant, as those low volume shipments often result in TSMC securing a design win to mass-produce the design incorporated in the CyberShuttle prototype. Additionally, whereas here, Samsung's and TSMC's infringing semiconductor devices, mobile devices containing the same (i.e., smartphones, tablets, and smartwatches), and components thereof, are easily concealed, and it is difficult to identify the source of infringing goods, a cease and desist order is necessary to ensure compliance with the

requested remedial orders. At least for the foregoing reasons, cease and desist orders are an appropriate remedy to prevent the widespread violation of Daedalus's patent rights.

IX. RELIEF REQUESTED

151. WHEREFORE, by reason of the foregoing, pursuant to Commission Rule 210.12(a)(11), Complainant requests that the United States International Trade Commission:

a. Institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to the Respondents' violations of Section 337 based on the design, manufacture, importation into the United States, sale for importation into the United States, sale within the United States after importation, and instruction of purchasers on the infringing use of any articles, including semiconductor devices, mobile devices containing the same, and components thereof, that infringe or made by manufacturing processes that infringe one or more claims of one or more of the Asserted Patents;

b. Schedule and conduct an evidentiary hearing on permanent relief pursuant to 19 U.S.C. § 1337(d) and (f) of the Tariff Act of 1930, as amended;

c. Issue a Limited Exclusion Order specifically directed to each named Respondent and its subsidiaries, predecessors, affiliates, agents, successors, and assigns, pursuant to 19 U.S.C. § 1337(d), excluding from entry into the United States any articles (made from or incorporating foreign-fabricated wafers), including semiconductor devices, mobile devices containing the same, and components thereof, that infringe or made by processes that infringe one or more of the Asserted Patents;

d. Issue permanent cease and desist orders pursuant to 19 U.S.C. § 1337(f) prohibiting each Respondent and its subsidiaries, predecessors, affiliates, agents, successors, and assigns, from, among other things, importing, selling, offering for sale

(including via the Internet or electronic mail), advertising (including via the Internet or electronic mail), or distributing articles, including semiconductor devices, mobile devices containing the same, and components thereof, that infringe or made by processes that infringe one or more claims of one or more of the Asserted Patents; and

e. Impose a bond upon each Respondent and its subsidiaries, predecessors, affiliates, agents, successors, and assigns, who continues to import infringing articles, including infringing semiconductor devices, mobile devices containing the same, and components thereof, that infringe or made by processes that infringe, during the 60-day-Presidential review period per 19 U.S.C. § 1337(j); and issue such other and further relief as the Commission deems just and proper under the law, based upon the facts determined by the investigation and the authority of the Commission.

Dated: September 12, 2022

Respectfully submitted,



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**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON DC**

In the Matter of

CERTAIN SEMICONDUCTOR DEVICES,
MOBILE DEVICES CONTAINING THE
SAME, AND COMPONENTS THEREOF

Investigation No. 337-TA-_____

VERIFICATION OF COMPLAINT

I, Edward Gomez, am Managing Principal at Daedalus Prime LLC. (“Daedalus” or “Complainant”) and am duly authorized by Complainant Daedalus to execute this verification of the accompanying Complaint under Section 337 of the Tariff Act of 1390, as Amended, on behalf of Complainant. I have read the Complaint and am aware of its contents. To the best of my knowledge, information and belief and based upon a reasonable inquiry under the circumstances, I hereby certify that:

1. The allegations contained in the Complaint are well grounded in fact and have evidentiary support, or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery;
2. The claims and other legal contentions set forth in the Complaint are warranted by existing laws or by a good faith, non-frivolous argument for extension, modification, or reversal of existing law, or by the establishment of new law; and
3. The Complaint is not being filed for any improper purpose, such as to harass or cause unnecessary delay or needless increase in the cost of litigation.

Executed on September 12, 2022

Ed Gomez

Edward Gomez
Managing Principal of Daedalus Prime LLC