

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner

v.

TOPWIRE LLC
Patent Owner

Case No. IPR2026-00303
U.S. Patent No. 9,859,202

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

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PETITIONER’S EXHIBIT LIST

Exhibit No.	DESCRIPTION
1001	U.S. Patent No. 9,859,202 (“The ’202 Patent”)
1002	Declaration of Dr. Stanley Shanfield
1003	U.S. Patent Application Publication No. 2013/0182402 (“Chen”)
1004	U.S. Patent Application Publication No. 2011/0147908 (“Sun”)
1005	U.S. Patent Application Publication No. 2016/0056087 (“Wu”)
1006	U.S. Patent Application Publication No. 2009/0140415 (“Furuta”)
1007	Prosecution History of U.S. Patent No. 9,859,202 (“’202 Patent FH”)
1008	U.S. Patent Application Publication No. 2014/0248742
1009	U.S. Patent Application Publication No. 2011/0159284
1010	U.S. Patent Application Publication No. 2008/0155820 (“Arai”)
1011	U.S. Patent Application Publication No. 2015/0001708
1012	USPTO Seven-step U.S. Patent Search Strategy
1013	Amended Complaint, <i>TopWire LLC, v. Apple Inc.</i> , 7:25-cv-00551-ADA (District Court Case), Dkt. No. 22 (W.D. Tex. February 23, 2026)
1014	Apple, “The future is here: iPhone X” (September 12, 2017)
1015	Assignment of the ’202 Patent
1016	Initial Schedule, (District Court Case), Dkt. No. 26 (W.D. Tex. March 23, 2026)
1017	Motion to Transfer, (District Court Case), Dkt. No. 34 (W.D. Tex. April 2, 2026)
1018	Order Reassigning Case to Judge Counts, (District Court Case), Dkt. No. 35 (W.D. Tex. April 22, 2026)
1019	Order Reassigning Case to Judge Schydlower, (District Court Case), Dkt. No. 36 (W.D. Tex. April 27, 2026)
1020	Motion to Stay, (District Court Case), Dkt. No. 37 (W.D. Tex. May 22, 2026)
1021	Correspondence with Patent Owner re Motion to Stay
1022	W.D. Tex. Case Management Statistics
1023	Contentions Cover Pleading
1024	Claim Construction Disclosure
1025	Apple, “Apple increases U.S. commitment to \$600 billion, announces American Manufacturing Program” (August 6, 2025)

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1026	Apple, “Apple Manufacturing Academy brings together hundreds of U.S. manufacturers to accelerate AI use in American supply chains” (May 5, 2026)
1027	Apple, “Apple adds new partners to its American Manufacturing Program” (March 26, 2026)
1028	Apple, “Apple and Corning partner to manufacture 100 percent of iPhone and Apple Watch cover glass in Kentucky” (August 6, 2025)
1029	Apple, “Apple will spend more than \$500 billion in the U.S. over the next four years” (February 24, 2025)
1030	Apple, “Apple announces expanded partnership with Amkor for advanced silicon packaging in the U.S.” (November 30, 2023)
1031	Apple, “Apple expands U.S. supply chain with \$500 million commitment to American rare earth magnets” (June 15, 2025)
1032	Apple, “Apple accelerates U.S. manufacturing, with Mac mini production coming later this year” (February 24, 2026)
1033	Complaint, <i>TopWire LLC, v. Apple Inc.</i> , District Court Case, Dkt. No. 1 (W.D. Tex. December 1, 2025)

LISTING OF CLAIMS

[1Pre] A structure, comprising

[1A] a bottom package substrate;

[1B] a top package substrate stacked on top of the bottom package substrate;

[1C] at least one spacer connector interposed between the bottom package substrate and the top package substrate to define a space between the bottom package substrate and the top package substrate,

[1D] wherein the spacer connector comprises a core substrate;

[1E] a plurality of metal pillars, each passing through the core substrate;

[1F] a plurality of top metal pads, each on a top end of a corresponding metal pillar among the plurality of metal pillars;

[1G] wherein a bottom end of each metal pillar among the plurality of metal pillars protrudes downwardly from a bottom surface of the core substrate;

[1H] the top package substrate has, on a bottom surface thereof, a plurality of bottom metal pillars each coupled to a corresponding metal pillar among the plurality of metal pillars of the spacer connector,

[1I] the bottom package substrate has, on a top surface thereof, a plurality of top metal pillars each coupled to a corresponding metal pillar among the plurality of metal pillars of the spacer connector,

[1J] the top package substrate is electrically coupled to the bottom package

substrate through the plurality of bottom metal pillars of the top package substrate, the plurality of metal pillars of the spacer connector, and the plurality of top metal pillars of the bottom package substrate; and

[1K] a bottom chip arranged in the space between the bottom package substrate and the top package substrate,

[1L] wherein the bottom chip is mounted to the top surface of the bottom package substrate,

[1M] the at least one spacer connector comprises two spacer connectors arranged on opposite sides of the bottom chip.

