

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. 11,681,643

Post Grant Review No. PGR2024-00011

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

U.S. Patent No. 11,681,643 (“the ’643 patent”), issued in June 2023, 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 who rely on chips made by the Petitioner, Microchip.

On July 9, 2025, the Board issued its Final Written Decision finding all challenged claims of the ’643 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 Final Written Decision is legally untenable, and inconsistent with recent Director determinations, for the following reasons.

First, the Final Written Decision improperly excused the Petitioner from a baseline statutory requirement. 35 U.S.C. § 322(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 particular steps of routing USB signals with a specific routing logic circuit. 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 to implement the claimed signal routing steps. As the Patent Owner's Response (Paper 25, "POR") demonstrated, the Petition (Paper 1, "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, 19-22.) The Petition did not identify any plausible location for the detection unit other than within a bridge circuit that fatally becomes bypassed by the operation of the switching circuit. Nor did the Petition explain how the detection unit of Chang II would be utilized to route the USB ports in the specific manner recited by claim 1; or how any such modification to Chang and Chang II would be within the scope of the POSITA's general knowledge. This amounts to a failure to identify, with particularity, how the proposed combination satisfied the claim limitations.

Second, 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, 39 (Patent Owner "improperly assumes that Petitioner bodily incorporated Chang II's detection unit into the

bridge in Chang’s Hub module.”).) But the Board’s conclusion is inconsistent with the Petition’s analysis for the claim 1 limitation that “the USB bridge includes a *bridge controller*.” Specifically, the Petition relied on Chang II’s control chip to meet the claimed bridge controller. (Petition, 64-65; FWD, 31, 34-35.) Because the Chang II control chip includes the detection unit, the USB bridge in Petitioner’s prior art combination logically includes the detection unit. The Board did not address this discrepancy and erred by relying on its faulty conclusion to invalidate the claims.

Third, the Board erred by disregarding Patent Owner’s un rebutted evidence of secondary considerations of non-obviousness and failing to adequately explain its decision to deny a presumption of nexus—analogue 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 un rebutted 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, 52.) 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. § 322(a)(3)

Under 35 U.S.C. § 322(a)(3), a PGR petition “may be considered only if ... the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” The Board 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), quoting *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 24 (Mar. 6, 2019); *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 signal routing limitations of the challenged claims. (POR, 19-22.) The limitation is not met by implementing any arbitrary signal routing circuit. The claims recite that the USB signals emanating from the consumer USB device must be routed to the first USB port via a routing logic circuit connected directly to a USB bridge and a USB hub connected to the USB bridge when the device is operating in a USB host mode. The claims also require the USB signals to be routed to the first USB port via the routing logic connected directly to the USB hub and thereby bypassing the USB bridge when the device is in a USB device mode. While the Petition identified generic switching elements to accomplish this signal routing, it relied on a detection unit circuit from Chang II to detect the USB host/device mode and control the generic routing switch. (Petition, 62, 66-67.) 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.”

(Petition, 48; POR, 19-22.)

Even on reply, Petitioner failed to definitively identify the location of the detection unit. Instead, Petitioner conceded there may be “multiple locations for the detection unit,” including within the bridge. (Paper 30, “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. § 322(a)(3).)

In finding that the Petition met the particularity requirement, the Board also committed legal error by shifting the burden of proof to the Patent Owner to determine how the detection unit could be used to meet the claimed signal routing scheme in the proffered combination. The error is particularly egregious here, where the Petitioner relies on combining the detection unit with circuitry that is not even found in the cited references, and is instead supplied by its expert’s own say-so. (POR, 2, 37-39.) Petitioner’s reliance on expert testimony to supply missing claim limitations promotes uncertainty and is unfair to the Patent Owner,¹ as the

¹ For example, the Petitioner’s only identification of a concrete location for the detection unit is as “part of the bridge’s ‘control chip’.” (Petition, 47; *see* Paper 40, “Sur-Reply”, 6-9.) With no other location description to rely upon, Patent Owner focused its analysis of the prior art assuming that the detection unit is within the bridge. The Board ultimately invalidated all the claims, finding it was

Office recently recognized by prohibiting this practice in future petitions. (July 31, 2025 USPTO Memorandum.) The Final Written Decision should be vacated with respect to the challenged claims.

B. 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, 39-40 (“We agree with Petitioner that Patent Owner’s argument in this regard improperly assumes that Petitioner bodily incorporated Chang II’s detection unit into the bridge in Chang’s Hub module.”).) But the Board failed to square this conclusion with claim 1, which recites that “the USB bridge includes a *bridge controller*.” Petitioner identified Chang II’s control chip as this claimed bridge controller in its prior art combination. (Petition, 65.) Chang II’s control chip includes the detection unit. (Petition, 47 (“[D]etection unit 134 is part of the bridge’s control chip.”) (internal quotations omitted).) Because Petitioner

erroneous for Patent Owner to assume the Petition’s detection unit was located in the bridge. (FWD, 39.) Had there been the required particularity in the Petition, Patent Owner would have had a fairer opportunity to address the prior art combination.

specifically located the control chip within the bridge in its prior art combination to satisfy the bridge controller limitation of claim 1, the detection unit in the control chip will logically also be within the bridge in this combination. The Petition expressly acknowledges the same, explaining that in this combination, “it would have been obvious” for the bridge in Chang to include detection unit logic to control “the switch’s select lines.” (Petition, 48.)

The Final Written Decision cited Petitioner’s explanation of the prior art combination to conclude that the combination met claim 1. (FWD, 31 (“Additionally, Petitioner contends Chang II’s control chip 13 corresponds to the claimed bridge controller...”).) The Board thus contradicted itself—it dismissed Petitioner’s own placement of the detection unit in the bridge as the Patent Owner’s improper assumption but then relied on that same premise to invalidate the claims. (FWD, 34-35.) The Board did not acknowledge or address the discrepancy. Nor could it identify any location, other than within the bridge, for the Petition’s detection unit. The Board’s invalidation of claim 1 thus demonstrates that it erred by discounting Patent Owner’s argument regarding the detection unit’s location, and by invalidating all claims based on that error. (FWD, 57-60.) The Final Written Decision should be vacated with respect to the challenged claims.

C. 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, 50-57.) The Board characterized Patent Owner's evidence as "weak" and "not well-supported," but failed to adequately support or explain this finding, or to justify discrediting record evidence that was unrebutted by Petitioner. (FWD, 50-57.) 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. *See 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 Aptiv's engineer, Michael Dreon. (POR, 68-70.) This evidence was un rebutted 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, 52-53.) But that paragraph included a 9-page claim chart that identified, on a per-limitation basis, how every element of claim 1 is met by the Aptiv Dual Role Hub product. (*See* EX2019, ¶ 156.) The Board faults Patent Owner for not comparing the product to more claims, (FWD at 52-53), but Patent Owner need not analyze 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).

Additionally, the Board discredits Patent Owner's cited trial testimony for

“fail[ing] to identify the witness or the proceeding in which the testimony was given.” (FWD, 52.) 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, 54.) 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, 55.)

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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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