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ACCELIGHT TECHNOLOGIES, INC.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

APPLIED OPTOELECTRONICS, INC.,

Plaintiff,

v.

ACCELIGHT TECHNOLOGIES, INC.,

Defendant.

Case No. 4:24-cv-09041-HSG

DEFENDANT ACCELIGHT TECHNOLOGIES, INC.'S INVALIDITY CONTENTIONS

Defendant Accelight Technologies, Inc. ("ATI" or "Defendant"), hereby discloses its Invalidity Contentions for U.S. Patent No. 10,042,116 (the "'116 Patent"), U.S. Patent No. 10,379,301 (the "'301 Patent"), U.S. Patent No. 10,788,690 (the "'690 Patent"), U.S. Patent No. 9,523,826 (the "'826 Patent"), U.S. Patent No. 9,448,367 (the "'367 Patent"), and U.S. Patent No. 10,313,024 (the "'024 Patent") (collectively, the " Asserted Patents").

I. INTRODUCTION

In its April 15, 2025, Infringement Contentions and Disclosures, Plaintiff Applied Optoelectronics, Inc. ("AOI") asserts the following claims of the Asserted Patents (collectively, the "Asserted Claims"):

The '116 patent: claims 1-4, 10-13, 15, and 16

The '301 patent: claims 1-4

The '690 patent: claims 1-6, 8-15, and 17-19

The '826 patent: claims 1-7

The '367 patent: claims 1-5

The '024 patent: claims 1, 2, 5, 7, and 10-12

Pursuant to Patent L.R. 3-3, these Invalidity Contentions include: (a) the identity of prior art that anticipates each Asserted Claim or renders it obvious; (b) a statement specifying whether each item of prior art anticipates each Asserted Claim or renders it obvious; (c) a chart that identifies where in each item of prior art each limitation of each Asserted Claim is found; and (d) grounds for invalidity of the Asserted Claims based on indefiniteness or written description under 35 U.S.C. § 112.

II. CLAIM CONSTRUCTION

ATI's Invalidity Contentions are based on its present understanding of the scope of the Asserted Claims and/or the apparent claim constructions ATI believes AOI to be asserting based on its Infringement Contentions, whether or not ATI agrees with such claim constructions. To the extent that ATI's Invalidity Contentions reflect constructions of claim limitations consistent with or implicit in AOI's Infringement Contentions, no implication is intended nor should any inference be drawn that ATI agrees with AOI's claim constructions, and ATI expressly reserves its right to put forth its own claim constructions and contest the construction of the Asserted Claims. ATI's Invalidity Contentions may be in the alternative to any position it may ultimately take as to any claim construction issues. In the absence of a claim construction ruling, ATI's Invalidity Contentions are made in the alternative, and are not necessarily intended to be consistent with each other, and should not be otherwise construed.

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Similarly, the mapping of the Asserted Claims to prior art does not imply that the meaning and scope of the claims/claim limitations are reasonably clear. The claim charts accompanying this Invalidity Contentions are based on ATI's present understanding of AOI's interpretations of the Asserted Claims as set forth in the Infringement Contentions. As discussed below, ATI asserts that one or more Asserted Claims are invalid for lack of definiteness.

III. RIGHT TO SUPPLEMENT

ATI's Invalidity Contentions set forth below and in the attached exhibits are subject to supplementation and amendment when the Court issues its claim construction ruling, if and when AOI provides supplemental Infringement Contentions, or as otherwise provided for under the Patent Local Rules.

In addition, ATI's investigation regarding invalidity of the Asserted Patents, including invalidity based on prior use, public use or on sale bar, improper inventorship and derivation, prior invention, obviousness under 35 U.S.C. § 103, and failure to comply with 35 U.S.C. § 112 is ongoing. Accordingly, the following contentions are subject to revision and amendment pursuant to Federal Rule of Civil Procedure 26(e) and the Court's Patent Local Rules to the extent appropriate in light of ATI's further investigation and discovery, any supplementation of AOI's Infringement Contentions, the Court's construction of the Asserted Claims, and the review and analysis of expert witnesses. ATI reserves the right to modify, amend, or supplement these Invalidity Contentions in accordance with the Patent Local Rules, as additional documents and information become available (including documentation and information that AOI has not yet produced or provided), and as discovery and investigation proceed. ATI further reserves the right to introduce and use such supplemental materials at trial.

Moreover, ATI is currently unaware of the extent, if any, to which AOI will contend that limitations of the Asserted Claims are not disclosed in the art identified by ATI. To the extent that an issue arises with respect to any such limitation, ATI reserves the right to identify references and combinations, which may render obvious the addition of the allegedly missing limitation to the disclosed method or apparatus.

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IV. IDENTIFICATION OF PRIOR ART

Pursuant to Patent L.R. 3-3(a) ATI contends that the following prior art anticipate and/or render obvious each Asserted Claim.

Prior Art	Country of Origin	Filing Date (if applicable)	Date of Issue/Publication/ Sale/Offer for Sale
Contu et al., "3D Integrated Silicon Photonic External Cavity Laser (SPECL)," IEEE 2014, ("SPECL")	U.S.	--	2014
US 2014/0140665 to Akashi et al. ("Akashi")	U.S.	Nov. 4, 2013	May 24, 2014
US 8,750,659 to Ban ("Ban")	U.S.	Nov. 22, 2011	June 10, 2014
Bernasconi et al., "Design and Challenges in a 100 Gb/s Hybrid-Integrated Photonic Circuit," in European Conference and Exhibition on Optical Communication, OSA Technical Digest (online) (Optica Publishing Group, 2012), paper Tu.4.E.3 ("Bernasconi")	US	--	September 2012
WO 2006/046004 to Bleus et al. ("Bleus")	UK	Oct. 14, 2005	May 4, 2006
US 2015/0162990 to Daiber et al. ("Daiber")	US	Dec. 9, 2013	June 11, 2015
US 2005/0175350 to Hartzell et al. ("Hartzell")	US	Jan. 26, 2004	Aug. 11, 2005
US 9,306,671 to Ho et al. ("Ho-2")	US	Dec. 7, 2012	April 5, 2016
CN 203218595 to Huang et al. ("Huang")	China	Mar. 27, 2013	Sept. 25, 2013
SFF Committee, "SFF-8054 Specification for Automation Drive Interface Connector," Rev. 0.2 ("SFF committee")	US	--	May 6, 2024

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Prior Art	Country of Origin	Filing Date (if applicable)	Date of Issue/Publication/ Sale/Offer for Sale
JP 2005-269474	Japan	Mar. 22, 2004	Sept. 29, 2005
JP 2012-34314 to Kanazawa ("Kanazawa")	Japan	Aug. 3, 2010	Feb. 16, 2012
US 7,162,110 to Kohinata ("Kohinata")	US	PCT filed Dec. 12, 2002; Section 371(c) date Jan. 10, 2005	Jan. 9, 2007
US 2011/0064364 to Kurashima ("Kurashima")	US	Sep. 9, 2010	Mar. 17, 2011
CN 203026708 to Li et al. ("Li")	China	Dec. 25, 2012	June 26, 2013
CN 201749226 to Liu et al. ("Liu")	China	July 23, 2010	Feb. 16, 2011
Struhar, "Selecting a Small-Form-Factor Fiber Optic Connector for Private Networks," published by Lucent Technologies, Inc. in Fiber Optic Technical Bulletin 21	US	--	Nov. 20, 1998
Lutes, "A High-Performance Single-Mode Fiber-Optic Isolator Assembly," TDA Progress Report 42-90, "Lutes"	US	--	April-June 1987
US 9,568,694 to Mizobuchi et al. ("Mizobuchi")	US	Mar. 18, 2016	Feb. 14, 2017
US 2005/0180754 to Mizue et al. ("Mizue-2")	US	Feb. 13, 2004	Aug. 18, 2005
US 7,201,520 to Mizue et al. ("Mizue")	US	May 27, 2004	Apr. 10, 2007
Mochizuki et al., "Assembly Technologies for Integrated Transmitter/Receiver Optical Sub-Assembly Modules," IEICE Trans.	Japan	--	Feb. 2017

Prior Art	Country of Origin	Filing Date (if applicable)	Date of Issue/Publication/ Sale/Offer for Sale
Electron., Vol. E100-C, No. 2, ("Mochizuki")			
JP 2003-215371 to Sasaki, ("Sasaki")	Japan	Jan. 25, 2002	July 30, 2003
US Appl. No. 62/166,015 to Shen et al. ("Shen Provisional")	US	May 25, 2015	--
US 2016/0349451 to Shen et al. ("Shen")	US	May 24, 2016	Dec. 1, 2016
CN 208421455U to Wang et al. ("Wang")	China	July 20, 2018	Jan. 22, 2019
CN 201820017U to Wu ("Wu")	China	Oct. 19, 2010	May 4, 2011
US 9,563,073 to Xiong et al. ("Xiong")	US	Jun. 27, 2014	Feb. 7. 2017
US 2011/0044591 to Yoshikawa et al. ("Yoshikawa")	US	Aug. 18, 2010	Feb. 24, 2011
US 2005/0286839 to Yoshikawa ("Yoshikawa-2")	US	Jun. 15, 2005	Dec. 29, 2005
CN 103293609 to Zhou et al. ("Zhou")	China	May 22, 2013	Sept. 11, 2013
WO 2008/109982 to Bidnyk et al. ("Bidnyk")	Canada	Feb. 12, 2008	Sept. 18, 2008
US 9,479,259 to Ho et al. ("Ho")	US	Oct. 30, 2014	Oct. 25, 2016
US 2014/0169389 to Kim et al. ("Kim")	US	July 12, 2013	June 19, 2014
US 9,110,260 to Lee et al. ("Lee")	US	Aug. 22, 2013	Aug. 18, 2015
US 9,696,503 to Lin et al. ("Lin")	US	Sept. 10, 2015	July 4, 2017

Prior Art	Country of Origin	Filing Date (if applicable)	Date of Issue/Publication/ Sale/Offer for Sale
US 5,351,327 to Lurie et al. ("Lurie")	US	Jun. 25, 1993	Sept. 27, 1994
US 9,768,901 to Soldano et al. ("Soldano")	US	Feb. 12, 2015	Sept. 19, 2017
Kanazawa et al., "Low-crosstalk operation of directly modulated DFB laser away TOSA for 112-Gbit/s application," Optics Express, Vol. 24, No. 12	Japan	--	June 10, 2016
Nakajima et al., "High-Sensitivity Avalanche Photodiode and Receiver Optical Subassembly Technology for 100-Gbit/s Ethernet," NTT Technical Review, Vol. 13 No. 10.	Japan	--	Oct. 2015
Saeki et al., "Compact Optical Transmitter Module with Integrated Optical Multiplexer for 100 Gbit/s," SEI Technical Review, No. 82.	Japan	--	April 2016
ColorChip, DF40-GE-LR4-111-00F, "Prior Art Devices" ATI0000807-812	--	--	At least as early as July 2015
JDSU, JQP-04LWBA2, QSFP+ LR4, "Prior Art Devices" ATI0000813-817	--	--	At least as early as June 2017
Finisar, 100G QSFP CWDM4 LITE 500m, pages 8-12 of "Prior Art Devices" ATI0000813-817	--	--	At least as early as 2016
Lumentum, 100G QSFP28 CWDM4 2KM pages 8-12 of "Prior Art Devices" ATI0000813-817	--	--	At least as early as 2015

V. STATEMENT OF WHETHER PRIOR ART ANTICIPATES OR RENDERS OBVIOUS THE ASSERTED CLAIMS

Pursuant to Patent L.R. 3-3(b), in the six tables below, ATI states whether the identified prior art anticipates or renders obvious the Asserted Claims. In each of the claims charts (Exhibits A1-A5, B1-B4, C1-C2, D1-D5, E1-E3, F1-F3) identified below, ATI cites many references in the body of the charts that are not reflected in the "Grounds for Invalidity," and those references serve as teaching references that disclose the state of the art in the relevant field and supports the knowledge of a person skilled in the art, and/or serve as references that provide a motivation to combine or modify the base (primary and secondary) references under 35 U.S.C. § 103.

A. The '116 Patent

Asserted Claims	**Grounds for Invalidity**	**Exhibit No.**
1-4, 10-13, 15, and 16	Anticipated or rendered by Soldano, or rendered obvious by Ho in view of Soldano	A-1
1-4, 10-13, 15, and 16	Rendered obvious by Lee in view of Kim, or Ho in view Lee and Kim	A-2
1-4, 10-13, 15, and 16	Rendered obvious by Bernasconi in view of Soldano and Bidnyk, or Ho in view of Bernasconi, Soldano, and Bidnyk	A-3
1-4, 10-13, 15, and 16	Rendered obvious by Kanazawa in view of Kim, or Ho in view of Kanazawa and Kim	A-4
1-4, 10-13, 15, and 16	Anticipated or rendered obvious by Shen, or rendered obvious by Ho in view of Shen	A-5

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B. The'301 Patent

Asserted Claims	Grounds for Invalidity	Exhibit No.
1-4	Anticipated or rendered obvious by Soldano, or rendered obvious by Soldano in view of Bidnyk	B-1
1-4	Anticipated or rendered obvious by Shen, or rendered obvious by Shen in view of Soldano	B-2
1-4	Anticipated or rendered obvious by Lee, or rendered obvious by Lee in view of Kim	B-3
1-4	Anticipated or rendered obvious by Kim, or rendered obvious by Kim in view of Bidnyk	B-4

For exhibits A-1 to A-5 and B-1 to B-4, the prior art system ColorChip, DF40-GE-LR4-111-00F, provides additional disclosure of the state of the art and supports the knowledge of a person skilled in the art, and/or provides a motivation to combine or modify the base (primary and secondary) references under 35 U.S.C. § 103.

C. The '690 Patent

Asserted Claims	Grounds for Invalidity	Exhibit No.
1-6, 8-10	Anticipated or rendered obvious by Wang	C-1
11-15, 17-19	Rendered obvious by Xiong in view of Wang	C-1
1-6, 8-10	Rendered obvious by Kohinata in view of Wang	C-2
11-15, 17-19	Rendered obvious by Ho in view of Kohinata and further in view of Wang	C-2

D. The '826 Patent

Asserted Claims	Grounds for Invalidity	Exhibit No.
1-7	Anticipated or rendered obvious by Huang, or rendered obvious by Huang in view of Mizue	D-1

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Asserted Claims	Grounds for Invalidity	Exhibit No.
1-7	Anticipated or rendered obvious by Li, or rendered obvious by Li in view of Mizue	D-2
1-7	Anticipated or rendered obvious by Mizue, or rendered obvious by Mizue in view of Li	D-3
1-7	Anticipated or rendered obvious by Wu, or rendered obvious by Wu in view of Liu	D-4
1-7	Anticipated or rendered obvious Zhou, or rendered obvious by Zhou in view of Li with or without Mizue	D-5

E. The '367 Patent

Asserted Claims	Grounds for Invalidity	Exhibit No.
1-5	Anticipated or rendered obvious by Yoshikawa, or rendered obvious by Yoshikawa in view of Yoshikawa-2	E-1
1-5	Anticipated or rendered obvious by Kurashima, or rendered obvious by Kurashima in view of Yoshikawa-2	E-2
1-5	Anticipated or rendered obvious by Mizue-2	E-3

F. The '024 Patent

Asserted Claims	Grounds for Invalidity	Exhibit No.
1, 2, 5, 7, and 10-12	Rendered obvious by Akashi in view of Ban	F-1
1, 2, 5, 7, and 10-12	Rendered obvious by Mizobuchi in view of Hartzell	F-2
1, 2, 5, 7, and 10-12	Rendered obvious by Hartzell in view of Mochizuki and further in view of Daiber	F-3

For exhibits F-1, F-2, F-3, the prior art systems JDSU (JQP-04LWBA2, QSFP+ LR4), Finisar (100G QSFP CWDM4 LITE 500m), and Lumentum (100G QSFP28 CWDM4 2KM)

provide additional disclosure of the state of the art and support the knowledge of a person skilled in the art, and/or provide a motivation to combine or modify the base (primary and secondary) references under 35 U.S.C. § 103.

In the specific statements above, to the extent the prior art, alone or in the combinations indicated, lacks any specific limitation exactly, the claims are obvious over the prior art under the following standard from the Supreme Court:

> When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to trymight show that it was obvious under § 103.

KSR International Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007).

With regard to the proposed obviousness combinations, the following standard applies:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417.

All of the combinations set forth above involve references in the same field attempting to solve the same problems.

VI. CHARTS IDENTIFYING WHERE EACH LIMITATION OF EACH ASSERTED CLAIM IS FOUND IN THE PRIOR ART

In accordance with Patent Rule L.R. 3-3(c), the claim charts in Exhibits A1-A15, B1-B4, C1-C2, D1-D5, E1-E3, and F1-F3 identify how the prior art listed above correlates with the limitations in each of the Asserted Claims. The charts cite exemplary portions of the prior-art references that disclose particular limitations of the Asserted Claims, but the citations are informative, not exhaustive. Therefore, the citations should not be construed as limiting. ATI

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intends to rely on each reference in its entirety, including the uncited portions. One of ordinary skill in the art would read a prior art reference as a whole and in the context of the state of the art. Therefore, ATI may rely on the uncited portions of the prior art references, other publications, and the general state of the art to aid the understanding of the cited portions of the prior art references and to establish the motivation to modify or combine the cited references.

VII. IDENTIFICATION OF GROUNDS FOR INVALIDITY BASED ON § 112 PURSUANT TO PATENT L.R. 3-3(d)

A. Indefiniteness

35 U.S.C. § 112(b) and 35 U.S.C. § 112, ¶2 (pre-AIA) require that a patent "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter" which the applicant regards as his invention. The primary function of this requirement is to ensure that the language of a patent claim is sufficiently "definite" to inform the public of the boundaries of the protected invention. A lack of definiteness renders a patent claim invalid. "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc*., 134 S. Ct. 2120, 2124 (2014). Several claim limitations of the Asserted Patents fail to meet this standard, thereby rendering the claims (and the claims that depend therefrom) invalid as indefinite under § 112(b) or § 112, ¶2 (pre-AIA).

B. Lack of Written Description

To meet the written description requirement under 35 U.S.C. § 112(a) and 35 U.S.C. § 112, ¶1 (pre-AIA), the specification must "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention." *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991); *Ariad Pharm., Inc. v. Eli Lilly & Co*., 598 F.3d 1336, 1351–52 (Fed. Cir. 2010) (citations omitted). The Federal Circuit has also explained that a specification cannot support expansive claim language and satisfy the §112 written description requirement "merely by clearly describing one embodiment of the thing claimed." *LizardTech v. Earth Res. Mapping, Inc*., 424 F.3d 1336, 1346 (Fed. Cir. 2005) (claims to a generic method of making a seamless discrete wavelet transformation (DWT) were held invalid under §112,

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¶1 because the specification taught only one particular method for making a seamless DWT and there was no evidence that the specification contemplated a more generic method). Several claim limitations of the Asserted Patents fail to meet these standards, thereby rendering the claims (and the claims that depend therefrom) invalid for lack of written description under § 112(a) or §112, ¶1 (pre-AIA).

C. The '826 Patent

Claim 5 of the '826 patent recites that "[t]he pluggable optical transceiver module according to claim 1, further comprising two elastic components, wherein the number of the at least one limiting surface is two" then separately recites that "the main body has two first limiting surfaces and two second limiting surfaces forming the two limiting spaces together," thus suggesting that there are at least four (not two) limiting surfaces that form two limiting spaces. (emphasis added). As written, claim 5 is confusing and "fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention," and is thus indefinite. *Nautilus,* 134 S. Ct. at 2124.

D. The '367 Patent

Claim 5 of the '367 patent recites that "the first and second slots" of the LC adapter "are open on one side to receive the first and second direct link connector assemblies, respectively, in a direction orthogonal to longitudinal axes of the slots." There is no written description support for this claim limitation in the '367 patent specification or drawings, such that the '367 patent fails to "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention" in claim 5. *Vas-Cath*, 935 F.2d at 1563–64. Claim 5 of the '367 patent is therefore invalid for lack of written description. *Ariad Pharm*., 598 F.3d at 1351–52.

E. The '301 Patent

Claim 1 of the '301 patent recites that "the predetermined angle of the top surface defined by the output end of the arrayed waveguide grating is in a range of 41 to 46 degrees such that the top surface provides the reflection." Neither the claim, nor the specification of the '301 patent, identifies the two surfaces that define an angle between 41 to 46 degrees. Because the "top surface," by itself, cannot have an angle, it is unclear what angle is being measured. As written, this limitation

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of claim 1 is confusing and "fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention," and claim 1 is thus indefinite. *Nautilus,* 134 S. Ct. at 2124.

Claim 4 of the '301 patent similarly recites that "the predetermined angle of the top surface of the output end of the arrayed waveguide grating is 42 degrees," and is indefinite for the same reasons as claim 1.

VIII. ACCOMPANYING DOCUMENT PRODUCTION

Pursuant to Patent L.R. 3-4, ATI is producing the following:

(a) Documentation sufficient to show the operation of the ATI products accused of infringement in AOI's Patent L. R. 3-1 disclosures: ATI0000823-872.

(b) Copies of the prior art identified pursuant to Patent L.R. 3-3(a): ATI0000001-822. The prior art devices will be available to AOI for inspection at Perkins Coie's offices in Palo Alto.

(c) All agreements that may be related to the accused instrumentality or may be comparable to a license that would result from a hypothetical reasonable royalty negotiation: No relevant or available documents.

(d) Documents sufficient to show the sales, revenue, cost, and profits for accused instrumentalities identified pursuant to Patent L.R. 3-1 for any period of alleged infringement: ATI0000873.

(e) All agreements that may be used to support the party denying infringement's damages case: No relevant or available documents.

Dated: May 30, 2025

Respectfully submitted,

PERKINS COIE, LLP

By: */s/ Arpita Bhattacharyya*
Arpita Bhattacharyya
Attorneys for Defendant
ACCELIGHT TECHNOLOGIES, INC.

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