

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD.,

Petitioner

v.

ADVANCED INTEGRATED CIRCUIT PROCESS LLC,

Patent Owner

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Case IPR2025-00828  
Patent 7,579,227

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**PATENT OWNER'S REPLY TO PETITIONER'S OPPOSITION TO  
PATENT OWNER'S DISCRETIONARY DENIAL BRIEF**

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Patent Trial and Appeal Board  
U.S. Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**EXHIBIT LIST**

<b>Exhibit</b>	<b>Description</b>
EX2001	<b>Complaint for Patent Infringement</b> , Dkt. No. 1, <i>Advanced Integrated Circuit Process LLC v. Taiwan Semiconductor Manufacturing Company Limited</i> , Case No. 2:24-cv-00623, (E.D. Tex. Filed August 1, 2024)
EX2002	<b>Complaint for Patent Infringement</b> , Dkt. No. 1, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Case No. 2:24-cv-00730, (E.D. Tex. Filed September 6, 2024)
EX2003	<b>Consolidation Order</b> , Dkt. No. 12, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed December 6, 2024)
EX2004	<b>Docket Sheet</b> , <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Case No. 2:24-cv-00730, (E.D. Tex.) (Printed July 7, 2025)
EX2005	<b>Docket Control Order</b> , Dkt. No. 51, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed February 14, 2025)
EX2006	<b>Second Docket Control Order</b> , Dkt. No. 55, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed February 21, 2025)
EX2007	<b>First Amended Docket Control Order</b> , Dkt. No. 59, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed February 27, 2025)
EX2008	<b>Third Amended Docket Control Order</b> , Dkt. No. 83, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed April 9, 2025)
EX2009	<b>Docket Sheet</b> , <i>Advanced Integrated Circuit Process LLC v. Taiwan Semiconductor Manufacturing Company Limited</i> , Case No. 2:24-cv-00623, (E.D. Tex. Dated April 23, 2025)
EX2010	<b>Notice of Compliance (re: P.R. 3-1 and 3-2 disclosures)</b> , Dkt. No.

<b>Exhibit</b>	<b>Description</b>
	45, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed January 30, 2025)
EX2011	<b>Plaintiff’s Unopposed Motion for Leave to Amend Infringement Contentions</b> , Dkt. No. 54, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed February 20, 2025)
EX2012	<b>Plaintiff’s Unopposed Motion for Leave to Amend Infringement Contentions Against Defendant United Microelectronic Corporation</b> , Dkt. No. 64, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed March 7, 2025)
EX2013	<b>Defendant Taiwan Semiconductor Manufacturing Company Limited’s Notice of Compliance and Service of Invalidity Contentions</b> , Dkt. No. 104, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed May 1, 2025)
EX2014	<b>Defendant United Microelectronic Corporation’s Notice of Compliance and Service of Invalidity Contentions</b> , Dkt. No. 106 <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed May 2, 2025)
EX2015	<b>Scheduling Order</b> , Dkt. No. 28, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Case No. 2:24-cv-00730, (E.D. Tex. Filed December 11, 2024)
EX2016	<b>Defendant TSMC’s Invalidity Contentions</b> , <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Served May 1, 2025)
EX2017	<b>Defendant United Microelectronics Corporation’s Invalidity Contentions</b> , <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Served May 1, 2025)
EX2018	<b>Declaration of Kemper Diehl</b> , dated July 11, 2025
EX2019	<b>Protective Order</b> , Dkt. No. 71, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed March 20, 2025)