[2Pre] The structure of claim 1, wherein

[2A] a top surface of the bottom chip is spaced downwardly from the bottom surface of the top package substrate.

[3Pre] The structure of claim 2, further comprising:

[3A] a top chip mounted to the top surface of the top package substrate,

[3B] wherein in a direction in which the top package substrate is stacked on top of the bottom package substrate, the top chip overlaps the bottom chip and each of the two spacer connectors.

[4Pre] The structure of claim 1, wherein

[4A] each bottom metal pillar among the plurality of bottom metal pillars of the top package substrate is aligned with a corresponding metal pillar among the

plurality of metal pillars of the spacer connector, and with a corresponding top metal pillar among the plurality of top metal pillars of the bottom package substrate.

[5Pre] The structure of claim 4, wherein

[5A] the spacer connector is free of metal pads on the bottom ends of the plurality of metal pillars protruding downwardly from the bottom surface of the core substrate, and each metal pillar among the plurality of metal pillars and the corresponding top metal pad of the spacer connector form a T shape.

[6Pre] The structure of claim 4, wherein

[6A] the bottom ends of the plurality of metal pillars protruding downwardly from the bottom surface of the core substrate of the spacer connector are connected, in an end-to-end manner, to corresponding top ends of the plurality of top metal pillars of the bottom package substrate, and bottom ends of the plurality of bottom metal pillars of the top package substrate are connected to the corresponding top ends of the plurality of metal pillars of the spacer connector via the corresponding top metal pads of the spacer connector.

[7Pre] The structure of claim 4, wherein

[7A] the spacer connector further comprises a dielectric layer on the bottom surface of the core substrate, and

[7B] the plurality of metal pillars pass through the core substrate and the dielectric layer.

[8Pre] The structure of claim 7, wherein

[8A] the dielectric layer is a dielectric adhesive in which the core substrate is pasted.

[9Pre] The structure of claim 4, wherein

[9A] the spacer connector further comprises a plurality of bottom metal pads, each on the bottom end of a corresponding metal pillar among the plurality of metal pillars,

[9B] the bottom ends of the plurality of metal pillars are connected to corresponding top ends of the plurality of top metal pillars of the bottom package substrate via the corresponding bottom metal pads of the spacer connector, and

[9C] bottom ends of the plurality of bottom metal pillars of the top package substrate are connected to the corresponding top ends of the plurality of metal pillars of the spacer connector via the corresponding top metal pads of the spacer connector.

I. INTRODUCTION

Apple Inc. (“Petitioner”) respectfully requests institution of this IPR challenging U.S. Pat. No. 9,859,202 (“the ’202 Patent,” EX1001). The balance of discretionary considerations weighs firmly in favor of institution. **First**, the public interest weighs strongly against discretionary denial. Petitioner Apple has committed to investing hundreds of billions of dollars in American manufacturing. In contrast, TopWire sells no products, exists solely to monetize its patent, and has invested zero dollars in American manufacturing. **Second**, material errors in the Examiner’s search strategy weigh strongly against discretionary denial. During the original prosecution, only a cursory category search was conducted, which omitted not only the most relevant categories, but also omitted a keyword search. As a result, several pertinent references that would have led to the rejection of the ’202 Patent were not made of record. Those references are relied upon in this instant IPR Petition. **Third**, despite Patent Owner’s reliance on the ’202 Patent’s issue date of January 2, 2018, settled expectations weigh against discretionary denial. As of the filing date of the complaint, Patent Owner had owned the ’202 Patent for less than one year. On the other hand, Petitioner began selling the first accused product, the iPhone X, in November 2017—**before** the ’202 Patent had even issued. Therefore, Petitioner’s settled expectation that it would not be sued on the ’202 Patent outweighs Patent Owner’s supposed settled expectations. **Finally**, the *Fintiv* factors

weigh strongly against discretionary denial. There is no trial date and a motion to stay all non-venue-related deadlines has been filed at the district court. In addition, Petitioner diligently filed this Petition within one month of receiving Patent Owner's infringement contentions and has entered a *Sotera-plus* stipulation. Moreover, the Grounds presented in the Petition are compelling. Petitioner respectfully requests the Director deny Patent Owner's request and review the Petition on its merits.

