

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROCHIP TECHNOLOGY INC.,
Petitioner,

v.

APTIV TECHNOLOGIES AG,
Patent Owner.

Patent No. 9,645,962

Inter Partes Review No. IPR2024-00229

PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW

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Patent Owner Aptiv Technologies AG (“Patent Owner” or “Aptiv”) respectfully requests director review of the Final Written Decision (Paper 54, “FWD”).

I. INTRODUCTION

On July 11, 2025, the Board issued its Final Written Decision finding all challenged claims of U.S. Patent No. 9,645,962 (“the ’962 patent”) to be unpatentable, based on a combination of (1) prior art reference Chang, (2) prior art reference Chang II, and (3) custom electronic circuitry not found in either reference, but instead drawn from the POSITA’s purported knowledge. (FWD.)

The ’962 patent, issued in May 2017, claims an innovative connectivity solution permitting vehicles to support Apple CarPlay. The patented invention is the basis of Aptiv’s Dual Role Hub product, and is responsible for the product’s widespread acclaim and Aptiv’s domination over competitors in the automotive hub market using chips made by the Petitioner, Microchip. The challenged patent had been in force for over six years when the Petition was filed in December 2023. (Paper 1, “Petition”). In addition to disturbing the Patent Owner’s strong settled expectations of the patent’s validity, *see Amgen Inc. v. Bristol-Myers Squibb Co.*, IPR2025-00602, Paper 9 at 3 (July 24, 2025), the Final Written Decision is legally untenable, and inconsistent with recent Director determinations, for at least four reasons.

First, the Final Written Decision improperly excused the Petitioner from a baseline statutory requirement. 35 U.S.C. § 312(a)(3) requires that in order to be considered, a petition must identify *with particularity* the grounds for challenging each claim. Here, all challenged claims require a “USB routing switch” having a particular configuration for connecting USB ports. In challenging the claims, the Petition relied on a detection unit circuit found in Chang II, arguing that this detection unit would control a custom switching circuit (the purported USB routing switch) to implement the claimed configuration. As the Patent Owner’s Response (Paper 24, “POR”) demonstrated, the Petition failed to identify with particularity any prior art combination in which the detection unit would be operable to meet the claim limitations. (*See* POR, 20-24.) In particular, the Petition did not identify any location for the detection unit other than within a bridge circuit that fatally becomes bypassed by the operation of the switching circuit. This amounts to a failure to identify, with particularity, how the proposed combination satisfied the claimed “USB routing switch” limitation.

In the Final Written Decision, the Board did not dispute that “the Petition lacks particularity with regard to how the detection unit in the proposed combination would be implemented.” (FWD, 29.) But without any cited authority, the Board excused such failure as “understandable” because “the claims also lack particularity” with respect to that element. (FWD, 29-30.) The Board

thus manufactured a new rule contradicting the plain language of § 312(a) (“A petition ... may be considered *only if* ...”)(emphasis added), which permits no such exception to the particularity requirement of subsection (3).

Second, the Board erred by mis-applying its own rule to the Petition. The Board explained that “it was unnecessary for Petitioner to be particular as to the detection unit,” because “the claims do not recite a detection unit.” (FWD, 30.) But the claims *do* recite a specially configured USB routing switch; and the Petition relied on the detection unit from one of the prior art references to meet that claim limitation. Under § 312(a)(3), the Petitioner had a statutory burden to articulate “the evidence that supports the grounds” —including, here, how its detection unit is used to meet the claimed USB routing switch. Requiring the Patent Owner to instead decipher how the detection unit meets the USB routing switch in the Petition’s combination improperly shifted the burden of proof.

Third, the Final Written Decision improperly disregarded the claim language. The Board concluded that it was error for Patent Owner to assume the Petition’s detection unit—the component that purportedly controls the USB routing switch—is located in the USB bridge. (FWD, 27-30 (“Patent Owner contrives this faulty premise by surmising that ... the detection unit must be located in the bridge”).) But the Board’s conclusion is inconsistent with dependent claims 7 and 8, which recite that “*the USB bridge* is configured to control the USB routing

switch” and “the USB bridge comprises a bridge controller,” respectively (emphasis added). For the Petition’s prior art combination to meet claims 7 and 8, as Petitioner argued and as the Board found, the combination must have included the detection unit in the bridge. (Petition, 75-76; FWD, 56-59.) The Board did not address this discrepancy, and erred by relying on its faulty conclusion to invalidate the claims.

