

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIZIO, INC.,
Petitioner

v.

POLARIS POWERLED TECHNOLOGIES, LLC,
Patent Owner

Case IPR2024-00073
U.S. Patent No. 7,843,148

PATENT OWNER'S SUR-REPLY

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Exhibit No.	Description
2001	Declaration of Aidan M. Brewster in Support of <i>Pro Hac Vice</i> Admission
2002	Declaration of Thomas L. Credelle
2003	<i>Curriculum Vitae</i> of Thomas L. Credelle
2004	Transcript of the Deposition of Regan A. Zane, Ph.D.
2005	U.S. Patent No. 7,948,468 to Zane et al., issued May 24, 2011
2006	“Comprehensive Dictionary of Electrical Engineering,” Taylor & Francis Group, LLC, 2 nd Edition (2005) (Excerpts)
2007	Final Rulings on Markman/Claim Construction, Polaris PowerLED Techs., LLC v. VIZIO, Inc., No. 2:23-cv-3478 (C.D. Cal. May 8, 2024)
2008	U.S. Patent No. 4,156,288 to Spandorfer, issued May 22, 1979
2009	U.S. Patent No. 3,166,715 to Cogar, issued January 19, 1965
2010	Full Copy of “Comprehensive Dictionary of Electrical Engineering,” Taylor & Francis Group, LLC, 2 nd Edition (2005) (<i>served not filed</i>)
2011	Transcript of the Second Deposition of Regan A. Zane, Ph.D., October 7, 2024

I. INTRODUCTION

Petitioner's Reply fails to cure the fatal deficiencies raised in the Patent Owner's ("PO") Response regarding the Thomas grounds, so the Board should decline to find any claim unpatentable over the Thomas reference. Petitioner defends its flawed Thomas grounds by presenting—improperly—new arguments regarding claims 1, 3, and 14. Petitioner originally claimed that the current set circuit of claims 1 and 14 was a resistor. For the first time in its Reply, Petitioner identifies a new combination of a resistor and bipolar junction transistor ("BJT") as comprising the current set circuit in an attempt to cure its original flawed analysis. This is improper and the Board should reject it. Petitioner's Reply also improperly attempts to foist the burden of proof onto PO. Regarding claim 7, Petitioner claims that it was *PO* that failed to meet the burden of persuasion. Of course, this burden-shifting is improper. Petitioner's obviousness analysis over Thomas fares no better. Petitioner's attempted rescue of its obviousness grounds under *Realtime* is inapposite and fails to address the deficiencies with Petitioner's obviousness analyses—failing to prove obviousness in the first place.

Regarding the Zane grounds, Petitioner does not adequately rebut Dr. Zane's inability to provide unbiased testimony regarding his own Zane reference. Instead, Petitioner cites inapposite case law and avoids the bulk of PO's allegations. In doing so, Petitioner failed to explain why the Board should credit Dr. Zane's

testimony. Regarding its obviousness grounds, Petitioner repeats its flawed *Realtime* argument it deployed regarding Thomas—that it is not required to perform an obviousness analysis, which it failed to do in its Petition. Finally, Petitioner attempts to discredit Mr. Credelle’s arguments regarding the lack of motivation for a POSITA to modify Zane to render claims 5 and 16 obvious by focusing on semantics and making the same deficient technical arguments from the Petition.

Petitioner failed to adequately show that Thomas anticipates claims 1, 3, 7, or 14, or any claims depending therefrom in Ground 1, and fails to demonstrate that claims 1 3, 7, 9-12, 14, 17, 18, and 20-22 would have been obvious over Thomas alone in Ground 2A. Grounds 3 and 4 rely on Dr. Zane’s biased testimony, which should not be credited, so the Petition has not established that claims 1-5, 11-17 and 22 are anticipated or obvious in view of Zane. Petitioner similarly failed to show that Zane renders obvious claims 5 or 16, and has not convincingly rebutted Dr. Zane’s bias that should result in his testimony being given little or no weight. Accordingly, the Board should decline to find any challenged claim unpatentable.

II. THOMAS GROUNDS (1, 2A-2C)

A. Thomas does not anticipate claims 1 and 14 or any claims depending therefrom.

1. Thomas' single, passive resistor is not a "current set circuit."

Petitioner claims that PO is mistaken in claiming that Petitioner identified a resistor as the current set circuit. Reply, 14-15. Petitioner alleges this misrepresents its position—though it plainly does not—and proceeds to materially change its theory of anticipation in the Reply to allege that a combination of the resistor *and* a BJT comprise the "current set circuit" of claims 1 and 14. *Id.*, 14-16. Petitioner also, in the alternative, provides a flawed defense of its original theory, claiming that PO argues a new claim construction. *Id.* These arguments are incorrect.