II. PETITIONER'S SIGNIFICANT INVESTMENT IN AMERICAN MANUFACTURING WEIGHS AGAINST DISCRETIONARY DENIAL.

Public interest overwhelmingly weighs against discretionary denial because Petitioner has invested billions of dollars into American manufacturing while Patent Owner has invested none.

Patent Owner has accused "the iPhone X series and all other subsequent iPhone series" (the "Accused Products") of allegedly infringing the '202 Patent. EX1013, ¶9. Patent Owner argues that "the key component—the PCB technology integral to the Accused Products—is manufactured overseas" and that this should "weigh strongly in favor of discretionary denial." PO's DD Brief, 16–17. But in the district court, Patent Owner alleged that significant manufacturing activity for iPhone occurs in the U.S. EX1013, ¶¶ 9, 13 ("Apple manufactures integrated circuits and other semiconductor components for Apple's iPhones at its manufacturing plant in Austin, Texas located at 12100 Apple Blvd, Austin, TX 78754."); *id.*, ¶ 15

(“Apple works with hundreds of suppliers, many of which have operations in Texas.”). Indeed, the Accused Products have far-reaching effects to American manufacturing that strongly weigh against discretionary denial. As of August 2025, Apple has committed to invest \$600 billion in American manufacturing over the next four years. EX1025.

Petitioner partners with numerous companies that all collectively help boost American manufacturing of the Accused Products. EX1027, 1. For example, sensors that support key iPhone features like camera stabilization will be manufactured by TDK in the U.S. EX1027, 1-2. Sensors that enable the Crash Detection feature in the iPhone will be manufactured by Bosch and TSMC in Camas, Washington. EX1027, 2. Advanced integrated circuits that power the iPhone’s Face ID features will be manufactured by Cirrus Logic and GlobalFoundries in Malta, New York. EX1027, 2. Cover glass for the iPhone is already being made at the Corning glass factory in Harrodsburg, Kentucky, with all production there by the end of 2026. EX1028. A18 chip and Apple C1 modem found in iPhone will be fabricated by TSMC in Arizona. EX1029, 4–5. Silicon for iPhone is sourced from Broadcom, Skyworks, Qorvo, and Texas Instruments, which have manufacturing locations across multiple states across the U.S. EX1029, 4. Amkor will carry out advanced silicon packaging in Arizona. EX1030. Magnets used in iPhone’s Taptic Engine will be manufactured at the MP Materials’ facility in Fort Worth, Texas

and/or Mountain Pass, California. EX1031. Petitioner has also opened a new factory in Houston, TX to produce servers for Apple Intelligence, which is available on several of the Accused Products. EX1032, 2. Petitioner has also created a Manufacturing Academy to prepare the next generation of American manufacturers in partnership with Michigan State University. EX1026. In short, the significant extent of American manufacturing that has and will continue for the Accused Products overwhelmingly weighs against discretionary denial. *See Tesla, Inc. v. Bulletproof Property Management, LLC*, IPR2026-00204, Paper 14, 5 (Director June 15, 2026) (informative) (“Petitioner provides evidence of its manufacturing activities in the United States” which “further demonstrates that discretionary denial in these proceedings is not appropriate”).

In contrast, Patent Owner admits it “has not manufactured any products in the U.S.” PO’s DD Brief, 17. The Director should not allow a party that has not invested a single dollar in American manufacturing to avoid review of a patent that should never have been issued in the first place—particularly when that party accuses products that implicate billions of dollars in American manufacturing of infringement.

III. MATERIAL ERRORS IN THE EXAMINER’S SEARCH STRATEGY WEIGH AGAINST DISCRETIONARY DENIAL.

The ’202 Patent should be reviewed to correct the material errors made during

original examination because it lacked a thorough and complete search of the prior art. The original prior art search was deficient for three reasons.

First, several relevant categories were omitted from the search during examination, which meant key references were overlooked. In conducting a category search, M.P.E.P. §904.02 instructs that “***/e/very*** group/subgroup and secondary classification area of the Cooperative Patent Classification, class/subclass of the U.S. Patent Classification, digest, and cross-reference art collection pertinent to each type of invention claimed ***should be included, from the largest combination through the various subcombinations to the most elementary part.***” M.P.E.P. §904.02(a). Here, that guidance was not followed. For example, the Examiner searched within group H05K and class 361 (and some of the subgroups/subclasses therein). EX1007, 112, 138–139. However, the Examiner failed to search “***every***” subgroup and subclass, such as subgroup H05K 7/04 and subclass 361/807. Had such subgroup/subclass been included in the search, Chen—the primary reference in the Petition, which discloses almost every limitation of every challenged claim—would have been uncovered. *See* EX1003, Cover (classified under H05K 7/04 and 361/807). In fact, the claims were allowed after Applicant included limitations [1K], [1L], and [1M]. *See* EX1007, 117–118, 135–136, 138–139. But Chen discloses each and every one of those limitations. *See* Pet., 28–31 (“Chen discloses [1K] ... [1L] ... [1M].”). Therefore, failure to include the most relevant

