

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAMBRIDGE INDUSTRIES USA, INC.,

Petitioner, v.

APPLIED OPTOELECTRONICS, INC.,

Patent Owner.

Case IPR2025-00433

Patent No. 9,523,826

PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBITS

Exhibit No.	Description
2004	Declaration of Dr. Alan E. Willner

I. INTRODUCTION

Patent Owner Applied Optoelectronics, Inc. (“AOI”) submits this Preliminary Response to the Petition of Cambridge Industries USA, Inc. (“CIG USA”) challenging the patentability of Claims 1–7 (the “Challenged Claims”) of U.S. Patent No. 9,523,826 (the “’826 Patent”) (Ex. 1001). The Board should deny institution because CIG USA has not established a reasonable likelihood that it will prevail on any claim in any Ground raised in the Petition.

CIG USA presents two grounds of invalidity against the Challenged Claims.

In Ground 1, CIG USA challenges claims 1–7 under an anticipation theory. Ground 1 is based on China patent CN 201820017 (“Wu”, Ex. 1005 and English translation, Ex. 1006).

In Ground 2, CIG USA challenges claims 1–7 under an anticipation theory. Ground 2 is based on U.S. Patent No. 7,201,520 (“Mizue”, Ex. 1007).

As set forth below, Petitioner fails to show that either of the prior art references discloses every feature of the Challenged Claims. Thus, CIG USA has not established a reasonable likelihood that it will prevail on any claim on either Ground raised in the Petition. In addition, as further set forth below, the Board

should exercise its discretion and deny institution.¹ Accordingly, AOI respectfully requests that the Board decline to institute *inter partes* review.

II. BACKGROUND

A. '826 Patent

The '826 Patent is directed to a pluggable optical transceiver module for insertion into a plugging slot. The pluggable optical receiver includes main body and sliding component. The main body has opposite two side surfaces and two sliding slots. Each of the two sliding slots is located at one of the two side surfaces. The sliding component includes a linkage arm and two extending arms. Each of the two extending arms is disposed on one of the two sliding slots to have a fastening position and a releasing position. *See* '826 Patent (Exhibit 1001), Abstract; *See*

¹ On April 28, 2025, pursuant to the Director's Memorandum of March 26 2025, AOI filed a Request to Director for Discretionary Denial of Petition for *Inter Partes* Review of U.S. Patent No. 9,523,826 (Paper No. 8). AOI includes similar arguments from the Request in this brief in support of AOI's position that the Board should exercise its discretion for the same reasons and deny institution of *inter partes* review.

also Exhibit 2004 (Declaration of Dr. Alan E. Willner) at ¶¶ 47.

Figure 1 (reproduced below) shows an example of a pluggable optical transceiver module 10 disclosed in the '826 Patent. Pluggable optical transceiver module 10 is configured to be inserted into a socket 20 to convert optical signals into electronic signals. See '826 Patent (Exhibit 1001) at Col. 2:47-53; Exhibit 2004 at ¶ 48.

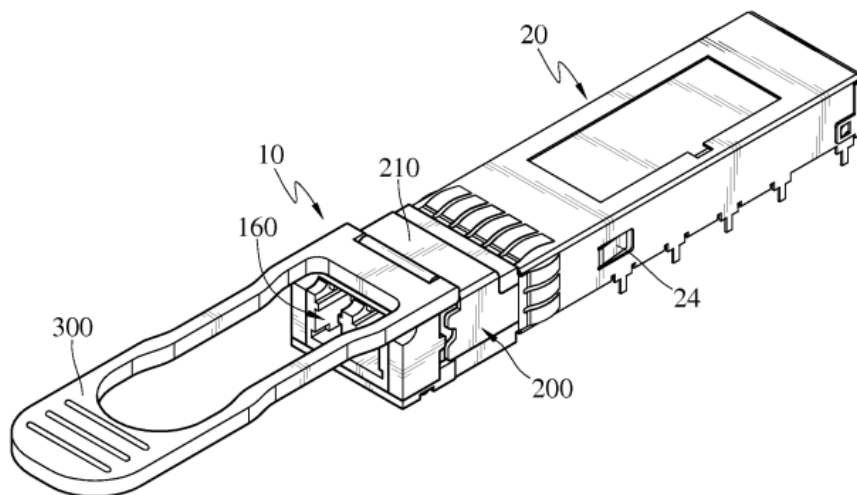
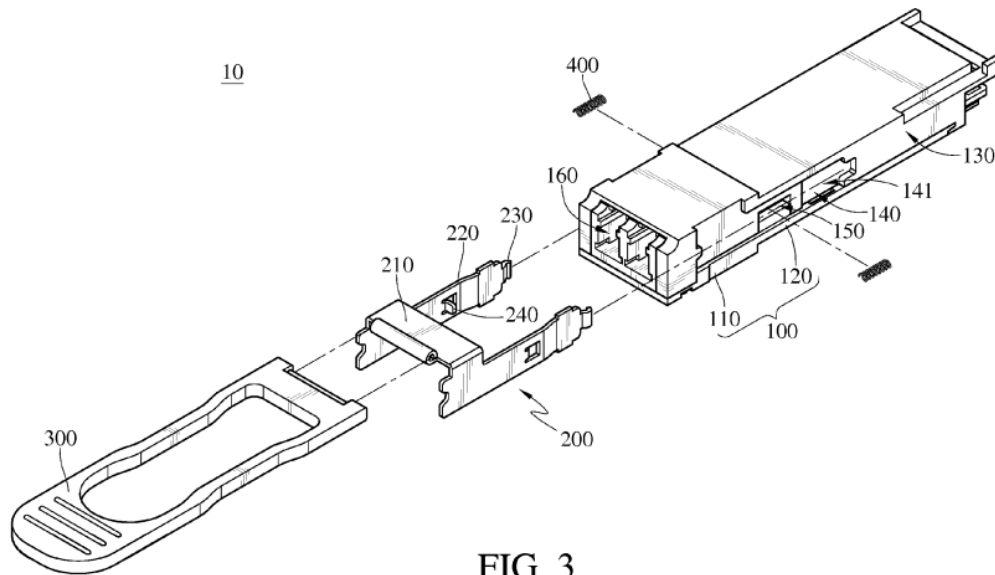


FIG. 1

Figure 3 (reproduced below) shows an exploded view of Figure 1. See '826 Patent (Exhibit 1001) at Col. 2:47-53; Exhibit 2004 at ¶ 49.



B. Relevant File History

The application for the '826 Patent was filed on October 2, 2014, as Application No. 14/504,500 with nine claims, including two independent claims.