First, PO did not mischaracterize Petitioner's position. Reply, 14. Indisputably, Petitioner originally identified *only the passive resistor* as the "current set circuit" of claims 1 and 14. Petitioner claims, confusingly, that "[n]either Petitioner nor Dr. Zane identified the resistor as the current set circuit to the *exclusion* of other components." *Id.* (emphasis original). This is manifestly incorrect. Petitioner's implication appears to be that a party can tactically reconfigure its anticipation arguments on Reply so long as it did not explicitly disclaim this right. While wrong, this is immaterial: if Petitioner wished to make such an argument, it was required to do so in the Petition. *FanDuel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1342 (Fed. Cir. 2020) (quoting *SAS Inst.*

Inc. v. Iancu, 138 S. Ct. 1348, 1357 (2018)) (“the *petitioner’s* contentions . . . define the scope of the litigation all the way from institution through to conclusion.”) (emphasis original). Regardless, the Petition did, in fact, state that each individual resistor was a current set circuit itself. Pet., 26 (“the resistors shown in Thomas’ Figure 1 (and more specifically, ***the individual resistors*** in each sub-path in Figure 2) are ***each a current set circuit.***”) (emphasis added). Petitioner was careful to *explicitly call out* that each individual resistor was a claimed current set circuit. Petitioner’s allegations that Dr. Zane made no such identification are similarly incorrect. EX1003, ¶¶62-63; EX2004, 84:21-85:3.

Second, Petitioner surreptitiously attempts to rewrite the Petition in its Reply to escape this incorrect initial mapping. Petitioner opens by arguing that statements it and Dr. Zane made regarding *an entirely different claim* should be imported into the claim 1 and 14 sections of the Petition. Reply, 14-15. Specifically, Petitioner argues that PO improperly “ignored” the arguments it made for claim 6. Reply, 14-15. But these arguments were made for *an entirely different claim and Ground* in the Petition. Pet., 46-50. That Petitioner made an argument in Ground 2A under an obviousness theory that it now wishes it had made regarding claims 1 and 14 in Ground 1 for anticipation is meaningless. It did not, and the Petition must be evaluated as submitted. *FanDuel*, 966 F.3d at 1342.

Petitioner now identifies a combination of components as comprising the

current set circuit of claims 1 and 14—specifically, the passive resistor (that it originally mapped to the current set circuit) in combination with a BJT (that it had *not* originally mapped to the current set circuit). Reply, 16. Petitioner does so in view of the plain and ordinary meaning of the word “circuit” that makes its initial mapping of “current set circuit” to a single passive resistor plainly insufficient. *Id.*; EX1031, ¶13. This material change in position is disguised as an argument in response to “a new claim construction position.” Reply, 16. PO presented no “new claim construction.” The parties agreed that no claim constructions were necessary. Pet., 16; POR, 5. And PO did not ask the Board to construe “circuit” in its Response; rather, PO simply applied the plain and ordinary meaning of the term to a POSITA—that a circuit requires more than a singular element—and exposed the flaw in Petitioner’s argument.

Petitioner’s reliance on *Medtronic* is thus inapposite. Reply, 16-17. The patent owner in *Medtronic* did, in fact, present a new claim construction after institution. Here, Petitioner simply misunderstood the term “circuit,” which both parties agree should be accorded its plain meaning. Under the plain meaning, Petitioner’s original mapping of Thomas is deficient, causing it to shift theories.

Third, Petitioner’s defense of its original position in the Petition regarding the “current set circuit” of claims 1 and 14 falls flat. Petitioner claims that PO’s argument that a circuit requires two components is “inconsistent with the ’148

Patent, which identifies a single resistor as an example of a current set circuit.”

Reply, 15. This is not correct. The ’148 patent specifies that “each current [setting] circuit 20-22 may **comprise** a current set resistor or a current regulator.” EX1001, 1:67-2:3 (emphasis added). Using the long-held status of “comprise” as open-ended language, such a statement does not mean that a current set circuit may consist of **only** a resistor; rather, it means that a current set circuit **may include** a resistor or current regulator.