<b>Exhibit</b>	<b>Description</b>
EX2020	<b>Joint Notice Resolving Discovery Disputes Set for Hearing (Dkt. Nos. 78, 80, 89, 90)</b> , Dkt. No. 102, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed April 30, 2025)
EX2021	<b>Defendant Taiwan Semiconductor Manufacturing Company Limited’s Motion to Stay Pending <i>Inter Partes</i> Review</b> , Dkt. No. 99, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed April 28, 2025)
EX2022	<b>United Microelectronics Corporation’s Motion to Dismiss Plaintiff’s Claims for Direct Infringement and Pre-Suit Indirect Infringement</b> , Dkt. No. 15, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed December 6, 2024)
EX2023	<b>Defendant Taiwan Semiconductor Manufacturing Company Limited’s Reply in Support of its Motion to Stay Pending <i>Inter Partes</i> Review</b> , Dkt. No. 109, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed May 20, 2025)
EX2024	<b>Plaintiff’s Opposition to Defendant Taiwan Semiconductor Manufacturing Company Limited’s Motion to Stay</b> , Dkt. No. 108, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623, (E.D. Tex. Filed May 12, 2025)
EX2025	<b>Exhibit 227-01</b> to Defendant TSMC’s Invalidation Contentions, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Served May 1, 2025)
EX2026	<b>Exhibit 227-02</b> to Defendant TSMC’s Invalidation Contentions, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Served May 1, 2025)
EX2027	<b>Lex Machina Time-to-Trial Statistics Report</b> for trials before The Honorable Rodney Gilstrap, Federal District Judge in the Eastern District of Texas, during the period from July 1, 2024 to July 1, 2025
EX2028	<b>Notice of Allowance</b> in TSMC’s U.S. Patent Application Ser. No. 12/757,241 (May 24, 2012)

<b>Exhibit</b>	<b>Description</b>
EX2029	<b>U.S. Patent Application Publication No. 2011/0147857</b>
EX2030	<b>Notice of Allowance</b> in TSMC’s U.S. Patent Application Ser. No. 17/027,032 (November 24, 2023)
EX2031	<b>Redaction to TSMC’s Sealed Motion for Issuance of Letter Rogatory for Nuvoton Technology Corporation – Japan</b> , Dkt. No. 119, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed June 27, 2025)
EX2032	<b>Exhibit A to TSMC’s Sealed Motion for Issuance of Letter Rogatory for Nuvoton Technology Corporation – Japan</b> , Dkt. No. 116-1, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed June 20, 2025)
EX2033	<b>Exhibit B to TSMC’s Sealed Motion for Issuance of Letter Rogatory for Nuvoton Technology Corporation – Taiwan</b> , Dkt. No. 114-2, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed June 20, 2025)
EX2034	<b>Redaction to TSMC’s Sealed Motion for Issuance of Letter Rogatory for Nuvoton Technology Corporation – Taiwan</b> , Dkt. No. 118, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed June 27, 2025)
EX2035	<b>Recorded Assignment</b> from Panasonic Corporation to Panasonic Semiconductor Solutions Co., Ltd. (May 21, 2020)
EX2036	<b>Recorded Assignment by Change of Name</b> from Panasonic Semiconductor Solutions Co., Ltd. to Nuvoton Technology Corporation Japan
EX2037	Reserved
EX2038	Bashir, R., et al., “Reduction of Sidewall Defect Induced Leakage Currents by the Use of Nitrided Field Oxides in Silicon Selective Epitaxial Growth Isolation for Advanced Ultralarge Scale Integration,” 18(2) J. Vac. Sci. Technol. B 695–699 (2000).
EX2039	Reserved
EX2040	<b>Order Granting to Taiwan Semiconductor Manufacturing Company Ltd.’s Motion for Letters Rogatory to Nuvoton Technology Corporation</b> (Letter Rogatory No. 1), Dkt. No. 122,

Exhibit	Description
	<i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed July 25, 2025)
EX2041	<b>Order Granting to Taiwan Semiconductor Manufacturing Company Ltd.’s Motion for Letters Rogatory to Nuvoton Technology Corporation</b> (Letter Rogatory No. 2), Dkt. No. 123, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed July 25, 2025)
EX2042	<b>Docket Navigator Time-to-Trial Statistics Report</b> for trials before the Honorable Rodney Gilstrap, Federal District Judge in the Eastern District of Texas, during the period from August 18, 2024 to August 18, 2025
EX2043	<b>Lex Machina Time-to-Trial Statistics Report</b> for trials before The Honorable Rodney Gilstrap, Federal District Judge in the Eastern District of Texas, during the period from July 1, 2024 to August 18, 2025
EX2044	<b>FAQs for Interim Processes for PTAB Workload Management</b> from <a href="https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management">https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management</a>
EX2045	<b>Defendant TSMC Ltd.’s Answer</b> , Dkt. No. 75, <i>Advanced Integrated Circuit Process LLC v. United Microelectronics Corporation</i> , Consolidated Case Nos. 2:24-cv-00730, -00623 (E.D. Tex. Filed March 31, 2025)