During prosecution, in a non-final Office Action mailed March 31, 2016, the PTO ("Office") rejected both independent claims and several dependent claims as anticipated under 35 U.S.C. § 102(a)(1) by U.S. Patent Application Publication No. 2011/0081114 to Togami, et al. ("Togami"). The Office also rejected several dependent claims under 35 U.S.C. § 103 as obvious over Togami in view of U.S. Patent No. 7,201,520 to Mizue, et al. ("Mizue"). On August 1, 2016, AOI filed an amendment amending the two independent claims to add limitations from two

dependent claims and canceling the two dependent claims. A Notice of Allowance was mailed on August 12, 2016.

The '826 Patent issued on December 20, 2016, with seven claims, including two independent claims.

C. The Litigation Between AOI and Petitioner

On February 20, 2024, AOI filed a lawsuit against Petitioner for patent infringement entitled *Applied Optoelectronics, Inc. v. Cambridge Industries, Inc.*, case no. 3:24-cv-01010-JD (N.D. CA) (the “Litigation”). The complaint alleges that Petitioner infringes eight of AOI’s patents, including the '826 Patent. AOI filed a First Amended Complaint on April 25, 2024.

On May 16, 2024, the parties exchanged initial disclosures. On June 6, 2024, AOI served its infringement contentions, stating that Petitioner infringes claims 1–7 of the '826 patent. On October 15, 2024, Petitioner served its amended invalidity contentions. Ex. 2002. Petitioner’s invalidity contentions alleged that claims 1–7 are invalid under either 35 U.S.C. § 102 or 35 U.S.C. § 103 based on five grounds, the following grounds of which are relevant here: (1) anticipated by or obvious over China patent CN 201820017 to Chao Wu (which Petitioner refers to in the Litigation as “Chao” and in the Petition as “Wu”); (2) anticipated by or obvious over Togami; and (3) obvious over Togami in view of Mizue.

On August 8, 2024, the District Court entered its scheduling order setting the following pre-trial dates: a claim construction hearing on April 10, 2025; fact discovery cut-off on September 29, 2025; expert discovery cut-off on December 29, 2025; dispositive motion cut-off on January 28, 2026; and pre-trial conference on May 21, 2026. The court set a jury trial for June 8, 2026. *See* Scheduling Order, Exhibit 1015.

On November 7, 2024, Petitioner filed its answer and counterclaims against AOI. In its counterclaims, Petitioner alleges that each of the eight patents-in-suit is invalid. On November 15, 2024, AOI filed its answer to the counterclaims.

Pursuant to the District Court's Scheduling Order, between October 2024 and March 2025, AOI and Petitioner exchanged proposed terms for claim construction, exchanged preliminary claim constructions and extrinsic evidence, filed a Joint Claim Construction Statement and Prehearing Statement, exchanged damage contentions, and filed opening, responsive, and reply claim construction briefs.

On March 19, 2025, AOI and Petitioner jointly filed a Notice to Court of Filing of Petitions for *Inter Partes* Review, informing the District Court that Petitioner had filed petitions for IPR of five of the eight patents-in-suit. On April 4, 2025, the District Court issued an order staying the case pending further order,

vacating the claim construction hearing set for April 10, 2025, and requiring the parties to file joint status reports on the status of the PTAB proceedings every 90 days beginning on July 7, 2025.

D. Additional Litigation Involving the '826 Patent

In addition to the Litigation against Petitioner, AOI has filed another patent infringement suit against another defendant, Accelight Technologies, Inc. (“Accelight”), entitled *Applied Optoelectronics, Inc. v. Accelight Technologies, Inc.*, case no. 4:24-cv-09041-HSG (N.D. CA) (the “Additional Litigation”). The complaint, filed on December 13, 2024, alleges infringement of six AOI patents, including the '826 Patent. Four of the other patents-in-suit are also the subject of the Litigation and are the subject of separate petitions for IPR that Petitioner filed on January 17, 2025, the same day that Petitioner filed the Petition that is the subject of this Preliminary Response.² Thus, the Litigation with Petitioner and Additional Litigation share five patents-in-suit, all of which are the subject of separate petitions for IPR that Petitioner filed in January 2025.

On March 28, 2025, AOI and defendant Accelight jointly filed a Notice to

² AOI is filing a Patent Owner’s Preliminary Response to Petitioner’s other four Petitions for IPR on applicable grounds on the same day as this Response is filed.

Court of Filing of Petitions for *Inter Partes* Review, informing the District Court that Petitioner had filed petitions for IPR of five of the six patents-in-suit. In the Joint Case Management Statement, defendant Accelight stated that one of the issues in the case was whether the asserted claims of the patents-in-suit were invalid. At the case management conference held on April 22, 2025, the court indicated that the case would move forward, and stated that it would set claim construction deadlines.

On April 23, 2025, the court entered a Scheduling Order which set the following dates: invalidity contentions and documents on May 30, 2025; exchange of proposed terms for claim construction on June 13, 2025; exchange of preliminary constructions and extrinsic evidence on July 7, 2025; damages contentions on July 22, 2025; a Joint Claim Construction Statement and Prehearing Statement to be filed on July 30, 2025; claim construction discovery cut-off on August 29, 2025; opening, responsive, and reply claim construction briefs to be filed on September 16, 2025, September 30, 2025, and October 7, 2025, respectively; a technical tutorial on October 17, 2025; and a claim construction hearing on October 31, 2025. *See* Exhibit 2003.

E. The Petition for *Inter Partes* Review

On January 17, 2025, 11 months after AOI filed its complaint in the

Litigation and seven months after AOI served its infringement contentions in the Litigation, Petitioner filed its Petition for IPR of the '826 Patent, PTAB Case IPR2025-00433. On the same date, Petitioner also filed petitions for IPR of four of the other AOI patents asserted in the Litigation: U.S. Patent Nos. 10,042,116; 10,313,024; 10,788,690; and 10,379,301.

As summarized above, in the Petition for IPR of the '826 patent, Petitioner challenges claims 1–7 based on two grounds: (1) that claims 1–7 are anticipated by Wu; and (2) that claims 1–7 are anticipated by Mizue.

The Petition relies on the 50-page declaration of Petitioner's expert, Dr. Andrew G. Kirk. *See* Exhibit 1003. Petitioner's other four petitions for IPR of the other four patents also rely on a declaration of Dr. Kirk.

On February 28, 2025, the PTAB issued its Notice of Filing Date Accorded to Petition and Time for Filing Patent Owner Preliminary Response (Paper 3).

On April 28, 2025, AOI timely filed a Request to the Director for Discretionary Denial of each of Petitioner's five Petitions for IPR.