Fourth, the Board erred by disregarding Patent Owner’s unrebutted evidence of secondary considerations of non-obviousness and failing to adequately explain its decision to deny a presumption of nexus—analogous to *Verizon Connect Inc. v. Omega Patents, LLC*, in which the Director terminated the proceeding for similar error. IPR2023-01162, Paper 37 at 2-3 (PTAB May 2, 2025). Here, as in *Verizon*, the Board improperly disregarded, without sufficient explanation, Patent Owner’s unrebutted expert testimony as to nexus—how the patented invention was directly responsible for the commercial success and praise for Aptiv’s Dual Role Hub product in the automotive industry and how competitors, including Petitioner, tried for years without success to replicate the patented technology. The Board also, implausibly, dismissed a full transcript of sworn courtroom testimony as “fail[ing] to identify the witness or the proceeding in which the testimony was given.” (FWD, 81.) And as in *Verizon*, the Board failed to address secondary considerations factors supported by substantial evidence—referring, instead, to its

erroneous nexus decision.

For these reasons, the Director should reverse the Final Written Decision or, in the alternative, vacate and terminate the proceeding as in *Verizon*.

II. ARGUMENT

A. The Board Improperly Excused the Petition From the “With Particularity” Requirement of 35 U.S.C. § 312(a)(3)

Under 35 U.S.C. § 312(a)(3), an IPR petition “may be considered only if ... the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenges to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” The Board has recently denied institution of petitions that lack such particularity, noting that the requirement exists “in the interests of efficient administration of the Office and integrity of the patent system and as a matter of procedural fairness to Patent Owner.” *Ikea Supply AG v. Everlight Electronics Co., Ltd*, IPR2024-00988, Paper 6 at 28-29 (Dec. 12, 2024); *see also Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377 (Fed. Cir. 2023) (“Ultimately, it is the petitioner’s burden to present a clear argument.”). And a recent USPTO memorandum emphasized the need for petitioners to “identify in the petition where each claim element is found in the prior art patents or printed publications,” to provide “certainty to the parties, the Board, and the public, and to allow for the efficient administration of the Office.” (July 31, 2025 USPTO Memorandum, available at <https://www.uspto.gov/sites/>

default/files/documents/aapa_memo_final__signed.pdf (last visited Aug. 7, 2025).)

The Petition should never have been instituted. As explained in the POR, the Petition failed the threshold particularity requirement with respect to the “USB routing switch” limitation of the challenged claims. (POR, 20-23.) The limitation is not met by any mere USB routing switch: the claims recite that the USB routing switch must be: (1) “configured to connect a first downstream USB port of the plurality of downstream USB ports to the upstream USB port through the USB bridge” when the consumer device is the USB host, and (2) “configured to connect the first downstream USB port directly to the USB hub” when the consumer device is a USB device. While the Petition identified a crossbar switch (not disclosed in any prior art reference) as the physical component of the USB routing switch, it relied on a separate detection unit circuit from Chang II to detect the USB host/device mode and control the USB routing switch to claim it would meet the two “configured to” limitations. (Petition, 57-67, 71-72.) The Petition was ambiguous about the location of the detection unit, and how it would control the switching functionality, describing the operation only as “routine and obvious.”¹

¹ Even on reply, Petitioner failed to identify the location of the detection unit.

Instead, Petitioner conceded there were multiple possible locations for the detection unit, highlighting no fewer than three such possibilities in the Reply.

(Petition, 39 n.14; POR, 20-24.)

The Final Written Decision did not dispute that “the Petition lacks particularity with regard to how the detection unit in the proposed combination would be implemented.” (FWD, 29-30.) However, the Board dismissed this shortcoming as “understandable” because “the claims also lack particularity as to the detection unit.” (FWD, 29-30.) According to the Board, because “the claims do not recite a detection unit,” it was “unnecessary for Petitioner to be particular as to the detection unit in order to establish unpatentability.” (FWD, 30.)

The Board’s new rule—presented without citation to any authority—is legally untenable. First, the detection unit is a component of the Petitioner’s cited prior art (Chang II), not the claimed invention; it would be nonsensical to expect or require a patent’s claims to recite features of the prior art. That the prior art’s detection unit is not found in the claims supports patentability, not obviousness. (As Patent Owner explained, the ’962 patent describes performing mode detection

(Paper 29, “Reply”, 8.) Because Petitioner relied on the detection unit to challenge the claims, the particularity requirement cannot be met in view of this ambiguity. (35 U.S.C. § 312(a)(3).) Moreover, Petitioner’s support for the possible detection unit locations was found in the expert declaration—not in the Petition itself, as required by the statute. (35 U.S.C. § 312(a)(3); Reply, 8-10.)

by the USB hub's head unit, not by a detection unit. (*See* EX1003, 6:19-26; Paper 39, "Sur-Reply", 25-26.))