Confusingly, Petitioner claims that “PO’s argument makes no sense because, under its construction, two resistors in series could be a current set circuit, but a single equivalent resistor could not.” Reply, 15. There is, of course, nothing nonsensical about this argument. The plain and ordinary meaning of “circuit” implies multiple components. That a single component could replace the claimed element is immaterial because the claim element specifies multiple components. Accordingly, the only relevant inquiry is whether Petitioner identified a “current set circuit.” It did not. Thus, Petitioner’s Ground 1 fails for this reason alone.

2. Thomas does not disclose that a PWM signal is applying a PWM brightness control signal to Petitioner’s new “current set circuit.”

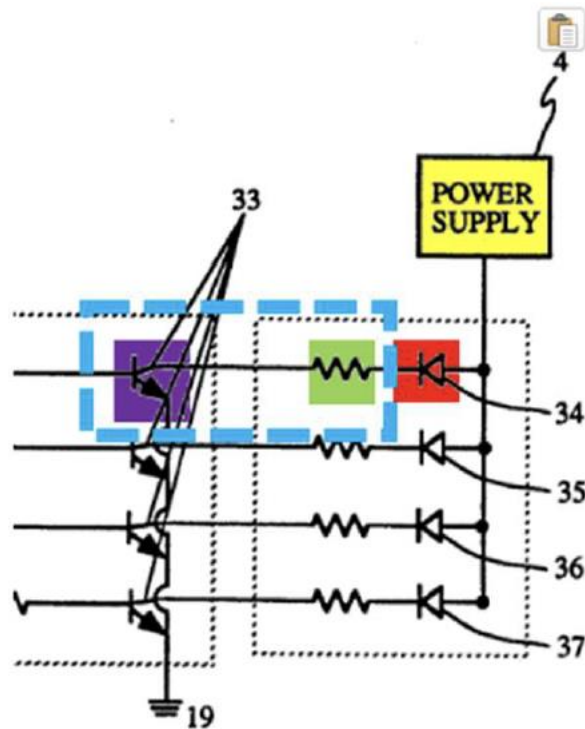
Petitioner’s arguments regarding [1.d] and [14.d] of Ground 1 are similarly unavailing, under Petitioner’s original single-resistor “current set circuit” and the untimely reconfiguration of its arguments to include a BJT as part of the “current

set circuit” of claims 1 and 14.

First, Petitioner repeats its claim that PO mischaracterized the Petition and Dr. Zane’s statements regarding the claimed “current set circuit,” and that “the Petition did not identify the resistors in isolation.” Reply, 17. Again, this is incorrect. Petitioner and its declarant *did* identify the resistor in isolation as the “current set circuit,” and PO properly argued this is fatal under limitation [1.d] and [14.d]’s requirement that the PWM brightness control signal be applied to the current set circuit.