subgroups/subclasses as part of the search in the original examination was a material error that should be corrected. *See Anthony Inc. v. ControlTec, LLC*, IPR2025-00559, Paper 12, 2 (Director July 16, 2025) (holding that omission of relevant prior art by the Examiner during prosecution constituted a “material error” and outweighed other factors supporting discretionary denial under §314(a), including challenged patent’s advanced age); *Xencor, Inc. v. Merus N.V.*, IPR2025-00604, Paper 12, 2–3 (Director July 17, 2025) (material omission of relevant prior art during prosecution supported instituting review); *Microsoft Corp. v. ParTec Cluster Competence Ctr. GmbH*, IPR2025-00318, Paper 9, 3 (Director June 12, 2025) (material omission of relevant prior art during prosecution supported instituting review).

Second, even within the subgroups/subclasses that were searched during original examination, the Examiner missed key references relied upon in the Petition. For example, although the Examiner searched subgroup H01L 23/52 and subclass 257/686, Examiner failed to uncover Sun. EX1007, 112, 138–139; EX1004, Cover (classified under H01L 23/52 and 257/686). In fact, like Chen, Sun discloses limitations [1K], [1L], and [1M]. *See* EX1004, Fig. 12. *See Tesla, Inc. v. Bulletproof Property Management, LLC*, IPR2026-00204, Paper 14, 4 (Director June 15, 2026) (informative) (finding material error when “the examiner overlooked certain teachings in [the prior art] that appear to disclose allowable subject matter of

the challenged claims”). As another example, Wu, listed under three subcategories that were searched during original examination—H01L 23/31, H01L 21/48, and H01L 21/56—was not made of record either. EX1007, 112, 138–139; EX1005, Cover. Failing to uncover Sun and Wu during original examination was a material error that should be corrected.

Third, the category search was not supplemented with a keyword search, contrary to typical Patent Office procedures. *See* EX1012, 7 (explaining that “U.S. patent examiners regularly supplement their classification searches with keyword searches” to ensure they find the most relevant prior art during prosecution). Indeed, courts have held that a keyword search is “[a]n important component of almost any reasonable search strategy.” *Palomar Techs., Inc., v. MRSI Sys., LLC*, No. 1:18-cv-10236-FDS, 2020 WL 2115625, at *6 (D. Mass. May 4, 2020) (additionally warning against “strict reliance on the classification system”). But there is nothing in the record indicating that any such keyword search was carried out during original examination.

Accordingly, Patent Owner’s request for discretionary denial should be denied, to allow the Patent Office to correct the material errors that were made during original examination. *See also TSMC Ltd. and Apple Inc. v. Marlin Semiconductor Ltd.*, IPR2025-00847, Paper 11 (Director Sept. 3, 2025) (finding material error overrides settled expectation of a patent issued about 15 years ago).

IV. PETITIONER’S SETTLED EXPECTATIONS OUTWEIGH PATENT OWNER’S SETTLED EXPECTATION AND WEIGH AGAINST DISCRETIONARY DENIAL.

Patent Owner claims its settled expectations favor granting discretionary denial but identifies nothing beyond the age of the ’202 Patent. PO’s DD Brief, 2–3. A closer look at the facts reveals that Petitioner has a stronger settled expectation of non-assertion that weighs against discretionary denial. Patent Owner has accused “the iPhone X series and all other subsequent iPhone series” of allegedly infringing the ’202 Patent. EX1013, ¶9. But Petitioner announced the release of iPhone X on September 12, 2017 and began selling it in stores on November 3, 2017—*before* the issuance of the ’202 Patent on January 2, 2018. EX1014. The accused iPhones are ubiquitous and represent Apple’s best-selling product lines. And Petitioner has continued to sell hundreds of millions of the Accused Products since their release—longer than the duration of time the ’202 Patent was in force—without any threat of litigation from the original Patent Owner. *See Intel Corp. v. Proxense, LLC*, IPR2025-00327, Paper 12, 2 (Director June 26, 2025) (finding patents that were not “commercialized, asserted, marked, licensed, or otherwise applied” to weigh against discretionary denial). But that changed in 2025. The current Patent Owner acquired the ’202 Patent on March 14, 2025 from the previous Patent Owner, Dyi-Chung Hu, who is located in Taiwan. EX1015; EX1001, Cover. Less than four months later, on July 10, 2025, Patent Owner asked Petitioner to take a license. EX1013, ¶31, 44