Second, the statute does not contain or permit any such exception to the particularity requirement. The Petition must "identif[y] ... with particularity" the grounds and evidentiary support for "each claim challenged," even if the claims themselves lack particularity, and even if failure to do so is "understandable." (35 U.S.C. § 312(a)(3); FWD, 29-30.) The Board lacked the authority to insert an exception to the statute. And third, to the extent the Board relied on a determination of claim definiteness under § 112(b), such reliance was improper because definiteness under § 112(b) is beyond the scope of an IPR proceeding under § 311(b). *See Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1350 (Fed. Cir. 2020) ("[W]e hold that the Board may not cancel claims for indefiniteness in an IPR proceeding.") Because the Board did not, and could not, find that the Petition met the threshold requirements of § 312(a)(3), the Director should vacate the Final Written Decision's determination of unpatentability.

B. The Board Mis-Applied Its Manufactured Rule to the Petition and Improperly Shifted the Burden of Proof

The Board further erred by failing to correctly apply its manufactured rule to the claim limitations. The Board concluded that because "the claims do not recite a detection unit," it was "unnecessary for Petitioner to be particular as to the detection unit." (FWD, 29-30.) But, as noted above, it is the *USB routing switch*,

not the detection unit, that is recited by the claims. In the claims, the USB routing switch is “configured to” take specific actions based on whether a consumer device is a USB host or a USB device. The Petition relies upon the prior art detection unit to show the claimed USB routing switch, because the detection unit is what “detect[s] whether the consumer product is host or device” in the proffered combination. (Petition, 38.) Under § 312(a)(3), it was necessary for the Petition to be particular as to the detection unit, because the detection unit forms and supports the grounds on which the challenge to the claim (*i.e.*, the USB routing switch claim limitation) is based. It was legal error, in violation of the statute, for the Board to conclude otherwise.

It was further legal error to shift the burden of proof to the Patent Owner, by requiring Patent Owner to determine how the detection unit could be used to meet the claimed USB routing switch in the proffered combination. The error is particularly egregious here, where the Petitioner relies on combining the detection unit with circuitry (the crossbar switch) that is not even found in the cited references, and is instead supplied by its expert’s own say-so. (POR, 2, 54-56.) Petitioner’s reliance on expert testimony to supply missing claim limitations promotes uncertainty and is unfair to the Patent Owner, as the Office recently recognized by prohibiting this practice in future petitions. (July 31, 2025 USPTO Memorandum.)

C. The Board Improperly Disregarded the Claim Language

The Board further erred by improperly disregarding the language of the claims. The Board invalidated all claims upon concluding it was error for Patent Owner to assume the Petition's detection unit is located in the bridge. (FWD, 24-27 ("Patent Owner contrives this faulty premise by surmising that ... the detection unit must be located in the bridge").) But the Board failed to square this conclusion with dependent claims 7 and 8, which recite that "*the USB bridge is configured to control the USB routing switch,*" and that "*the USB bridge comprises a bridge controller,*" respectively (emphasis added).

In the Petition's prior art combination, the detection unit is the component that controls the USB routing switch. (Petition, 37-38.) Accordingly, in analyzing claim 7, Petitioner explained that its detection unit is part of the bridge. (Petition, 75 ("Applying this teaching [of the detection unit] to Chang, Chang's bridge would be configured to control the crossbar's control inputs.").) For example, the Petition explained that in its combination, the bridge "would have been understood" to include detection unit logic to control routing, and that "it would have been obvious and advantageous" to do so. (Petition, 75.)

For claim 8, Petitioner identified Chang II's control chip as the bridge controller installed in Chang's bridge in its prior art combination. (Petition, 76.) Chang II's control chip includes the detection unit. (Petition, 28.) Because

Petitioner specifically located Chang II's control chip within Chang's bridge in its prior art combination to satisfy the bridge controller limitation of claim 8, the detection unit in Chang II's control chip will logically also be within Chang's bridge, as Patent Owner correctly pinpointed. (POR, 25-26.)

The Final Written Decision cited this explanation of the prior art combination to conclude that the combination met claims 7 and 8. (FWD, 56-59.) The Board thus contradicted itself—it dismissed Petitioner's own placement of the detection unit in the bridge as a "faulty premise" of Patent Owner, (FWD, 27), but then relied on that same premise to invalidate the claims. (FWD, 56-59.) The Board did not acknowledge or address the discrepancy. Nor could it identify any location, other than within the bridge, for the detection unit. The Board's treatment of claims 7 and 8 thus demonstrate that it erred by discounting Patent Owner's argument regarding the detection unit's location, and by invalidating all claims based on that error. The Final Written Decision should be vacated with respect to the challenged claims.

