PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of **CERTAIN SEMICONDUCTOR DEVICES AND METHODS OF MANUFACTURING SAME AND PRODUCTS CONTAINING THE SAME**	**Investigation No. 337-TA-1366**

COMMISSION OPINION

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I. INTRODUCTION

On September 5, 2024, the Commission determined to review in its entirety the final initial determination ("ID") issued by the presiding Chief Administrative Law Judge ("CALJ") on July 5, 2024. 89 Fed. Reg. 73719-21 (Sept. 11, 2024). On review, the Commission has determined to affirm, with modifications, the ID's finding that there has been a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("section 337"). Having found a violation of section 337, the Commission has determined to issue a limited exclusion order and cease and desist orders as set forth below. The Commission finds that the public interest does not preclude the issuance of remedial orders. The Commission has determined that a bond in the amount of five percent (5%) of entered value is required for infringing products imported during the period of Presidential review. This opinion sets forth the Commission's reasoning in support of that determination. The Commission adopts the remainder of the ID that is not inconsistent with this opinion.

II. BACKGROUND

A. Procedural History

On July 3, 2023, the Commission instituted this investigation based on a complaint filed by Efficient Power Conversion Corporation of El Segundo, California ("EPC"). 88 Fed. Reg. 42756–77 (Jul. 3, 2023). The complaint alleged violations of section 337, based on the importation into the United States, the sale for importation, or sale within the United States after importation of certain semiconductor devices, and methods of manufacturing same, and products containing the same by reason of infringement of one or more of claims 1-3 of U.S. Patent No. 8,350,294 ("the '294 patent"); claim 1 of U.S. Patent No. 8,404,508 ("the '508 patent"); claims 1-3 of U.S. Patent No. 9,748,347 ("the '347 patent"); and claims 1-7 of U.S. Patent No.

10,312,335 ("the '335 patent"). *Id.* All asserted claims of the '347 patent and the '335 patent have been terminated. Order No. 9 (Dec. 13, 2023), *unreviewed by* Comm'n Notice (Jan. 11, 2024); Order No. 12 (Feb. 12, 2024), *unreviewed by* Comm'n Notice (Mar. 12, 2024).

The Commission's notice of investigation named as respondents Innoscience (Zhuhai) Technology, Company, Ltd., of Zhuhai, Guangdong, China; and Innoscience America, Inc. of Santa Clara, California (together "Innoscience" or "Respondents"). The Office of Unfair Import Investigations ("OUII") was also named as a party in this investigation. *Id.*

On October 13, 2023, the CALJ held a *Markman* hearing.[1] The CALJ held an evidentiary hearing from February 26, 2024 to March 1, 2024, and received post-hearing briefs thereafter.

On July 5, 2024, the CALJ issued the final ID finding a violation of section 337 as to claims 2 and 3 of the '294 patent but no violation as to claim 1 of the '294 patent and claim 1 of the '508 patent. The ID found that EPC established the importation requirement under 19 U.S.C. § 1337(a)(1)(B), noting that Innoscience does not dispute importing the accused products. *Id.* at 11-12. The ID further found that EPC successfully proved that the accused products infringe the asserted claims of the '294 patent (claims 1-3) but that unlike claims 2 and 3, claim 1 has been shown to be invalid for anticipation. ID at 30-51, 85-100. The ID found that EPC failed to prove that the accused products infringe claim 1 of the '508 patent and that Respondents failed to prove the claim invalid for obviousness. *Id.* at 52-68, 103-117. Finally, the ID found that EPC established the economic prong of the domestic industry requirement for both the '294 and '508 patents but failed to establish the technical prong of the domestic industry requirement for the

[1] The CALJ, however, did not issue a *Markman* Order construing the disputed claim terms prior to issuing the Final ID

'508 patent. ID at 120-151. Thus, the ID found the existence of a domestic industry that practices the '294 patent as required by 19 U.S.C. § 1337(a)(2) but not one that practices the '508 patent.

The ID included the CALJ's recommended determination on remedy and bonding ("RD"). The RD recommended, should the Commission find a violation, issuance of a limited exclusion order and cease and desist orders against the Respondents. ID/RD at 154-157. The RD also recommended imposing a bond in the amount of five percent (5%) of entered value for infringing products imported during the period of Presidential review. *Id.* at 158-59.

On July 19, 2024, EPC and Innoscience filed respective petitions for review of the ID.[2] On July 29, 2024, the parties, including OUII, filed responses to the petitions.[3]

On August 6, 2024, Respondents filed a motion for sanctions against for their alleged breach of the CALJ's administrative protective order ("APO") based on an alleged disclosure made in Inter Partes Review ("IPR") proceedings before the Patent Office.[4] Respondents requested a sanction of non-enforcement of the '294 patent. On August

[2] *See* Respondents' Petition for Review of the Final Initial Determination ("Resp. Pet."); Petition of Complainant Efficient Power Conversion Corporation for Review-In-Part of the Initial Determination on Violation of Section 337 ("EPC Pet.").

[3] *See* Respondents' Opposition to Complainant's Petition for Review ("Resp. Rep."); Complainant Efficient Power Conversion Corporation's Response to Respondent's Petition for Review of the Initial Determination on Violation of Section 337 ("EPC Rep."); Combined Response of the Office of Unfair Import Investigations to the Private Parties' Petitions for Review of the Final Initial Determination on Violation ("OUII Rep.").

[4] *See* Respondents Innoscience (Zhuhai) Technology Company, Ltd. and Innoscience America, Inc.'s Motion for Sanctions Against for Violation of the ITC Protective Order, Based on Disclosure Made in , with Request for Sanction of Non-Enforcement of the '294 Patent ("Resp. Sanctions Motion").

15, 2024, OUII filed a response, opposing Respondents' motion.[5] On August 16, 2024, EPC filed an opposition to Respondents' motion.[6] On September 19, 2024, Respondents filed a motion for leave to file a reply brief in support of its motion for sanctions.[7] EPC and OUII each filed an opposition to Respondents' motion for leave to file a reply.[8, 9]

On September 5, 2024, the Commission determined to review the final ID in its entirety. 89 Fed. Reg. 73719-21 (Sept. 11, 2024). The Commission asked the parties briefing questions related to: (1) construction of the claim term "compensated GaN layer" recited in claim 1 of the '294 patent and the ID's infringement, invalidity, and technical prong of the domestic industry analyses if the Commission adopted OUII's proposed construction of the term; (2) invalidity finding of the'294 patent in view of Uemoto[10]; (3) whether claim 1 of the '508 patent is limited to using a single mask to etch both the gate contact and doped GaN layer based on the '508 patent's description of the "present invention," as well as whether the claim steps must be performed in the order recited; and (4) whether EPC's "total operating expenditures" identified

[5] *See* Response of the Office of Unfair Import Investigations to Innoscience (Zhuhai) Technology Company, Ltd. and Innoscience America, Inc.'s Motion for Sanctions ("OUII Sanctions Reply").

[6] *See* Complainant's Opposition to Respondents' Motion for Sanctions ("EPC Sanctions Reply").

[7] *See* Respondents' Motion for Leave to File a Reply Brief in Support of Its Motion for Sanctions ("Resp. Motion for Leave").

[8] *See* Complainant's Opposition to Respondents' Motion for Leave to File a Reply Brief in Support of Its Motion for Sanctions ("EPC Opp. to Motion for Leave").

[9] *See* Response of the Office of Unfair Import Investigations to Respondents' Motion for Leave to File a Reply Brief in Support of Their Motion for Sanctions ("OUII Opp. to Motion for Leave").

[10] U.S. Patent Application No. 2008/0087915 (RX-0073).

on page 129 of the ID includes foreign manufacturing expenses for the domestic industry products. *Id.* The Commission also requested the parties to brief the issues of remedy, the public interest, and bonding. *Id.*

On September 23, 2023, the parties filed initial submissions in response to the Commission's request for briefing.[11] On September 30, 2023, the parties filed reply submissions.[12]

B. Asserted Patents

Both of the asserted patents are directed to gallium nitride ("GaN") semiconductor high electron mobility transistors ("HEMTs"). GaN-based transistors are superior to silicon-based transistors because of their ability to carry large current and support high voltages.

The '294 patent, entitled "Compensated Gate MISFET[13] and Method for Fabricating the Same," "is directed to a MISFET, such as a GaN transistor, with low gate leakage."[14] '294 patent, Abstract. The patent describes an embodiment in which "the gate leakage is reduced with a compensated GaN layer below the gate contact and above the barrier layer" and another

[11] *See* Complainant's Opening Response to the Commission's Notice to Review the Final Initial Determination and Request for Written Submissions on the Issues Under Review and on Remedy, the Public Interest, and Bonding ("EPC Sub."); Respondents' Response to the Commission's Notice and Request for Written Submission ("Resp. Sub."); Brief of the Office of Unfair Import Investigations on the Issues Under Review and on Remedy, the Public Interest, and Bonding ("OUII Sub.").

[12] *See* Complainant's Reply to Respondents' Response to the Commission's Notice and Request for Written Submissions ("EPC R. Sub."); Respondents' Reply submission to the Commission's Notice and Request for Written Submission ("Resp. R. Sub."); Reply Brief of the Office of Unfair of Import Investigations on the Issues Under Review and on Remedy, the Public Interest, and Bonding ("OUII R. Sub.").

[13] MISFET stands for metal-insulator-semiconductor field-effect transistor.

[14] Gate leakage is where there is current leakage between the gate and source or drain. *See* '508 patent at 6:33-34.

embodiment in which "the gate leakage is reduced by employing a semi-insulating layer below the gate contact and above the barrier layer." *Id.* EPC asserts claims 1-3 in this investigation. ID at 6. The claims recite:

Claim 1: [1pre] A column III Nitride transistor comprising:

[1a] a substrate,

[1b] a set of III-N transition layers above the substrate,

[1c] a III-N buffer layer above the set of transition layers,

[1d] a III-N barrier layer above the buffer layer,

[1e] **a compensated GaN layer** above the barrier layer, and

[1f] a gate contact above the compensated GaN layer.

Claim 2: The transistor of claim 1, wherein the compensated GaN layer contains acceptor type dopant atoms passivated with hydrogen.

Claim 3: The transistor of claim 2, where the acceptor type atoms are selected from the group consisting of Mg, Zn, Be and Ca.

'294 patent, claims 1-3 (emphasis added). The bracketed limitation labels were added by the ID and used by the parties in their briefing.

