Paper No. 8
Filed: August 15, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD. and
APPLE INC.,
Petitioners,

v.

MARLIN SEMICONDUCTOR LTD.,
Patent Owner.

Case IPR2025-00847
Patent No. 7,745,847

PETITIONERS' UPDATED EXHIBIT LIST

Pursuant to 37 C.F.R. § 42.63(e), Petitioners Taiwan Semiconductor Manufacturing Company Ltd. and Apple Inc. hereby submit a current listing of Petitioners' exhibits. Exhibits 1037-1047, 1100-1114, 1116-1133, 1139-1147, 1150-1189, and 1191-1197 are being filed today.

Exhibit	Description
1001	U.S. Patent No. 7,745,847 B2 to Tseng et al. ("'847 Patent").
1002	Prosecution File History of the '847 Patent.
1003	Declaration of Dr. Eugene Fitzgerald, Ph.D.
1004	Curriculum Vitae of Dr. Eugene Fitzgerald, Ph.D.
1005	U.S. Pat. No. 7,935,590 B2 to Lan et al. ("Lan").
1006	U.S. Pat. No. 7,026,689 B2 to Liaw ("Liaw").
1007	U.S. Pat. No. 7,605,407 B2 to Wang ("Wang407").
1008	U.S. Pat. No. 7,449,753 B2 to Wang et. al. ("Wang753")
1009	U.S. Pat. No. 7,591,659 B2 to Chen et al. ("Chen").
1010	S.M. Sze, *Physics of Semiconductor Devices.* (2d ed. 1981) (excerpted).
1011	J.D. Plummer et al., *Silicon VLSI Technology: Fundamentals, Practice and Modeling* (2000) (excerpted).
1012	D. James, "2004 – The Year of 90-nm: A Review of 90 nm Devices," 2005 IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 72-76 (2005).
1013	S.E. Thompson et al., "A 90-nm Logic Technology Featuring Strained-Silicon," IEEE Transactions on Electron Devices, vol. 51. No. 11, pp. 1790-97 (Nov. 2004).

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1014	U.S. Pat. Pub. No. 2006/0148151 A1 to Murthy et al.
1015	U.S. Pat. Pub. No. 2004/0262683 A1 to Bohr et al.
1016	T. Ghani et al., "A 90nm High Volume Manufacturing Logic Technology Featuring Novel 45nm Gate Length Strained Silicon CMOS Transistors," Technical Digest of the 2003 IEEE International Electron Devices Meeting ("IEDM"), pp. 978-80 (Dec. 10, 2003).
1017	U.S. Pat. Pub. No. 2007/0034906 A1 to Wang et al.
1018	U.S. Pat. Pub. No. 2006/0286729 A1 to Kavalieros et al.
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1020	Excerpts from C.Y. Chang & S.M Sze, *ULSI Technology* (1996).
1021	Excerpts from S. Wolf, *Silicon Processing for the VLSI Era, Volume 2: Process Integration* (1990).
1022	G.E. Moore, *Lithography and the Future of Moore's Law*, Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE) 2437, pp. 2-17 (May 19, 1995).
1023	Excerpts from S. Wolf, *Silicon Processing for the VLSI Era, Volume 3: The Submicron MOSFET* (1995).
1024	M. Quirk & J. Serda, *Semiconductor Manufacturing Technology*, Ch. 12: Metallization (2001) (excerpted).
1025	U.S. Pat. No. 7,364,957 to Thei et al.
1026	U.S. Pat. Pub. No. 2007/0042584 A1 to Huang et al.