(Ex. B). Petitioner responded to Patent Owner's request less than two weeks later, on July 22, 2025, requesting more information about Patent Owner's request, but Patent Owner never responded. EX1013, ¶41. Instead, it filed suit on December 1, 2025. EX1033. Patent Owner's refusal to engage in a pre-suit discussion regarding the merits of its allegations, including the validity of the patent, is the conduct of a party determined to extract revenue solely based on litigation. In choosing this deliberate, litigation-focused strategy against Petitioner's best-selling product, Patent Owner should have expected that the validity of the '202 Patent would be challenged. Accordingly, Patent Owner cannot claim any meaningful settled expectation regarding the validity of the '202 Patent, particularly where it has owned the patent for only about a year. Accordingly, the Parties' settled expectations weigh against discretionary denial.

V. FINTIV FACTORS STRONGLY WEIGH AGAINST DISCRETIONARY DENIAL.

The *Fintiv* factors strongly weigh against discretionary denial because no *Markman* is set, no trial date is set, a motion to stay has been filed that will likely be granted, and the parties have made little substantive investment in the parallel district court litigation.

A. Factual Background

Patent Owner filed suit in the Western District of Texas on December 1, 2025.

EX1033. The case was originally assigned to Judge Counts, who re-assigned the case to Judge Albright. Judge Albright initially set a trial date of August 16, 2027. EX1016, 6. On March 24, 2026, Petitioner moved to transfer the district court case from the Western District of Texas to the Northern District of California. EX1017. On April 22, 2026, Judge Albright **vacated the *Markman* hearing and trial dates**, and re-assigned the case to Judge Counts, who subsequently further re-assigned the case to Judge Schydlower the next day. EX1018, EX1019. On May 22, 2026, Petitioner filed a motion to stay all deadlines pending a decision on Petitioner's motion to transfer.¹ EX1020. The parties have exchanged only preliminary infringement and invalidity contentions, with final contentions not due until October 6, 2026.

B. Analysis Of The *Fintiv* Factors Strongly Weigh Against Discretionary Denial

1. Factor 1: District Court Case Is Likely To Be Stayed

Factor 1 weighs against discretionary denial because Petitioner has filed a motion to stay and the district court is likely to grant it. The District Court is likely

¹ Petitioner's motion to stay was not yet on file when Patent Owner filed its request for discretionary denial. However, Patent Owner was aware that such a motion would be filed because Petitioner had already requested Patent Owner's availability to confer on the motion. EX1021.

to grant Petitioner’s motion because Judge Schydlower has previously stayed cases when a motion to transfer is pending. *See Allani v. Google, LLC*, No. 6:24-cv-00305-LS, D.I. 44 (W.D. Tex. July 11, 2025) (staying all deadlines pending a ruling on a motion to transfer). Other courts in the Western District of Texas have done the same. *Alto Dynamics, LLC v. Wayfair LLC*, No. 1:22-cv-829-RP, D.I. 39 (W.D. Tex. February 27, 2023); *Board of Regents, The University of Texas System v. Alnylam Pharmaceuticals Inc. et al.*, No. 1:24-cv-01524-DAE, D.I. 85 (W.D. Tex. November 4, 2025).

2. Factor 2: District Court Case Does Not Have A Trial Date

Factor 2 strongly weighs against discretionary denial because there is no set trial date. Judge Albright vacated the originally scheduled trial date of August 16, 2027, and the case is now reassigned to Judge Schydlower. EX1018, EX1019. Factor 2 strongly weighs against discretionary denial where no trial date has been set. *OnePlus Technology (Shenzhen) Co., Ltd, v. Pantech Corporation*, IPR2025-00762, Paper 9, 2 (Director Sept. 12, 2025) (this factor weighs against discretionary denial in cases where “no trial date has been set in the parallel district court proceeding”); *Tesla, Inc. v. Bulletproof Property Management, LLC*, IPR2026-00204, Paper 14, 2–3 (Director June 15, 2026) (informative) (“The absence of a scheduled trial date and Petitioner’s broad stipulation reduces the concern of inconsistent outcomes or significant duplication of efforts, and allows this AIA

review to function as an alternative to the co-pending litigation.”) (citing *Magnolia Med. Tech., Inc. v. Kurin*, IPR2026-00097, Paper 17, 3–4 (Director May 14, 2026) (precedential)).