The '508 patent, entitled "Enhancement Mode GAN HEMT Device and Method for Fabricating the Same," describes "an enhancement mode GaN HEMT device with a gate metal material and a doped GaN or AlGaN material that are self-aligned, and a method for making such a device." '508 patent, col.3:1-4. EPC asserts claim 1 in this investigation. ID at 7. The claim recites:

[1pre] 1. A method of forming an enhancement mode GaN transistor, the method comprising:

[1a] nucleating and growing transition layers on a substrate;

[1b] growing an III Nitride EPI layer over the transistor[15] layers;

[1c] growing an III Nitride barrier layer over the EPI layer;

[1d] growing a GaN layer with acceptor type dopants over the barrier layer;

[1e] depositing a gate contact layer on the doped GaN layer;

[1f] applying a gate photo resistant pattern;

[1g] etching away the gate contact layer outside the gate region;

[1h] **etching away the doped GaN layer, except a portion of the doped GaN layer beneath the gate contact**;

[1i] removing the gate photo resistant pattern;

[1j] depositing a dielectric layer;

[1k] applying a contact photo resistant pattern;

[1l] etching the dielectric layer to open the drain and source contact area;

[1m] removing the contact photo resistant pattern;

[1n] depositing an Ohmic contact metal;

[1o] applying a metal photo resistant pattern;

[1p] etching the Ohmic contact metal;

'508 patent, claim 1 (emphasis added). The bracketed limitation labels were added by the ID and used by the parties in their briefing.

C. The Accused Products

The accused products are GaN enhancement mode transistors manufactured and/or sold by Innoscience. Specifically, the accused products are "GaN-on-Silicon enhancement-mode

[15] As the ID observed, "[t]he phrase 'transistor layers' in claim element [1b] appears to be a typographical error that should instead read 'transition layers,' consistent with its antecedent basis provided in claim element [1a] on the previous line." ID at 7 n.6

power transistor[s],” and semiconductor devices used for “AC-DC converters” and “Fast battery charging” among other applications. CX-0551. For a complete listing of accused products, see ID at 8-9.

D. Domestic Industry Products

For domestic industry, EPC, a company that manufactures and sells enhancement-mode gallium nitride (GaN) transistors and integrated circuits, identifies 250 of its products that allegedly practice the asserted claims. ID at 8.

III. COMMISSION REVIEW OF THE ID

When the Commission reviews an initial determination, in whole or in part, it reviews the determination *de novo*. *Certain Soft-Edged Trampolines and Components Thereof*, Inv. No. 337-TA-908, Comm’n Op. at 4 (May 1, 2015). Upon review, the “Commission has ‘all the powers which it would have in making the initial determination,’ except where the issues are limited on notice or by rule.” *Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, USITC Pub. No. 3046, Comm’n Op. at 9–10 (July 1997) (quoting *Certain Acid-Washed Denim Garments & Accessories*, Inv. No. 337-TA-324, Comm’n Op. at 5 (Nov. 1992)). With respect to the issues under review, “the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge.” 19 C.F.R. § 210.45(c). The Commission also “may take no position on specific issues or portions of the initial determination,” and “may make any finding or conclusions that in its judgment are proper based on the record in the proceeding.” *Id.*; *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984).

IV. ANALYSIS

A. Statutory Authority (Jurisdiction and Standing)

The ID found that by appearing and participating in the investigation, the parties have consented to personal jurisdiction at the Commission. ID at 10-11. The ID further found that because the accused products have been imported into the United States, the Commission has *in rem* jurisdiction over them. *Id.* at 12. The ID found that EPC owns the patents and thus has standing to assert the patents in this investigation. *Id.*

As discussed more fully in the Commission Opinions recently issued in Inv. Nos. 337-TA-1355 and 337-TA-1362, the Commission clarifies that the terms "subject matter jurisdiction," "personal jurisdiction," and "in rem jurisdiction" are not necessarily applicable to the Commission's investigative authority under section 337. The Commission is "a creature of statute." *Kyocera v. Int'l Trade Comm'n*, 545 F.3d 1340, 1355 (Fed. Cir. 2008). Accordingly, the Commission has statutory authority to investigate an alleged violation of section 337 where a complaint alleges that the named respondents have imported, sold for importation, or sold after importation articles that, inter alia, infringe a valid and enforceable U.S. patent. 19 U.S.C. § 1337(a)(1)(B). The Commission likewise has authority over accused products based on their alleged importation, sale for importation, or sale after importation into the United States.

B. Claim Term "Compensated GaN Layer" Recited in Claim 1 of the '294 Patent

1. Legal Standard – Claim Construction

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is a question of law but may

depend on "factual underpinnings" such as the understanding of a person of ordinary skill in the art at the time of the invention. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331-32 (2015). Claim construction focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *Markman v. Westview Instr., Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). The Federal Circuit explained in *Phillips* that courts must analyze each of these components to determine the "ordinary and customary meaning of a claim term" as understood by a person of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1313. "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001).

"Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claims terms." *Phillips*, 415 F.3d at 1314; *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) ("In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point [ ] out and distinctly claim [ ] the subject matter which the patentee regards as his invention.'").

"[T]he specification 'is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). "[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Id.* at 1316.

In addition to the claims and the specification, the prosecution history should be examined, if in evidence. *Phillips*, 415 F.3d at 1317. The prosecution history can "often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Phillips*, 415 F.3d at 1317; *see Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005).

When the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence (*i.e.*, all evidence external to the patent and the prosecution history, including dictionaries, inventor testimony, expert testimony, and learned treatises) may be considered. *Phillips*, 415 F.3d at 1317. As the Supreme Court has explained, while claim construction is a question of law it may depend on "factual underpinnings," such as the understanding of an ordinarily skilled artisan. *Teva*, 574 U.S. at 331-32.

2. The ID

The ID construed the claim limitation "compensated GaN layer" according to its plain and ordinary meaning. ID at 24. In adopting that construction, the ID noted that "there is no dispute that a compensated GaN layer has one type of impurity which cancels out the electrical effects of another type of impurity." *Id.* Nevertheless, the ID declined to adopt the constructions proposed by the parties. The parties proposed the following constructions:

Term	EPC Proposed Construction	Innoscience Proposed Construction	Staff Proposed Construction
"a compensated GaN layer" (Claim 1 of the '294 patent)	a semiconductor GaN gate material in which one type of impurity (for example, donor) cancels the electrical effects of the other type of impurity (for example, acceptor) Not a "product-by-process" limitation.	"a doped GaN layer formed with a step to passivate its impurities" Which is a "product-by-process" limitation.	"a GaN layer in which one type of impurity cancels the electric effects of another type of impurity"

The ID noted EPC's argument that the arrangement disclosed in claim 1 of the "compensated GaN layer" being formed "above the barrier layer" and "a gate contact" being formed "above the compensated GaN layer" indicates that the GaN layer is limited to GaN gate material. *Id.* at 19. The ID disagreed, finding that "EPC's construction does not sufficiently account for the use of the word 'layer' in the disputed claim term 'compensated GaN layer.'" *Id.* As the ID explained, "Claim 1 is directed to structures organized in the vertical direction: the claim requires 'layer above' 'layer above' 'layer'" and that "[o]nly two elements in claim 1 lack the express recitation of a 'layer': the 'substrate' and the 'gate contact.'" *Id.* The ID reasoned that "[t]he fact that some claim elements are defined as a 'layer' and others are not counsels against interpreting 'a compensated GaN layer' to be inherently restricted to something other than a layer." *Id.* (citing *Phillips*, 415 F.3d at 1314 ("[W]here a claim refers to 'steel baffles,' that language strongly implies that the term 'baffles' does not inherently mean objects made of steel.")).

The ID also noted that the specification differentiates between layers and other components. As an example, the ID pointed to Figure 7 of the '294 patent as showing "a

compensated semiconductor layer 38 over the barrier layer 34 before any gate structures are formed." *Id.* at 20. The ID pointed to the patent disclosure that "this compensated layer can be a compensated GaN layer" and found that "[t]hus, it would be incorrect to conclude, as EPC appears to, that the '294 patent exclusively describes a compensated GaN layer as being associated with a gate." *Id.*

The ID rejected Innoscience's proposal to construe "compensated GaN layer" as a product-by-process term. *Id.* at 22. The ID explained that "[t]he product-by-process doctrine allows certain claims to be 'limited by and defined by [their manufacturing] process,' while a determination of patentability is 'based on the product itself.'" *Id.* (citing *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985)). "The purpose of the doctrine is to 'enable an applicant to claim an otherwise patentable product that resists definition by other than the process by which it is made.'" *Id.* (citing *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985)). The ID noted that the Federal Circuit has laid out an analytical framework for construing a term alleged to be a product-by-process term: "First, the tribunal should determine if the term at issue 'is a process or structural limitation'" and that if the disputed words connote structure, then "by default" those words are "interpreted in their structural sense, unless the patentee has demonstrated otherwise." *Id.* at 23 (citing *In re Nordt Dev. Co., LLC*, 881 F.3d 1371, 1375-76 (Fed. Cir. 2018). The ID found that "[h]ere, the record clearly indicates that 'a compensated GaN layer' connotes structure." *Id.* For support, the ID stated that, as an example, "Figures 2, 7, 8, and 9 each illustrate a structural layer 38 labeled 'Compensated Semiconductor'" and that "[t]he written description confirms the structural nature of this layer by describing its constituent materials: 'Compensated semiconductor layer 38 preferably comprises AlGaN or GaN with a deep level passivated p-type impurity such as, for example, Mg, Zn, Be, Cd, or Ca.'" *Id.* (citing '294 patent

at 3:10-12). The ID added that the specification discloses that "the compensated semiconductor or GaN layer can be 'etch[ed] away,' which again confirms the layer is a structure." *Id.*

As to OUII's proposal that a compensated GaN layer is "a GaN layer in which one type of impurity cancels the electric effects of another type of impurity," the ID stated that "[b]eyond the private party proposals to restrict the term to 'gate material' or to a product-by-process limitation, both addressed above, there is no dispute that a compensated GaN layer has one type of impurity which cancels out the electrical effects of another type of impurity, as Staff proposes." *Id.* at 24. The ID, however, stated that "[a]ccordingly, there is no need to substitute the words proposed by Staff for the words of the claim." *Id.*

3. Commission Determination

Respondents and EPC sought review of the ID's construction of the limitation "compensated GaN layer" and the ID's infringement and technical prong findings based thereon. *See* Resp. Pet. at 8; EPC Pet. at 18. Respondents argue that the parties heavily contested the meaning of "compensated GaN layer" but that the ID "improperly applied an undefined and imprecise 'plain and ordinary' meaning" that "failed to resolve the parties' dispute or to provide necessary guidance on claim scope." Resp. Pet. at 12. EPC argues that while it has no issues with the plain and ordinary meaning of "compensated" adopted by the ID in that "a compensated GaN layer has one type of impurity which cancels out the electrical effects of another type of impurity," EPC Pet at 18), "the term 'compensated GaN ***layer***' as recited in claim 1 of the '294 patent is properly construed as being a layer ***that is part of the gate***." EPC Pet. at 19 (emphasis by EPC).