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1027	U.S. Pat. No. 7,105,394 to Hachimine et al.
1028	U.S. Pat. No. 7,968,952 to Fischer et al.
1029	U.S. Pat. No. 6,232,164 to Tsai et al.
1030	U.S. Pat. No. 4,641,417 to McDavid
1031	U.S. Pat. No. 7.402,496 to Liu et al.
1032	U.S. Pat. Pub. No. 2007/0132038 A1 to Chong et al.
1033	U.S. Pat. No. 7,238,580 B2 to Orlowski et al.
1034	U.S. Pat. Pub. No. 2006/0228863 A1 to Zhang et al.
1035	U.S. Pat. Pub. No. 2007/0048907 A1 to Lee et al.
1036	U.S. Pat. Pub. No. 2007/0249069 A1 to Alvarez et al.
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1038	U.S. Pat. No. 7,579,262 to Hoentschel et al.
1039	A. Wei et al., *Combining Embedded and Overlayer Compressive Stressors in Advanced SOI CMOS Technologies*, Extended Abstracts of the 2005 International Conference on Solid State Devices and Materials, Kobe 32-33 (2005).
1040	M. Horstmann et al., *Integration and Optimization of Embedded-SiGe, Compressive and Tensile Stressed Liner Films, and Stress Memorization in Advanced SOI CMOS Technologies*, IEEE (2005).
1041	U.S. Pat. Pub. No. 2007/020179 A1 to Chen.
1042	U.S. Pat. Pub. No. 2005/0112817 A1 to Cheng et al.
1043	U.S. Pat. Pub. No. 2007/0228357 A1 to Wei et al.
1044	U.S. Pat. No. 6,887,762 to Murthy et al.

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1045	U.S. Pat. No. 7,727,845 to Wang et al.
1046	Listing of district court cases and inter partes review proceedings in which U.S. Patent No. 7,745,847 has been asserted or challenged, Docket Navigator.
1047	Continuity data for U.S. Patent No. 7,745,847, Patent Center, United States Patent and Trademark Office.
1048-1099	Reserved.
1100	Institution Decisions for TSMC, based on Lex Machina data.
1101	*Certain Integrated Circuits With Voltage Regulators And Products Containing Same*, Inv. No. 337-TA-1024, USITC Order 55 (Aug. 31, 2018).
1102	*Certain Personal Computer/Consumer Electronic Convergent Devices, Components Thereof, And Products Containing Same*, Inv. No. 337-TA-558 (USITC Order 6 (Feb. 7, 2006).
1103	*Certain Unmanned Aerial Vehicles And Components Thereof*, Inv. No. 337-TA-1133, USITC Comm'n Op. (Sept. 8, 2020).
1104	Jennifer Nall, *How delayed Notice of Date Accorded mailings may affect inter partes review*, DLA Piper (last visited Aug. 8, 2025), *available at* https://www.dlapiper.com/en/insights/publications/intellectual-property-news/2025/how-delayed-notice-of-date-accorded-mailings-may-affect-inter-partes-review.
1105	Memorandum from Scott R. Boalick to PTAB AIA Paneling re: Notice of Filing Date Accorded for AIA Petitions (July 18, 2025).

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1106	Final Written Decision Outcomes for TSMC, *available at* https://law.lexmachina.com/party/ptab?filing_date-from=2012-09-16&filing_date-to=&final_decision_date-from=2013-07-17&final_decision_date-to=&new_trial_flow-exclude=PreI_AS&party_role-include=Petitioner&filters=true&id=26931&id=20676624&id=64431208&tab=ptab_trial_flow&view=analytics&cols=trial%2Cfiled%2Cinstitution_decision_date%2Cpatent%2Cpetitioners%2Cpatent_owners%2Ctrial_resolution%2Cfinal_decision_date.
1107	George Quillin, *PTAB Average Time-To-Decision in IPRs May Surprise You*, JDSupra (July 28, 2015) (last visited Aug. 8, 2025), *available at https://www.jdsupra.com/legalnews/ptab-average-time-to-decision-in-iprs-71645.*
1108	*Certain Foreign-Fabricated Semiconductor Devices, Products Containing The Same, And Components Thereof*, Inv. No. 337-TA-1443, USITC Order 10 (May 7, 2025).
1109	*Certain Power Inverters And Converters, Vehicles Containing The Same, And Components Thereof*, Inv. No. 337-TA-1267, USITC Order 6 (Aug. 4, 2021).
1110	*Certain Power Inverters And Converters, Vehicles Containing The Same, And Components Thereof*, Inv. No. 337-TA-1267, USITC Order 14 (Sept. 22, 2021).
1111	Trump on China - Putting America First (Robert C. O'Brien editor).
1112	YiTan Hsu, The Critical Role of Taiwan in the United States Semiconductor Supply Chain (Nov. 24, 2024).
1113	Letter from Billie Chen to Under Secretary Andrei Iancu regarding USPTO Request for Comments on Discretion to Institute Trials Before the Patent Trial and Appeal Board, Docket No. PTO-C-2020-055.