F. Alleged Prior Art References

1. Wu (Exhibits 1005 and 1006)

Wu (Exhibits 1005 and 1006) is directed to an optical transceiver integrated module. The optical transceiver integrated module includes an upper module

cover, a lower module cover, an unlocking pull ring and an unlocking slider. The covers are docked and snap-fitted, forming a limiting groove for the unlocking pull ring and a groove cavity for the unlocking slider. The unlocking pull ring is rotatably snap-fitted in the limiting groove by a rotating shaft on the unlocking pull ring. Exhibit 1006, Abstract; Exhibit 2004 at ¶ 58.

Figure 1 of Wu shows optical transceiver integrated module in the state of being pulled out from the slot under force in accordance with Wu. As shown in Figure 1, the optical transceiver integrated module includes an upper module cover 1, a lower module cover 2, an unlocking pull ring 3, and an unlocking slider 4. The optical integrated module is shown inserted into a cage-shaped slot 100. Locking springs 101 are shown on two sides of the cage-shaped slot 100. When the locking springs 101 are pressed inward, the optical transceiver integrated module maintains a normal working state under the pressing state of the locking springs 101. Exhibit 1006 at ¶¶ 29, 38; Exhibit 2004 at ¶ 59.

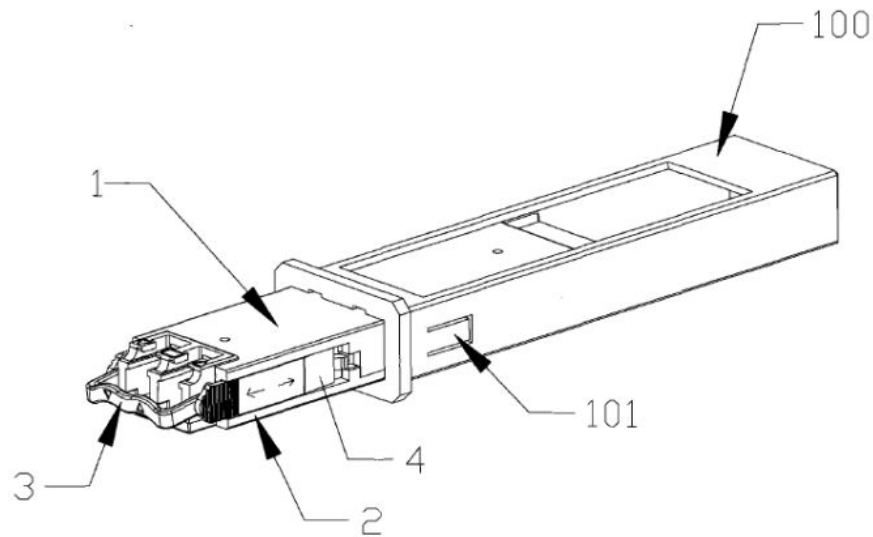


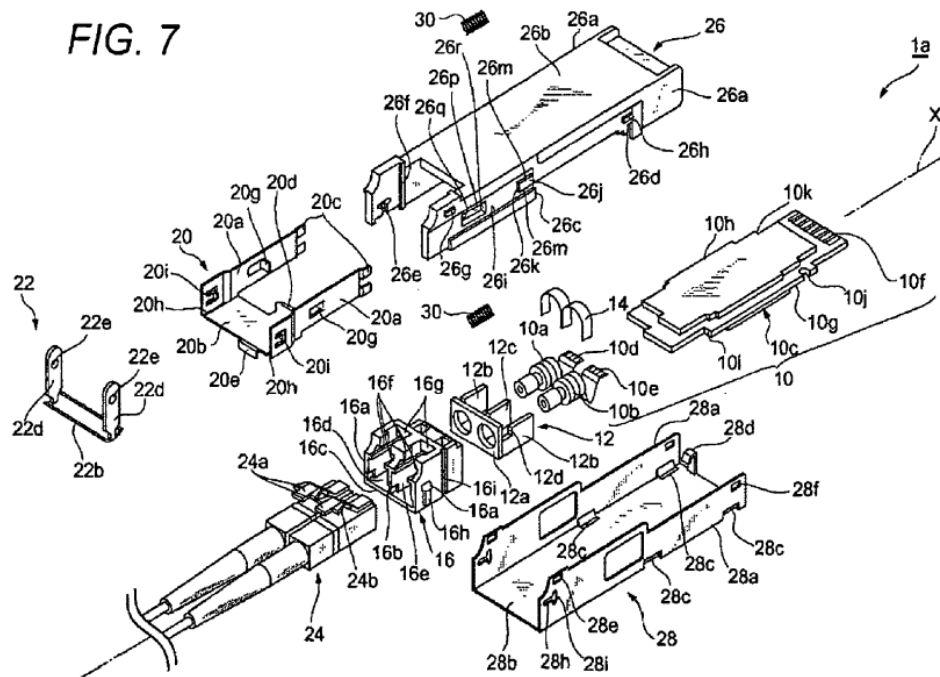
Fig. 2

2. Mizue (Exhibit 1007)

Mizue (Exhibit 1007) is directed to an optical module having a pluggable configuration. The optical module can latch with the cage when the optical connector is mated with the receptacle. The optical module is secured in the cage by latching the latch of the cage and the projection of the module. When the optical connector is in the optical receptacle, the slab of the actuator butts the optical connector such that the optical module cannot be released from the cage. Ex. 1007, Abstract; Exhibit 2004 at ¶ 77.

Figure 7 shows an exploded view of an optical module 1a in accordance with Mizue. The optical module 1a includes a primary unit 10, a holder 12, a bracket 14,

a receptacle body 16, a housing 18, an actuator 20 and a bail 22. The optical module 1a includes a spring 30. Ex. 1007 at Col. 7:4-12; Exhibit 2004 at ¶ 78.



III. DEFINITION OF A PERSON OF ORDINARY SKILL IN THE ART

For the purposes of this Preliminary Response only, AOI applies CIG USA's proposed level of skill in the art: A person of ordinary skill in the art ("POSITA") knowledgeable of the technical field of the '826 Patent would have had at least (1) an undergraduate degree in electrical engineering, computer engineering, networking, or a comparable field of study and (2) at least two years of experience

with optical data communications or a comparable field of work. Exhibit 1003, ¶¶ 22–23. Individuals with different education and additional experience also could be of ordinary skill in the art if that experience compensates for a deficit in their educational training as mentioned above. *Id.* Additional education might substitute for some experience, and vice versa. *Id.*; *see also* Exhibit 2004 at ¶ 28.

AOI reserves the right to further address CIG USA’s formulation of a POSITA if trial is instituted.