The Commission determined to review the ID's construction, and on review, the Commission agrees that the term "compensated GaN layer" should be given its plain and ordinary meaning. The analysis, however, does not end there. To provide clarity as to what the

plain and ordinary meaning is in this case, the Commission has determined to expressly adopt the construction proposed by OUII and construe "compensated GaN layer" to mean "a GaN layer in which one type of impurity cancels the electric effects of another type of impurity." Indeed, that is the construction that the ID appeared to apply, but the Commission makes it explicit. In fact, the ID noted that "there is no dispute that a compensated GaN layer has one type of impurity which cancels out the electrical effects of another type of impurity," which is the construction proposed by OUII. ID at 24. As the ID further stated, "[b]eyond the private party proposals to restrict the term to 'gate material' or to a product-by-process limitation . . . there is no dispute that a compensated GaN layer has one type of impurity which cancels out the electrical effects of another type of impurity, as Staff proposes." ID at 24. The constructions proposed by EPC and OUII are consistent with this construction, and Respondents' expert, Dr. Doolittle, explained that conductive GaN is rendered semi-insulating (*i.e.*, compensated) by passivation with hydrogen and that hydrogen (an impurity) cancels out the electrical effects of magnesium (another impurity). Tr. (Doolittle) 1067:18-1069:10; RDX-0012C.19.

The Commission also finds that the ID correctly found that "compensated GaN layer" connotes structure and should not be construed as a "product by process" limitation. Indeed, Respondents concede this argument. Resp. Pet. at 19 ("Respondents do not dispute the ID's conclusion that 'compensated GaN layer' is not product-by-process in this petition…."). Respondents, however, contend that a "compensated GaN layer" means "a doped GaN layer formed **with a step to passivate its impurities**" because the '294 patent describes the "compensated" layers in the "present invention" according to their formation, requiring a "critical step" of passivation to form a nonconductive layer that distinguishes it from the prior art. Resp. Pet. at 19-20 (emphasis by Respondents). This is effectively Respondents' attempt to

rescind their concession and invite the Commission to limit the term by how it is formed rather than by its structure. As the ID correctly found, however, the intrinsic evidence indicates that "a compensated GaN layer" connotes structure. ID at 22-23 (observing that Figures 2, 7, 8, and 9 of the '294 patent each illustrate a structural layer 38 labeled "Compensated Semiconductor"; '294 patent at 3:10-12 ("Compensated semiconductor layer 38 preferably comprises AlGaN or GaN with a deep level passivated p-type impurity such as, for example, Mg, Zn, Be, Cd, or Ca."); '294 patent at 3:33-37 (stating that the compensated semiconductor or GaN layer can be "etch[ed] away," which again confirms the layer is a structure)).

As OUII also correctly observes, the intrinsic evidence does not support Respondents' argument. OUII Rep. at 3. The patent states that "[t]he critical step in the above process that differentiates the device of the present invention from the prior art device (FIG. 1) is the passivation of a p-type impurity using hydrogen." '294 patent at 3:43-45. The "critical step," however, relates to a method of fabricating the device and does not describe the structure of the disclosed device. As to the prosecution history, contrary to Respondents' assertion, EPC did not characterize the claimed "compensated GaN layer" as made by a particular process to distinguish prior art but rather "argued that the prior art did not disclose forming the structure that is claimed." JX-0004.107. Because Respondents concede that the limitation is not a product by process term, the process of its formation has no bearing on its construction.

We also agree with the ID that "it would be incorrect to conclude, as EPC appears to, that the '294 patent exclusively describes a compensated GaN layer as being associated with a gate." ID at 20. As the ID found, the '294 patent specification discloses differences between layers and other components and, as an example, Figure 7 shows "a compensated semiconductor layer 38 over the barrier layer 34" before any gate structures are formed:

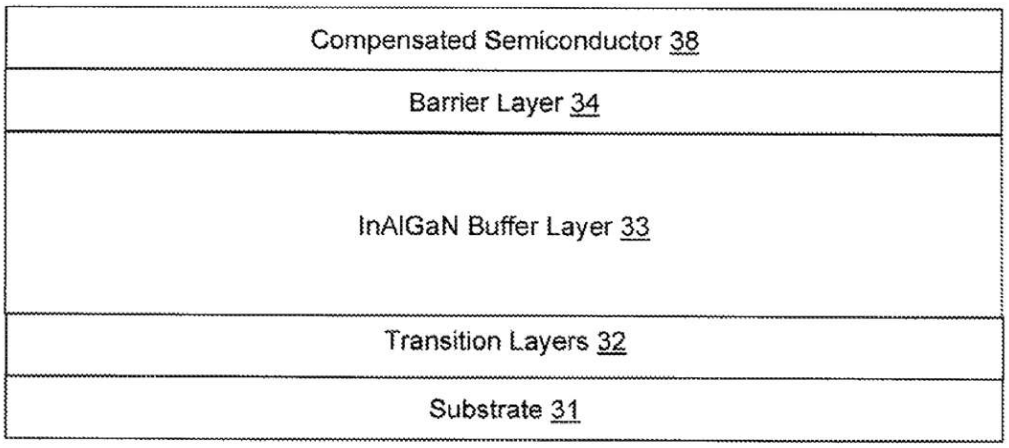


FIG. 7

EPC argues that "[i]t is the *position* of the 'compensated GaN' layer that is critical to the proper interpretation of claim 1" and that because the claimed "compensated GaN layer" is formed "above the barrier layer" and "a gate contact" is formed "above the compensated GaN layer," the GaN layer must be gate material. EPC Pet. at 21-22 (emphasis by EPC). As OUII correctly notes, even if what EPC says is true, "there would still be no need to construe the claimed 'compensated GaN layer' as limited to gate material because the claim already requires that the 'compensated GaN layer' be positioned between the barrier layer and the gate contact." OUII Rep at 20 (citing JX-0014 ('294 patent) at cl. 1). That is, there is nothing in that disclosure that requires the "compensated GaN layer" to be a part of the gate contact. Figure 2 (depicted above) that EPC relies on also shows "compensated GaN layer" 38 and gate contact 37 as separate and distinct structures. Thus, it would be improper to limit the invention as EPC argues absent clear direction in the intrinsic evidence to do so. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (it is improper to import limitations into claims "unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'").

EPC argues that its proposed construction would be "consistent with the inventors' identified invention goals." EPC Pet. at 23. Absent clear support in the intrinsic evidence, however, vague notions of "invention goals" cannot serve as a basis to limit claim scope. *See Phillips*, 415 F.3d at 1314 (claim construction "focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history"). The cases that EPC cites are not to the contrary. For example, in *Retractable Technologies, Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296 (Fed. Cir. 2011), the Court limited a claim term because the specification disavowed the broader scope, not because of the goals of the invention. 653 F.3d at 1305 (limiting the term "body" to a one-piece body because "the specifications … expressly state that each syringe embodiment contains a one-piece body").

After reviewing the parties' briefing and the ID's analyses, the Commission finds that adoption of OUII's construction will have no impact on the ID's findings on infringement, technical prong of domestic industry, and invalidity based on "the compensated GaN layer" limitation. This is unsurprising because as noted above, OUII's proposed construction appears to be what the CALJ referred to when he adopted the "plain and ordinary" meaning in the ID. *See* ID at 24. The Commission therefore affirms the ID's findings for the reasons provided in the ID.

C. The ID's Finding that Uemoto Fails to Render the Asserted Claims Obvious Under 35 U.S.C § 103

1. Legal Standard

Under 35 U.S.C. § 103, a claim may be found invalid as obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). "Obviousness is a question of law based on underlying questions of fact." *Scanner Techs. Corp.*

v. ICOS Vision Sys. Corp. N.V., 528 F.3d 1365, 1379 (Fed. Cir. 2008). The underlying factual determinations include the so-called "Graham factors": "(1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness." *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). The U.S. Supreme Court has held that the critical inquiry in determining the differences between the claimed invention and the prior art is whether there is a reason to combine the prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-21 (2007). While specific teachings, suggestions, or motivations to combine prior art may provide helpful insights into the state of the art at the time of the alleged invention, "an obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *Id.* at 420.

When a claim is challenged as obvious, the critical inquiry in determining the differences between the claimed invention and the prior art is whether there is an apparent reason to combine known elements in the fashion claimed by the patent at issue. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417-418 (2007). Thus, when a respondent relies upon a combination of multiple prior art references to show obviousness, "the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007) (citations omitted).

An obviousness determination should also include a consideration of "secondary considerations," that is, "commercial success, long felt but unsolved needs, failure of others, etc.,

might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Graham*, 338 U.S. at 17-18; *see Merck & Cie v. Gnosis S.P.A.*, 808 F.3d 829, 837 (Fed. Cir. 2015). "[I]n order to accord substantial weight to secondary considerations of nonobviousness, the evidence of secondary considerations must have a 'nexus' to the claims, *i.e.*, there must be 'a legally and factually sufficient connection' between the evidence and the patented invention." *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019) (internal citations omitted).

2. The ID

The ID found that Innoscience "failed to meet its burden to show obviousness based on Uemoto." ID at 85. Specifically, the ID found that "Uemoto does not disclose at least 'a set of III-N transition layers' as required by limitation [1b]" of the '294 patent. *Id.* The ID noted Innoscience's argument that "Uemoto's buffer layer 12 is a set of III-N transition layers above the substrate" and that "the buffer layer in Uemoto is formed with aluminum nitride (AlN)," which according to Innoscience "is 'the same material as the transition layers described in the '294 patent.'" ID at 73. The ID disagreed, finding that Respondents "failed to adequately demonstrate that 'buffer layer 12' disclosed in Uemoto is 'a set of transition layers' required by limitation [1b] of the'294 patent." *Id.* at 73.

