

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD.,

and

APPLE INC.,

Petitioners

v.

MYW SEMITECH, LLC,

Patent Owner

Inter Partes Review Case No. IPR2026-00066

U.S. Patent No. 11,538,763

**PETITIONERS' OPPOSITION TO PATENT OWNER'S
REQUEST FOR DISCRETIONARY DENIAL**

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I. INTRODUCTION

Referral for merits consideration is justified for several reasons. This IPR is the first evaluation of unpatentability of the '763 Patent (or any family member) by any tribunal and will remain so. The pending Parallel Litigation's expected trial date is more than four months *after* this IPR's Final Written Decision deadline of June 2027. The Examiner erred by simply repeating his reason for allowing the '763 Patent's parent '768 Patent, despite the fact that the limitation the Examiner relied on to allow the '768 Patent (the low CTE polymer layer limitation) is not recited in *any* of the '763 Patent's claims. Patent Owner identifies no reasonable settled expectations, as the '763 Patent issued only approximately 3 years ago. Patent Owner never previously communicated with either Petitioner regarding the '763 Patent (or any family member), and Patent Owner has not commercialized the '763 Patent's described technology. In contrast, Petitioners have settled expectations due to selling the Accused Products for over ten years without any assertion of infringement from Patent Owner. Finally, Patent Owner's inflammatory argument aimed at TSMC because it is a foreign company is baseless. Not only does this ignore Apple's impact on the U.S. economy, but TSMC is a trusted partner advancing the U.S.'s economy, innovation, and public interest and strategic contribution of semiconductor chips to the U.S. supply chain, making IPR of the '763 Patent a sound use of the Board's resources.

II. THE BOARD WILL BE THE FIRST TO ADJUDICATE THE '763 PATENT'S VALIDITY

Institution is an efficient use of Board resources because the Board will be the first tribunal to adjudicate the unpatentability of the Challenged Claims. *See* EX1139, at 48337 (emphasizing that proposed rules to only institute IPRs “where the patent has not previously been challenged in litigation” “will enhance fairness and efficiency in patent disputes”); *cf. uPI Semiconductor Corp. v. Force MOS Tech. Co. Ltd.*, IPR2025-00920, Paper 13 at 2 (PTAB Sep. 12, 2025) (“Repeated challenges weigh against institution”). Other than the Parallel Litigation, Patent Owner has never asserted the '763 Patent.

The Board will adjudicate the '763 Patent's unpatentability **before** the District Court in the Parallel Litigation. Trial in the Parallel Litigation is scheduled for October 18, 2027. EX1140, 11. By contrast, the Final Written Decision will issue no later than June 2, 2027—more than *four months* before trial in the Parallel Litigation. In fact, the FWD will issue before the Parallel Litigation is even “trial ready[,]” as dispositive motion briefing will still be taking place. *Berkshire Hathaway Energy Co. v. Birchtech Corp.*, IPR2025-00274 Paper 23 at 2 (PTAB July 2, 2025); *Pacificorp v. MES, Inc.*, IPR2025-00717, Paper 24 at 2 (PTAB Aug. 22, 2025) (incorporating the analysis from *Berkshire Hathaway*); EX1140, 9. Referral of this IPR for merits consideration is an efficient use of Board resources.

III. INSTITUTION IS WARRANTED BECAUSE THE PATENT OFFICE MATERIALLY ERRED DURING EXAMINATION

A. Examiner Error 1: Perfunctorily Approving the Claims Based on a Limitation Not Found in the Claims

Institution of Petitioners' IPR challenge is an efficient use of Board resources because the Examiner materially erred by allowing the '763 Patent's claims based on limitations not recited in the claims. According to the Examiner, the claims—both before the Applicant amended them after issuance of the first Notice of Allowance and again after the Applicant's amendment—were “allowable because the closest prior art does not appear to disclose...the limitations of material and structure of the chip package in combination with the other required elements” of the claims. EX1002, 294, 367. Those limitations, the Examiner claimed, “are material to the inventive concept of the application in hand to forming a polymer interconnect *with sufficient coefficient of expansion* to enable holes and other features formed inside with improved chemical durability, strength, and optical properties.” *Id.* (emphasis added). The Examiner's allowance of the claims for this reason was material error because the pending claims did not recite a coefficient of expansion.

The '763 Patent ties each of the aforementioned characteristics directly to a glass or polymer layer having “a [CTE] between 3 and 10 ppm/° C.” EX1001, 7:35–44 (describing how the glass layer may be softened to allow for the formation of

holes and surface treated to improve chemical durability, strength, or optical properties), 7:45–48 (explaining that glass layer may be replaced by a polymer layer that “has a [CTE] between 3 and 10 ppm/° C”). However, *none* of the pending claims included a limitation directed to a glass or polymer layer having a CTE between 3 and 10 ppm/° C (the “CTE limitation”). EX1002, 352–58 (allowed claims); EX1001, 22:52–25:29 (issued claims). Instead, the Examiner apparently based his allowance of the ’763 Patent’s claims on the CTE limitation recited in independent Claim 1 of the ’763 Patent’s parent, the ’768 Patent. EX1160, 22:53–58 (reciting “a first polymer layer...[having] a coefficient of expansion between 3 and 10 ppm/° C”). Indeed, the Examiner’s reason for allowing the ’763 Patent’s claims is, *verbatim*, the reason the Examiner provided when he allowed the claims of the ’768 Patent. EX1032, 551–52. The Examiner’s allowance of the ’763 Patent’s claims based on the ’768 Patent’s CTE limitation constitutes material error for two reasons.