Patent Owner argues that “neither party has received any indication that the trial date will be materially pushed beyond the agreed upon date.” PO’s DD Brief, 4. But the original trial date has been vacated, and the case has been reassigned to Judge Schydlower. Judge Schydlower has not previously presided over a patent case through trial and Patent Owner’s assumption that the case will proceed on the vacated timeline set by Judge Albright is purely speculative. Moreover, the latest judicial statistics in W.D. Texas show that the median time-to-trial for civil cases is 29.5 months. EX1022, 1. Applying that median time-to-trial statistic against the filing date of the complaint yields an expected trial date of about mid-May 2028, which is well after the anticipated Final Written Decision of September 2027. The Board has previously explained that this factor weighs against discretionary denial in similar situations. *See Orca Security Ltd., v. Wiz, Inc.*, IPR2025-01083, Paper 10, 2 (Director Oct. 17, 2025).

**3. Factor 3: Investment In The District Court Was Minimal
And Petitioner Diligently Filed The IPR Petition**

Factor 3 strongly weighs against discretionary denial because no significant resources have yet been committed to the litigation by the parties or the court. The

parties have exchanged only preliminary infringement contentions on February 24, 2026, and preliminary invalidity contentions on April 21, 2026. Fact discovery has not begun², and the parties have only exchanged venue-related discovery requests and responses. Final contentions are due to be exchanged on October 6, 2026, which is after the institution decision due date. The court also has not addressed any substantive issues related to the patent-in-suit, and with the *Markman* hearing date vacated, will not do so before the institution decision is due. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, 9–10 (PTAB Mar. 20, 2020) (precedential) (“If, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution...”).

Patent Owner also argues that “[t]here is no indication that the *Markman* hearing will be materially delayed beyond the original schedule.” PO’s DD Brief, 6. But the *Markman* hearing date has been vacated and there is no indication that a new hearing will be scheduled near the original date. EX1018. The cases Patent

² Accordingly, third party subpoenas requesting information on third party product prior art have not been issued yet. But Petitioner plans to rely on product prior art defense in litigation that could not have been raised in the IPR, subject to the *Sotera-plus* stipulation filed on May 28, 2026.

Owner cites, therefore, are inapposite as they are all premised on the *Markman* hearing being complete.

Petitioner's prompt filing of the Petition further weighs against discretionary denial. Patent Owner served preliminary infringement contentions on February 24, 2026, and Petitioner filed the instant Petition *less than a month later*, on March 16, 2026. The Office has found petitions prepared far slower to be "diligent," and weighed that diligence against discretionary denial. *Samsung Elecs. Co. v. Mullen Indus. LLC*, IPR2024-01472, Paper 9, 10 (PTAB Mar. 31, 2025) ("Petitioner's diligence in filing its Petition (a) less than five months after receiving Patent Owner's infringement contentions and (b) prior to the parties briefing claim construction issues weighs against exercising discretionary denial.").

4. Factor 4: There Will Be No Overlap Between The IPR And The District Court

Factor 4 strongly favors institution. *First*, Patent Owner's critique of Petitioner's invalidity contentions misrepresents the current procedural status of the district court litigation. Petitioner has only served preliminary invalidity contentions, which not only include claim charts directed to patents and printed publications, but also identify several prior-art systems that require discovery from third parties to substantiate. EX1023. Fact discovery has not opened, so Petitioner has not yet had the opportunity to develop those systems with discovery. When the

parties exchange final contentions on October 6, 2026, after fact discovery has opened, Apple plans to include claim charts of product prior art systems—including product prior art systems that would not be subject to the *Sotera-plus* stipulation filed on May 28, 2026. **Second**, Patent Owner complains that Petitioner’s failure to file a *Sotera* stipulation favors discretionary denial.³ PO’s DD Brief, 9–10. Because there is no trial or *Markman* date in the underlying litigation, the *Fintiv* analysis should weigh against discretionary denial even absent a *Sotera* stipulation. But nevertheless, in order to moot the issue entirely, Petitioner filed a stipulation on May 28, 2026 that goes beyond the typical *Sotera* stipulation, additionally stipulating that it will not assert in the district court “any product or system that is based on the same evidence presented in this IPR.” Paper 7. Petitioner’s broad stipulation ensures that

³ Filing the stipulation prior to filing of Patent Owner’s discretionary denial brief is not mandatory. Indeed, the Director previously reviewed multiple IPR petitions on the merits even though Petitioner’s stipulations were filed (on March 2, 2026 and March 31, 2026) **after** Patent Owner’s discretionary denial brief was filed (on February 2, 2026). *See, e.g., Wybotics Co. Ltd. v. Zodiac Pool Systems LLC*, IPR2026-00158, Paper 12, 4–5 (Director May 6, 2026) (finding “Petitioner’s stipulation is binding on Petitioner should the merits warrant institution” and finding that “the Petitions will be reviewed for merits and non-discretionary considerations”).

the IPR will serve as a true alternative to the parallel litigation if the Board institutes review. The Board and Director have repeatedly recognized that such a stipulation “mitigates any concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions.” *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 19 (PTAB Dec. 1, 2020) (precedential); *Nikon Corp. v. Optimum Imaging Technologies, LLC*, IPR2024-01373, Paper 17, 23 (PTAB Apr. 23, 2025) (finding that a *Sotera* stipulation “significantly reduces the overlap between the district court litigation and [an] IPR” and weighs in favor of institution).