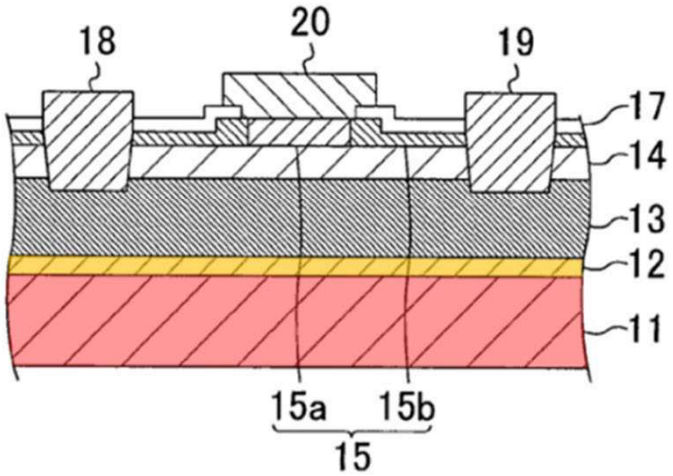
The ID found "Innoscience's argument that Uemoto's buffer layer corresponds to the claimed transition layers because both are made of the 'same material'—aluminum nitride—unpersuasive for several reasons." *Id.* First, the ID found that "Innoscience's expert Dr. Lebby gave no opinion at trial that Uemoto's buffer layer 12 corresponds to the claimed set of transition layers because both were made of aluminum nitride." *Id.* (citing Tr. at 875:9-17 (Lebby)). Next, the ID found that "Uemoto discloses that aluminum nitride can be used to form various structures in a semiconductor, such as 'a buffer layer 12' or a 'hydrogen diffusion barrier film

16.'" *Id.* at 74 (citing Uemoto ¶¶ [0005], [0031], [0034], [0046]). The ID reasoned that "[g]iven that Uemoto teaches multiple ways to implement aluminum nitride in a transistor, it would be error to assume on this sparse record that Uemoto's layer 12 is necessarily structured as a set of transition layers merely because it is made of aluminum nitride." *Id.* (citing *Endo Pharms. Sols., Inc. v. Custopharm Inc.*, 894 F.3d 1374, 1381 (Fed. Cir. 2018) (noting an unrecognized but inherent characteristic of the prior art can be part of an obviousness analysis, but the presence of inherent characteristic may not be established by probabilities or possibilities). The ID concluded that "[w]ithout evidence that the aluminum nitride in Uemoto's layer 12 is structured as a set of transition layers, Innoscience has failed to identify limitation 1[b] in the prior art." *Id.*

Having found the limitation absent from Uemoto, the ID stated that "Innoscience is required to show 'by clear and convincing evidence' that an ordinary artisan at the time of the invention 'would have had reason to attempt to make' the Uemoto device with the required transition layers, and reason to arrange the other components in Uemoto to arrive at the invention described in claim 1. *Id.* at 85-86. The ID found that yet, "the entirety of Innoscience's briefing on this point is as follows:

> Uemoto renders obvious [1b]. Tr. (Lebby) 875:9-17; RDX-0013.47. EPC does not dispute that Uemoto satisfies [1b]. Tr. (Lebby) 875:11-22. Uemoto discloses or at least renders obvious [1b] by describing a "buffer layer 12 of AlN having a thickness of 100 nm is formed on the principal plane of the substrate 11," which is formed with the same material as the transition layers described in the '294 patent. RX-0073 ¶ [0031]; Tr. (Lebby) 875:9-17. Uemoto's buffer layer 12, located above substrate 11, teaches or suggests the claimed III-N transition layers as highlighted in Figure 7 below.

FIG. 7



RDX-0013.47; RX-0073 Fig. 7 (annotated)

ID at 86. The ID thus found that "Innoscience presents only the conclusory statement that Uemoto 'renders obvious [1b]' because 'buffer layer 12, located above substrate 11, teaches or suggests the claimed III-N transition layers'" and that "Innoscience has not shown an ordinary artisan 'would have had reason to attempt to make' the Uemoto device with the required transition layers." *Id.* (citing *PharmaStem Therapeutics*, 491 F.3d at 1360). The ID noted that "[w]hile Innoscience cites three times to the same passage of testimony from its expert Dr. Lebby, that passage is as conclusory as Innoscience's brief":

> Q. Dr. Lebby, does Uemoto disclose element 1B of the '294 patent?
> A. Element 1B is a set of III-N transition layers. This is not disputed, and I've also brought in on the top right-hand corner of this slide paragraph 31. I've annotated in yellow, as well as parts of figure seven, and yes, Uemoto discloses a set of III-N transition layers that are above the substrate, and this invalidates claim element 1B of the '294.

ID at 87 (citing Tr. at 875:9-17 (Lebby)). The ID found that "[n]ot only is Dr. Lebby's testimony unsupported by the evidence he cited, it is not directed to obviousness at all." *Id.* The ID stated that "Dr. Lebby did not explain any difference between the claimed invention and the

prior art, as required by *Graham* and *KSR*," and also failed to "explain how the single buffer layer 12 in Uemoto teaches or suggests the claimed set of transition layers required by claim 1." *Id.* The ID thus gave "Dr. Lebby's testimony on this point no weight." *Id.*

After considering the objective indicia of non-obviousness, the ID found that "Innoscience has not met its burden to adduce 'clear and convincing evidence' that an ordinary artisan at the time of the invention 'would have had reason to attempt to make' the Uemoto device with the required set of transition layers." *Id.* at 87.

3. Commission Determination

In their petition for review, Respondents argue that the ID erred by failing to properly consider or address their obviousness arguments. Resp. Pet. at 25. According to Respondents, they presented Uemoto as a single-reference obviousness ground but that the ID "incorrectly analyzed Uemoto as an anticipation reference, stating that 'Uemoto [does not] disclose 'a set of III-N transition layers' as required by limitation [1b] of the '294 patent,' which—as the ID admits —**was not in dispute and was admittedly prior art and obvious within the '294 patent itself**." *Id.* at 3, 25 (citing ID at 73-74, 83 (quoting JX-0014, 5:14) (emphasis by Respondents)).

The Commission asked the parties whether the CALJ correctly found that Uemoto fails to disclose element [1b] "a set of III-N transition layers above the substrate" recited in claim 1 of the '294 patent, even though neither EPC nor OUII disputed Respondents' assertion that Uemoto disclosed this limitation. 89 Fed. Reg. 73720 (Sept. 11, 2024).

In its response to the Commission's question, Respondents fail to cite any precedent indicating, or even suggesting, that the fact that EPC and OUII did not expressly dispute Respondents' assertion that Uemoto discloses this limitation absolved Respondents of proving by clear and convincing evidence that Uemoto disclosed the limitation. As EPC correctly contends, "[n]either [it] nor the Staff were under an obligation to ***disprove*** invalidity; and as

such, it is irrelevant whether EPC or Staff disputed Innoscience's assertion that *Uemoto* disclosed limitation [1b]." EPC Sub. at 17 (emphasis by EPC).

Patents are presumed valid, and the burden of establishing invalidity rests on the party asserting such invalidity. 35 U.S.C. § 282(a); *St. Jude Medical, Inc. v. Access Closure, Inc.*, 729 F.3d 1369 (Fed. Cir. 2013) ("This burden of proof never shifts to the patentee."). The patent challenger must establish invalidity by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95, 102 (2011). As an example, the Federal Circuit in *St. Jude Medical*, affirmed the validity of the claims because the patent challenger failed to carry its burden even though the patentee presented no substantive evidence in rebuttal. 729 F.3d 1369; *see also Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1570 (Fed. Cir. 1986) ("Under the law set by Congress, a jury or a court may reach a conclusion that a patent remains valid solely on the failure of the patent challenger's evidence to convincingly establish the contrary. A patent being presumed valid at birth, § 282, a patentee need submit no evidence in support of a conclusion of validity by a court or a jury."); *Canon Computer Systems, Inc. v. Nu-Kote Intern., Inc.*, 134 F.3d 1085, 1088 (Fed. Cir. 1998) ("[W]here the challenger fails to identify any persuasive evidence of invalidity, the very existence of the patent satisfies the patentee's burden on the validity issue, and the patentee has no obligation to introduce any additional evidence on the issue of validity.").

The Commission finds that the ID's finding (provided in the ID and summarized above) that Uemoto fails to explicitly disclose this limitation is correct. Indeed, Respondents do not dispute the ID's finding that Uemoto fails to explicitly disclose this limitation is correct. Respondents, however, argue that Uemoto "teaches or suggests the claimed III-N transition layers" because Uemoto discloses "a buffer layer 12 of AlN … formed on the principal plane of

the substrate 11," and "a POSITA would have found it obvious to create multiple layers from AlN, as this was well known in the art." Resp. Pet. at 26 (citing Uemoto, ¶ [0031]); Tr. (Lebby) 875:9-17). Respondents then accuse the ID of ignoring "critical testimony and evidence presented by Dr. Lebby on the knowledge and common sense of a POSITA that supports Respondents argument that using more than one transition layer in Uemoto's device would have been obvious." *Id.* at 27. Respondents also rely on the '294 patent and assert that "[i]n describing conventional enhancement mode GaN devices, the '294 patent states that transition layers are common and 'typically composed of AlN and AlGaN material'" and that "[t]his is the same material used in Uemoto's buffer layer 12." *Id.* at 27-28 (citing Uemoto, ¶ [0032]).

The ID, however, considered Respondents' obviousness arguments but found that the conclusory testimony and arguments Respondents presented were insufficient to carry their burden of presenting clear and convincing evidence of invalidity. ID at 85-87. As OUII explains, Respondents relied on the *Smith* prior art and argued that "*Smith* discloses a III-nitride transistor with multiple 'strain balancing transition layer(s)'" and that "a POSITA would have found it obvious to incorporate *Smith*'s transition layers into *Uemoto*'s device structure." OUII Rep. at 2 (citing Respondents' Pre-Hearing Brief at 183). Respondents, however, dropped their reliance on *Smith* and abandoned this argument in their post-hearing briefing. *See id.* All that Respondents presented was the cursory testimony of Dr. Lebby reproduced above that the ID found insufficient. Respondents, who bore the burden of proving obviousness by clear and convincing evidence, cannot establish this affirmative defense on this sparse record merely because it was uncontested by EPC and OUII. We agree with the ID that they failed to do so. ID at 73-74.