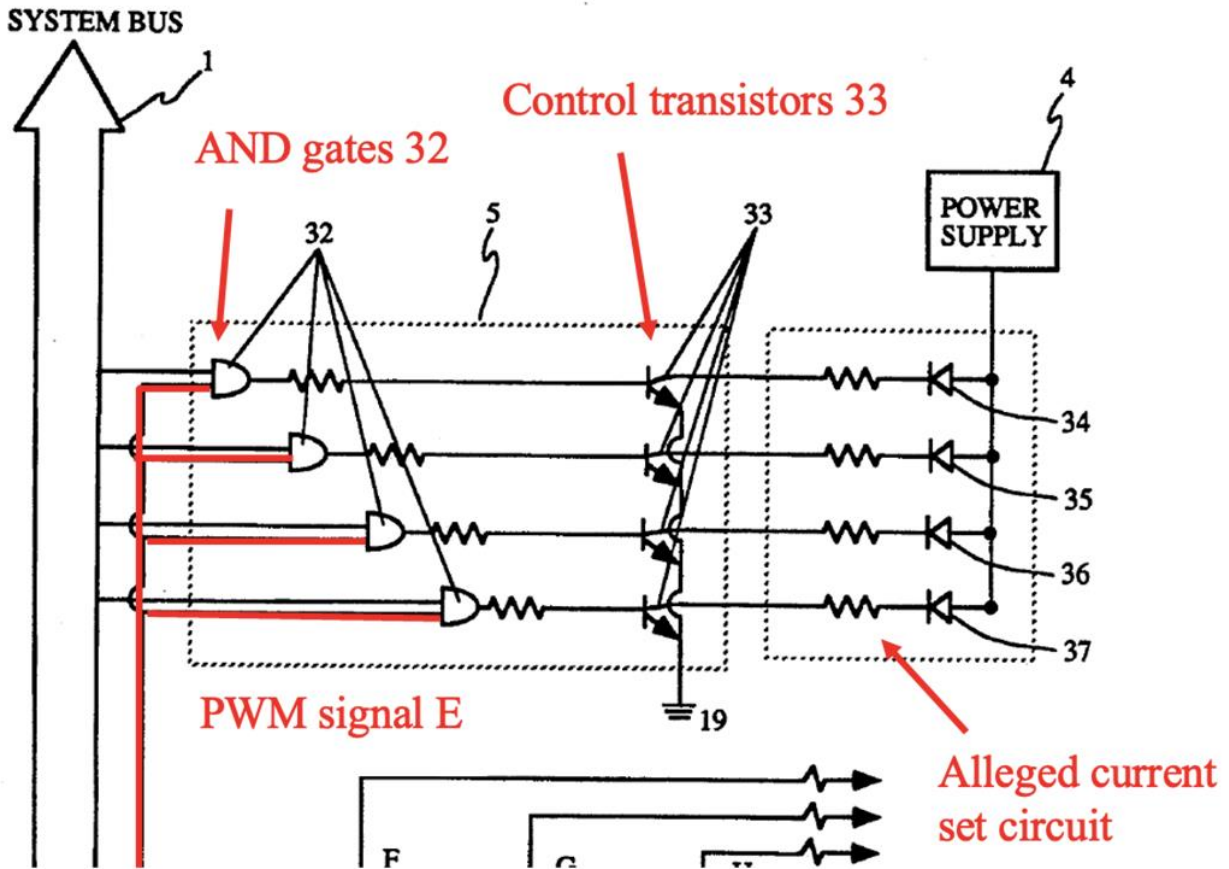
Second, Petitioner fails to show how, under either its original single-resistor theory or its new resistor-and-BJT theory, the PWM brightness control signal is applied to the current set circuit. PO explained that the PWM brightness control signal is not applied to the resistors under any interpretation. POR, 12-17. Despite Petitioner taking a second bite at the apple with an entirely new anticipation argument for Ground 1, it *still* fails to show that Thomas applies the PWM brightness control signal *to the current set circuit*. Petitioner now argues that “Thomas’s circuit works the same way as the ’148 Patent—by applying the PWM brightness control signal to the transistor connected to the current set resistor.” Reply, 17. But the PWM brightness control signal *is not applied to the transistor*. As shown below, Petitioner does not consider the AND gate to be a part of the “current set circuit” of Thomas, denoted by the blue box.

Thomas Fig. 2



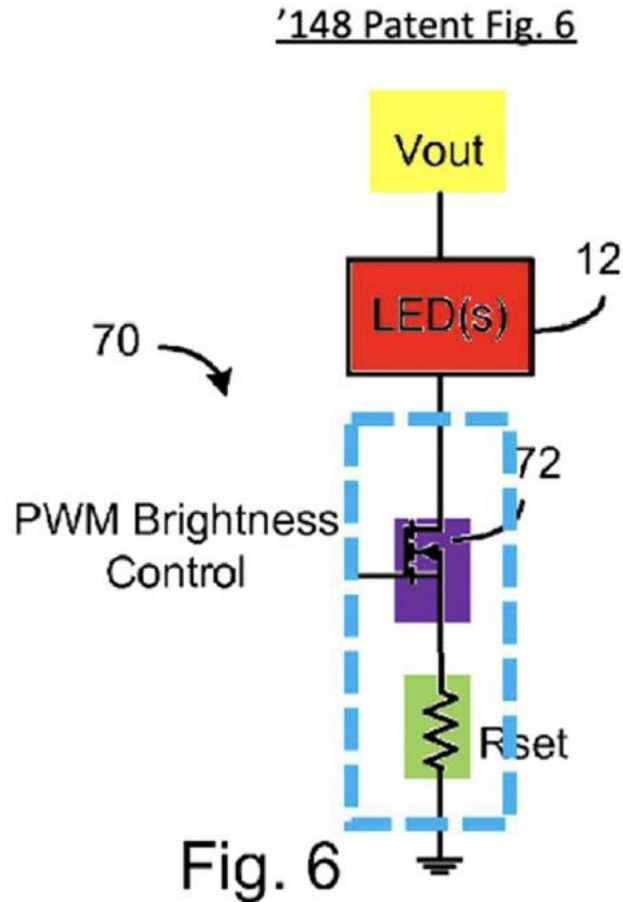
Reply, 16.