5. Factor 5: Patent Owner Is Involved In Another Parallel District Court Litigation Against A Third Party

Factor 5 favors institution because Patent Owner is not only involved in a parallel proceeding against the Petitioner, but also against a third party—Samsung—that has also filed a separate IPR petition.

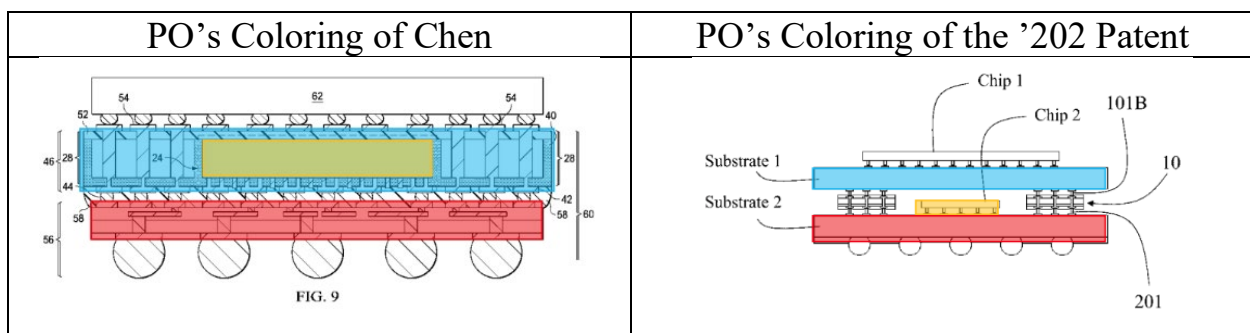
At the outset, it is not remarkable that Petitioner is a defendant in the parallel district court litigation. The Board has historically found that when the Petitioner and Patent Owner are the same as the parties in the parallel district court litigation, “this factor adds little if anything to the discretionary denial analysis.” *See Aylo Freesites Ltd. f/k/a MG Freesites Ltd. v. WellcomeMat, LLC*, IPR2024-00710, Paper 13, 17–18 (PTAB Sep. 5, 2024) (“We make the unremarkable observation that an

IPR petitioner and patent owner are very often named parties in parallel district court litigation regarding the same patent. In our view, ***this factor adds little if anything to the discretionary denial analysis*** unless the petitioner is not named as a defendant (or declaratory judgment plaintiff) in parallel district court patent litigation.”).

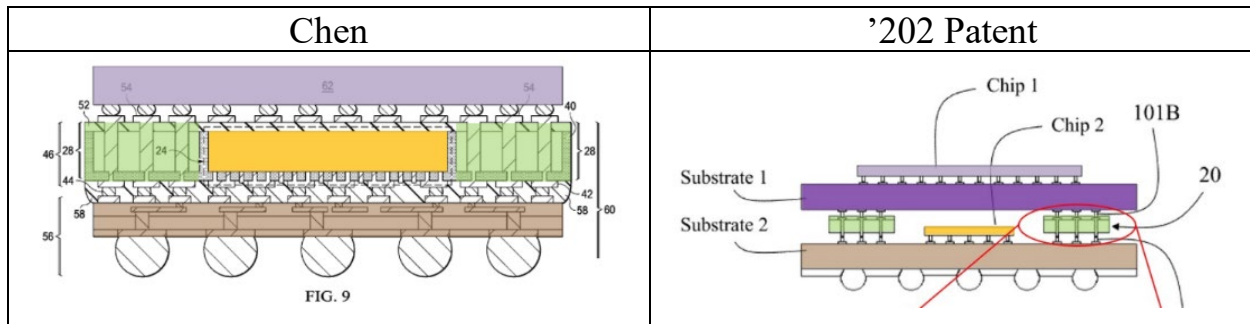
But Patent Owner has initiated another lawsuit against another third party in a different district, and that third party has in turn filed a separate IPR petition. *See TopWire LLC v. Samsung Electronics Co. Ltd. et al.*, 2:25-cv-01183-JRG-RSP (EDTX); IPR2026-00324. When Patent Owner sues multiple parties in a multitude of districts, the Director has found that “resolving the dispute between the parties at the Office would be more efficient.” *See Berkshire Hathaway Energy Co. et al. v. Birchtech Corp.*, IPR2025-00274, Paper 23, 2 (Director July 2, 2025).