D. Domestic Industry

1. Legal Standard

In patent-based proceedings under section 337, a complainant must establish that a domestic industry "relating to the articles protected by the patent . . . exists or is in the process of being established." 19 U.S.C. § 1337(a)(2). Under Commission precedent, this domestic industry requirement consists of an "economic prong" and a "technical prong." *See Alloc, Inc. v. Intl Trade Comm'n,* 342 F.3d 1361, 1375 (Fed. Cir. 2003). To satisfy the technical prong, the complainant must establish that it practices at least one claim of each of the asserted patents. *Certain Point of Sale Terminals and Components Thereof*, Inv. No. 337-TA-524, Order No. 40 at 17-18 (Apr. 11, 2005). To satisfy the "economic prong," paragraph (3) of section 337(a) provides:

> For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or
>
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). Expenditures in each of the above three categories under section 337(a)(3) must "pertain to the complainant's industry with respect to the articles protected by the asserted IP rights." *See, e.g.*, *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 68 (Oct. 30, 2015); *Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Prods. Containing the Same, and Components Thereof*, Inv. No. 337-TA-921, Comm'n Op. at 40 (Jan. 6, 2016).

2. *The ID*

The ID found that EPC successfully proved the economic prong of domestic industry under 19 U.S.C. § 1337(a)(3)(B). ID at 120-130. Specifically, the ID found that EPC proved the economic prong of the domestic industry requirement in three independent ways, all based on research and development investments relating to the patented articles: (1) domestic labor investment of at least [redacted] (2) capital investment of at least [redacted] directed to research and development in the United States; and (3) total investment of at least [redacted] in in both domestic labor and capital. *Id.* at 130.

3. *Commission Determination*

The Commission has determined to affirm the ID's finding that EPC proved the economic prong of the domestic industry requirement under 19 U.S.C. § 1337(a)(3)(B) based upon EPC's domestic labor investment of at least [redacted] for the reasons provided in the ID. The Commission has determined to take no position on the ID's findings with respect to EPC's purported domestic capital investments.[16]

V. MOTION FOR SANCTIONS

A. Parties' Arguments

As noted above, on August 6, 2024, Respondents filed a motion for sanctions against [redacted] for their alleged breach of the CALJ's protective order based on an alleged

[16] Commissioner Kearns continues to believe that the significance analysis under section 337(a)(3)(A) and (B) should be based on a full picture of all expenses associated with the product, not a selective subset of those expenses such as only those for R&D, and should include expenses related to foreign manufacturing. He expects parties to place information relating to foreign manufacturing expenses on the record so that the ID and Commissioners can take it into account in their analyses. In this case, the record reflects that foreign manufacturing costs are included as part of the "cost of revenue" set forth in EPC's Financial Statements. EPC R. Sub. at 24; OUII Sub. at 14; CX-51 at 6, 12; CX-52 at 6, 12; CPX-182C (sheet "IS"). Taking into account both the "total operating expenditures" and "cost of revenue," Commissioner Kearns finds that EPC's labor investments related to the domestic industry products are significant.

disclosure made in IPR proceedings before the PTAB as to the ’294 patent. Specifically, Respondents state that and that the confidential brief was viewed by multiple entities that are not signatories to the APO. Resp. Sanctions Motion at 1. Respondents further contend that *Id.* at 2-3. As a result, Respondents ask that the Commission determine not to enforce the ’294 patent at issue here. *Id.* at 53.

On August 15, 2024, OUII filed a response, opposing Respondents’ motion. OUII asserts that Respondents’ motion should be denied for failure to comply with Commission Rule 210.25, which governs a motion for sanctions for violation of a protective order. OUII Sanctions Reply at 4. Specifically, OUII argues that Respondents failed to timely notify the Commission of the alleged breach but waited almost eight weeks before filing their motion for sanctions in violation of Commission Rule 210.25(a)(1). *Id.* (citing 19 C.F.R. § 210.25(a)(1) (“A motion alleging … violation of a protective order should be ***promptly*** filed after the allegedly sanctionable conduct is discovered.”) (emphasis by OUII)). OUII further argues that even though the allegedly sanctionable conduct occurred and was discovered while the Investigation was pending before the CALJ, Respondents did not file their motion before the CALJ as Commission Rule 210.25(b) requires. *Id.* (citing 19 C.F.R. § 210.25(b) (“A motion for sanctions shall be addressed to the presiding administrative law judge, if the allegedly sanctionable conduct occurred and is discovered while the administrative law judge is presiding in an investigation or in a related proceeding.”)).

On August 16, 2024, EPC filed an opposition to Respondents’ motion. included Respondents’ confidential information in and that, even though

the filing was deleted shortly thereafter, the confidential information was viewed by non-signatories to the APO. EPC Sanctions Reply at 3-4. [redacted], however, states that the filing was inadvertent. *Id.* at 4-5.

On September 19, 2024, Respondents filed a motion for leave to file a reply brief in support of its motion for sanctions, alleging that "[g]ood cause exists to grant leave to address new allegations, new facts, and factual and legal inaccuracies in EPC's Opposition." Resp Motion for Leave at 1. On September 24, 2024, EPC filed an opposition to Respondents' motion for leave to file a reply, arguing that "the reply brief adds little of value for the Commission to consider" and that "Respondents rehash certain arguments already made in their motion." EPC Opp. to Motion for Leave at 2. On October 2, 2024, OUII filed an opposition to Respondents' motion for leave to file a reply, arguing that Respondents have not shown good cause to be allowed to reply. OUII Opp. to Motion for Leave at 1.

B. Commission Determination

The Commission has determined to deny Respondents' motion for leave to file a reply to the responses filed by OUII and EPC. Respondents have not shown good cause to file a reply.

The Commission has determined to deny Respondents' request to find the patent unenforceable. Respondents' motion raises the question as to whether the Commission has the authority to choose to not enforce the '294 patent as a sanction for the alleged breach of the protective order. The Commission, however, need not resolve the question of authority at this time. Respondents have failed to show that the requested relief would be appropriate. Notably, there is no evidence that [redacted] involved in the alleged breach and [redacted]

, had any involvement with the alleged breach of the APO. Yet, the requested sanction is directed to the '294 patent[17] .

As applicable to an alleged breach of a Commission APO, Commission Rule 210.34(c)(3) provides in relevant part as follows:

> Any individual who has agreed to be bound by the terms of a protective order issued pursuant to paragraph (a) of this section, and who is determined to have violated the terms of the protective order, may be subject to one or more of the following:
>
> (i) An official reprimand by the Commission;
>
> (ii) Disqualification from or limitation of further participation in a pending investigation;
>
> (iii) Temporary or permanent disqualification from practicing in any capacity before the Commission pursuant to § 201.15(a) of this chapter;
>
> (iv) Referral of the facts underlying the violation to the appropriate licensing authority in the jurisdiction in which the individual is licensed to practice;
>
> (v) Sanctions of the sort enumerated in § 210.33(b), or such other action as may be appropriate.

19 C.F.R. § 210.34(c)(3). is not an "individual who has agreed to be bound by the terms of a protective order," and as OUII correctly notes, "[t]here is also no indication that directed, controlled, or even benefited from the violation." The Commission finds that Respondents have failed to identify any basis for holding accountable for the alleged actions of With regard to the alleged breach by , the Commission notes that Respondents' submission regarding their alleged breach has been referred to the Commission's Office of the

[17] At issue in this investigation are the claims of the'294 patent as originally issued. At this time, no amended claims have issued from the IPR. There is no allegation of inequitable conduct during the prosecution of the original claims.

Secretary for further proceedings according to the Commission's normal procedures for handling alleged APO breaches.

The Commission reminds the parties of their obligations under Commission Rule 210.25 to promptly file any allegations of breach of an APO, and to bring the matter to the attention of the ALJ if the alleged breach is discovered while the investigation is pending before the ALJ. The Commission also reminds the parties of their obligation under Commission rule 210.34 to keep the identity of any alleged breacher confidential. Because the Commission has determined to deny the sanctions motion, the Commission also denies Respondents' request to stay the proceedings pending disposition of the sanctions motion.

VI. REMEDY

Where a violation of section 337 has been found, the Commission must consider the issues of remedy, the public interest, and bonding. The Commission has "broad discretion in selecting the form, scope, and extent of the remedy." *Philip Morris Products S.A. v. Int'l Trade Comm'n*, 63 F.4th 1328, 1339-1340 (Fed. Cir. 2023); *Viscofan, S.A. v. U.S. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986).

A. Limited Exclusion Order

1. Legal Standard

Section 337(d)(1) provides that "[i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the [public interest], it finds that such articles should not be excluded from entry." 19 U.S.C. § 1337(d)(1); *see also Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1358 (Fed. Cir. 2010) ("[T]he Commission is required to

issue an exclusion order upon the finding of a Section 337 violation absent a finding that the effects of one of the statutorily-enumerated public interest factors counsel otherwise.”).

2. The RD

As noted above, the ID included the CALJ’s recommended determination on remedy and bonding. ID/RD at 154-157. The CALJ recommended that, in the event the Commission finds a violation of section 337, “the parties agree that a limited exclusion order (‘LEO’) is appropriate.” *Id.* at 155.

3. Parties’ Submissions

EPC and OUII agree with the CALJ’s recommendation. EPC Sub. at 24; OUII Sub. at 15. Respondents argue that EPC’s “remedy should, at most, be a limited exclusion order directed to only those products shown to infringe” and that “any infringement finding must provide Respondents with sufficient clarity to know what current and future products do and do not infringe.” Resp. Sub. at 38-39. Respondents also argue that the LEO include the standard certification provision. *Id.* at 39. Respondents further contend that “[e]nforcement of any remedial order should also be suspended should the PTAB [United States Patent and Trademark Office, Patent Trial and Appeal Board] find any asserted claim of the asserted patents unpatentable, where a final written decision is due March 20, 2025.” *Id.* Respondents state that “a delay of any remedial order is appropriate assuming demand for imports of Innoscience’s products increases as there is not another entity that can supply the market to compensate for Innoscience’s production capacity.” *Id.*

4. Commission Determination

The Commission has determined to issue an LEO that includes the Commission’s standard certification provision. Respondents argue that the LEO should be directed to only those products shown to infringe. Resp. Sub. at 38-39. It is unclear exactly what Respondents

are asking for. Commission remedial orders are directed to only products that infringe the asserted claims, but they are not limited to current model numbers or versions or to the specific products adjudicated in the investigation. *See Certain Graphics Systems, Components Thereof, and Digital Televisions Containing The Same* (Reconsideration), Inv. No. 337-TA-1318, Comm'n Op. at 14-16 (May 22, 2024) (explaining the Commission's "well-established practice … that the Commission does not limit remedial orders to cover only those specific products that were adjudicated to infringe in the underlying investigation" but instead the remedial orders extend to "***all products within the scope of the investigation*** that are covered by the patent claims as to which a violation has been found"). The Commission sees no reason to deviate from its standard practice.

