

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROCHIP TECHNOLOGY INC.,
Petitioner,

v.

APTIV TECHNOLOGIES AG AND APTIV TECHNOLOGIES LIMITED,
Patent Owners.

Case No. IPR2024-00230
Patent No. 11,176,072

**PETITIONER'S RESPONSE TO
PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW**

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As authorized, Petitioner Microchip Technology Inc. respectfully submits this response to Aptiv Technologies AG's ("PO") request for Director Review.

I. INTRODUCTION

Lacking any meritorious basis to challenge the Board's thorough and well-reasoned Final Written Decision (Paper 59, "FWD"), PO throws multiple challenges at the wall and hoping that something sticks. PO raises many of the same failed merits arguments from the underlying proceeding. But the purpose of Director Review is not to relitigate the merits.

To the contrary, "Director Review of a Board's final decision ... shall be limited to decisions presenting (a) an abuse of discretion, (b) important issues of law or policy, (c) erroneous findings of material fact, or (d) erroneous conclusions of law." www.uspto.gov/patents/ptab/decisions/director-review-process, §II.B. PO fails to acknowledge—let alone satisfy—any of these criteria. The reason is simple—none are met.

The Petition presented two straightforward Grounds that both relied on Chang in view of Chang II. Paper 1 ("Pet."), 5. The Board's FWD is a run-of-the-mill decision that considered a large factual record (over 140 exhibits) and found that Ground 1 rendered the sole challenged claim unpatentable for multiple reasons. And it was not a close call. Indeed, the parties litigated the same Ground through final written decision in several other IPR/PGR proceedings (authored by

different judges) on related patents with the same result. IPR2024-00228, Paper 61; IPR2024-00229, Paper 59, PGR2024-00011, Paper 59.

Petitioner addresses below why each of PO's arguments fails.

II. ARGUMENT

A. PO's "Particularity" Argument is Baseless

As an initial matter, PO argues that "[t]he Petition should never have been instituted." Paper 60 ("Br."), 5. This is not the time¹ to reargue institution. The Board has issued the FWD and, as the Director has explained, "Director Review of a final decision is not an opportunity to raise issues related to ... institution." www.uspto.gov/patents/ptab/decisions/director-review-process, §III.B. The *Ikea* case cited by PO denied institution "in the interests of efficient administration of the Office." Br., 4 (citing *Ikea Supply AG v. Everlight Elecs. Co., Ltd*, IPR2024-00988, Paper 6 at 28-29 (Dec. 12, 2024)). But rehashing institution here would run counter to "efficient administration of the Office" and waste the extensive resources the Board (and parties) have invested in the proceeding, especially given that the district court stayed the case in deference to the PTAB.

¹ www.uspto.gov/patents/ptab/decisions/director-review-process, §III.B (a request challenging institution "must be filed within the time period set forth in 37 C.F.R. § 42.71(d)," which is "14 days [from] the entry of [] a decision to institute a trial").

PO's argument is that the Petition was "ambiguous about the location of the detection unit, and how it would control the switching functionality," and thus did not provide the requisite "particularity" under 35 U.S.C. §312(a)(3). Br., 5. This argument does not pass the red-face test and fails for numerous reasons.

First, the '072 patent's sole claim does not even recite a "detection unit," let alone any particular location for the unrecited detection unit. *See* EX1007, cl. 1. Thus, PO's argument fails because it is premised on a non-existent claim limitation. The Board agreed, stating that "[c]laim 1 does not recite detecting the mode, nor does it recite a detection unit." FWD, 46.

PO's argument that "the detection unit is a component of the Petitioner's cited prior art (Chang II), not the claimed invention" (Br. 7) is self-defeating. Indeed, as PO admits, because a detection unit is "not [a component of] the claimed invention," "it would be nonsensical to expect or require a patent's claims to recite features of the prior art." *Id.* Likewise, the prior art Grounds need not provide a detailed explanation of unclaimed features. PO's argument fails because there was no need for Petitioner to discuss a detection unit at all, much less do so with "particularity." FWD, 46.

Only by misleadingly cropping the FWD can PO assert that the Board somehow excused (or needed to excuse) a particularity requirement. Br., 6 (citing FWD, 46). After explaining that the claims do not require a detection unit, the

Board stated: “Thus, Petitioner does not overly focus on the location of the detection unit.” FWD, 46. In context, all the Board was conveying was the uncontroversial proposition that the requisite particularity necessarily depends on a claim’s specificity (*i.e.*, a petitioner’s showing must be commensurate with the claim scope and level of detail therein).² Regardless, as discussed below, Petitioner was “particular” as to the detection unit and its relationship to a mux.

Second, while not required, Petitioner demonstrated how the prior art satisfied the claims with more “particularity”³ (*i.e.*, more detail/specificity) than the ’072 patent, including for a detection unit and multiplexing switch. This is beyond dispute. The ’072 patent is ***completely silent*** regarding a detection unit (much less its location) and makes only passing reference to “USB [] multiplexing switches” (let alone how they are configured). *See generally* EX1009. Thus, PO employs a double standard by requiring more disclosure from the prior art than the challenged

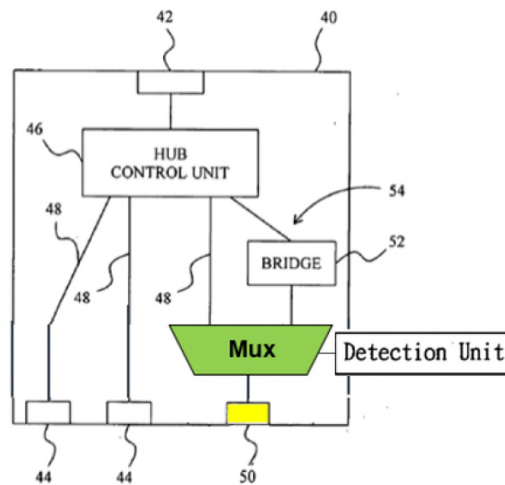
² If a claim recited a “nail,” the petitioner’s prior art need not show the size, shape, length, weight, cost, etc. of the nail, unless the claim specified those properties.

³ The *Ikea* case PO cites (Br., 4) could hardly be more irrelevant. In *Ikea*, the lack of “particularity” resulted from “Petitioner compound[ing] the multiplicity of potential combinations ... [by] combining the 25 combinations of prior art asserted in Ground 3 with Shelton, Inoue, Terashima, Sugimoto, and/or the level of ordinary skill.” IPR2024-00988, Paper 6, 28-29. Here, by contrast, Petitioner had just two Grounds that both relied on Chang in view of Chang II. Pet., 5.

patent provides. *In re Paulsen*, 30 F.3d 1475, 1481 n.9 (Fed. Cir. 1994).

Nevertheless, Petitioner provided more detail than the '072 patent about host/device detection and USB mux operation, routing, and configuration.

Compare EX1009, Fig. 4 *with* Pet., §§III.B, III.B.1-2, VII.A.1, VII.A.2.e, VII.A.2.g, VII.A.2.i and EX1013, §§VI.B, VI.B.1-2, IX, XIV.A.1.e, XIV.A.1.g, XIV.A.1.i. Indeed, PO does not contest that the Petition (and Chang II discussed therein) plainly disclose a “detection unit.” Rather, PO complains that Petitioner “failed to identify the location of the detection unit.” Br., 5. But PO’s next sentence contradicts this assertion, admitting that Petitioner identified “three such [locations].”⁴ *Id.*, 6. And Petitioner included the figure below illustrating one exemplary arrangement. EX1013, ¶192.



Contrary to PO’s assertion, the detection unit locations were disclosed in

⁴PO’s own expert admitted that “a POSITA would understand that the location of the signal detection circuit was a matter of design choice.” EX2001, ¶116.

Petitioner's opening papers. *See* Pet., 47 at fn.17 (pin-citing EX1013, ¶¶192-193 (explaining that “[the] detection circuitry could be deployed in several obvious ways,” including “associated with the mux,” “between the dual-role port 50 and mux,” and “in the bridge”)).

Third, PO's argument fails because the Petition demonstrated why “[a] POSITA would have understood [Chang II's switching] functionality to be implemented by some type of switch, mux, or crossbar.” Pet., 37 (citing EX1013, ¶165). The Board cited copious evidence that off-the-shelf USB multiplexers were well-known and commercially available in 2013 (FWD, 37 (citing, *e.g.*, EX1059 (listing dozens of USB mux products))), and that “it was well-known to use multiplexing switches for the specific purpose of routing USB communications emanating from a product to the appropriate path upon detection of whether the product is operating in host or device mode” (FWD, 37 (cite omitted). Given Chang II's extensive teachings about switching between host-to-host and host-to-device paths, the Board properly concluded “that it would have been obvious to employ multiplexing switches for switching between the bridge path (when a host connects) or bypass path (when a device connects).” FWD, 38.

PO's insinuation that Petitioner pulled a USB routing switch from the ether is absurd. Indeed, but PO's own expert testified that Chang II teaches a switch. EX1084, 205-207 (admitting that “Chang II is already referencing that there's a

switch”). As the Board stated, “[w]e also find unavailing [PO]’s argument that the claimed multiplexing switches ‘are absent from Chang and Chang II, and are instead supplied from [one of ordinary skill’s] alleged knowledge.’ [] As we discuss above, one of ordinary skill would have understood that using multiplexing switches—in lieu of Chang II’s bypass circuit unit and detection unit—for switching between the paths was a suitable option, which is sufficient.” FWD, 41.

Fourth, PO cites a PTO memorandum (issued *after* the FWD and *long after* the Petition was filed) changing how the PTAB will apply Rule 42.104(b) to IPR petitions “filed on or after September 1, 2025.” July 31, 2025 PTO Memorandum, 3; Br., 4, 8-9. Even if PO’s gripe had merit under the yet-to-be-implemented guidance (which is not the case), it would be manifestly unfair, arbitrary, and capricious to retroactively apply such a rule to the already decided FWD. This is especially true here, where the PTO’s guidance when the IPR Petition was filed stated that “the Board should not deny a petition in which an applicant points to general knowledge and/or a patentee’s admissions regarding the scope and content of the prior art to satisfy a claim limitation.” June 9, 2022 PTO Memorandum, 6.

Fifth, PO argues that the Board “shift[ed] the burden of proof to [PO] to determine how the detection unit could be used to meet the claimed signal routing scheme in the proffered combination.” Br., 8. Among other reasons, this argument fails because the claim requires “routing the [] USB signal via the USB

multiplexing switches ...” EX1009, cl. 1. PO ignores that Petitioner relied on a mux to perform the actual “routing” of signals. As seen below, the Petition showed that a “Mux”—not a “detection unit”—performs the claimed “routing.”

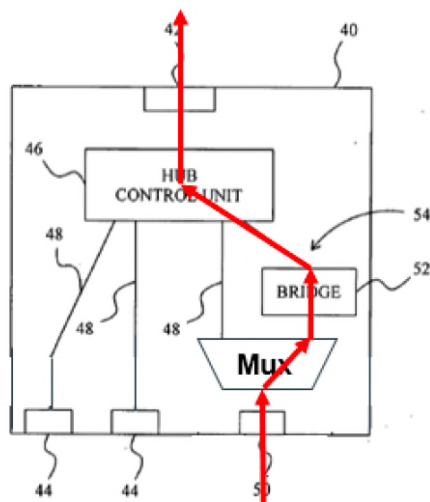


FIG. 3

Pet., 67 (host-to-host path)

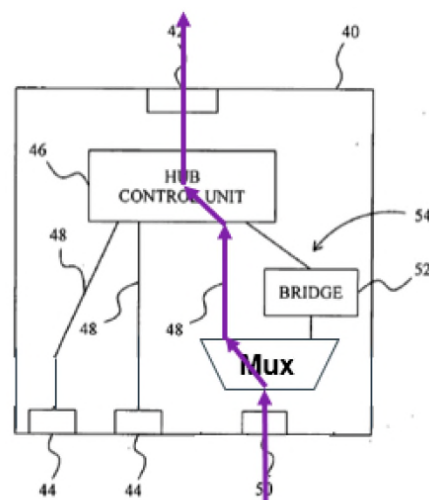


FIG. 3

Pet., 71 (host-to-device path)

The Director should reject PO’s bait-and-switch tactic, which improperly conflates/substitutes detection unit and mux. Far from “shifting the burden of proof,” Petitioner provided more granularity about both a mux and detection unit than the patent itself. Indeed, the Board had no problem understanding Petitioner’s argument and expressly rejected PO’s argument. FWD, 43 (“We credit Mr. Welch’s testimony that the detection unit ultimately controls the Mux’s select line, as it is consistent with Chang II’s teachings. Ex. 1013, ¶193. And as we discuss above, a 2:1 multiplexing switch’s ‘sel’ control signal simply has a zero or one value to select between the two output paths. Ex. 1013, ¶89. In light of the teachings, we find that it would not have been uniquely challenging or difficult for

[a POSITA] to add a Mux—a known, suitable option—to Chang and Chang II’s teachings in the manner Petitioner proposes resulting in the claimed switching”).

B. PO’s Secondary Considerations Assertions are Baseless

PO contends that “The Board Erred by Disregarding Unrebutted Evidence of Secondary Considerations Without Adequate Explanation.” Br., 9. This assertion is not credible. Petitioner thoroughly addressed each secondary consideration PO argued, not only as to nexus but also the underlying merits.⁵ *E.g.*, Paper 30 (Reply), 23-29. So, too, did the Board. FWD, 15-25.

PO’s concession that “[t]he Board acknowledged that at least some of [PO]’s secondary considerations arguments were meritorious” and “[gave] ‘some weight’ to those arguments” (Br., 9) makes Petitioner’s point—*i.e.*, the Board did not “disregard[] the supporting evidence with little justification” (*id.*) as PO asserts, but conducted a wholistic analysis and relied on specific countervailing evidence for its findings regarding individual secondary considerations. FWD, 15-25. Indeed, the Board analyzed secondary considerations before the prior art. *Id.*

Even if the Board had not found shortcomings with PO’s nexus arguments/evidence, it found numerous flaws with PO’s arguments and evidence regarding individual secondary considerations. Thus, even if PO established some

⁵ Tellingly, PO’s expert admitted he had no opinion on commercial acquiescence, unexpected results, and other secondary considerations. EX1085, 302:6-22, 34:25.

showing of nexus—it did not—PO would still lose and a remand would be futile.

1. PO’s Nexus Arguments Are Baseless

PO’s entire nexus argument—at the end of the POR—was under 2-pages and largely comprised of case law cites. Paper 25 (“POR”), 72-73. In other words, PO relegated nexus to an afterthought. PO argues the Board erred because “[PO]’s showing of nexus was backed by substantial evidence.” Br., 10. PO’s argument fails for three reasons: (1) PO never made a presumption of nexus argument in its POR; (2) PO’s argument and evidence was improperly incorporated by reference; and (3) PO’s argument rests on a false premise (*viz.*, an incorrect legal standard).

First, PO argued during the IPR that “secondary considerations are the ‘direct result of the unique characteristics of the claimed invention’” and that the “specific arrangement claimed in the patent” provided nexus. POR, 73. But PO’s Director Review request focuses only on “rebuttable presumption of nexus” (Br., 10-12), *an argument that is completely absent from its POR* (*see* POR, 72-73). It was not until PO’s sur-reply that it even asserted that “Aptiv’s dual role hub ... warrants a presumption of nexus.” Paper 40 (“Sur-reply”), 25. But that is far too late to raise a new argument. PTAB Consolidated Trial Practice Guide (November, 2019), 74 (“[A] sur-reply that raises a new issue or belatedly presents evidence may not be considered. The Board is not required to attempt to sort proper from improper portions of the reply or sur-reply.”).

Second, the Board properly criticized PO’s sole citation to a single paragraph (spanning 5-pages in its expert report) as procedurally insufficient and an improper incorporation by reference. FWD, 16 (“[PO] cites to a single paragraph in this declaration, without providing any specific arguments in its Response that its product practices claim 1. [] [PO] incorporates its arguments by reference, which is not permitted.”). The Board was well within its discretion to apply the rules and “not consider these arguments.” *Id.* Thus, the Board was “not persuaded that [PO]’s product practices claim 1,” which is an independent basis to deny Director Review.⁶ *Id.* But the Board went further, explaining that “even assuming that [PO]’s product practices claim 1—which has not been shown—[PO] does not provide any detailed analysis showing that its product is coextensive with claim 1 to support a presumption.” *Id.*, 17. As the Board explained, PO’s “arguments do not even allege that [PO]’s dual role hub product does not also contain significant features that are unclaimed, which is a required showing.” *Id.*

Third, the premise of PO’s argument is that the Director should vacate (or reverse) if substantial evidence supported its nexus assertion. *E.g.*, Br., 10, 12.

⁶ The Board further explained that “claim 1 is silent as to CarPlay, and the dual-role hub allowing for CarPlay on all ports is not required by claim 1.” FWD, 23. This is for the simple reason that claim 1 does not even require multiple downstream ports. EX1009, cl. 1.

But the relevant question is not whether substantial evidence could support PO's failed argument, but whether substantial evidence supports the Board's actual findings in Petitioner's favor. In other words, PO's framing would only be correct had it prevailed before the Board, but it did not. When the correct question is addressed, it is plain that there was no abuse of discretion or legal error. PO asserts its "[secondary consideration] evidence was un rebutted." Br., 10. For the reasons explained below (§II.D.2), this assertion fails the red face test. The analysis below also disposes of PO's one-line throw away argument that "the Board fail[ed] to consider that nexus can nevertheless be established by 'showing that the evidence of secondary considerations is the direct result of the unique characteristics of the claimed invention.'" *Id.*, 12.

Indeed, PO's own witness (Mr. Dreon) testified that other aspects of PO's product (undisputedly not claimed) were "very important" to customers. EX2042, 182:10-23 (the "cosmetic component" is "very important to our customers," as are "matching [] colors," "texture," "illumination," and "intensity within the dashboard"). Further, it was undisputed PO "benefited from a head start due to early, insider access to Apple's confidential CarPlay requirements through the Jaguar car company." FWD, 23. And PO ignores the impact of other factors such as Apple's brand name, lower pricing, etc. *Id.*

Against this counter-evidence, it cannot be said with a straight face that PO's

evidence was “unrebutted” or ignored. The Board’s conclusions in Petitioner’s favor rest on solid footing and are supported by substantial evidence. FWD, 15-25.

2. The Board Evaluated All of PO’s Secondary Considerations

PO asserts that the Board “Failed to Sufficiently Address” the alleged secondary considerations. Br., 12. Not so. In addition to nexus failures, the Board found that the lion’s share of PO’s secondary considerations fail for other reasons as well. For example, the Board expressly found that even if PO’s “dual role hub product practices claim 1, ... we find that [PO] does not show that there was a *long-felt need*.” FWD, 18-19. The Board explained that, giving PO every benefit of the doubt, the alleged need existed for a relatively short period of time which is “not long-felt under the circumstances here.” *Id.*, 19. Regarding *industry praise*, the Board “agree[d] with Petitioner and [found] that the Judge’s Citation for the award states that [PO] solved the CarPlay integration problem ‘at a lower cost, in a smaller package and with all functionality.’ [] Thus, Petitioner’s criticism of this purported evidence of industry praise has merit.” *Id.*, 24.

And with respect to alleged *copying*, in addition to PO’s “[failure to] show that its product practices claim 1,” the Board rejected PO’s copying arguments for multiple reasons. FWD, 24-25. The Board found Petitioner’s “investigat[ion]” of PO’s product was “insufficient to show copying.” *Id.*, 24; *see also id.*, 25 (“Nor does the presentation show sufficient access to [PO]’s dual-hub product. Rather,

the presentation shows that Petitioner developed a similar solution, which could support that such a solution is obvious instead of copied.”). Moreover, the Board found the alleged activity PO relies on “occurred in July 2016 after Petitioner ‘finished [its] device and [was] making it available [for customer testing].’” *Id.*

Concerning *skepticism/failure of others*, the Board gave “some weight” to PO’s assertions, but not more because of Petitioner’s evidence that any skepticism resulted from a miscommunication with Apple, rather than skepticism on the technical merits. *Id.*, 21 (“[Some] emails suggest that the concern related to what Apple CarPlay allowed, rather than the difficulty in enabling persistent downstream USB connectivity.”). Regarding *commercial success*, the Board “agree[d] with Petitioner that we should not discount the impact of Apple’s certification of [PO]’s dual role hub product,” that “claim 1 is silent as to CarPlay,” and that PO’s “dual-role hub allowing for CarPlay on all ports is not required by claim 1.” *Id.*, 23. In sum, PO’s assertion that the Board did not perform an analysis and that PO’s evidence is “unrebutted” is baseless.

Finally, PO seeks to analogize this case to *Verizon Connect Inc. v. Omega Patents, LLC*, IPR2023-01162. Br., 3, 9-10. But this case is nothing like *Verizon*. Not even close. To begin, validity of the patent in *Verizon* had been confirmed in six prior challenges (including district court, IPR, and *ex parte* reexam) with several decisions relying on secondary considerations. IPR2023-01162, Paper 37,

3 and Paper 38, 2.⁷ By contrast, Petitioner’s IPR is the first challenge to the ’072 patent so the Board was not creating inconsistent results. To the contrary, a finding that there was nexus and/or meritorious secondary considerations would conflict with several other PTAB decisions which found the opposite on similar evidence for other family members. IPR2024-00228, Paper 61; IPR2024-00229, Paper 59; PGR2024-00011, Paper 59; and IPR2024-00495, Paper 51.

Further, unlike in *Verizon* where the patentee made out its case in the POR brief, PO’s presumption of nexus assertion first appeared in its Sur-reply and relies on improper incorporation by reference as already discussed. This alone is dispositive in Petitioner’s favor. And in *Verizon*, the Director noted the patentee’s extensive licensing. IPR2023-01162, Paper 37, 2-3. But here it is undisputed that PO has never licensed the challenged patent. EX1085, 302:6-22, 303:4-304:25.

Additionally, the Board separately analyzed each secondary consideration and overwhelmingly found they lacked merit independent of nexus. As such, even if some nexus existed, the Board’s decision would stand. FWD, 18-25.

III. CONCLUSION

The Director should deny PO’s request for Director Review.

⁷ The Director noted a “jury verdict finding the claims not invalid and highlighting objective indicia of non-obviousness, and [an *ex parte* reexam] decision ... [with persuasive] objective indicia of nonobviousness.” IPR2023-01162, Paper 37, 2.

Respectfully submitted,

Dated: August 21, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that on August 21, 2025, a copy of the following was served in its entirety via electronic mail, upon the following attorneys of record for the Patent Owner:

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