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1114	*Certain Wearable Electronic Devices With Egg Functionality And Components Thereof*, Inv. No. 337-TA-1266, USITC Order 6 (June 25, 2021).
1115	Reserved.
1116	*Certain Automated Storage And Retrieval Systems, Robots, And Components Thereof*, Inv. No. 337-TA-1228, USITC Order 4 (Dec. 4, 2020).
1117	*Certain Automated Storage And Retrieval Systems, Robots, And Components Thereof*, Inv. No. 337-TA-1228, USITC Order 21 (June 10, 2021).
1118	*Certain Disposable Vaporizer Devices*, Inv. No. 337-TA-1410, USITC Order 9 (Aug. 26, 2024).
1119	Another Historic Investment Secured Under President Trump, Articles, The White House (Mar. 3, 2025) (last visited July 14, 2025), *available at* https://www.whitehouse.gov/articles/2025/03/another-historic-investment-secured-under-president-trump/.
1120	About TSMC Washington, TSMC (last visited July 14, 2025), *available at* https://www.tsmcwashington.com/en/about/index.html.
1121	Russ Wiles, US Commerce Secretary visits TSMC complex in Phoenix as work on third fab starts, azcentral. (Apt. 30, 2025, updated May 1, 2025) (last visited July 15, 2025), *available at* https://www.azcentral.com/story/money/business/tech/2025/04/30/us-commerce-secretary-howard-lutnick-visits-tsmc-complex-in-phoenix/83353830007/.

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1125	Lucas Tsai, TSMC: Enabling Startups to Unleash New Semiconductor Innovation, TSMC Blog (Apr. 18, 2022) (last visited July 14, 2025), *available at* https://www.tsmc.com/english/news-events/blog-article-20220418.
1126	Silent Giant TSMC Returns to the Peak of its Powers as the AI Boom Continues, Yahoo! finance (June 12, 2025), *available at* https://finance.yahoo.com/news/silent-giant-tsmc-returns-peak-230300515.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAGbNeBi6fbz4U1LAPZACoSOpXFKhZ2d8Aeym1OTBUscShGSwm5cDQL_KDbidYk16TkPx7YtIzsB2YbOGeGdO4PchwSBFYrk3fTg3HWr-MVsPIL1q7mWa7ZR5e6BG0tbKASjEzPE-8r-aiT0KakQ2cXTjpdVs4xTGUvCoXUGlVbDT.
1127	*Certain Electronic Computing Devices, And Components And Modules Thereof*, Inv. No. 337-TA-1387, USITC Order 7 (Mar. 12, 2004).
1128	*Certain Semiconductor Devices, And Methodes Of Manufacturing Same and Products Containing The Same*, Inv. No. 337-TA-1366, USITC Order 7 (Aug. 8, 2023).