IV. CLAIM CONSTRUCTION

CIG USA identifies a dispute over the terms I understand that Dr. Kirk and Petitioner submit that a POSITA would not recognize certain terms, such as “limiting space,” “fastening part,” and “linkage arm,” as having any plain and ordinary meaning, apart from the disclosure of the ’826 Patent. Petition at pp. 8. However, Dr. Kirk and Petitioner submit that these terms would be understood by a POSITA when mapped to the specification’s disclosure so no special constructions are required. *Id.*; *see also* Exhibit 2004 at ¶ 56.

But the Board need not construe these terms because claim construction is not necessary to resolve the controversy presented by CIG USA’s petition. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required

to construe ‘only those terms ... in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). CIG USA has not demonstrated a reasonable likelihood of prevailing on any Challenged Claim. *See* Exhibit 2004 at ¶ 57.

V. CIG USA HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD OF PREVAILING FOR ANY CHALLENGED CLAIM

CIG USA bears the burden on institution of “demonstrating a reasonable likelihood that it will prevail in showing the unpatentability of at least one claim.” *SMIC, Ams. v. Innovative Foundry Techs., LLC*, IPR2020-00837, Paper 13, 13–14 (PTAB Oct. 9, 2020) (citing 35 U.S.C. §§ 314(a) and 312(a)(3)). In making this showing, CIG USA’s Petition must identify “the evidence that supports the grounds for the challenge to each claim.” *Id.* CIG USA has not met that burden here.

CIG USA alleges that each of independent claims 1 and 7 and dependent claims 2–6 are invalid as anticipated under 35 U.S.C. § 102. Anticipation requires “that a single prior art reference discloses each and every element of a claimed invention.” *Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 796 (Fed. Cir. 2010). A reference must not only explicitly or inherently disclose every claimed element, but those elements must also be arranged within that reference as they are in the claim. *See Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1369–71

(Fed. Cir. 2008). Disclosures from multiple, distinct embodiments of a prior art reference cannot be combined to anticipate the challenged claim. *See id.*, 1371.

And “differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.” *Id.*

Here, CIG USA has not shown a reasonable likelihood of success for any challenged claim under either ground of unpatentability. The Board should thus deny institution.

**VI. GROUND 1: CIG USA HAS NOT SHOWN A REASONABLE
LIKELIHOOD THAT WU ANTICIPATES OR RENDERS OBVIOUS
CLAIMS 1–7**

Petitioner fails to show that Wu discloses all the limitations of any claim of the '826 Patent.

For example, Petitioner fails to show that Wu discloses “two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces” as required by claims 1–7. See Exhibit 2004 at ¶ 61.

Specifically, independent claim 1 requires “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively,

the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” *Id.* at ¶ 62.

Claims 2–6 depend from claim 1 and thus also contain this limitation. *Id.* at ¶ 63.

Similarly, independent claim 7 requires “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” *Id.* at ¶ 64.

A. Petitioner fails to show that Wu discloses the limitations requiring “two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces”

Petitioner fails to show that Wu discloses “two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces” as required by independent claim 1. *See* Exhibit 2004 at ¶ 65.

Claims 2–6 depend from claim 1 and thus also contain this limitation. *Id.* at ¶ 63.

Similarly, independent claim 7 requires “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” *Id.* at ¶ 64.

Thus, Petitioner fails to show that Wu discloses all limitations of any claim of the '826 Patent.

Petitioner and its expert argue that Wu discloses “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” Petition at p. 15-16.

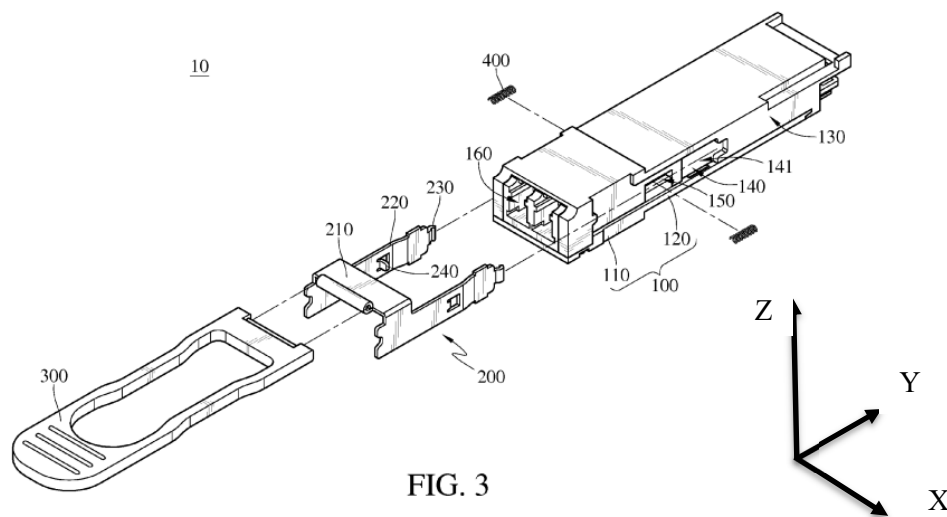
However, Petitioner fails to show that Wu teaches that “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” Exhibit 2004 at ¶ 67.

As shown in the '826 Patent's FIG. 3 below (annotated to add the X, Y, and Z axes for reference) and FIG. 4A, each bottom surface 141 is parallel to corresponding side surface 130. '826 Patent at Col. 2:59-67 to Col. 1-10; Exhibit 2004 at ¶ 68.

For purposes of illustration only, the X and Y axes are formed at an angle of 90 degrees with respect to each other and form a plane. The Z axis is perpendicular

to the plane formed by the X and Y axes. '826 Patent at Col. 2:59-67 to Col. 1-10; Exhibit 2004 at ¶ 68.

Both bottom surface 141 and side surface 130 extend from the X-Y plane upward in the Z direction as shown. And bottom surface 141 and side surface 130 are parallel to each other as independent claims 1 and 7 require, stating “the two bottom surfaces are parallel to the two side surfaces.” '826 Patent at Col. 2:59-67 to Col. 1-10; Exhibit 2004 at ¶ 70.



'826 Patent, FIG. 3 (annotated)

Petitioner shows an annotated version of Wu's FIG. 2, which is reproduced below and further annotated as with the above figure to show the X, Y, and Z axes. Petition at p. 15; Exhibit 2004 at ¶ 71.

Petitioner has not shown that Wu discloses two bottom surfaces on the main body. Specifically, in the annotated versions of Wu's FIG. 2, Petitioner and Dr. Kirk seem to point to the lower module cover 2, which would appear to be a *single* surface in the *X-Y plane*, as allegedly corresponding to the *two* claimed bottom surfaces 141. Petitioner and Dr. Kirk also point to surfaces extending upward from the X-Y plane in the *Z axis* as the claimed side surfaces 130. Petition at pp. 14-16; Exhibit 2004 at ¶ 72.