First, the factors meriting discretionary denial in *Taiwan Semiconductor Manufacturing Company Ltd v. Advanced Integrated Circuit Process LLC*, IPR2025-00682 and IPR2025-00683, Paper 17 (PTAB Aug. 14, 2025) (Acting Dir. C.M. Stewart) [hereinafter, “*TSMC Denial*”], also justify discretionary denial here. There, as here, “it is unlikely that a final written decision in [the subject] proceedings will issue before district court trial [scheduled for June 2026] occurs.” *Id.* at 2. Because that was true for a final written decision projected on October 18, 2026, *id.*, it is *a fortiori* true for the November 13, 2026 date projected in this proceeding. Also, the ’227 patent is 16 years old, *see* EX1001 at (45), and therefore gives rise to the same “strong settled expectations,” *see TSMC Denial*, at 2.

TSMC’s counter arguments have already been considered and rejected. The scheduled June 2026 trial date accords with statistical evidence from Lex Machina and Docket Navigator, EX2043 at 1; EX2042, but TSMC again argues from different data that the *maximum* delay could be seven months, *i.e.*, a January 2027 trial date. Opp. at 48 (citing EX1152 at 3). The Director considered the possibility of a January 2027 trial date and still discretionarily denied. *TSMC Denial*, at 2. The Director also rejected TSMC’s claim of “settled expectations” to continue infringing the ’227 patent due to the absence of earlier enforcement. *See id.* at 2–3.

The discretionary denial of IPR2025-00682 and -683 means that the district court will not grant a stay in the Lawsuits. *See, e.g., AGIS Software Development*

*LLC v. Google LLC*, No. 19-cv-361-JRG, 2021 U.S. Dist. LEXIS 24195, at \*9 (E.D. Tex. Feb. 9, 2021) (“It has been [the district court’s] consistent and long established practice to deny motions to stay pending IPR . . . when the PTAB [has] instituted review on less than all asserted claims of all asserted patents.”).

Second, fatal to TSMC’s opposition is its failure to dispute that, under the very unusual facts here, institution would violate AICP’s due process rights. TSMC does not dispute that Guha is necessary to four of the Petition’s Grounds, earlier invention date evidence could eliminate those Grounds, and the PTAB (unlike the district court) cannot secure this discovery because Japan is not a signatory to the Hague Convention. Indeed, TSMC seeks this evidence in the district court, reflecting its relevance. *See* EX2031 at 4; EX2032 at 3, 17. Those motions have been granted. EX2040; EX2041. TSMC’s failure to mention this, while faulting AICP’s supposed inaction, *Opp.* at 63, is misleading if not dishonest. TSMC’s other arguments merely speculate that foreign third-party discovery will be unproductive.

Third, TSMC delayed filing its new stipulation until after AICP’s *Fintiv* brief, contravening guidance to file “as soon as practicable, so that the patent owner may address [its] impact [in its brief].” EX2044 at 3. Given its vaunted experience filing IPRs, *see, e.g.*, *Opp.* at 38–39, 65, TSMC knew how to draft a stipulation that eliminated the risk of duplicative litigation. Instead, it filed one stipulation with its Petition, *Pet.* at 66–67, and switched to a broader stipulation (in coordination with

co-petitioner UMC) *after* reviewing AICP’s *Fintiv* arguments. EX1053; EX1084.

The timing and the coordination together reveal TSMC’s attempt to game the discretionary denial process. This defeats the purpose of timely filing stipulations, *i.e.*, promoting efficiency (both here and in the Lawsuits). Indeed, TSMC’s “strategy” has already reduced the efficiency of the bifurcated discretionary denial process by requiring additional briefing. Giving the stipulation full weight will only encourage TSMC and other parties to similarly ignore USPTO guidance and delay their stipulations. Such gamesmanship should instead be discouraged.