First, the CTE limitation did not justify the Examiner’s allowance of the ’768 Patent’s claims, at least because the Examiner failed to conduct a reasonable search for prior art disclosing the CTE limitation and, had he done so, he would have determined the CTE limitation was clearly taught in the prior art, including U.S. Patent No. 8,709,933 to Haba et al. EX1032, 465–71; EX1161, 6:15–18 (“By forming dielectric layer **20** with a low-CTE...the structures will expand and contract by closer amounts, thereby potentially reducing the likelihood of bonding interface

failures”). Thus, even *if* the CTE limitation were recited in the ’763 Patent’s claims, the Examiner’s allowance of the ’763 Patent on that basis alone would have been material error. *Id.* Second, because the ’763 Patent’s claims do not recite the CTE limitation, the Examiner materially erred by relying on his reason for allowance from the ’768 Patent to allow the ’763 Patent’s claims. *Activision Blizzard, Inc. v. Milestone Ent., LLC*, IPR2025-00708, Paper 13 at 2–3 (PTAB Aug. 14, 2025) (holding it is an efficient use of Board resources to refer the IPR for merits consideration where “the challenged claims omit limitations added during prosecution of the parent patent that appear to have been the patent examiner’s reason for allowing the parent patent’s claims”); *Volkswagen Grp. of Am., Inc. v. Longhorn Auto. Grp. LLC*, IPR2025-01064, Paper 9 at 2 (PTAB Oct. 10, 2025) (Examiner materially erred where claims did not recite the limitation the Examiner deemed allowable).

B. Discretionary Denial Is Not Appropriate Under § 325(d) Because the Petition Combines Lin-191 with New Prior Art

Patent Owner contends discretionary denial under § 325(d) is appropriate because “Lin-191 was [] previously presented to the Office.” Paper 9, 6. Lin-191 was cited in an IDS but never applied in a rejection. EX1002, 11. “The fact that one piece of art from the combination was previously presented and/or argued to the Office alone is insufficient to satisfy the first prong of *Advanced Bionics* two-part test.” *Thorne Research, Inc. v. Trustees of Dartmouth College*, IPR2021-00491,

Paper 18 at 8 (PTAB Aug. 12, 2021). Patent Owner presented no other reasons why the first prong of *Advanced Bionics* is met. Paper 9, 6. Indeed, the combination of Lin-191 with Sundaram and/or Lin-863, Lin-691, or Shenoy (Grounds 1A–1D) or Yu and/or Sundaram or Lin-863 (Grounds 2A–2C) cannot be the same or substantially the same art as previously presented to the Office during prosecution because none of Sundaram, Lin-863, Lin-691, Shenoy, or Yu, alone or in combination with Lin191 “were before the Examiner[.]” during examination. *Align Tech., Inc. v. Dental Monitoring SAS*, IPR2023-01369, Paper 10 at 9 (PTAB Mar. 5, 2024). Because the first prong is not satisfied, the Director need not reach the second prong and should decline to exercise his discretion under § 325(d). *Id.*, 9; *Align Tech.*, Paper 10 at 10 (§ 325(d) denial inappropriate “because the Petition sets forth a combination of prior art and arguments that are not the same or substantially the same as that considered by the Examiner”).

Regardless, the second prong of *Advanced Bionics* is satisfied. *Becton* factors (c) and (d) support finding a material error because Lin-191 was not the basis for a rejection or substantively relied on and, consequently, there is also no overlap between how the Petition applies Lin-191 and how it was applied (or here, not applied) in prosecution. Similarly, applying *Becton* factor (f), the Examiner made another material error during the examination of the ’763 Patent that warrant reconsideration. *See* Section III.A.

IV. THE STRENGTH OF PETITION'S MERITS WARRANTS INSTITUTION AND EXEMPLIFIES THE MATERIALITY OF THE EXAMINER'S EXAMINATION ERRORS

The Petition presents compelling and straightforward unpatentability challenges, each with strong, well-supported, and well-reasoned merits. Petitioners present two obviousness grounds against the '763 Patent's claims that confirm the materiality of the Examiner's errors during examination. Both of the Petition's grounds demonstrate that the independent claims, lacking the CTE limitation the Examiner based his allowance on, were obvious. Paper 1, 3–131. Ground 1 demonstrates that, had the Examiner examined the pending claims lacking the CTE limitation, the Examiner would not, or at least should not, have allowed the independent claims because they are obvious in view of Sundaram and Lin-191. *Id.*, 3–29 (Claim 1 mapping), 61–68 (Claim 18 mapping). In fact, Ground 1 demonstrates that Sundaram teaches all the general structures of the independent claims, as well as a majority of those structures' claimed features. *Id.*, 3–29. The Petition relies on Lin-191 for just a few, narrowly tailored claim limitations. *Id.*, 19 (demonstrating that Lin-191 discloses the “metal bump” and “tin-containing layer” limitations), 24–26 (demonstrating that Lin-191 discloses the “metal pad” limitation), 26–27 (demonstrating that Lin-191 discloses the “third metal interconnect” limitations). Moreover, the Petition demonstrates that it would have been obvious to a POSITA to modify Sundaram's chip package to utilize Lin-191's teachings. *Id.* In sum, the

Petition's Ground 1 presents a strong, straightforward showing that the independent claims of the '763 Patent would have been obvious to a POSITA.