First, one surface does not meet the claims' requirement for two bottom surfaces. Second, the X-Y plane is perpendicular to the Z axis, not parallel as required in all claims of the '826 Patent. In Wu, the surface identified by Petitioner as the bottom surface is perpendicular – not parallel – to the surface identified by Petitioner as the side surface. Exhibit 2004 at ¶ 73.

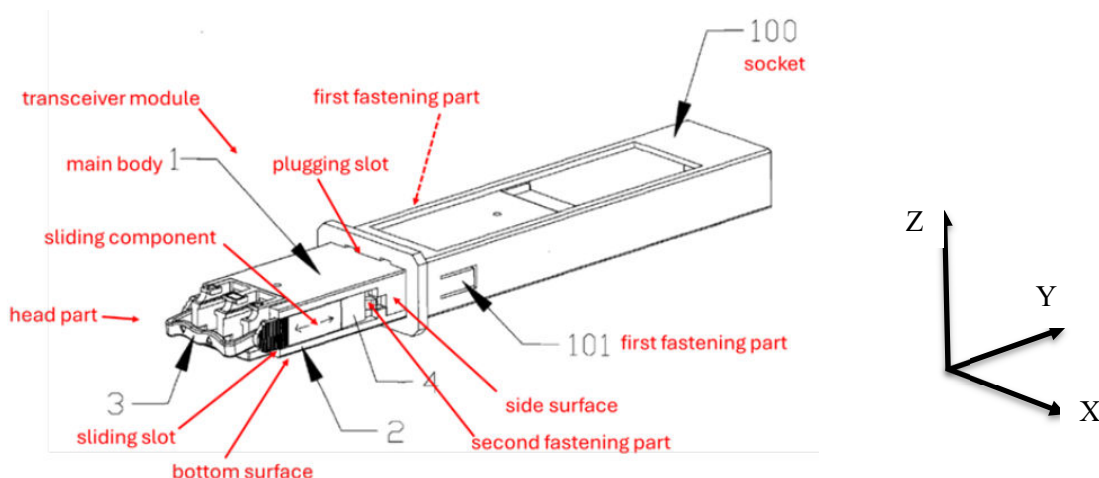
Additionally, Petitioner and Dr. Kirk provide an annotated version of Wu's FIG. 3 and label what they allege corresponds to the bottom surfaces and side surfaces. However, Wu states that "Fig. 3 is a schematic structural view of an *upper* module cover of an XFP optical transceiver integrated module according to an embodiment of the present utility model." See Exhibit 1006 at ¶¶ 21, 30. The annotated labels for "bottom surface(s)" when looking down at the upper perspective of FIG. 3 do not clearly correspond to, and are not labeled as, lower

module cover 2 in FIG. 2. This is in potential contradiction to the Petitioner and Dr. Kirk pointing to the *lower* module cover in Petitioner's annotated version of Wu's FIG. 2 as allegedly being the bottom surface. Exhibit 2004 at ¶ 74.

Moreover, Petitioner and Dr. Kirk seem to point to places in FIG. 3 for both the "bottom surface" and "side surface" that are not labeled with specific number for parts referenced in Wu. Exhibit 2004 at ¶ 75.

Therefore, due to the apparent ambiguity in Petitioner's and Dr. Kirk's identification of "bottom surface(s)", the potential inconsistency between the annotations of Wu's FIG. 2 and FIG. 3 with regards to "bottom surface(s)", and the deficiencies in the lower module cover 2 identified as the "bottom surface", the Petitioner has not shown that Wu discloses "the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces". Exhibit 2004 at ¶ 76.

Therefore, Petitioner fails to show that Wu discloses the limitations of claims 1–7 requiring "the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces."



Ex. 1005, FIG. 2 (annotated)

As a result, Wu does not anticipate the '826 Patent.

Therefore, Petitioner fails to show to a reasonable likelihood that Wu anticipates any challenged claim in Ground 1.

VII. GROUND 2: CIG USA HAS NOT SHOWN A REASONABLE LIKELIHOOD THAT MIZUE ANTICIPATES S CLAIMS 1–7

Petitioner fails to show that Mizue discloses all the limitations of any claim of the '826 Patent.

- A. Petitioner fails to show that Mizue discloses the limitation requiring that “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.”**

As discussed in conjunction with Ground 1, independent claim 1 requires

“the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.”

See Exhibit 2004 at ¶¶ 62.

Claims 2–6 depend from claim 1 and thus also contain this limitation. *Id.* at ¶ 63.

Similarly, independent claim 7 requires “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” *Id.* at ¶ 64.

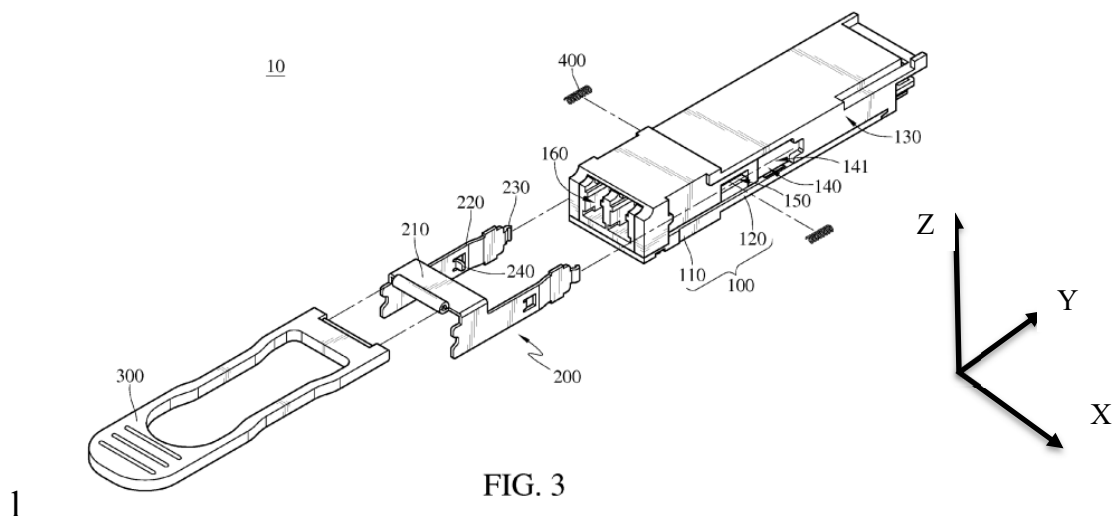
Petitioner and its expert argues that Mizue discloses “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.” Petition at p. 24-25.