Exhibit	Description
1129	Removing Barriers to American Leadership in Artificial Intelligence, Presidential Actions, The White House (Jan. 23, 2025) (last visited July 14, 2025), *available at* https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/.
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1131	Cadence and TSMC Advance AI and 3D-IC Chip Design with Certified Design Solutions for TSMC's A16 and N2P Process Technologies, Cadence (Apr. 23, 2025) (last visited July 14, 2025), *available at* https://www.cadence.com/en_US/home/company/newsroom/press-releases/pr/2025/cadence-and-tsmc-advance-ai-and-3d-ic-chip-design-with-certified.html.
1132	Marlin Semiconductor Limited, D&B Hoovers (last visited July 23, 2025), *available at* https://app.hoovers.dnb.com/company/f077d361-3cc9-3811-9ffb-8fffef999170/reportViewer?reports=summary&mode=pdf&userId=635c7f94-3f17-3ac0-974a-c9aecbd1eb3…
1133	David Sacks and Seaton Huang, Onshoring Semiconductor Production: National Security Versus Economic Efficiency, Council on Foreign Relations (Apr. 17, 2024) (last visited July 14, 2025), *available at* https://www.cfr.org/article/onshoring-semiconductor-production-national-security-versus-economic-efficiency.
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1139	TSMC Intends to Expand Its Investments in the United States to US$165 Billion to Power the Future of AI, TSMC (Mar. 4, 2025) (last visited July 16, 2025), *available at* https://pr.tsmc.com/english/news/3210.
1140	TSMC Arizona, U.S. Department of Commerce announce up to $6.6B in proposed CHIPS Act direct funding; Company plans third leading-edge fab in Phoenix, Greater Phoenix Economic Council (Apr. 8, 2024) (last visited July 16, 2025), *available at* https://www.gpec.org/news/tsmc-chips-funding-fab-expansion-announcement/.
1141	TSMC, ASU form partnership to boost student recruitment, faculty research, Arizona Technology Council (last visited July 16, 2025), *available at* https://www.aztechcouncil.org/tsmc-asu-form-partnership-to-boost-student-recruitment-faculty-research/.
1142	TSMC Arizona, TSMC (last visited July 17, 2025), *available at* https://www.tsmc.com/static/abouttsmcaz/index.htm.
1143	Read the Full Transcript of Donal Trump's '100 Days' Interview With TIME, TIME USA (last visited July 18, 2025), *available at* https://time.com/7280114/donald-trump-2025-interview-transcript/.
1144	Allowance Rate for U.S. patent applications for TSMC, from https://app.juristat.com/dashboard/premium-benchmarks.
1145	Excerpted data on U.S. utility patent applications from ifi Claims Patent Services December 2024 Monthly Report – U.S. Utility Grants and Applications (Dec. 2024).

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1146	ifi Claims Patent Services, Top 50 patent grants from 2022-2024, *available at* https://www.ificlaims.com/rankings/top-50-2024/, https://www.ificlaims.com/rankings/top-50-2023/, https://www.ificlaims.com/rankings/top-50-2022/.
1147	Jeremy Bowman, Nasdaq, This 1 Number May Ensure TSMC's Market Dominance, The Motley Fool (Aug. 17, 2024) (last visited July 18, 2025), *available at* https://www.nasdaq.com/articles/1-number-may-ensure-tsmcs-market-dominance.
1148	Reserved.
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1150	Patent Assignment Record from United Microelectronics Corp. to Marlin Semiconductor Ltd., Reel: 056991 Frame: 0292-0328, United States Patent and Trademark Office (July 26, 2021).
1151	*Certain Foreign-Fabricated Semiconductor Devices, Products Containing The Same, And Components Thereof*, Inv. No. 337-TA-1443, Verified Complaint Under Section 337 of the Tariff Act of 1930, as Amended (Feb. 14, 2025).
1152	*FAQs for Interim Processes for PTAB Workload Management*, USPTO (last visited Aug. 8, 2025), *available at* https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management.
1153	U.S.-China Economic and Security Review Commission, 2024 Report to Congress of the U.S.-China Economic and Security Review Commission, 118 Cong., 2d Sess. (2024).
1154	Press Release, *Apple will spend more than $500 billion in the U.S. over the next four years*, Apple (Feb. 24, 2025) (last visited Aug. 8, 2025), *available at* https://www.apple.com/newsroom/2025/02/apple-will-spend-more-than-500-billion-usd-in-the-us-over-the-next-four-years/.