6. Factor 6: The Petition Presents Compelling Merits

Factor 6 strongly favors institution because the merits of the Petition are strong. ***First***, as reproduced below, Patent Owner mischaracterizes Chen by incorrectly coloring the components and ignoring ***Chen’s TAV modules 28*** that read on the claimed ***spacer connector***. *See* PO’s DD Brief, 11-12.



But as the Petition explains, the proper identification of the components that include *Chen's TAV modules 28* that read on the claimed *spacer connector* demonstrates that Chen is just like the structure that is claimed by the '202 Patent. *See Pet.*, 6, 37.



Second, Patent Owner argues that the die packaging structure in Chen is “entirely different” from the packaging structure in the '202 Patent because Chen discloses a die device while the '202 Patent is related to a chip. PO’s DD Brief, 11. But Patent Owner cites only an unrelated online article to support its attorney argument that a die and a chip are different. In contrast, Dr. Shanfield, Petitioner’s expert, explained how a POSITA would have understood these terms to be interchangeable. EX1002, ¶102. Patent Owner’s argument that a “die” does not disclose a “chip” is a distinction without a difference.

Third, Patent Owner criticizes Chen’s unlabeled connectors as not disclosing bottom metal pillars. PO’s DD Brief, 13–14. But as explained in the Petition, “a POSITA would have readily recognized that it would have been obvious to utilize metal pillars as the unlabeled connectors” because they are just like the connectors 44 that Chen explicitly teaches can be metal pillars. *See Pet.*, 21–23. Moreover,

Petitioner *additionally* proposed a combination with Sun that clearly discloses the use of metal pillars. *See* Pet., 23–26. Patent Owner simply ignores these arguments that were articulated in the Petition.

VI. PETITIONER HAS TAKEN CONSISTENT POSITIONS BETWEEN THE PETITION AND THE DISTRICT COURT.

Patent Owner incorrectly contends that Petitioner has taken inconsistent claim construction positions regarding the term “metal pillar.” PO’s DD Brief, 14–15. Petitioner has not. In both the district court and this IPR, Petitioner’s position is that “metal pillar” should be given its plain and ordinary meaning. EX1024.

In the district court, Petitioner merely seeks clarification in the district court that the plain and ordinary meaning of “metal pillars” does not encompass solder. That request is entirely consistent with the Petition. The Petition expressly states that “[t]o be clear, solder and metal pillars are two distinct structures and are not equivalent to one another.” Pet., 23. Consistent with that position, Petitioner does not rely on solder to satisfy the claimed “metal pillar” limitation in either forum.

Nor was any further claim construction necessary in this IPR. The Petition relied on actual metal pillars taught in both Chen and Sun—*not* solder—to meet the claimed “metal pillars.” Because there is no dispute that those structures constitute “metal pillars” under the plain and ordinary meaning of the term, there was no need to seek clarification from the Board regarding whether solder falls within the scope

of the claim. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor, Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (The Board “need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’”).

VII. PETITIONER PROPERLY RELIES ON EXPERT TESTIMONY.

Finally, Patent Owner argues Petitioner’s supposed overreliance on expert testimony weighs in favor of discretionary denial. PO’s DD Brief, 17–18. But Patent Owner’s argument is internally inconsistent; it argues, with no explanation, that the expert testimony “parrots [talking points] without further elaboration,” *and* that “Petitioner uses Dr. Shanfield as a crutch to patch shortcomings in its obviousness positions.” PO’s DD Brief, 13, 18. Dr. Shanfield’s testimony cannot simultaneously “parrot” the Petition and “patch shortcomings.”

Dr. Shanfield’s declaration contains substantive technical analysis. For example, he explains why a POSITA would have been motivated to combine the references in the Petition. *See, e.g.*, EX1002, ¶¶ 92, 111–115, 119, 175, 210. He also explains basic scientific concepts and vocabulary, such as the idea that a “chip” and a “die” are terms that could be used interchangeably by a POSITA. *See* EX1002, ¶102. This is precisely the type of testimony one would expect an expert to provide.

VIII. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the Director review the Petition on the merits.

Case No. IPR2026-00303
Opposition to Request for Discretionary Denial

Dated: June 18, 2026

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that on June 18, 2026 a complete copy of the foregoing **Petitioner's Opposition to Patent Owner's Discretionary Denial Brief and corresponding exhibits** (EX1012-EX1033) were served on counsel of record for the Patent Owner by filing the documents through P-TACTS and by sending via electronic mail to the following addresses:

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Dated: June 18, 2026

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