Thomas indisputably shows that the PWM brightness control signal in Figure 2 is applied to the AND gates 32, not to the control transistors or to the resistors, as shown below. POR, 16. Importantly, Dr. Zane agreed that modulating signal E (the alleged PWM control signal) is applied in combination with an input control signal W from the system to the AND gates. POR, 14-15; EX2004, 81:7-10, 82:1-8. Because the signal is applied to AND gates in conjunction with the input control signal W, what issues from these gates is a new signal generated from the conjunction of the brightness control signal E and the control signal W, not the brightness control signal E itself.



POR, 16 (PWM brightness control signal path in red).

This arrangement is different from the '148 patent, where the PWM brightness control signal is applied *directly* to the current set circuit, as shown in Petitioner's annotated Figure 6 below.



Reply, 16.

Thus, whether under Petitioner's original identification of the resistor as the current set circuit or under Petitioner's unsanctioned new argument—which the Board should reject as improper—Petitioner again fails to show that a PWM brightness control signal is ever applied to *either* of its alleged “current set circuits.” While Petitioner insinuates that PO agrees (“Thomas indisputably applies the PWM signal directly to the current set circuit because the PWM signal is applied to the switch. See EX1031, ¶17; POR, 14 (“[T]he PWM signals go to the activation switches’”), Reply, 18), this quotation is misleading. The “activation

switches” are a component in Thomas, including the AND gates *and* the BJT. *See, e.g.,* EX1005, Fig. 2. But Petitioner *did not include* the whole activation switch in its identification of the current set circuit. It only included the BJT. Reply, 16.

Thus, Petitioner failed to show that Thomas anticipates claims 1 and 14.

B. Thomas does not anticipate claim 3: the Reply presents a new theory that impermissibly relies on the prior art described in the background of Thomas in combination with Thomas’ circuit.

Petitioner again presents a completely new argument on Reply. In the Petition, Petitioner alleged that Thomas anticipated claim 3 because, allegedly, “Thomas discloses resistors in each parallel path which limit the current flowing through the LED,” and that “[a] resistor connected in series with the load (the LED) is a basic type of a current regulator.” Pet., 32.

Now, forced to defend its anticipation arguments regarding claim 3, Petitioner alleges for the first time that Thomas discloses a regulated voltage in series with a resistor and that this anticipates claim 3. Reply, 19. However, Petitioner improperly combines disclosures regarding *the prior art* in Thomas with the invention of Thomas itself. Thomas describes *the prior art* as “maintaining a regulated voltage,” not the Thomas invention. EX1005, 1:67. Thomas does not disclose that “power supply 4,” in the circuit upon which Petitioner relies, is a voltage regulator or has a regulated voltage. Rather, Petitioner improperly infers this through Thomas’ discussion of the prior art. *Id.*; Reply, 19. Anticipation

requires that Petitioner demonstrate that *the asserted reference* discloses each claim element, not the asserted reference in combination with other prior art. Thus, Petitioner failed to demonstrate that Thomas anticipates claim 3, or any claims depending therefrom.

C. Thomas does not anticipate claim 7: Petitioner has not demonstrated that Thomas inherently discloses a clock connected to the shift register and improperly attempts to shift the burden to PO.

For claim 7, Petitioner and Dr. Zane initially—and strenuously—alleged that “[a]ll shift registers **must** have a clock connected to them for shifting the bits.” Pet., 34 (emphasis original). Dr. Zane similarly alleged that “[b]y definition, all shift registers must receive a clock signal to shift the bits.” EX1003, ¶76. PO and its expert, Mr. Credelle, demonstrated that these arguments were incorrect, identifying asynchronous and dynamic shift registers that do not utilize a clock. *See, e.g.*, Pet. at 19-20. Indeed, Petitioner’s declarant, Dr. Zane, and Petitioner’s own evidence showed that Petitioner was wrong. EX2004, 99:19-21 (“In an asynchronous register, that would typically not include a separate dedicated clock from the data going into the register itself.”); EX2009, 2:12-15 (“The asynchronous device as contrasted with the synchronous device mentioned above does not require a clock or timing pulse for its operation.”). Forced to address this error, Petitioner now incorrectly argues that Thomas does not utilize asynchronous shift registers and that dynamic shift registers actually utilize a “clock signal.”