However, Petitioner fails to show that Mizue teaches that “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the

at least one limiting space is located at one of the two side surfaces.” Exhibit 2004 at ¶¶ 82, 84.

As shown in the '826 Patent's FIG. 3 (annotated to add the X, Y, and Z axes for reference), bottom surface 141 is parallel to corresponding side surface 130. For purposes of illustration only, the X and Y axes are formed at an angle of 90 degrees with respect to each other and form a plane. The Z axis is perpendicular to the plane formed by the X and Y axes. Exhibit 2004 at ¶ 85.

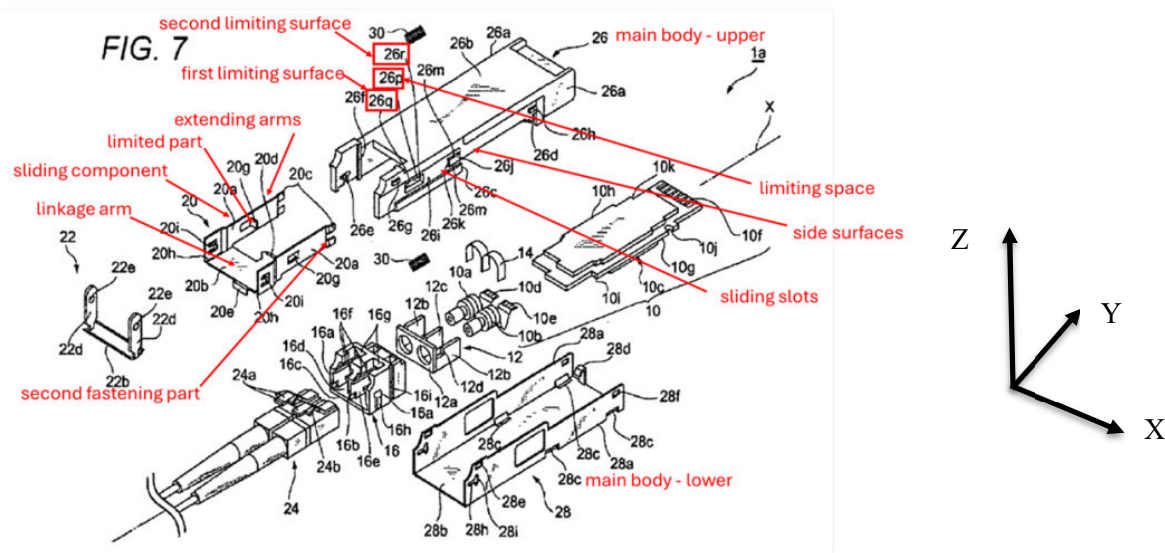
Both bottom surface 141 and side surface 130 extend from the X-Y plane upward in the Z direction as shown. And bottom surface 141 and side surface 130 are parallel to each other and as claims 1 and 7 require in the limitations stating that “the two bottom surfaces are parallel to the two side surfaces.” Exhibit 2004 at ¶ 86.



'826 Patent, FIG. 3 (annotated)

Petitioner shows an annotated version of Mizue's FIG. 7, which is reproduced below and further annotated as with the other figures above to show the X, Y, and Z axes. Petition at p. 24; Exhibit 2004 at ¶ 87.

Petitioner points to a *single* surface in the *X-Y plane* as allegedly corresponding to the *two* claimed bottom surfaces 141. Specifically, Petitioner identifies surface 28b in Mizue's FIG. 7 as allegedly corresponding to the two claimed bottom surfaces 141. *See* Petition, pp. 24-25. As shown in Petitioner's annotated version of Mizue's FIG. 7, Petitioner points to surfaces extending from the X-Y plane in the Z direction as the claimed side surfaces 130. *See* Petition, p. 24-25; ; Exhibit 2004 at ¶ 87.



Ex. 1007, FIG. 7 (annotated)

First, one surface does not meet the claims' requirement for two bottom surfaces. Second, the X-Y plane is perpendicular to the Z axis, not parallel as required in all claims of the '826 Patent. In Mizue, the surface identified by Petitioner as the bottom surface is perpendicular – not parallel – to the surface identified by the Petitioner as the side surface. Exhibit 2004 at ¶ 89.

Therefore, this does not meet the required limitation that “the main body has at least one limiting space and two bottom surfaces forming the two sliding slots, respectively, the two bottom surfaces are parallel to the two side surfaces, the at least one limiting space is located at one of the two side surfaces.”

Thus, Petitioner has not shown that Mizue anticipates the '826 Patent.

Therefore, Petitioner fails to show to a reasonable likelihood that Mizue anticipates any challenged claim in Ground 2.

VIII. THE BOARD SHOULD EXERCISE ITS DISCRETION TO DENY INSTITUTION.

The Board should exercise its discretion and deny institution of IPR on the '826 Patent. The following factors support a discretionary denial:

- Art relied upon in the Petition was also relied upon by the Office in rejecting claims during prosecution.
- There is significant overlap between the issues in the Petition and in the Litigation. The same claims are challenged, and the grounds, the art, and the arguments are substantially the same in the Petition as in the Litigation. All of the art relied upon in the Petition is also relied upon by Petitioner in the Litigation.
- There has been significant investment in the Litigation in that substantive issues have already been addressed by the parties.
- There are settled expectations in the enforcement of the '826 Patent in that the patent has been in force for over eight years.
- Petitioner's arguments on unpatentability are weak.

- The Petition relies heavily on the declaration of an expert.
- Petitioner and the defendant are the same party.
- The '826 Patent is one of the patents-in-suit in the Additional Litigation between AOI and defendant Accelight, and claim construction and the validity of the '826 Patent may well be adjudicated before the PTAB's decision in an IPR would be due.
- There are no relevant changes in the law that affect patentability.
- Four of the other five patents asserted by AOI in the Litigation are each the subject of an IPR filed by Petitioner on the same date as this Petition. Each of these factors is discussed separately below in sections A through J.

A. The Petition is Based in Part on Art Presented to the Office.

The Board may consider whether the same or substantially the same prior art or arguments were previously before the Office during prosecution. 35 U.S.C. § 325(d); *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Paper 6, pp.7-8 (Feb. 13, 2020) (precedential); *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, p. 17 (Sept. 6, 2017) (precedential).

Pursuant to 35 U.S.C. § 325(d), the Board uses a two-part test for this factor:

(1) whether the same or substantially the same art or arguments were previously presented to the Office; and, if the first part is met, (2) whether the petitioner has shown that the Office erred in a material way with respect to patentability.