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1155	Newsroom, *Apple Manufacturing Academy opens in Detroit on August 19*, Apple (July 29, 2025) (last visited Aug. 8, 2025), *available at* https://www.apple.com/newsroom/2025/07/apple-manufacturing-academy-opens-in-detroit-on-august-19/.
1156	Donald J. Trump, *Promoting the Export of the American AI Technology Stack*, The White House (July 23, 2025) (last visited Aug. 8, 2025), *available at* https://www.whitehouse.gov/presidential-actions/2025/07/promoting-the-export-of-the-american-ai-technology-stack/.
1157	Office of Science and Technology Policy, Executive Office of the President of the United States, *Winning the Race: America's AI Action Plan* (July 2025).
1158	*Certain Electrical Connectors And Cages, Components Thereof, And Products Containing The Same*, Inv. No. 337-TA-1241, USITC Order 50 (Jan. 24, 2022).
1159	*Certain Electrical Connectors And Cages, Components Thereof, And Products Containing The Same*, Inv. No. 337-TA-1241, USITC Order 51 (Mar. 4, 2022).
1160	*Certain Electrical Connectors And Cages, Components Thereof, And Products Containing The Same*, Inv. No. 337-TA-1241, USITC Notice (June 21, 2022).
1161	*Certain Power Inverters and Converters, Vehicles Containing The Same, And Components Thereof*, Inv. No. 337-TA-1267, USITC Order 54 (July 27, 2022).
1162	*Certain Power Inverters and Converters, Vehicles Containing The Same, And Components Thereof*, Inv. No. 337-TA-1267, USITC Notice (Oct. 18, 2022).
1163	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Order 5 (Sept. 22, 2021).

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1164	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Order 58 (Sept. 12, 2022).
1165	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Order 59 (Oct. 24, 2022).
1166	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Order 61 (Dec. 9, 2022).
1167	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Notice (Mar. 13, 2023).
1168	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Notice (July 11, 2023).
1169	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Notice (Oct. 2, 2023).
1170	*Certain Light-Based Physiological Measurement Devices And Components Thereof*, Inv. No. 337-TA-1276, USITC Notice (Oct. 23, 2023).
1171	*Certain Flocked Swabs, Products Containing Flocked Swabs, And Methods Of Using Same*, Inv. No. 337-TA-1279, USITC Order 73 (Sept. 30, 2022).
1172	*Certain Flocked Swabs, Products Containing Flocked Swabs, And Methods Of Using Same*, Inv. No. 337-TA-1279, USITC Order 77 (Oct. 20, 2022).

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1173	*Certain Flocked Swabs, Products Containing Flocked Swabs, And Methods Of Using Same*, Inv. No. 337-TA-1279, USITC Notice (Feb. 3, 2023).
1174	*Certain Cellular Base Station Communication Equipment, Components Thereof, And Products Containing Same*, Inv. No. 337-TA-1302, USITC Order 27 (Feb. 22, 2023).
1175	*Certain Power Semiconductors, And Mobile Devices And Computers Containing Same*, Inv. No. 337-TA-1308, USITC Order 50 (May 2, 2023).
1176	*Certain Outdoor And Semi-Outdoor Electronic Displays, Products Containing Same, And Components Thereof*, Inv. No. 337-TA-1331, USITC Order 40 (Sept. 19, 2023).
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1181	*Certain Photovoltaic Connectors And Components Thereof*, Inv. No. 337-TA-1365, USITC Order 33 (Aug. 13, 2024).
1182	*Certain Photovoltaic Connectors And Components Thereof*, Inv. No. 337-TA-1365, USITC Notice (Nov. 13, 2024).
1183	*Certain Electronic Computing Devices And Components Thereof*, Inv. No. 337-TA-1382, USITC Order 66 (Jan. 13, 2025).