Respondents also request that any remedial orders be suspended because, in their view, the PTAB is likely to find the claims unpatentable when it issues its final written decision on March 20, 2025. This argument is too speculative to warrant suspension of the remedial orders. In addition, the Commission normally only suspends its orders if a final written decision finding the claims invalid issues before the Commission issues its orders, not when it issues after. *See, e.g.*, *Certain Network Devices, Related Software and Components Thereof (II)*, Inv. No. 337-TA-945, Comm'n Op. (Aug. 16, 2017). But, if the PTAB finds the claims invalid, Respondents are free to seek a stay, a modification, or a revocation of the remedial orders if appropriate. *See* 19 U.S.C. § 1337(k); 19 C.F.R. § 210.76. However, as noted above, when a PTAB final written decision finding invalidity issues after remedial orders have issued, the Commission does not normally suspend its remedial orders when that decision is subject to appeal.

B. Cease and Desist Order

1. Legal Standard

Section 337(f)(1) provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a cease and desist order ("CDO") as a remedy for violation of section 337. *See* 19 U.S.C. § 1337(f)(1). CDOs are generally issued when, with respect to the imported infringing products, respondents maintain commercially significant inventories in the United States or have significant domestic operations that could undercut the remedy provided by an exclusion order.[18] *See, e.g.*, *Certain Tobacco Heating Articles and Components Thereof*, Inv. No. 337-TA-1199, Comm'n Op. at 49 (Sept. 29, 2021), *aff'd, Philip Morris Products S.A.*, 63 F.4th at 1332; *Certain Audio Players and Controllers, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-1191, Comm'n Op. at 26 (Jan. 6, 2022), *aff'd, Sonos, Inc. v. Int'l Trade Comm'n*, 2024 WL 1507605 (Fed. Cir. Apr. 8, 2024). Complainants bear the burden on this issue. "A complainant seeking a cease and desist order must demonstrate, based on the record, that this remedy is necessary to address the violation found in the investigation so as to not undercut the relief provided by the exclusion order." *Tobacco Heating Articles*, Comm'n Op. at 49-50 (citations omitted); *Audio Players*, Comm'n Op. at 26-27 (citations omitted); *see also* H.R. REP. No. 100-40, at 160 (1987).

[18] When the presence of infringing domestic inventory or domestic operations is asserted as the basis for a CDO under section 337(f)(1), Commissioner Schmidtlein does not adopt the view that the inventory or domestic operations needs to be "commercially significant" in order to issue the CDO. *See, e.g.*, *Certain Table Saws Incorporating Active Injury Mitigation Technology & Components Thereof*, Inv. No. 337-TA-965, Comm'n Op. at 6-7, n.2 (Feb. 1, 2017). In Commissioner Schmidtlein's view, the presence of some infringing domestic inventory or domestic operations, regardless of its commercial significance, provides a basis to issue a CDO. *Id.*

2. *The RD*

The CALJ recommended that issuance of a CDO is appropriate. ID/RD at 156. The CALJ found that "Innoscience has a commercial inventory of approximately in the United States as of August 3, 2023." *Id.* (citing CPX-0121C; JX-0036C at 83:14-84:5, 84:14-15 (Sun Dep. Tr.)). The CALJ observed that respondents have "an office in Santa Clara, California, and domestic employees to support its commercial operations in the United States" and that if Respondents' "domestic operations are allowed to continue to offer and trade in its domestic inventory of of infringing goods, a limited exclusion order remedy will be undermined." ID/RD at 156-57 (citing JX-0036C at 50:7-22, 51:1-22; 55:14-56:1 (Sun Dep. Tr.)).

3. *Parties' Submissions*

EPC and OUII agree with the CALJ that CDOs are warranted in this investigation. EPC Sub. at 39-40; OUII Sub. at 9. Specifically, OUII notes that "" and "maintains sufficient inventory at its California office to conduct its commercial operations in the United States." OUII Sub. at 16 (citing JX-0036C (Sun Dep. Tr.) at 50:7-22, 51:1-22; 55:14-56:1; CPX-0121C (showing a commercial inventory of approximately); JX-0036C (Sun Dep. Tr.) at 83:14-84:5, 84:14-15, 96:13-25). OUII states that "[i]n similar situations, the Commission has issued cease and desist orders." *Id.* (citing *Certain Electrical Connectors and Cages, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-1241, Comm'n Op. at 39 (Sept. 30, 2022) (issuing cease and desist order where respondent maintained inventory to support sales activities in the United States)).

Respondents assert that the Commission should decline to issue CDOs because they do not maintain commercially significant levels of inventory in the United States. Resp. Sub. at 40. (citing JX-0036C at 125:10-14 .")). Respondents argue that the Commission has not historically issued CDOs directed to foreign respondents who do not have inventories in the United States because of the difficulty in enforcing such an order. *Id.* (citing *Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, Comm'n Op. at 25 (July 1997)). Regarding its domestic operations, Respondents contend that the Commission has applied a "significant domestic operations" analysis test only "when a respondent has refused to participate in an Investigation, thus preventing discovery into inventory." *Id.* (citing *Certain Mobile Device Holders and Components Thereof*, Inv. No. 337-TA-1028, Comm'n Op., 2018 WL 4042764, *12 (Mar. 22, 2018); *Certain Elec. Skin Care Devices, Brushes and Chargers Therefor, and Kits Containing the Same*, Inv. No. 337-TA-959, Comm'n Op., 2017 WL 8683854, *15-16 (Feb. 13, 2017)). Respondents state that in contrast, they "participated fully and provided any evidence of domestic inventory for the accused products." *Id.* (citing CPX-0121C; JX-0036C). Respondents argue that EPC merely "include[s] a general reference to Innoscience's California sales office, which supports domestic and foreign customers and is supplied by Innoscience fabs in China" but that Innoscience America "'" and so "EPC's allegations at best demonstrate the existence of Innoscience activities outside of the U.S., not the significance of Innoscience's domestic operation." *Id.* at 41 (citing JX-0036C at 54:1-6, 54:13-55:2).

4. Commission Determination

The Commission finds Respondents' arguments unpersuasive and has determined to issue CDOs. As the CALJ found, "Innoscience has a commercial inventory of approximately

in the United States as of August 3, 2023." *Id.* (citing CPX-0121C; JX-0036C at 83:14-84:5, 84:14-15 (Sun Dep. Tr.)). Respondents' reason for maintaining this inventory is that they are only "." Resp. Sub. at 40 (citing JX-0036C at 125:10-14). However, whether or not, here, are commercially significant, especially given that Respondents are using these inventories to attract new business from potential customers even though they have not yet made any "real sales." Tr. (Luo [Respondents' Founder and Chair]) at 731:25-732:2) ("We're working in the sales office, tried to work with customers on design, but I don't believe we have any real sales yet.").

Moreover, as the CALJ found, Respondents spend to maintain an office in Santa Clara, California, with about employees to assist customers in purchasing its products. ID at 156-57. (citing JX-0036C (Sun Dep. Tr.) at 50:7-22, 51:1-22; 55:14-56:1). This, coupled with the of domestic inventory support the CALJ's finding that if Respondents' "domestic operations are allowed to continue to offer and trade in its domestic inventory of of infringing goods, a limited exclusion order remedy will be undermined." ID at 156-57.

Respondents contend that the Commission has applied a "significant domestic operations" analysis test only "when a respondent has refused to participate in an Investigation, thus preventing discovery into inventory." Resp. Sub. at 40. Commission precedent provides no support for Respondents' assertion. The Commission has made clear that "[c]ease and desist orders are generally issued when, with respect to the imported infringing products, respondents maintain commercially significant inventories in the United States or have significant domestic operations that could undercut the remedy provided by an exclusion order." *Certain Arrowheads with Deploying Blades & Components Thereof & Packaging Therefor*, Inv. No. 337-TA-977,

Comm'n Op. at 16-17 (Apr. 28, 2017). Here, the CALJ found, based on the evidence, that CDOs should issue under both standards. We agree.[19]

C. The Public Interest

Section 337 requires the Commission, upon finding a violation of section 337, to issue an LEO "unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry." 19 U.S.C. § 1337(d)(l). Similarly, the Commission must consider these public interest factors before issuing a CDO. 19 U.S.C. § 1337(f)(1).

The statute requires the Commission to consider and make findings on the public interest in every case in which a violation is found regardless of the quality or quantity of public interest information supplied by the parties. 19 U.S.C. § 1337(d)(l), (f)(l). Thus, the Commission publishes a notice inviting the parties as well as interested members of the public and interested government agencies to gather and present evidence on the public interest at multiple junctures in the proceeding. 19 U.S.C. § 1337(d)(l) & (f)(l).

On August 6, 2024, Respondents submitted public interest comments.[20] Respondents contend that they are "the largest manufacturer of GaN-on-Si wafers in the world, holding over 30% of the global power GaN device market." Resp. Public Interest Comment at 1.

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[19] Commissioner Schmidtlein supports issuance of the CDOs in this investigation regardless as to whether the domestic inventory or domestic operations are commercially significant. In her view, the presence of some infringing domestic inventory or domestic operations provides a basis to issue the CDOs.

[20] *See* Respondents Innoscience (Zhuhai) Technology Company, Ltd., Innoscience, Inc., and Innoscience America, Inc's Comments on the Public Interest ("Resp. Public Interest Comment").

Respondents state that given their "large share in the GaN power device supply chain, an exclusion order would have significant impacts on U.S. consumers and economy at large" and that "[w]ithout a delay in the effective date of an exclusion order, an immediate and potentially multi-year shortage across a wide variety of industries could not be averted given alternative suppliers' existing production capacities and a lack of readily available GaN semiconductor devices." *Id.* at 2. According to Respondents, "there is no evidence in the record that other suppliers could fill the supply gap caused by an exclusion order" and that "[a]n exclusion order would vastly limit consumers' ability to acquire the impacted products and would drive up consumer cost." *Id.*

On August 9, 2024, EPC submitted a public interest statement arguing that there are no public interest concerns that would warrant denying or delaying the recommended relief.[21] No public interest comments were received from the public pursuant to the Commission's solicitation of public interest comments. *See* 89 Fed. Reg 57429-30 (July 15, 2024).

In its notice of review, the Commission requested responses to the following question regarding the public interest:

> Please provide specific facts and data with respect to Respondents' assertion that "an exclusion order would have significant impacts on U.S. consumers and economy at large" and that "[w]ithout a delay in the effective date of an exclusion order, an immediate and potentially multi-year shortage across a wide variety of industries could not be averted given alternative suppliers' existing production capacities and a lack of readily available GaN semiconductor devices." Resp. PI Stmt. at 2. Please include in your discussion, the shares of the U.S. market for EPC and Respondents, as well as other suppliers and whether these suppliers have the capability to supply U.S. demand in the event of an exclusion order and/or cease and desist orders.

[21] *See* Complainant's Comments Regarding the Public Interest.

1. EPC's Submission

a) Public Health and Welfare

EPC states that issuance of remedial orders will not pose any health, safety, or welfare concerns in the United States. EPC Sub. at 25. According to EPC, the accused products "are general purpose semiconductors that can be used across a wide variety of applications" and "not specialized for any particular public health, safety, or welfare applications." *Id.* at 25-26. EPC asserts that the Commission has previously determined that exclusion of semiconductor products does not pose any public health, safety, or welfare concerns. *Id.* at 26 (citing *Certain Graphics Systems, Components Thereof, and Digital Televisions Containing the Same*, Inv. No. 337-TA-1318, Comm'n Op. at 84 (Feb. 23, 2024); *Certain Encapsulated Integrated Circuit Devices and Prods. Containing Same*, Inv. No. 337-TA-501, Comm'n Op. at 50 (Apr. 28, 2014)).

b) Competitive Conditions in the United States Economy

EPC contends that the power semiconductor industry is highly competitive and that "[n]early seventy percent of the market is divided among ten different semiconductor companies." EPC Sub. at 26. According to EPC, "[c]ompetitors include both integrated device manufacturers ('IDMs') like Innoscience and fabless companies like EPC" and that "[w]ith so much competition in the industry, Respondents' assertion that 'an exclusion order would have significant impacts on U.S. consumers and the economy at large' is unsupported by the facts." *Id.* (citing *Certain Inkjet Ink Supplies & Components Thereof*, Inv. No. 337-TA-691, Comm'n Op. at 15 (Jan. 28, 2011) (holding public interest concerns do not bar issuance of remedial orders because "[t]here is no evidence that domestic demand for [complainant's] inkjet cartridges cannot be met by [complainant] and its legitimate competitors")).

c) Production of Like or Directly Competitive Articles in the United States

EPC states that it "is a manufacturer and seller of GaN semiconductor devices that are interchangeable with the Accused Products" and that Respondents have "touted [their] products' pin-to-pin compatibility with EPC's chips." EPC Sub. at 27 (citing Tr. 187:12-188:3 (Lidow)). EPC contends that thus it "makes like and directly competitive articles that could replace the subject articles if they were excluded." *Id.* (citing CX-0832C-0057 (showing EPC product offerings in every category in which Innoscience competes)). EPC notes that "according to Innoscience, there are at least eight other companies that produce like or directly competitive articles" and that "upon information and belief, Infineon Technologies Americas Corp., along with its related company Infineon Technologies Austria AG (collectively, 'Infineon'), manufacture and sell GaN semiconductors in the United States that are competitive with Innoscience's Accused Products and have the capacity to replace any volume of subject articles that may be excluded, as alleged in Infineon's recent complaint against the same Respondents." *Id.* (citing Complainants Infineon Technologies Austria AG And Infineon Technologies Americas Corp.'s Statement on the Public Interest, 337-3763, at 4 (EDIS Doc. Id. 827240) (Jul. 26, 2024) ("Infineon's products…are readily available to replace the [Innoscience] Accused Products within a reasonable timeframe."); *see also id.* ("Infineon can provide an adequate supply of alternative power transistors and circuit products to manufacturers, customers, and consumers.")).

d) United States Consumers

EPC states that "[b]ecause [it] manufactures and sells GaN semiconductor devices that can replace the subject articles, and given that Innoscience has had, according to its Chairwoman, no "real sales yet" in the United States, it would not be difficult for EPC to replace

the subject articles within a commercially reasonable time if they were excluded." EPC Sub. at 27 (citing Tr. at 731:23-732:2 (Luo)). EPC states that "there are numerous companies in this highly-competitive industry that can replace any volume of Innoscience products subject to exclusion" and presents the chart below for support:

Revenue estimates of Power GaN device suppliers				
Company	**2021**	**2022**	**Market share 2021**	**Market share 2022**
Innoscience	$11.6M	$40.4M	9%	22%
Power Integrations	$32.0M	$35.0M	25%	19%
Navitas	$23.7M	$30.3M	19%	16%
EPC	$15.5M	$25.0M	12%	14%
GaN Systems	$18.0M	$19.0M	14%	10%
Transphorm	$7.1M	$15.5M	6%	8%
Infineon	$4.0M	$4.5M	3%	2%
Others	$14.4M	$15.2M	11%	8%
TOTAL	**$126.3M**	**$184.9M**		

Id. (citing research estimates from The Yole Group, an organization that provides market research focused on the semiconductor industry and related fields; available to www.yolegroup.com).

2. Respondents' Submission

Respondents state that "GaN is indisputably the future of semiconductor technology because of its vast benefits over silicon-based devices" and that "GaN is the replacement for aging silicon semiconductor technology because it supports new applications, is easy to use, is cost effective, and reliable." Resp Sub. at 43. According to Respondents, "[b]ecause of the vast benefits and applications of GaN, the electronics industry's dependency on GaN is increasing" and that in 2023, "power GaN revenues grew by 41%" and that growth is set to continue "at a

compound annual growth rate (CAGR) of 46% over the 2023-2029 period." *Id.* (citing Ex. C at 1, Yole Group, *Power GaN: harnessing new horizons* (Sept. 20, 2024), https://www.yolegroup.com/strategy-insights/power-gan-harnessing-new-horizons/." Respondents assert that "the leading sectors for this growth are expected to be consumer products and automotive/mobility" and that "Innoscience's technological advancements in manufacturing GaN semiconductors makes the adoption of GaN possible." *Id.* at 44.

Respondents argue that "[a]s the largest manufacturer of GaN semiconductor devices in the world, there is no other entity capable of meeting the anticipated demand for GaN semiconductor devices if Innoscience's devices were excluded." *Id.* at 43. Referencing a report from the Yole Group, Respondents contend that they are "the largest manufacturer of GaN semiconductor devices or wafers in the world, holding over 30% of the global power GaN market, while EPC and Infineon—the other producer EPC points to as potentially able to meet market demand in the absence of Innoscience's products . . . are not mentioned among the top 3 market participants." *Id.* at 44 (citing Yole Group, *Power GaN: harnessing new horizons* (Sept. 20, 2024), https://www.yolegroup.com/strategy-insights/power-gan-harnessing-new-horizons/); Ex. D at ¶ 5 (Luo Decl.).

Respondents assert that they are "the sole GaN semiconductor manufacturer in the world that mass produces 8-inch wafers and accounts for more than 53% of the global production capacity" and that "[t]he development of 8-inch wafers allows for nearly two times more chips to be produced per wafer than a 6-inch wafer, thus increasing yield and reducing cost per chip during the manufacturing process." *Id.* at 45. According to Respondents, they "mass produce wafers that span the entire voltage spectrum, including high voltage products from 300V-700V, which EPC does not even make," and they argue that their "two semiconductor fab facilities in

China—in Zhuhai and Suzhou—already represent the largest worldwide capacity for manufacturing GaN." *Id.* at 46. Respondents state that in contrast, "EPC does not manufacture any GaN semiconductor devices itself" and that "EPC designs 6-inch semiconductor devices that only go up to 350 volts, meaning EPC has less manufacturing capacity overall and no competitive products for any of the accused high voltage devices." *Id.* at 47. Respondents thus assert that they and EPC "are not competitors for the full complement of accused Innoscience GaN products, and EPC could not fill the supply gap an exclusion order could create." *Id.*

Finally, Respondents state that "the PTAB's final written decision for the '294 patent is expected by March 20, 2025, roughly 4 months from the current Target Date of November 5, 2024" and that "[t]he USPTO's statistics show that in FY2023, the USPTO invalidated approximately 77.7% of claims in *inter partes* reviews that reached final written decision." *Id.* As such, Respondents contend that "[i]t would be counter to the public interest to issue an exclusion order for a patent [that] is going to likely be found invalid in a matter of months" and request that any remedy be delayed at least until the PTAB issues its final written decision in March. *Id.* at 47-48

3. OUII Submission

OUII states that it is "[un]aware of any facts that would support Innoscience's contention that an exclusion order adversely impacts U.S. consumers or the U.S. economy." OUII Sub. at 20. OUII points to Respondents' statement that [redacted] and that Respondents have "[redacted]."" *Id.* (citing Response to the Complaint and Notice of Investigation, EDIS Doc. ID 801747, Exh. A at 1 (Aug. 4, 2023)). OUII further points to the testimony of the "Founder and Chair of Innoscience," who testified that "'[w]e're working in the

sales office, tried to work with customers on design, but I don't believe we have any real sales yet.'" *Id.* (citing Tr. (Luo) at 731:25-732:2). OUII asserts that "[g]iven Innoscience's lack of 'any real sales,' the potential impact on the statutory public interest factors would appear to be de minimis." *Id.* at 20-21.

OUII also contends that "there is no shortage of competition in the GaN power transistor market," and that a report from the Yole Group shows "a 'strong presence' of market players, including semiconductor giants such as Texas Instruments, TSMC, and STMicroelectronics." *Id.* at 21 (citing https://www.yolegroup.com/strategy-insights/power-gan-harnessing-new-horizons/ (last visited Aug. 13, 2024)). OUII further notes that "numerous market intelligence research reports identify EPC and Infineon, but not Innoscience, as major market players." *Id.* at 21-23. OUII states that "[c]learly, EPC, Infineon, and others have the capacity to replace the de minimis quantity of products that would be excluded by the requested remedial orders." *Id.* at 23.