(*Advanced Bionics, supra*, at p. 8.) If the first part is met, and the petitioner does not demonstrate material error by the Office, “the Director generally will exercise discretion not to institute IPR.” *Id.* at p. 9.

“If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability. At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*

The Board may use the *Becton, Dickinson* factors (*Becton, Dickinson and Company v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, pp. 17-18 (December 15, 2017) (precedential section)) to apply the two-part *Advanced Bionics* test. *Advanced Bionics, supra*, at p. 9. These factors are non-exclusive and are to be “read broadly” (*id.* at p. 10): (a) the similarities and differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the

extent of the overlap between the arguments made during examination and the manner in which the petitioner relies on the prior art; (e) whether the petitioner has pointed out sufficiently how the examiner erred in their evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the petition justifies reconsideration of the prior art or arguments.

According to *Advanced Bionics*, factors (a), (b), and (d) are used to determine if the same or substantially the same art or arguments were previously presented to the Office. Factors (c), (e), and (f) are then applied to determine if the petitioner has shown that the Office made a material error. *Id.*

Here, Petitioner asserts two grounds for invalidity of claims 1–7: (1) anticipation under 35 U.S.C. § 102 based on Wu; and (2) anticipation under 35 U.S.C. § 102 based on Mizue.

With respect to Mizue, the first part of the *Advanced Bionics* test favors Patent Owner AOI because the same or substantially the same art was previously presented to the Office. During prosecution, in the first and only Office Action, the Office rejected all claims under 35 U.S.C. §103 as obvious over Togami in view of Mizue. Thus, Mizue was clearly considered, and, more importantly, relied upon, by the Office in making the rejection. Petitioner notes that Mizue was the secondary reference used in combination with Togami; however, this does not

change the fact that Mizue was before the Office and relied upon in rejecting claims. Further, by combining Mizue with another reference in its initial rejection, the patent office implicitly rejected that Mizue was an anticipatory reference.

The second part of the *Advanced Bionics* test is also favors Patent Owner AOI. As for factor (c), the Office evaluated Mizue in that it relied on Mizue to reject claims. As for factor (e), Petitioner has not shown that the Office made a material error in evaluating Mizue. Petitioner relies on its expert, who states: “in my opinion, it would have been abundantly plain to a POSITA that the Patent Owner’ alleged ‘defect’ in Mizue could be remedied, as a simple matter of design choice, by making the U-shaped cut in the wall of arm 20a from the direction of the inserted part” Declaration of Andrew G. Kirk in Support of Petition, p. 43, para. 92 (emphasis added).

However, Petitioner has failed to show how the Office erred in not finding the claims *anticipated* as Petitioner’s expert opines. Given that Petitioner’s argument is based on an opinion about a design choice, then “reasonable minds can disagree regarding the purported treatment of the art [and] it cannot be said that the Office erred in a manner material to patentability.” *See, Advanced Bionics, supra*, at p. 9. Factor (f) is not present or satisfied by Petitioner because Petitioner offers no other evidence to justify reconsideration of the prior art or arguments.

With respect to Petitioner's grounds that the claims are anticipated by Wu, this reference was not before the Office. However, Petitioner uses Wu to make the same argument it is making with Mizue. Therefore, Wu would have been cumulative. *See*, Section VI above. Thus, Wu does not change the conclusion that substantially the same art and arguments were previously presented to the Office, and Petitioner cannot show material error by the Office.

Therefore, pursuant to *Advanced Bionics*, the Board should exercise its discretion and deny institution of IPR based on this factor.

B. The Issues in the Petition Have Significant Overlap with the Issues in the Litigation.

The Board may consider whether there is significant overlap between the issues raised in the Petition and in the Litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, p. 6 (March 20, 2020) (precedential). “[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.”

Here, there is significant overlap in the issues raised in the Petition and in the Litigation; in fact, the issues in the Petition are a subset of the issues in the Litigation.

First, the same claims are challenged in the Petition as are challenged in the Litigation: claims 1-7.

Second, all of the art relied upon in the Petition (Wu and Mizue) is relied upon in the Litigation.³ The art at issue in the Petition is a subset of the art at issue in the Litigation.

Third, the two grounds for invalidity in the Petition are the same or substantially the same as two of the several grounds asserted in the Litigation. In the Petition, Petitioner argues that claims 1-7 are anticipated by Wu; in the Litigation, Petitioner argues that claims 1-7 are anticipated by or obvious over Chao, which is the same patent. In the Petition, Petitioner argues that claims 1-7 are anticipated by Mizue; in the Litigation, Petitioner argues that claims 1-7 are obvious over Togami in view of Mizue (which is the same combination the Office relied upon in its obviousness rejection in the first Office Action). The grounds at issue in the Petition are a subset of the grounds at issue in the Litigation.

³ As noted above, Petitioner refers to China patent CN 201820017 as “Wu” in the Petition, but refers to the same patent as “Chao” in the Litigation. The CN 201820017 patent lists Chao Wu as the inventor; it is the same patent.

Fourth, the arguments in the Petition are substantially the same as the arguments in the Litigation. Petitioner's arguments as to where the claim limitations are found in the prior art, on a limitation-by-limitation basis, are essentially the same in both proceedings. This is demonstrated by a comparison of the Declaration of Andrew G. Kirk in Support of Petition (pp. 25-36 as to Wu and pp. 36-49 as to Mizue) filed in the PTAB with Petitioner's Amended Invalidity Contentions and claim charts filed in the Litigation (Exhibit 2002, Ex. B-1 as to Wu and Ex. B-4 as to Togami in view of Mizue).

Thus, the challenged claims are the same; the grounds are the same or substantially the same; the art is the same or substantially the same; and the arguments are substantially the same. Moreover, the Litigation involves three other references and three additional grounds not asserted in the Petition: that claims 1-7 are anticipated by Togami, that claims 1-7 are anticipated by or obvious over the Oclaro packaging, and that claims 1-7 are anticipated by or obvious over Hiroyoshi. And the Litigation also involves seven other patents. Thus, the issues in the Petition are a subset of the issues in the Litigation; meaning that the Litigation will need to go forward regardless of whether IPR is instituted. The fact that the Litigation involves additional challenges to the '826 Patent weighs in

favor of a denial. *See, Next Caller Inc. v. Trustid, Inc.*, IPR 2019-00963, Paper 8, p. 12 (October 28, 2019) (informative).

Accordingly, this factor favors denial of institution.