Ground 2 separately demonstrates that chip packages devoid of a low CTE polymer layer were obvious as of the '763 Patent's earliest priority date. *Id.*, 87–131. Like Sundaram, Yu teaches all the general structural requirements of independent Claims 1 and 18 and most of the claimed features. *Id.*, 87–103 (Claim 1), 124–30 (Claim 18). The only claimed features of Claim 1 not expressly taught by Yu are the claimed “thickness” limitation, the “metal bump” and “tin-containing layer” limitations, and “metal pad” limitation, all features expressly taught by Lin-191. *Id.*, 89–92, 100–101, 102. Similarly, the only claimed feature of Claim 18 not expressly taught by Yu as modified by Lin-191 is the claimed “copper portion” limitation, a feature expressly taught by Sundaram. *Id.*, 125–26. For both Claim 1 and 18, the Petition demonstrates that it would have been obvious to a POSITA to modify Yu's chip package to utilize Lin-191's and/or Sundaram's teachings. *Id.*, 89–92, 100–101, 102, 125–26.

Patent Owner tries to fault Petitioners for providing a 309-page expert declaration that it cites 245 times in its Petition. Paper 9, 19–20. Instead of being allegedly gap-filling (per Patent Owner), the cited expert testimony supports the Petition's motivation to combine with repeated citations to **objective** evidence. *See, e.g.*, EX1003, ¶¶ 155 (citing EX1098, EX1099, and EX1134), 156 (citing EX1037

and EX1038), 157 (citing EX1039, EX1040, and EX1041), 160 (citing EX1042 and EX1043), 165 (citing EX1044, EX1045, EX1046, and EX1095), 170 (citing EX1022 and EX1047), 171 (citing EX1054 and EX1063), 173 (citing EX1135), 175 (citing EX1042 and EX1043), 239 (citing EX1011), 240 (citing EX1063 and EX1064), 291 (citing EX1080), 292 (citing EX1080 and EX1131), 293 (citing EX1136 and EX1137). The Petition's reliance on expert testimony backed with extensive factual bases supported with objective evidence reflects the strength, not the weakness, of the Petition's merits, and is crucial to ensure a complete record for the Board and for appellate review. *See Tesla, Inc. v. Charge Fusion Techs., LLC*, IPR2025-00032, Paper 11 at 39 (PTAB May 19, 2025) (“[A]pplaud[ing]” Petitioner and the expert for “leav[ing] virtually none of the substance of his testimony unsupported by objective evidence” by supporting its Petition with a 278 page expert declaration containing extensive explanations “with citations to dozens of pieces of objective evidence”). Indeed, Patent Owner cites just one example of alleged “gap-filling” in the Petition. Paper 9, 20 (citing Pet. 20, Ex. 1003 ¶¶ 156–57). But even that cited portion of the Petition does not rely on expert testimony to gap-fill, but rather to support the stated motivation to combine. Paper 1, 20 (“A POSITA would have appreciated the advantages of applying Lin-191’s teachings of a solder ball having a tin-containing layer 29 and the UBM metal layer to improve the strength of Sundaram’s copper bump...EX1003, ¶¶ 156–157.”).

V. PETITIONERS' SETTLED EXPECTATIONS OF NON-ENFORCEMENT AND PATENT OWNER'S LACK OF SETTLED EXPECTATIONS WARRANTS MERITS CONSIDERATION

Patent Owner has not developed settled expectations in the '763 Patent or in its parent '768 Patent or child '306 Patent that Patent Owner has also asserted against Apple in the Parallel Litigation. The '763 Patent will have only been in force for a little more than 3.5 years by the May 2026 deadline for the Institution Decision. That is not enough time for the Patent Owner to have developed settled expectations in the '768 Patent. *See, e.g., Samsung Elecs. Co., Ltd. v. Wilus Inst. of Standards & Tech. Inc.*, IPR2025-00933, Paper 11 at 3 (PTAB Oct. 10, 2025) (no settled expectations for patents that issued between 2020 and 2023). Nor has Patent Owner developed settled expectations in the '763 Patent's parent '768 Patent, which will have been in force for only 4.5 years at the May 2026 deadline for institution, or developed settled expectations in its child '306 Patent, which will have been in force for even less time, 2 years, at the May 2026 deadline for institution. Thus, Patent Owner has not developed any settled expectations in the '768 Patent or its family that would support discretionary denial. *Id.; see also Caption Health, Inc. v. Univ. of British Columbia*, IPR2025-01066, Paper 13 at 2 (PTAB Oct. 10, 2025) (no settled expectations for patent that issued in 2021).