4. Commission Determination

The Commission finds that remedial orders in this investigation would not have an adverse effect on the public interest factors and therefore determines that there is no basis to deny or delay implementation of remedial orders in this investigation.

a) Public Health and Welfare

The Commission finds that remedial orders in this investigation would not raise significant public health or welfare concerns. As EPC notes, the accused products "are general purpose semiconductors that can be used across a wide variety of applications." EPC Sub. at 25-26. There is no allegation that the accused products are "specialized for any particular public health, safety, or welfare applications." *Id.* at 25-26. Indeed, Respondents do not argue that remedial orders will have an adverse impact on the public health or welfare. As EPC observes, the Commission has previously determined that exclusion of semiconductor products does not

pose any public health, safety, or welfare concerns under the facts presented in those investigations and no facts have been presented in this investigation that suggest a public health or welfare concern. EPC Sub. at 26 (citing *Certain Graphics Systems, Components Thereof, and Digital Televisions Containing the Same*, Inv. No. 337-TA-1318, Comm'n Op. at 84 (Feb. 23, 2024); *Certain Encapsulated Integrated Circuit Devices and Prods. Containing Same*, Inv. No. 337-TA-501, Comm'n Op. at 50 (Apr. 28, 2014)).

b) Competitive Conditions in the United States Economy

The Commission finds that remedial orders would not have any adverse impact on competitive conditions in the United States economy. Respondents assert that remedial orders would adversely impact the public interest because "GaN is the future of electronics" and "Innoscience is the leading manufacture of GaN devices." Resp. Sub. at 43-47. Respondents argue that they are "the largest manufacturer of GaN semiconductor devices in the world" and that "no other entity (EPC or Infineon or otherwise) has the capability to mass produce 8-inch wafers that span the voltage spectrum from 30V-700V." Resp. R. Sub. at 30. According to Respondents, "[t]here is no record evidence that any other manufacturers could meet the expected increased domestic demand for Innoscience's GaN devices, because no other manufacturer produces 8-inch chips that span the full voltage spectrum or that could do so quickly enough as to not impact the public interest." *Id.* at 30.

As OUII correctly notes, the problem with Respondents' argument, however, is that they have failed to provide any evidence that competitive conditions in the United States would be adversely affected by exclusion of Respondents' products, which have not yet been sold to consumers in the United States to date. OUII Sub. at 18. Thus, excluding them from importation would, at present, have no significant adverse effect on this public interest factor.

Indeed, Respondents acknowledge that and Response to the Complaint and Notice of Investigation, EDIS Doc. ID 801747, Exh. A at 1 (Aug. 4, 2023). Consistent with this, Respondents' Founder and Chair testified as follows: "We're working in the sales office, tried to work with customers on design, but I don't believe we have any real sales yet." Tr. (Luo) at 731:25-732:2.

Respondents' argument depends on an allegedly "expected increased domestic demand for Innoscience's GaN devices, because no other manufacturer produces 8-inch chips that span the full voltage spectrum or that could do so quickly enough as to not impact the public interest." Resp. R. Sub. at 30. The evidence, however, including evidence produced by Respondents themselves, shows that there are numerous competitors in the GaN market that can satisfy any expected increase in domestic demand:

Respondents Sub. Exh. E, at 42. As OUII also notes, "additional leading semiconductor manufacturers are entering the GaN market in the near future." OUII R. Sub at 20-21 (citing Taiwan Semiconductor Manufacturing Company Ltd. 2023 Annual Report at 98 ("TSMC's industry leading GaN (Gallium Nitride) power device technology, the second generation of 650V and 100V E-HEMT, entered the reliability verification stage with production expected in 2024."); Infineon Announces Next Generation CoolGaN™ Transistor Families Built on 8-inch In-house Fab, https://www.infineon.com/cms/en/about-infineon/press/market-news/2024/INFPSS202405-108.html (May 29, 2024) ("The CoolGaN 650 V G5 will be available in Q4 2024 and the medium voltage CoolGaN G3 will be available in Q3 2024."); Texas Instruments to Offer Cheaper GaN Chips Through 8-inch Wafer, https://www.thelec.net/news/articleView.html?idxno=4749 (Mar. 7, 2024) ("The upgrade in

Dallas is expected to be completed in 2025…."); Samsung Electronics Unveils Foundry Vision in the AI Era at Samsung Foundry Forum 2023, https://news.samsung.com/global/samsung-electronics-unveils-foundry-vision-in-the-ai-era-at-samsung-foundry-forum-2023 (June 28, 2023) ("From 2025, Samsung will begin foundry services for 8-inch gallium nitride (GaN) power semiconductors targeting consumer, data center and automotive applications.")).

Thus, Respondents' assertion that remedial orders will adversely affect "expected demand" is not only speculative, but unfounded.

c) The Production of Like or Directly Competitive Articles in the United States

The record contains no evidence that remedial orders will adversely impact the production of like of directly competitive articles in the United States.

d) United States consumers

The record contains no evidence that remedial orders will adversely impact United States consumers. Indeed, the evidence shows that Respondents' do not "have any real sales yet." Tr. (Luo) at 731:25-732:2. Thus, exclusion of their products will have no impact on domestic consumers of GaN products.

In sum, the public interest factors do not compel declining to issue remedial orders in this investigation.

Respondents also argue that "[i]t would be counter to the public interest to issue an exclusion order for a patent that is going to likely be found invalid in a matter of months" and request that any remedy be delayed at least until the PTAB issues its final written decision in March. Resp. Sub. at 47-48. As discussed above, this argument is too speculative to warrant suspension of the remedial orders. In addition, the Commission normally only suspends its orders if a final written decision finding the claims invalid issues before the Commission issues

its orders, not when it issues after. *See Certain Network Devices, Related Software and Components Thereof (II)*, Inv. No. 337-TA-945, Comm'n Op. (Aug. 16, 2017). But, if the PTAB finds the claims invalid, Respondents are free to petition the Commission for a stay or for modification or revocation of the remedial orders if appropriate under 19 U.S.C. § 1337(k). However, the Commission notes that when a PTAB final written decision finding invalidity issues of issues after the Commission remedial orders have issued, the Commission does not normally suspend its remedial orders when that decision is subject to appeal.

D. Bond

If the Commission enters an exclusion order or a cease and desist order, a respondent may continue to import and sell its products during the 60-day period of Presidential review under a bond in an amount determined by the Commission to be "sufficient to protect the complainant from any injury." 19 U.S.C. § 1337(j)(3); *see also*, 19 C.F.R. § 210.50(a)(3). When reliable price information is available in the record, the Commission has often set the bond in an amount that would eliminate the price differential between the domestic product and the imported, infringing product. *See Streaming Players*, Comm'n Op. at 41-42 (citations omitted); *Tobacco Heating Articles*, Comm'n Op. at 77 (citations omitted). The Commission also has used a reasonable royalty rate to set the bond amount where a reasonable royalty rate could be ascertained from the evidence in the record. *See, e.g.*, *id.* Where the record establishes that the calculation of a price differential is impractical or there is insufficient evidence in the record to determine a reasonable royalty, the Commission has imposed a one hundred percent (100%) bond. *See, e.g.*, *id*.

The CALJ recommended that the Commission set a bond in the amount of five percent (5%) of entered value for infringing products imported during the period of Presidential review.

ID/RD at 158-59. The CALJ noted Respondents' argument that "if there is a bond, it should be guided by the [redacted] ID/RD at 158 (citing [redacted] RX-0652C and RX-0653C). The CALJ found that [redacted] and that [redacted] *Id.* at 159. The CALJ thus recommended a bond rate of five percent. *Id.*

OUII asserts that EPC failed to establish "why a bond is necessary to protect it from injury during the Presidential review period." OUII Sub. at 24. Specifically, OUII asserts that "EPC failed to establish a basis to support any specific bond based on pricing information or reasonable royalty rates" as Commission precedent require. *Id.* at 24-25. Thus, OUII asserts that the Commission should set the bond "at zero percent (0%, i.e., no bond) of the entered value of the articles subject to any remedial orders during the Presidential review period." *Id.* at 25. Respondents agree with OUII that the Commission should set no bond during the period of Presidential review but that "if the Commission decides a nonzero bond is necessary, a bond of 5% is appropriate." Resp. Sub. at 42-43. EPC states that it does not contest the CALJ's recommendation that a bond be set in the amount of five percent of entered value for infringing products imported during the period of Presidential review.

The Commission has determined to set the bond in the amount of five percent (5%) of entered value for infringing products imported during the period of Presidential review. The CALJ considered the argument that no bond should issue because EPC failed to show that it would be injured during the period of Presidential review and found that Respondents' economic expert, "Mr. Schoettelkotte, opined that [redacted]

ID/RD at 158-59 (citing Tr. at 837:23-839:13 (Schoettelkotte)). This The Commission has determined to adopt the CALJ's recommendation and apply the evidence of The Commission notes that the CALJ to 5% and finds that this is reasonable to protect EPC from harm.

VII. CONCLUSION

The Commission has determined to affirm the ID's finding of a violation of section 337 as to the '294 patent. The Commission has determined to clarify the ID's statement on jurisdiction as noted herein. Regarding the '294 patent, the Commission has determined to adopt OUII's construction of the claim term "compensated GaN layer" recited in claim 1 of the '294 patent as its plain and ordinary meaning and find that adoption of OUII's construction does not alter the ID's findings on infringement, invalidity, and technical prong of domestic industry. For the '508 patent, the Commission has determined to affirm the ID's finding of no violation for the reasons provided in the ID. The Commission has determined to deny Respondents' motion for a sanction of non-enforcement of the '294 patent for an alleged breach of the APO and notes that Respondents' allegation of a breach of the APO has been referred to the Commission's Office of the Secretary for further proceedings according to the Commission's normal procedures. For remedy, the Commission has determined to: (1) issue a limited exclusion order prohibiting the unlicensed importation of semiconductor devices and methods of manufacturing same and products containing the same that infringe one or more of claims 2 and 3 the '294 that are manufactured abroad by or on behalf of, or imported by or on behalf of, Respondents or any of their affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns, *i.e.*, such articles are excluded from entry for consumption into the United States, entry for consumption from a foreign trade zone, or withdrawal from a warehouse for

consumption, for the remaining terms of the patents, except under license of, or with the permission of, the patent owner or as provided by law and; (2) issue cease and desist orders directing that Respondents cease and desist from conducting any of the following activities in the United States: importing, selling, offering for sale, marketing, advertising, distributing, transferring (except for exportation), soliciting United States agents or distributors, and aiding or abetting other entities in the importation, sale for importation, sale after importation, transfer (except for exportation), or distribution of semiconductor devices and methods of manufacturing same and products containing the same that infringe one or more of claims 2 and 3 of the '294; (3) find that the public interest factors do not preclude the issuance of the proposed remedial orders; and (4) set a bond in the amount of five percent (5%) of entered value for infringing products imported during the period of Presidential review.

By order of the Commission.

Lisa R. Barton
Secretary to the Commission

Issued: December 5, 2024

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the parties listed have entered an appearance in the above captioned investigation, and a copy of the PUBLIC CERTIFICATE OF SERVICE was served upon the following parties via first class mail and air mail where necessary.

Document	Security	Document Type	Official Rec'd	Title
838650	Public	Opinion, Commission	12/05/2024 04:01 PM	Commission Opinion

Service Date: December 05, 2024

/s

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