D. The Board Erred by Disregarding Unrebutted Evidence of Secondary Considerations Without Adequate Explanation

Patent Owner presented extensive evidence of secondary considerations of non-obviousness, supported by unrebutted expert testimony and trial exhibits and testimony. The Board acknowledged that at least some of Patent Owner's secondary considerations arguments were meritorious, and conceded "some

weight” to those arguments; yet summarily dismissed all of the arguments for purported lack of nexus to the challenged claims. (FWD, 79-86.) The Board characterized Patent Owner’s evidence as “weak” and “not support[ing] the conclusions drawn from it”; but failed to adequately support or explain this finding, or to justify discrediting record evidence that was unrebutted by Petitioner. This was error by the Board, and in *Verizon*, the Director recently intervened to vacate a Final Written Decision under analogous circumstances. The Final Written Decision here should be similarly vacated.

1. The Board Failed to Explain Its Determination of No Nexus

A patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product is the invention disclosed and claimed. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Patent Owner’s showing of nexus was backed by substantial evidence: declaration testimony from Patent Owner’s expert, Dr. Houh, which cited multiple trial exhibits; and a transcript of live trial testimony from an employee, Michael Dreon. (POR, 81-82.) This evidence was unrebutted by Petitioner.

In *Verizon*, the Final Written Decision was vacated not for an erroneous finding of no nexus; but because the Board “failed to explain adequately its

decision to deny Patent Owner a presumption of nexus.” *Verizon*, Paper 37 at 2. Here, as in *Verizon*, the Board erred by failing to provide an adequate explanation for its decision to deny a presumption of nexus, in view of the evidence. For example, in the Final Written Decision, the Board downplayed Dr. Houh’s declaration testimony on the subject as comprising only “a single paragraph.” (FWD, 81-82.) But that paragraph included a 20-page claim chart that identified, on a per-limitation basis, how every element of claims 2 and 15 are met by the Aptiv Dual Role Hub product. (EX2019, ¶ 155.) The Board faults Patent Owner for not comparing the product to more claims, FWD at 82, but Patent Owner need not analyze these additional claims in order to establish a presumption of nexus. *See, e.g., Fox Factory*, 944 F.3d at 1373-78; *Pain Point Med. Sys., Inc. v. Blephex, LLC*, No. IPR2016-01670, 2018 WL 1137087, at *7 (P.T.A.B. Feb. 28, 2018) (finding nexus where analysis was limited to independent claims 1 and 17).

And the Board dismissed Dr. Houh’s chart for relying on trial exhibits (Exhibits 2022 through 2024) having “no showing or explanation that [it] relates to any of Patent Owner’s products” (FWD, 82), but it was unrebutted that this testimony related to Patent Owner’s “Boston-2” Dual Role USB Hub product. For example, the title page of Exhibit 2022 identifies the “Dual Role USB Hub” by Unwired Technology (Aptiv’s predecessor, *see* POR at 68 n.4); and Exhibit 2023, a product document relied on by Dr. Houh, uses the word “Boston” over 300 times,

with reference to the product.

Additionally, the Board discredits Patent Owner’s trial testimony, Exhibit 2042, for “fail[ing] to identify the witness or the proceeding in which the testimony was given.” (FWD, 81.) But this explanation is implausible, given that Exhibit 2042 is a transcript of live trial testimony, from which the identities of the witness (Mr. Dreon) and the proceeding are readily apparent. (*See, e.g.*, EX2042, 1, 174:22-181:16.) And although the Board alleges the testimony is unclear as to the product being discussed, Mr. Dreon specifically clarified on the record that his testimony relates to the dual role hub product. (EX2042, 181:14-16 (“Q. And the product you are talking about is a dual role hub? A. It is, yes.”).)

2. The Board Failed to Sufficiently Address Substantial Evidence of Secondary Considerations

The Board’s conclusory dismissal of Aptiv’s evidence of secondary considerations—in many cases, *unrebutted* evidence—is likewise erroneous. For example, the Board conceded that “Patent Owner succeeded where Petitioner for at least some time failed,” and that “Petitioner’s employees were skeptical about Patent Owner’s solution.” (FWD, 83.) But the Board wholly fails to address how these factors were considered, if at all, in the Board’s determination of obviousness; or to explain the basis for apparently weighing other secondary considerations factors more heavily in its analysis. Further, the Board did not dispute that Patent Owner had demonstrated commercial success, but chose to

“accord it little weight” because nexus had not been established. (FWD, 84.)

These deficiencies are analogous to *Verizon*, in which the Board erred by failing to consider an argument based on licensing evidence, even after the Board had determined that nexus had not been shown. Here, there are at least three secondary considerations factors inadequately addressed by the Board—far more than the single factor the Director identified in *Verizon*. The Final Written Decision should be vacated for at least the same reasons as in *Verizon*.

Dated: August 08, 2025

Respectfully submitted,

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Certificate of Service (37 C.F.R. § 42.6(e)(4))

I hereby certify that the attached PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW was served as of the below date via email (by agreement) on the following counsel of record for Petitioner:

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