Nor has Patent Owner provided evidence of any other activity that could support some level of settled expectations. Patent Owner has not commercialized,

asserted, marked, licensed, or otherwise applied the claimed technology at all, let alone in Petitioners' technology space. *See, e.g., Home Depot U.S.A., Inc. v. H2 Intellect LLC*, IPR2025-00480, Paper 11 at 2–3 (Sep. 4, 2025) (*informative*) (Patent Owner's failure to commercialize, assert, mark, or license patent outweighed 12 years of settled expectations and *Fintiv* factors 1 and 2 which favored discretionary denial). Nor has Patent Owner provided evidence of any "good reasons why [Patent Owner] has strong settled expectations in [the '763 Patent]...for example an explanation of how an extraordinary amount of investment, time, and resources dedicated to research, development, trials, and regulatory approval correlates to settled expectations." *Amgen Inc. v. Bristo-Myers Squibb Co.*, IPR2025-00601, Paper 9 at 2 (PTAB July 24, 2025) (*informative*). In sum, Patent Owner has no settled expectations to support discretionary denial of this IPR.

Patent Owner nonetheless contends it has developed "strong settled expectations" because the '763 Patent's parent, the '768 Patent, "is part of a mature [Patent Owner]-originated portfolio with family members in force since as early as 2013[.]" and that TSMC was aware of the portfolio, as it had cited the application that would issue as the '763 Patent in an IDS. Paper 9, 8–9. But Patent Owner's broader portfolio supports Petitioners' settled expectations, not Patent Owner's. The '768 Patent's grandparent, the '453 Patent, was filed in 2013 and issued in 2017. *Id.*, 9. Apple introduced the earliest Accused Product, the iPhone 7, on September 7,

2016. EX1145. Despite this, Patent Owner did not bring suit against Petitioners after the '453 Patent issued or after '453 Patent's child, the '310 Patent, issued in April 2020. Even when Patent Owner finally initiated the Parallel Litigation in April 2025, it still did not bring claims that Apple infringes either the '453 or '310 Patents (EX1146), presumably because the claims of the '453 and '310 Patents are different in scope, being directed to the use of “glass substrate[s]” and a “display substrate.” *E.g.*, EX2001, 16:18–43. Given this difference in scope, Petitioners had no reason to believe they needed to preemptively bring an IPR against the Challenged Patent or any patent in its family. Paper 9, 9. Patent Owner reinforced Petitioners' position when it still did not contact Petitioners when the '768 Patent issued in August 2021 or when the '763 Patent issued in December 2022. EX1160, 1 (45); EX1001, 1 (45). Instead, Patent Owner sat on its hands until April 2025—nearly four years after the '768 Patent's issuance, two and a half years after the issuance the '763 Patent's issuance, and nearly a decade after Petitioners began selling the Accused Products—before initiating the Parallel Litigation.

During Patent Owner's nearly decade-long silence, Petitioners developed strong settled expectations in their ability to sell the Accused Products and Accused Chips free from any concern that Patent Owner would raise infringement claims against Petitioners. Between 2016 and April 2025, when Patent Owner initiated the Parallel Litigation, Petitioners not only sold the earliest Accused Products and

Accused Chips without issue, but continued to improve upon and incorporate the Accused Chips into products across Apple’s iPhone, iPad, and other product lines. EX1146, ¶ 21. In total, by the time Patent Owner finally brought its lawsuit against Apple, the Accused Chips were incorporated into *fifty-two* products accused of infringement by Patent Owner. *Id.* Thus, Petitioners developed strong settled expectations that they could sell the Accused Products and Accused Chips without fear that Patent Owner would belatedly sue them for infringement. Consequently, discretionary denial is inappropriate.

VI. APPLE HAS COMPLIED AND CONTINUES TO COMPLY WITH ITS DISCOVERY OBLIGATIONS

Patent Owner next mistakenly complains about several discovery disputes in the Parallel Litigation. Paper 9, 10–11. The Court held a hearing on these issues on February 12, 2026, ordered Apple to produce the documents that it had already agreed to produce, and otherwise denied Patent Owner’s requested relief. EX1147 (striking out provisions in Patent Owner’s proposed order). In contrast, the Court granted Apple’s requests for relief—noting *sua sponte* that Patent Owner had not produced a single document in the case beyond the prosecution histories. EX1148, 36:7–15.

Patent Owner wrongly claims that Apple has refused to (1) elaborate on TSMC’s role with the Accused Products and “stymied various attempts to obtain discovery in this relationship[,]” and (2) delayed production of core technical

documents or provide substantive responses to discovery that forced Patent Owner to request an extension. Paper 9, 10–11. To the contrary, Apple has already agreed to and/or has begun to search for, collect, and produce all relevant and responsive agreements with TSMC and TSMC technical documents in its possession, as well as its own core technical documents. EX1149, 3, 5. Nor was Apple responsible for Patent Owner’s delays in the Parallel Litigation. Apple had already produced its full source code layouts for every Accused Product *two months prior to* Patent Owner’s infringement contentions deadline; its argument to the contrary stems from its own failure to fully review Apple’s production. *Id.*, 3–4. Indeed, Patent Owner had everything it needed to proceed with its source code review before Patent Owner’s deadline to serve its infringement contentions.

Lastly, Patent Owner notes that TSMC had approached Patent Owner’s counsel with potential inventorship and ownership problems. Paper 9, 11. As Patent Owner recognizes, inventorship issues are beyond the scope of this proceeding, and TSMC is not a party to the Parallel Litigation. *Id.* For at least these reasons, TSMC’s correspondence has no bearing on discretionary denial.