Fourth, TSMC asserts that AICP’s predecessor engaged in “unfair dealings” with the USPTO. TSMC alleges the failure to disclose certain prosecution details related to JP-Ono and Henson from a Chinese counterpart of the ’227 patent. Opp. at 23–26. Notably, TSMC has never made a similar allegation, or asserted inequitable conduct, in the parallel proceeding. EX2045. Moreover, TSMC fails to identify any evidence of deceptive intent, Opp. at 23–26, which TSMC’s own authority recognizes as a requirement. *See Am. Calcar, Inc. v. Am. Honda Motor Co.*, 768 F.3d 1185, 1190 (Fed. Cir. 2014) (noting that “partial disclosure” may not negate intent “*if the disclosure is intentionally selective*” (emphasis added)). Moreover, TSMC does not show that JP-Ono and Henson would even have been material to any claim of the ’227 patent. *See* Opp. at 8–9 (citing Chinese Examiner’s rejection of claim 1 in Chinese application over JP-Ono).

Fifth, TSMC’s Petition asserted only that the Examiner erred by overlooking Ono during prosecution, and the Petition only cited Ono’s relevance to dependent claims 6 and 14. Pet. at 67. But contrary to TSMC’s Petition (at 67), the other cited art does not disclose all the limitations of claim 1. See Paper 8 at 33–36. Recognizing its flawed argument, TSMC now pivots to arguing several new alleged errors, including overlooking JP-Ono for elements of claim 1, Opp. at 8–9, and overlooking Kajiyama and JP-Matsumoto, *id.* at 9–11, none of which were discussed in the Petition as the basis for a material error. Pet. at 67–68.

AICP’s Preliminary Response showed why all Grounds fail to teach an “active region in a substrate” as claimed. Paper 10, at 18-31. Although TSMC labels AICP’s response as the “fabricated ‘in’ versus ‘on’ argument,” Opp. at 14, those two words have different meanings. With regards to Matsumoto, TSMC’s opposition does not dispute the active regions are “in” silicon layer 3 rather than in the silicon wafer (*i.e.*, substrate 1). Opp. at 17-18. And, with regards to Kajiyama, TSMC unwittingly concedes that “it is clear that the ‘element separation layer’ (not shown in figures) is formed on the Si substrate,” Opp. at 17 (emphasis added). This admission is critical because in Kajiyama the ion implantation steps occur after the deposition of the “element separation layer” “on” the silicon wafer, EX1011 ¶¶ [0029], [0032], and thus the source and drain implants necessarily go into the “element separation layer” rather than into the silicon wafer.

Sixth, TSMC’s alleged significance to U.S. interests, broadly, is irrelevant to this specific case. TSMC fails to substantiate its claim that the accused products (not “TSMC’s technology” more broadly) are responsible for the alleged “extraordinarily broad impact . . . on the U.S. national security, economy, innovation, and public interest.” Opp. at 34. TSMC’s claim that AICP accused “military-grade products” lacks any evidence that those specific “FPGA chips” are used by the *U.S.* military. *Id.* at 35–36. Moreover, the alleged importance of “high-performance chips” and “advanced processors” to the “American AI-dominance strategy” suggests that the accused technology is *not* implicated. *Id.* at 37; *see id.* at 27 (“[T]he [accused] product went into volume production by at least October 2011.”). There is no evidence that the old, accused technology has any significance to the national interest, and the ’227 patent presents no risk of disruption because AICP will not seek injunctive relief. What TSMC requests here—namely, special treatment for large foreign companies accused of infringing U.S. patents based solely on those companies’ size, influence, and products—would not only open the floodgates to similar arguments by numerous foreign products manufacturers who are infringing American intellectual property rights but also undermine domestic investment in the development of new technologies. The patent system best serves national interests by encouraging innovation, not (as TSMC suggests) by giving special treatment to politically connected infringers. Opp. at 34–38.

Dated: August 19, 2025

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Discretionary Denial Brief, including Exhibits 2040-2045**, was served to the following counsel of record for Petitioner addressed as follows:

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Dated: August 19, 2025

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