Reply, 21-23. Petitioner’s arguments fall flat in several respects.

First, Petitioner improperly attempts to shift the burden onto PO, arguing that PO failed to sufficiently *disprove* Petitioner’s inherency argument. Reply, 20. Petitioner repeats this argument, claiming that “PO and Credelle did not show otherwise.” Reply, 23. But it is not PO’s burden. That burden—proving anticipation—is *always* on Petitioner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (“In an inter partes review, the burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence,’ 35 U.S.C. § 316(e), and that burden never shifts to the patentee.”); *FanDuel*, 966 F.3d at 1342 (“[A] patent owner carries no obligation to raise any objection to the petitioner’s challenges at all.”). Petitioner only ever demonstrated the *possibility* that Thomas utilizes a clock-based shift register, but failed to show that there *must necessarily be* a clock that is connected to the shift register in Thomas, as it was required to do.

Second, Petitioner’s inherency theory is based on a misreading of Thomas that conflates “sequentially” with “synchronously,” arguing that Thomas’s description of *sequentially* storing values means it must be a *synchronous* shift register that *must be* connected to a clock. Reply, 20-21. Petitioner alleges that “[w]ithout a clock, Thomas’ shift register would not be able to shift synchronously with *E*.” *Id.*, 21. These statements are incorrect. As PO explained, it is not

necessarily true that Thomas utilizes a synchronous shift register or a shift register connected to a clock. POR, 19-21. Petitioner provided no evidence to the contrary besides conflating “sequentially” with “synchronously.”

Petitioner asks the Board to ignore PO’s arguments regarding asynchronous shift registers on the premise that an unrelated passage of Thomas specifies a synchronous shift register. Reply, 21-22. Petitioner’s further arguments that Thomas does not affirmatively describe an asynchronous shift register are irrelevant and, again, improperly attempt to force PO to prove that Thomas does not inherently connect a clock to the shift register. Reply, 22 (“Because Thomas’ PWM signal E is not described as containing that extra data, it would be ‘impossible to extract the effective clock or the ability to shift the data down the register without...a clock signal to achieve that function.’”). This argument, however, is conclusory and unsupported by Thomas. Petitioner has not proven that a clock “necessarily must be present.” *Par Pharm. Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195-96 (Fed. Cir. 2014); *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003).

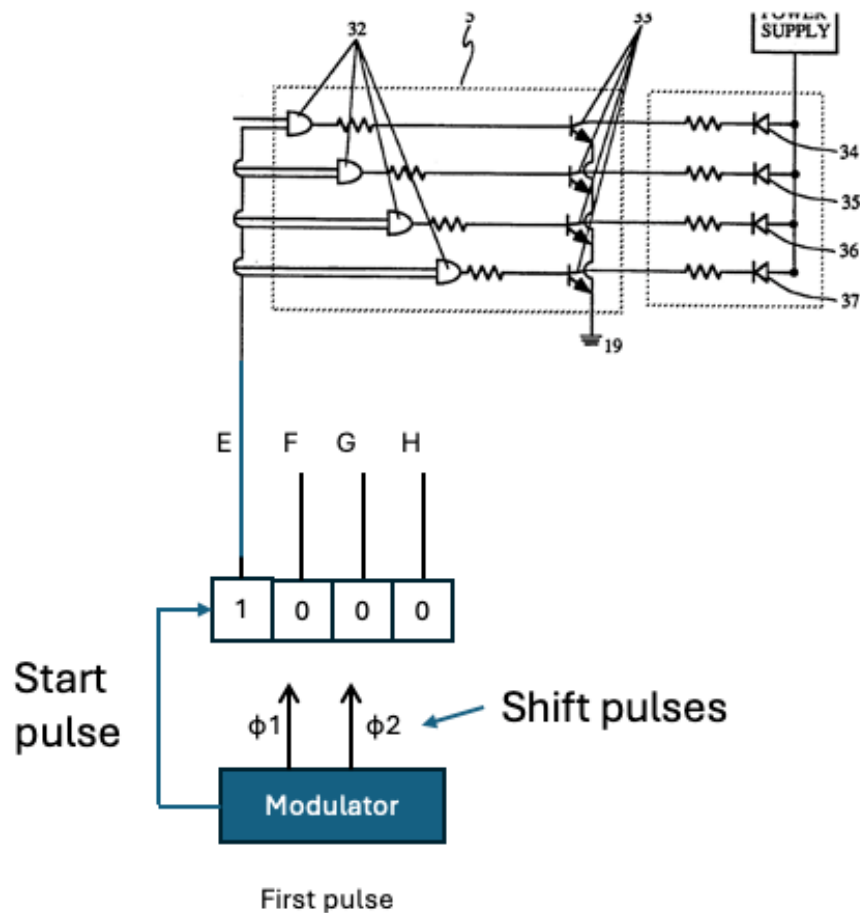
Third, Petitioner attempts an end-run around Thomas’s potential implementation of a dynamic shift register, conveniently arguing that any signal that allows Thomas to shift bits with PWM signal E is a clock signal, regardless of whether or not an actual clock signal is provided to the shift register. Reply, 22-23.