VII. INSTITUTION OF THIS IPR IS AN EFFICIENT USE OF BOARD RESOURCES

The remaining *Fintiv* factors also strongly weigh in favor of merits referral, further demonstrating that institution is an efficient use of Board resources.

***Fintiv* Factor 1 Weighs Strongly in Favor of a Merits Referral.** While Judge Andrews denied Apple’s pre-institution motion to stay (Paper 9, 11–12), he did so without prejudice and expressly permitted Apple to move again if the Board institutes. EX2007. If the Board does institute, Apple will move the Court for a post-institution stay, which the Court has granted 15 of 20 times since 2020. EX1150. Accordingly, *Fintiv* Factor 1 strongly favors a merits referral.

***Fintiv* Factor 3 Weighs Strongly in Favor of a Merits Referral.** Based on the current schedule, at the time of institution, the Parallel Litigation will still be in its early stages—briefing on claim construction will still be occurring, the *Markman* hearing will not take place until a month after institution, the fact discovery period will still have five months remaining, and expert reports will not be served until six months after institution. EX1140, 2, 7–9. Under these circumstances, where the *Markman* hearing will not occur prior to institution, the Director has held that *Fintiv* Factor 3 favors a merits referral. *See e.g., Am. Airlines, Inc. v. Intellectual Ventures I LLC*, IPR2025-00785, Paper 11 at 3 (PTAB Aug. 29, 2025) (finding little investment in the litigation based on Petitioners’ argument that *Markman* would occur after institution); *cf. Nissan Motor Co., Ltd. v. Longhorn Auto. Grp. LLC*, IPR2025-01089, Paper 10 at 2 (PTAB Oct. 17, 2025) (finding meaningful investment because *Markman* was scheduled prior to institution deadline).

***Fintiv* Factor 4 Weighs Strongly in Favor of a Merits Referral.** Petitioners timely filed a *Sotera* stipulation agreeing not to “assert in any district court proceeding that any claim challenged in the respective instituted IPR proceeding is invalid on any ground that Petitioners raised or reasonably could have raised during the respective *inter partes* review.” EX1138, 1. While no longer “dispositive by itself,” Petitioners’ stipulation remains “highly relevant” to the Board’s “holistic analysis under *Fintiv*.” EX1151, 2–3. Viewed holistically alongside the other *Fintiv* factors, Petitioners’ *Sotera* stipulation further supports a merits referral and ensures that the Parallel Litigation will save both party and Court resources and prevent the duplication of efforts by the Court and the Board in this IPR. Thus, *Fintiv* strongly supports referral of the Petition to the merits panel.

***Fintiv* Factor 5 Weighs in Favor of a Merits Referral.** *Fintiv* Factor 5 follows *Fintiv* Factor 2 in how it is weighted for or against discretionary denial. *See, e.g., BOE Tech. Grp. Co., Ltd. v. Optronix Scis. LLC*, IPR2024-01130, Paper 16 at 13 (PTAB Jan. 27, 2025) (Factor 5 follows Factor 2). Thus, because *Fintiv* Factor 2 strongly warrants merits referral (*see* Section II), *Fintiv* Factor 5 does as well.

VIII. NATIONAL SECURITY, ECONOMIC, AND PUBLIC INTEREST CONSIDERATIONS STRONGLY FAVOR INSTITUTION

The accused semiconductor chips manufactured by Co-Petitioner TSMC are vital to U.S. industries. As Secretary Lutnick explained in April 2025, “national security” is the “key” reason to “bring semiconductors home.” EX1152, 3. That has

been a key principle of President Trump’s agenda: “Our national security depends on bringing our supply chain home. This is especially true when we are dealing with critical technology, computer chips that are not only important to our civilian world...but also to our military.” EX1153, 40; EX1154; EX1155. TSMC is not a mere bystander in this process but a vanguard of President Trump’s mission to bring the computer chip industry home to America. Indeed, President Trump lauded TSMC’s work, calling TSMC “the greatest manufacturer of chips in the world” while celebrating that TSMC “is coming to America with a \$100 billion investment.” EX1156; www.youtube.com/watch?v=tGPWU3NmbVE, at 0:05-0:23, 0:30-0:44 (praising TSMC in Arizona).

TSMC is investing \$165 billion in the U.S. (an unprecedented direct foreign investment) and is an indispensable link in the U.S. supply chain, including reportedly providing around 90% of the world’s advanced chips. EX1156; EX1157. More importantly, TSMC is investing in America by building six cutting-edge fabrication facilities (“fabs”), two advanced packaging facilities, and an R&D center in Arizona that will lead to thousands of jobs. EX1156; EX1158. This investment will help revive and protect the U.S. supply chain in high-tech industries and preserve U.S. leadership in artificial intelligence. EX1156. High-volume production of chips using TSMC’s N4 process technology at its first fab has already begun,

while volume production using TSMC's N3 process technology at its second fab is targeted for 2028. EX1158.