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1184	*Certain Electronic Computing Devices And Components Thereof*, Inv. No. 337-TA-1382, USITC Notice (June 9, 2025).
1185	*Certain Electronic Computing Devices, And Components And Modules Thereof*, Inv. No. 337-TA-1387, USITC Order 36 (Mar. 14, 2025).
1186	*Certain High-Strength Aluminum Or Aluminum Alloy-Coated Steel, And Automotive Products And Automobiles Containing Same*, Inv. No. 337-TA-1402, USITC Order 33 (June 18, 2025).
1187	*Certain Disposable Vaporizer Devices*, Inv. No. 337-TA-1410, USITC Order 49 (July 16, 2025).
1188	Alex He, *In the Global AI Chips Race, China is Playing Catch-Up*, Centre for International Governance Innovation (Sept. 18, 2024).
1189	Taiwan Semiconductor Manufacturing Company Ltd., GIGAFAB Facilities.
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1193	*Certain Foreign-Fabricated Semiconductor Devices, Products Containing The Same, And Components Thereof*, Inv. No. 337-TA-1443, Proposed Respondent Apple Inc.'s Action Request Not to Institute and Public Interest Statement Under Commission Rule 210.8(C) (USITC Mar. 4, 2025).

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1195	Lionel Lim, *TSMC's $100 billion promise to invest in the U.S. won't shake up the chip supply chain:* Most of its capacity is still in Taiwan, Fortune (Mar. 12, 2025) (last visited Aug. 11, 2025), *available at* https://fortune.com/asia/2025/03/12/tsmc-us-investment-change-chip-supply-chain-taiwan/.
1196	Taiwan Semiconductor Manufacturing Company Ltd., 7nm Technology (last visited Aug. 13, 2025), *available at* https //www tsmc com/enghsh/ded1catedFoundry/technology/log1c/i_7nm.
1197	U.S. Patent and Trademark Office, Iterim Director Discretionary Process (last visited Aug. 13, 2025), *available at* https://www.uspto .gov/patents/ptab/interim-director-discretionary-process.

Respectfully submitted,

Dated: August 15, 2025

/ J. Preston Long /

J. Preston Long, Ph.D.
Reg. No. 65,125
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.
Lead Counsel for Petitioner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **Petitioners' Updated Exhibit List** and **Exhibits 1037-1047, 1100-1114, 1116-1133, 1139-1147, 1150-1189, and 1191-1197** were served on August 15, 2025, via e-mail directed to counsel of record for the Patent Owner at the following:

William A. Meunier
Adam S. Rizk
Michael T. Renaud
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO, P.C.
One Financial Center
Boston, MA 02111
WAMeunier@mintz.com
ARizk@mintz.com
MTRenaud@mintz.com
Mintz-Marlin-IPRs@mintz.com

Reza Dokhanchy
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO, P.C.
3580 Carmel Mountain Road,
Suite 300
San Diego, CA 92130
RDokhanchy@mintz.com

Tawfik Goma
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO, P.C.
777 Brickell Avenue, Suite 500
Miami, FL 33131
TAGoma@mintz.com

Counsel for Patent Owner
Marlin Semiconductor Ltd.

W. Karl Renner
Thomas A. Rozylowicz
FISH & RICHARDSON P.C.
60 South Sixth Street
Suite 3200
Minneapolis, MN 55402
IPR50095-0267IP1@fr.com
PTABInbound@fr.com
axf-ptab@fr.com
tar@fr.com

Minseung Ahn
FISH & RICHARDSON P.C.
1000 Maine Ave., S.W.
Suite 1000
Washington, DC 20024
ahn@fr.com

Counsel for Co-Petitioner
Apple Inc.

Patent Owner has consented to electronic service via email.

Dated: August 15, 2025

/ William Esper /

William Esper
Senior Litigation Paralegal
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP