

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROCHIP TECHNOLOGY INC.,
Petitioner,

v.

APTIV TECHNOLOGIES AG,
Patent Owner.

Case No. IPR2024-00495
U.S. Patent No. 9,619,420

**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. After PO filed the instant Director Review request, the Director denied PO's requests for Director Review in four IPR/PGR proceedings on related patents which raised substantially overlapping issues. *See* IPR2024-00228, Paper 64. Indeed, IPR2024-00228 concerned the same patent at issue here and identical prior art grounds. PO subsequently emailed the Director to withdraw its current Director Review request (*see* EX3101). Because the Director has not yet acted on PO's email, Petitioner submits this Response brief in an abundance of caution.

I. INTRODUCTION

Lacking any meritorious basis to challenge the Board's thorough and well-reasoned Final Written Decision (Paper 51, "FWD"), PO takes a kitchen-sink approach, throwing everything at the wall and hoping that something sticks. Excluding sub-parts, PO raises three challenges, representing most of PO's 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.

PO first argues “settled expectations,” as if this were a discretionary denial challenge to institution. Paper 53 (“Br.”), 1. But the Board issued the FWD, where settled expectations play no role. 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. Allowing settled expectations to overturn the well-reasoned FWD would be a dramatic departure from PTAB policy and precedent. It would also 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.

The Petition presented a single, straightforward Ground—obviousness over Chang in view of Chang II. Paper 2 (“Pet.”), 4. The Board’s FWD is a run-of-the-mill decision that considered a large factual record (over 140 exhibits) and found against PO for multiple reasons. And it was not a close call. The Board’s FWD (spanning 83-pages) found by “a ***strong preponderance of the evidence*** [] that the combination of Chang and Chang II teaches all the limitations of challenged claims 13 and 14 and that a skilled artisan would have been motivated to combine the relied-upon teachings of Chang and Chang II as set forth in the challenged claims.” FWD, 76 (emphasis added). Indeed, the parties litigated the same Ground through

final written decision in four other IPR/PGR proceedings (authored by different judges) on related patents with the same result. IPR2024-00228, Paper 61; IPR2024-00229, Paper 59; IPR2024-00230, 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

PO begins by arguing that "[t]he Petition should never have been instituted"¹ because it "was ambiguous about the location of the detection unit and how it would be used to control the connecting functionality," and thus did not provide the requisite "particularity" under 35 U.S.C. §312(a)(3). Br., 5-6. This argument does not pass the red-face test and fails for numerous reasons.

First, claims 13 and 14 of the '420 patent do not even recite a "detection unit." *See generally* EX1003. Thus, PO's argument fails because it is premised on a non-existent claim limitation. The Board agreed, stating that "the claims do not recite a detection unit." FWD, 29-30. PO argues that claim 13 recites "*determining when the consumer device is operating in a USB host mode and in a*

¹ As noted, this is not the time to reargue institution.

www.uspto.gov/patents/ptab/decisions/director-review-process, §III.B (a request "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").

USB device mode,” as if that were synonymous with a detection unit. Br., 5-6 (emphasis in original). But this argument fails for at least two reasons: (1) it stands in contrast to Aptiv’s ’643 patent claims which do actually recite a “signal detection circuit” (*e.g.*, EX1011 (’643 patent), cl. 1); and (2) it is belied by the ’420 patent itself, which is completely silent regarding a detection unit.

PO also notes that claim 14 specifies that the USB routing switch performs “the step of determining if when the consumer device is operating in the USB host mode or in the USB device mode.” Br., 6. PO suggests this is not a conventional arrangement. *Id.* But PO’s **own expert** (Dr. Houh) directly contradicted PO’s new position, testifying that “a POSITA would understand that the location of the signal detection circuit was a matter of design choice. Because of the functional relationship between the signal detection circuit and the routing switch, it would be natural to implement a routing switch that includes the signal detection circuit.” EX1105, ¶116. PO’s argument—belied by its own expert—is baseless.

PO’s argument that “the detection unit is a component of the Petitioner’s cited prior art (Chang II), not the claimed invention” (Br., 7-8) is self-defeating. Indeed, 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 Ground 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.”

PO makes much of the Board’s passing reference to “particularity.”² Br., 7 (citing FWD, 29). PO’s argument is much ado about nothing. 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). FWD, 29-30 (“[T]he fundamental flaw in [PO’s] argument is the claims do not recite a detection unit and it was unnecessary for Petitioner to be particular as to the detection unit in order to establish unpatentability”).³ Regardless, as discussed below, Petitioner was “particular” as to the detection unit.

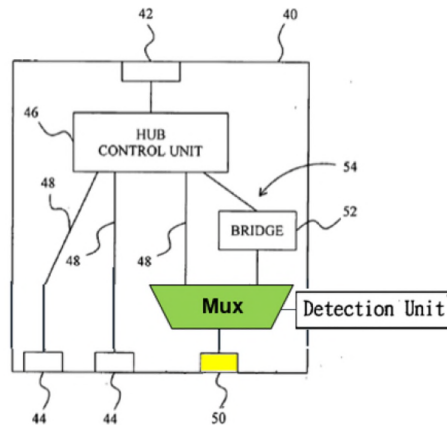
Second, while not required to do so, Petitioner demonstrated how the prior art satisfied the claims with more “particularity” (*i.e.*, more detail) than the ’420 patent, including for a detection unit. This is beyond dispute. The ’420

² Only by misleadingly cropping the FWD can PO assert that the Board found a lack of particularity. Br., 7. But the Board made no such finding. Rather, in context, all the Board said was that if there were a lack of particularity, it would be “understandable as the claims also lack particularity as to the detection unit.” FWD, 29. Indeed, the Board found that “the Petition is particular as to the limitations recited in the challenged claims.” *Id.*, 30

³ 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.

specification is **completely silent** regarding a detection unit (much less its location) and is completely devoid of details on how the claimed USB routing switch “connect[s] the consumer device” on the downstream port to the USB hub. *See generally* EX1003. Thus, PO employs a double standard by requiring more disclosure from the prior art than the challenged patent provides. *In re Paulsen*, 30 F.3d 1475, 1481 n.9 (Fed. Cir. 1994).

Nevertheless, Petitioner provided more detail than the ’420 patent about host/device detection and USB crossbar/multiplexer operation, routing, and configuration. *Compare* EX1003, Fig. 4 *with* Pet., §§III.B, III.B.1-2, VII.A.1, VII.A.2.b-d and EX1013, §§VI.B, VI.B.1-2, IX, XIV.A.1.b-d. Indeed, PO does not contest that the Petition (and the Chang II reference discussed therein) plainly disclose a “detection unit.” Rather, PO complains that Petitioner “failed to identify the location of the detection unit.” Br., 7 at fn. 1. But PO’s next sentence contradicts this assertion, admitting that Petitioner identified “multiple possible locations for the detection unit.” *Id.* Contrary to PO’s assertion, these locations were disclosed in Petitioner’s opening papers. *See* Pet., 42 at fn.11 (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”)). Petitioner included the figure below illustrating one exemplary arrangement. *Id.*, ¶192.



To be sure, as noted above, claim 14 specifies that “determining if when the consumer device is operating in the USB host mode or in the USB device mode is performed by the USB routing switch.” EX1003, cl. 14. And Petitioner provided a more detailed discussion for this claim, explaining why that limitation would have been obvious, including because of Chang and Chang II’s teachings regarding integrating multiple functions/components on a single chip. *E.g.*, Pet., 69-71.

Third, PO’s insinuation that Petitioner pulled a USB routing switch from the ether is absurd. Indeed, PO’s own expert testified that Chang II teaches a switch. EX1084, 205-207 (“Chang II is already referencing that there’s a switch”). The Board cited copious evidence that off-the-shelf USB switches were well-known, commercially available, and easy to use (FWD, 51 (citing, EX1059 (listing dozens of USB mux products), EX1060; EX1063, 7-8; EX1068, 2; EX1017, ¶57, Fig. 1; EX1040, 4:39-5:29; EX1041, 1:20-36; EX1052, 3:7-20, Fig. 1; EX1053, ¶¶31-34, Fig. 1; EX1055, 284-288)), and concluded that “Petitioner’s argument that a skilled artisan would have been motivated to modify Chang to include switching

functionality as taught by Chang II [is] supported by other substantial evidence appears well-reasoned and well-supported” (FWD, 51). Given Chang II’s extensive teachings about switching between host- and device paths with the aid of a detection unit, the Board’s conclusion was indeed “well supported.”

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. Even if PO’s gripe had merit under the yet-to-be-implemented guidance (which is not the case as explained above), 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.

B. The Board Did Not “Misappl[y]” the Law or “Improperly Shift[] the Burden of Proof”

PO asserts it was necessary “to be particular as to the detection unit, because the detection unit forms and supports the grounds on which the challenge [is based].” Br., 9. In addition to the reasons discussed in §II.A, PO’s argument fails because it rests on the false premise that Petitioner pulled a detection unit out of thin air. But this is demonstrably incorrect. For example, when discussing the

“determining ...” limitation of element 13[a], the Petition cited Chang II’s “detection unit 134,” as shown below.

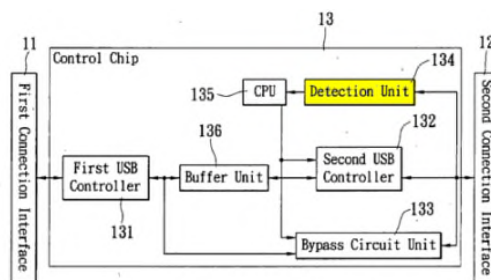


FIG. 5

Pet. 59 (citing EX1015, Fig. 5 (annotated)); *id.*, 58-59 (“Chang II discloses a ‘detection unit’ that ‘automatically ... determine[s] the type of device.’”).

The Board did not “misapply” the law in finding that Chang II’s expressly disclosed host/device detection unit “determin[es] when the consumer device is operating in a USB host mode and in a USB device mode.” FWD, 34; *id.* (“Petitioner points to [Chang II’s] detection unit 134 [] as making the recited determination [and ¶¶38-40] of Chang II as ‘describ[ing] operational details of detection unit 134.’ ... [W]e find that ... the cited art teaches this limitation”).

PO also argues that the Board “shift[ed] the burden of proof to [PO], by requiring [PO] to determine how the detection unit could be used to meet the claimed method in the proffered combination.” Br., 9. But Chang II itself explains how the role and function of the detection unit. Pet., 58-59 (citing EX1015, [0038]-[0040] (explaining host/device detection)). Far from “shifting the burden of proof” to PO to guess about a detection unit, Petitioner provided more

granularity than the patent itself, including how the results of host/device detection are used to route signals in a switch. *Id.*, 9-11, 32-33, 58-59. Indeed, the Board had no problem understanding Petitioner’s argument. FWD, 34-36, 43-46.

C. PO’s Secondary Considerations Assertions are Baseless

PO contends that “The Board Erred by Disregarding Unrebutted Evidence of Secondary Considerations Without Adequate Explanation.” Br., 10. This assertion fails the red face test. Petitioner thoroughly addressed each secondary consideration PO argued, not only as to nexus but also the underlying merits.⁴ *E.g.*, Paper 25 (“Reply”), 25-32. So, too, did the Board. FWD, 55-62.

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., 10) makes Petitioner’s point—*i.e.*, the Board did not “summarily dismiss[] all of [PO’s secondary consideration] arguments for purported lack of nexus” (*id.*) as PO asserts, but conducted a wholistic analysis. FWD, 55-62. The Board “analyze[d] the arguments and evidence related to [] secondary considerations” and made its unpatentability determination “based on consideration of all the arguments and evidence as a whole.” *Id.*, 18.

Further, the Board expressly found that “[PO]’s argument and evidence

⁴ Tellingly, PO’s expert admitted he had no opinion on commercial acquiescence, unexpected results, and other secondary considerations. EX1085, 302:6-22, 34:25.

relating to nexus is limited to claims 18-20.” FWD, 57. But even if the Board (1) had not found shortcomings with PO’s nexus assertions and flaws for each secondary consideration, and (2) had found that PO’s nexus arguments applied to claims 18-20, the Board noted that “a strong showing of obviousness may stand even in the face of considerable [secondary considerations] evidence.” *Id.*, 55. In other words, PO would still lose and a remand would be futile.

1. PO’s Nexus Arguments Are Baseless

PO argues that its “showing of nexus for claims 13 and 14 was backed by substantial evidence,” and that “[t]his evidence was unrebutted by Petitioner.” Br., 11. This assertion is frivolous. PO did not even attempt to show nexus for claims 13-14, nor was its “evidence” of nexus for claims 18-20 unrebutted.