The implications of TSMC-built chips for America's economy are striking. TSMC-built chips power the vast majority of electronic devices in the world, including smartphones, laptops, computer servers, and other devices used in cars and consumer goods. EX1159, 2. TSMC enables innovations by its customers, including Co-Petitioner Apple—a flagship American company and industry-leading innovator that has shaped the trajectory of consumer technology and contributed significantly to the U.S.'s economic growth—and its Accused Products, as well as NVIDIA, AMD, Microsoft, Amazon, and Tesla, among others, thereby securing U.S. leadership in high-tech industries. Given TSMC's extraordinarily broad impact on the U.S. economy, innovation, and public interest, it is difficult to imagine a more compelling case for use of the Board's resources.

Ignoring this, Patent Owner instead resorts to cheap shots and mudslinging, lobbying baseless and inflammatory claims about TSMC's intentions. Paper 9, 18–19. Patent Owner claims that TSMC is “weaponiz[ing]...the USPTO” to “orchestrate the destruction of American innovation.” *Id.* This patently absurd claim flies in the face of President Trump's praise of TSMC and its ***\$165 billion*** investment in Arizona that will safeguard *America's* global competitive edge in high-tech industries by supplying *America's* companies and *America's* innovators with the

advanced chips they rely on to drive innovation. Nor is TSMC “shielding itself” behind Apple or trying to “skirt” the Parallel Litigation. Paper 9, 19. Quite the opposite: TSMC is *a named Co-Petitioner* to this proceeding. (Paper 1, 132). That TSMC is not a party to the Parallel Litigation is not a problem of Petitioner’s making. Instead, that was Patent Owner’s decision because it elected *not* to name TSMC as a defendant. EX1146, 1. And, as shown above, Apple, the only named defendant in the Parallel Litigation, is already complying with its discovery obligations to provide Patent Owner with relevant and responsive TSMC-related documents in its possession. *See* Section VI. So, far from constituting a “shield and sword” maneuver,” Petitioners’ conduct is nothing more than standard procedure, and indeed, one of *Patent Owner’s* own choosing. Paper 9, 19.

IX. CONCLUSION

For the foregoing reasons, Petitioners respectfully request this IPR not be discretionarily denied and that IPR of the Challenged Claims be instituted.

Respectfully submitted,

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APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 11,538,763
Exhibit 1002	File History of the '763 Patent
Exhibit 1003	Declaration of Stanley Shanfield, Ph.D.
Exhibit 1004	U.S. Patent No. 9,167,694 to Sundaram, et al.
Exhibit 1005	U.S. Patent Publication No. 2010/0290191 to Lin, et al.
Exhibit 1006	U.S. Patent Publication No. 2011/0215458 to Camacho, et al.
Exhibit 1007	U.S. Patent No. 9,679,863 to Lin, et al.
Exhibit 1008	U.S. Patent Publication 2011/0266691 to Lin, et al.
Exhibit 1009	Intentionally left blank
Exhibit 1010	U.S. Patent No. 9,123,763 to Yu, et al.
Exhibit 1011	U.S. Patent Publication 2014/0035935 to Shenoy, et al.
Exhibit 1012	Andrea Chen, et al. <i>Semiconductor Packaging Materials Interaction and Reliability</i> , CRC Press, 2012
Exhibit 1013	Philip Garrou, et al., <i>RDL: an integral part of today's advanced packaging technologies</i> , Solid State Technology, May 2011
Exhibit 1014	U.S. Patent No. 8,780,576 to Haba, et al.
Exhibit 1015	U.S. Patent No. 7,902,648 to Lee
Exhibit 1016	U.S. Patent No. 7,964,961 to Lee, et al.
Exhibit 1017	U.S. Patent No. 7,241,641 to Savastiouk, et al.
Exhibit 1018	U.S. Patent Publication No. 2005/0110168 to Chuang
Exhibit 1019	U.S. Patent Publication No. 2011/0026232 to Lin, et al.
Exhibit 1020	U.S. Patent No. 5,086,558 to Grube, et al.
Exhibit 1021	U.S. Patent Publication No. 2011/0193219 to Lai, et al.
Exhibit 1022	U.S. Patent No. 6,818,545 to Lee, et al.
Exhibit 1023	U.S. Patent No. 6,974,659 to Su, et al.
Exhibit 1024	U.S. Patent Publication No. 2006/0175686 to Murata, et al.
Exhibit 1025	U.S. Patent Publication No. 2012/0098124 to Wu, et al.
Exhibit 1026	U.S. Patent No. 8,193,604 to Lin et al.
Exhibit 1027	U.S. Patent Publication No. 2004/0203224 to Halahan, et al.
Exhibit 1028	Philip Garrou, <i>Introduction to 3D Integration</i> , Handbook of 3D integration: Volumes 1 and 2, Technology and Application of 3D Integrated Circuits, 2012
Exhibit 1029	U.S. Patent Publication No. 2003/0068877 to Kinsman
Exhibit 1030	U.S. Patent Publication No. 2010/0246152 to Lin, et al.
Exhibit 1031	Yi Yang, et al, <i>CPU-Assisted GPGPU on Fused CPU-GPU Architectures</i> , IEEE Xplore
Exhibit 1032	File History of U.S. Patent No. 11,107,768