C. The Parties Have Invested in the Litigation by Addressing Substantive Issues.

Pursuant to the District Court's Scheduling Order, between October 2024 and March 2025, AOI and Petitioner exchanged proposed terms for claim construction, exchanged preliminary claim constructions and extrinsic evidence, filed a joint claim construction statement and pre-hearing statement, exchanged damage contentions, and filed opening, responsive, and reply claim construction briefs.

Thus, the parties have spent significant time and effort in conducting discovery, in the claim construction process, and in briefing claim construction.

This factor weighs in favor of denial of institution.

D. There Are Settled Expectations in the '826 Patent.

The '826 Patent was issued on December 20, 2016. The patent has been in force for over eight years, almost one-half of the life of the patent. Thus, there are settled expectations of the parties that the '826 Patent is valid and enforceable.

This factor weighs in favor of denial of institution.

E. Petitioner’s Arguments on Unpatentability are Weak.

The Board may consider the strength of the petitioner’s unpatentability challenge in determining whether to discretionarily deny institution of IPR. *Apple Inc. v. Fintiv, Inc.*, *supra*, pp. 14-15. If the merits are a “close call,” that fact weighs in favor of denying institution if other factors favoring denial are present. *Id.* at p. 15.

Here, Petitioner is unlikely to succeed on the merits because Petitioner fails to show that the cited references disclose all the limitations of the ’826 Patent.

F. The Petition Relies Almost Exclusively on the Declaration of an Expert.

An over-reliance on expert testimony may weigh in favor of discretionary denial of an IPR. *See, Next Caller Inc.*, *supra*, p. 14 (informative); see also, Memorandum, Exhibit 2001 at p. 2. The Petition is based almost exclusively on the Declaration of Andrew Kirk, Petitioner’s expert (Exhibit 1003 to the Petition). As can be seen from the Petition, every limitation of every challenged claim cites to Exhibit 1003 (see Petition, pp. 14-24 for Wu and pp. 24-34 for Mizue), and the Declaration of Dr. Kirk discusses every limitation of every claim (see Kirk Declaration, Ex. 1003, pp. 25-36 for Wu and pp. 36-49 for Mizue).

Accordingly, this factor weighs in favor of denial.

G. Petitioner and the Defendant Are the Same Party.

Here, the fact that Petitioner and the Defendant in the Litigation are the same party weighs in favor of denial of institution. *See Apple Inc. v. Fintiv, Inc., supra*, pp. 13-14.

H. The Validity of the '826 Patent May Be Adjudicated by a District Court Before the PTAB's Decision Is Due if IPR is Instituted.

The Board may consider whether another forum has already adjudicated the validity of the challenged claims in determining whether to discretionarily deny institution of IPR. Memorandum, Exhibit 2001 at p. 2.

Here, the '826 Patent is one of the patents-in-suit in the Additional Litigation between AOI and defendant Accelight, filed on December 13, 2024. As noted above, five of the six patents-in-suit in the Additional Litigation are also in suit in the Litigation with Petitioner and are the subject of petitions for IPR filed by Petitioner. In the Additional Litigation, the District Court has ordered the case to move forward, despite the parties' notifying the court that five of the six patents-in-suit are the subject of petitions for IPR filed by Petitioner. On April 23, 2025, the court entered a Scheduling Order which set all of the dates pertaining to claim construction between June 2025 and October 2025 (exchange of proposed terms, exchange of preliminary constructions and extrinsic evidence, damages

contentions, a Joint Claim Construction Statement and Prehearing Statement, claim construction discovery cut-off, opening, responsive, and reply claim construction briefs, and a technical tutorial), and set a claim construction hearing on October 31, 2025. Exhibit 2003.

Defendant Accelight has stated that the validity of the asserted claims of the patents-in-suit is in issue and that it will be taking discovery on invalidity. The court has set invalidity contentions and documents due on May 30, 2025.

Thus, the validity of the '826 Patent may well be adjudicated in the Additional Litigation before the PTAB's decision in an IPR, which would be due on or about August 28, 2026 if IPR is instituted. Accordingly, this factor weighs in favor of denial.

I. There Are No Relevant Changes in the Law that Affect Patentability.

There have been no changes in the law or judicial precedent regarding patentability since the '826 Patent issued. Accordingly, this factor weighs in favor of denial of institution. *See* Memorandum, Exhibit 2001 at p. 2.

J. Petitioner Filed Petitions for IPR for Four of the Other Patents Asserted by AOI in the Litigation on the Same Date as this Petition.

The Board may consider all relevant circumstances in determining whether

to discretionarily deny institution of IPR. *See* Memorandum, Exhibit 2001 at p. 3; *Apple Inc. v. Fintiv, Inc.*, *supra*, p. 14. The Litigation involves eight AOI patents, five of which are the subject of petitions for IPR filed by Petitioner, including the '826 Patent. These facts indicate that Litigation will need to go forward regardless of the petitions for IPR. Therefore, it would be more efficient for the validity of the '826 Patent to be resolved in the Litigation, and the PTAB could conserve its resources by denying institution. *See, Next Caller Inc.*, *supra*, p. 14, fn. 13, with similar facts (informative). Therefore, this factor weighs in favor of denial.

IX. RESERVATION OF RIGHTS

Should the Board decide to institute an *inter partes* review, Applied Optoelectronics, Inc. reserves all rights to make additional arguments in, and present claim constructions and evidence with, its Patent Owner Response. Applied Optoelectronic's silence on any particular claim or limitation at this time is not a concession that the Petition's discussion of that claim or limitation is properly based. Applied Optoelectronics, Inc. also reserves the right to dispute the level of ordinary skill in the art if the Board decides to institute *inter partes* review. Accordingly, Applied Optoelectronics, Inc. reserves the right to submit additional or alternative arguments of patentability, and nothing in this Preliminary Response

acts or should be construed to act as an admission, acquiescence, or estoppel on the merits of the Petition.

X. CONCLUSION

For the reasons set forth above, Applied Optoelectronics, Inc., respectfully requests that the Board deny institution of the Petition for all Challenged Claims of the '826 Patent.

Dated: May 28, 2025

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CERTIFICATE OF WORD COUNT

Under the provisions of 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the Microsoft Office word count including all footnotes for the foregoing Patent Owner's Preliminary Response, excluding the table of contents, table of authorities, certificate of word count, appendix and certificate of service, totals 7434 words, which is less than the 14,000 words allowed under 37 C.F.R. § 42.24(b)(1).

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CERTIFICATE OF SERVICE

The undersigned hereby certifies service on the Petitioner, pursuant to 37 C.F.R. § 42.6(e) and by agreement of counsel, by electronic (e-mail) delivery of a true copy of the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE**, which was served on May 28, 2025 to the following Counsel for Petitioner via e-mail:

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