Two sets of claims were challenged in the IPR: (1) independent claim 13 (and its dependent claim 14); and (2) independent claim 18 (and its dependent claims 19-20). Pet., 48-71 (claims 13-14) and 71-87 (claims 18-20). The Board found claims 18-20 not unpatentable for reasons entirely unrelated to secondary considerations (*i.e.*, a claim construction issue). FWD, 62-76. But Petitioner’s attempted showing of nexus was limited to claims 18-20. Paper 20 (“POR”), 80-96. Indeed, the PTAB found that “[PO]’s argument and evidence relating to nexus is limited to claims 18-20.” FWD, 57. The PTAB examined PO’s expert declaration and found that it too only addressed claims 18-20. *Id.*, 57-58 (“The

cited paragraphs are limited to providing an analysis of only [’420 patent] claims 18-20”). PO cannot shift blame onto the Board for not crediting arguments about claims 13-14 that PO never made. Not can PO argue that its nexus arguments for claim 18-20 necessarily apply to claim 13-14 when the Board found sufficient distinctions in the claim language to uphold the patentability of claims 18-20 (*i.e.*, the transitive property does not apply). That alone disposes of PO’s nexus gripe.

But PO’s argument fails for other reasons as well, both procedural and substantive. Taking the procedural point first, the premise of PO’s argument is that the Director should vacate (or reverse) if substantial evidence supported its nexus assertion. *E.g.*, Br., 4, 11, 13. This argument fails because it rests on a false premise (*viz.*, an incorrect legal standard). 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 if 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. In other words, PO loses on the merits because the Board addressed PO’s nexus arguments for claims 18-20, even though doing so was unnecessary for its conclusion that those claims were not unpatentable. FWD, 57-58. PO cites the testimony of Mr. Dreon (Br., 11-12) to support the claim that its “[secondary consideration] evidence was unrebutted” (*id.*, 11). This assertion is

not credible.⁵ The Board addressed Mr. Dreon’s fact testimony, finding it “based on hearsay” and that “the witness does not establish [] any first-hand knowledge.” FWD, 61. Moreover, Aptiv’s dual-role hub cannot practice claims 18, 19, or 20 because they require “a central vehicle microcontroller” (element 18[b]). But it is undisputed that PO does not sell cars or “central vehicle microcontroller[s],” and thus cannot practice the claims. Against this counter-evidence, it cannot be said with a straight face that PO’s evidence was “unrebutted” or ignored by the Board.

Moreover, 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”). And PO ignores the impact of other factors such as Apple’s brand name, lower pricing, etc. Reply, 28-29. 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, 60.

In summary, the Board’s conclusions rest on solid footing. FWD, 57-58.

⁵ Aptiv points to previously uncited court testimony from Mr. Dreon to rebut the Board’s observation that it was unclear what product he was discussing. Br., 12. But Mr. Dreon testified PO had “hundreds” of dual role hub models, which required specialized (but unclaimed) software. EX2042, 196:1-197:24, 198:1-7.

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

PO asserts that the Board “Failed to Sufficiently Address” the alleged secondary considerations. Br., 13. 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 found that “[PO] fail[ed] to make a showing that there was any [*long-felt need*]” because the alleged need existed for “mere months before the ’420 patent’s priority date.” FWD, 58. Regarding *industry praise*, the Board found that “Petitioner’s criticism of this purported evidence of industry praise has merit” for a host of reasons, and that “[PO]’s argument is based on hearsay and should not be considered.” *Id.*, 61.

And with respect to alleged *copying*, the Board found that “[PO]’s purported evidence of alleged copying by Petitioner is entitled to little or no weight because it is not well-supported.” FWD, 61-62. The Board credited Petitioner’s argument and “evidence that [PO] has th[e] timing wrong” (*viz.*, that Petitioner had already developed its product beforehand). *Id.*, 62. 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 any technical skepticism. *Id.*, 59. 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 the *Verizon* case. Br., 10-11, 13.

But this case is nothing like *Verizon*. Not even close. To begin, the validity of the challenged patent in *Verizon* had been confirmed in six prior challenges (including district court, *inter partes* review, and *ex parte* reexam) with several decisions relying on secondary considerations.⁶ See IPR2023-01162, Paper 37, 3 and Paper 38, 2. By contrast, Petitioner’s IPR is the first challenge to ’420 patent claims 13-14 so the Board was not creating inconsistent results.

Further, unlike in *Verizon* where the patentee addressed the relevant claims in its POR brief, PO ignored ’420 claims 13-14 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. Even if some nexus existed, the Board’s decision would stand given Petitioner’s “strong” obviousness showing on the technical merits. FWD, 65, 76.

III. CONCLUSION

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

⁶ 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: September 25, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that on September 25, 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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