Exhibit 1033	U.S. Patent No. 4,863,773 to Rousseau, et al.
Exhibit 1034	U.S. Patent No. 6,365,265 to Tose, et al.
Exhibit 1035	E.D. Blackshear, et al., <i>The evolution of build-up package technology and its design challenges</i> , International Business Machines Corporation, 2005
Exhibit 1036	Intentionally Left Blank
Exhibit 1037	U.S. Patent No. 7,374,969 to Cho, et al.
Exhibit 1038	U.S. Patent No. 7,199,036 to Chan, et al.
Exhibit 1039	U.S. Patent No. 8,158,508 to Lin, et al.
Exhibit 1040	U.S. Patent No. 6,619,538 to Test, et al.
Exhibit 1041	U.S. Patent Publication No. 2011/0101523 to Hwang, et al.
Exhibit 1042	U.S. Patent No. 6,831,003 to Huang, et al.
Exhibit 1043	U.S. Patent Publication No. 2009/0226611 to Suzuki, et al.
Exhibit 1044	U.S. Patent No. 6,077,726 to Mistry, et al.
Exhibit 1045	U.S. Patent Publication No. 2010/0244245 to Pendse, et al.
Exhibit 1046	U.S. Patent Publication No. 2012/0206160 to Wu, et al.
Exhibit 1047	U.S. Patent Publication No. 2009/0174052 to Sogawa, et al.
Exhibit 1048	U.S. Patent Publication No. 2013/0100624 to Carpenter, et al.
Exhibit 1049	U.S. Patent No. 7,047,515 to Vitek, et al.
Exhibit 1050	U.S. Patent No. 8,116,097 to Love, et al.
Exhibit 1051	U.S. Patent Publication No. 2009/0237900 to Origuchi, et al.
Exhibit 1052	U.S. Patent Publication No. 2005/0002167 to Hsuan, et al.
Exhibit 1053	U.S. Patent Publication No. 2008/0067695 to Chow, et al.
Exhibit 1054	U.S. Patent No. 6,489,240 to Iacoponi, et al.
Exhibit 1055	U.S. Patent No. 6,578,178 to Mau
Exhibit 1056	U.S. Patent Publication No. 2012/0001190 to Okabe, et al.
Exhibit 1057	U.S. Patent No. 7,307,348 to Wood, et al.
Exhibit 1058	U.S. Patent No. 8,138,014 to Chi, et al.
Exhibit 1059	U.S. Patent No. 6,506,672 to Dagenais, et al.
Exhibit 1060	U.S. Patent No. 8,518,798 to Graetz
Exhibit 1061	U.S. Patent Publication No. 2009/0261473 to Lee, et al.
Exhibit 1062	U.S. Patent No. 6,440,289 to Woo, et al.
Exhibit 1063	U.S. Patent No. 6,812,143 to Lane, et al.
Exhibit 1064	U.S. Patent Publication No. 2012/0145552 to Nagai, et al.
Exhibit 1065	U.S. Patent Publication No. 2011/0147950 to Tsi, et al.
Exhibit 1066	U.S. Patent Publication No. 2009/0070727 to Solomon
Exhibit 1067	U.S. Patent Publication No. 2012/0098114 to Ishibashi
Exhibit 1068	U.S. Patent Publication No. 2011/0074028 to Pendse
Exhibit 1069	U.S. Patent No. 7,485,955 to Kang, et al.

Exhibit 1070	U.S. Patent Publication No. 2012/0104623 to Pagaila, et al.
Exhibit 1071	Intentionally left blank
Exhibit 1072	U.S. Patent No. 7,772,880 to Solomon
Exhibit 1073	U.S. Patent No. 7,989,270 to Huang, et al.
Exhibit 1074	U.S. Patent Publication No. 2011/0304999 to Yu, et al
Exhibit 1075	U.S. Patent Publication No. 2009/0117327 to Takada
Exhibit 1076	U.S. Patent Publication No. 2005/0081744 to Klocke, et al.,
Exhibit 1077	U.S. Patent No. 6,291,082 to Lopatin
Exhibit 1078	Intentionally left blank
Exhibit 1079	Intentionally left blank
Exhibit 1080	U.S. Patent Publication No. 2012/0319251 to Yu, et al.
Exhibits 1081-1089	Intentionally left blank
Exhibit 1090	U.S. Patent Publication No. 2005/0156280 to Patel, et al.
Exhibits 1091-1092	Intentionally left blank
Exhibit 1093	U.S. Patent No. 6,107,180 to Munroe, et al.
Exhibit 1094	U.S. Patent Publication No. 2011/0210283 to Ramirez, et al.
Exhibit 1095	U.S. Patent No. 6,452,502 to Dishongh, et al.
Exhibit 1096	U.S. Patent No. 6,344,401 to Lam.
Exhibit 1097	Richard K. Ulrich, et al., <i>Advanced Electronic Packaging</i> , IEEE Press Series on Microelectrical Systems, 2006
Exhibit 1098	Mulugeta Abteu, et al., <i>Lead-free Solders in Microelectronics</i> , Materials Science and Engineering, 2000
Exhibit 1099	Karl J. Puttlitz, et al., <i>Handbook of Lead-Free Solder Technology for Microelectronic Assemblies</i> , 2005
Exhibit 1100	U.S. Patent Publication No. 2013/0309832 to Cheng, et al.
Exhibit 1101	U.S. Patent Publication No. 2013/0151869 to Steinman, et al.
Exhibit 1102	Linely Gwennap, <i>Sandy Bridge Spans Generations: Intel Focuses on Graphics, Multimedia in New Processor Design</i> , Microprocessor, 2010
Exhibit 1103	U.S. Patent No. 6,330,164 to Khandros, et al.
Exhibit 1104	U.S. Patent No. 6,710,447 to Nogami.
Exhibits 1105-1126	Intentionally left blank
Exhibit 1127	U.S. Patent No. 8,238,113 to Iihola, et al.
Exhibit 1128	Intentionally left blank
Exhibit 1129	U.S. Patent No. 6,468,413 to Fanti, et al.
Exhibit 1130	U.S. Patent No. 8,132,775 to Goldmann.

Exhibit 1131	U.S. Patent Publication No. 2011/0186977 to Chi, et al.
Exhibit 1132	U.S. Patent No. 7,169,627 to Duh, et al.
Exhibit 1133	U.S. Patent No. 6,614,243 to Klehn, et al.
Exhibit 1134	U.S. Patent Publication No. 2009/0162622 to Van Veen, et al.
Exhibit 1135	U.S. Patent No. 6,570,259 to Alcoe, et al.
Exhibit 1136	U.S. Patent No. 7,741,567 to Beddingfield, et al.
Exhibit 1137	U.S. Patent No. 6,407,341 to Anstrom, et al.
Exhibit 1138	Email to Patent Owner’s Counsel with Stipulation
Exhibit 1139	Revision to Rules of Practice Before the Patent Trial and Appeal Board, 90 Fed. Reg. 48335 (Oct. 17, 2025) (to be codified at 37 CFR pt. 42)
Exhibit 1140	<i>MYW Semitech, LLC v. Apple Inc.</i> , No. 1:25-cv-00504, Dkt. 26, Scheduling Order (D. Del. Sept. 5, 2025)
Exhibit 1141	Left Intentionally Blank
Exhibit 1142	Left Intentionally Blank
Exhibit 1143	Left Intentionally Blank
Exhibit 1144	Left Intentionally Blank
Exhibit 1145	Apple iPhone 7 Introduction Press Release, dated Sept. 7, 2016
Exhibit 1146	<i>MYW Semitech, LLC v. Apple Inc.</i> , No. 1:25-cv-00504, Dkt. 18, Amended Complaint (D. Del. July 7, 2025)
Exhibit 1147	<i>MYW Semitech, LLC v. Apple Inc.</i> , No. 1:25-cv-00504, Dkt. 83, Order (D. Del. Feb. 12, 2026) (“Semitech Order”)
Exhibit 1148	<i>MYW Semitech, LLC v. Apple Inc.</i> , No. 1:25-cv-00504, Hearing Transcript (D. Del. Feb. 12, 2026) (“Hearing Transcript”)
Exhibit 1149	<i>MYW Semitech, LLC v. Apple Inc.</i> , No. 1:25-cv-00504, Dkt. 87, Apple’s Responsive Letter (D. Del. Feb. 13, 2025)
Exhibit 1150	Docket Navigator’s Statistics for Judge Andrew’s Motion for Stay Pending IPR (Post-Institution) Success
Exhibit 1151	Chief Administrative Patent Judge Boalick’s Memorandum dated March 24, 2025
Exhibit 1152	CNBC Transcript: United States Commerce Secretary Howard Lutnick Speaks with CNBC’s Brian Sullivan on “The Exchange” Today, CNBC (Apr. 29, 2025) (last visited October 22, 2025), available at https://www.cnbc.com/2025/04/29/cnbc-transcript-united-states-commerce-secretary-howard-lutnick-speaks-with-cnbc-brian-sullivan-on-the-exchange-today.html
Exhibit 1153	Trump on China Putting - America First (Robert C. O’Brien editor)
Exhibit 1154	Remarks: Donald Trump Announces an Economic Investment in the United States - March 3, 2025, available at

	https://rollcall.com/factbase/trump/transcript/donald-trump-remarks-economic-investment-united-states-march-3-2025/#2
Exhibit 1155	Speech: Donald Trump Addresses an Republican Dinner in Washington - April 8, 2025, available at https://rollcall.com/factbase/trump/transcript/donald-trump-speech-nrcc-republican-dinner-april-8-2025/#161
Exhibit 1156	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/
Exhibit 1157	Jeremy Bowman, Nasdaq, This 1 Number May Ensure TSMC's Market Dominance, The Motley Fool (Aug. 17, 2024) (last visited October 22, 2025), available at https://www.nasdaq.com/articles/1-number-may-ensure-tsmcs-market-dominance
Exhibit 1158	TSMC Arizona Webpage, available at https://www.tsmc.com/static/abouttsmcaz/index.htm
Exhibit 1159	Silvia Pellegrino, What is TSMC?, Tech Monitor (Jan. 2, 2023) (last visited July 14, 2025), available at https://www.techmonitor.ai/what-is/what-is-tsmc/?cf-view
Exhibit 1160	U.S. Patent No. 11,107,768 to Yang
Exhibit 1161	U.S. Patent No. 8,709,933 to Haba, et al.

**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b), the undersigned certifies that on March 2, 2026, a complete and entire copy of this *Opposition to Patent Owner's Request for Discretionary Denial* and Exhibits was served via electronic filing with the Board and via Electronic Mail on the following practitioners of record for Patent Owner:

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