Petitioner claims that “[e]ven if Thomas’ shift register were implemented like that dynamic shift register, that shift register would still be receiving the signals from ϕ_1 and ϕ_2 to shift the bits synchronously with the PWM signal E—in other words, ϕ_1 and ϕ_2 are a clock signal.” *Id.* But Petitioner does not explain this argument beyond simple hand-waving.¹ That a dynamic shift register *without* a clock accomplishes an end goal in a way similar to a shift register *with* a clock is immaterial, and actually reinforces PO’s argument that a clock *is not inherent* to Thomas. Furthermore, Petitioner’s allegation is that ϕ_1 and ϕ_2 are “clock signal[s],” not “a clock connected to the shift register,” as recited in claim 7. For these reasons alone, Petitioner failed to demonstrate that “a clock connected to the shift register” *must* be present in Thomas.

Indeed, a dynamic shift register, which could easily be implemented in Thomas, would not utilize “a clock connected to the shift register.” As shown

¹ Petitioner repeats this argument, claiming that “Dr. Zane also explained ‘either the concept of the clock is embedded in the data’ for an asynchronous register ‘or there’s a dedicated clock that shifts the data that’s available.” Reply, 22 (FN4). Petitioner’s amorphous allegation that the “concept of a clock” in data is sufficient to show an actual “clock connected to the shift register” for anticipation is not further explained and should be disregarded.

below, Thomas's modulator could provide shift pulses ϕ_1 and ϕ_2 to Thomas's shift register without changing Thomas's structure. Indeed, Dr. Zane testified that a POSITA would understand that a "shift signal" would be necessary to shift the signals in the shift registers. EX2011, 13:12-16:18. But a "shift signal" does not necessarily have to be a clock signal from a connected clock. *Id.*, 17:13-20:12 (testifying it depends on "context"), 27:14-33:9 (strobe signal). That a shift or strobe or clock signal can be used means that a clock is not inherent.



EX1005, Figure 2 (modified to show dynamic shift register implementation).

Notably, a dynamic shift register shifts bits using shift pulses ϕ_1 and ϕ_2 ,

which may be generated in a multitude of ways. For example, these pulses may be algorithmically derived, which Petitioner acknowledges. Reply, 22. Importantly, such a system would be advantageous to implement, as ϕ_1 and ϕ_2 , being provided by the modulator and not a clock, can be adjusted dynamically by the system and provided in equal or unequal time intervals as necessary. Critically, as noted above, Petitioner fails to substantively address the dynamic shift register implementation that could easily be utilized in Thomas aside from the conclusory claim that a dynamic shift register's ϕ_1 and ϕ_2 signals are somehow themselves a "clock." Thus, Petitioner failed to show that "a clock connected to the shift register" is inherent in Thomas. For these independent reasons, Thomas does not anticipate claim 7.

D. Petitioner's conclusory allegation of obviousness is woefully insufficient to support an obviousness ground.

Finally, Petitioner argues that the complete lack of substantive obviousness arguments presented in the Petition for Ground 2A is justified under *Realtime* because "anticipation is the epitome of obviousness." Reply, 6, 23 (quoting *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019)). Petitioner's argument is confusing, as the *Realtime* decision was premised on a situation where a single reference anticipated *every relevant claim*, and the petitioner separately analyzed a *second* obviousness reference to bolster the former's anticipation of a single element. *Realtime*, 912 F.3d at 1373. Furthermore, the patent owner conceded the latter obviousness argument explicitly. *Id.* As a result, the patent

owner's argument that obviousness required a separate motivation-to-combine analysis was rejected, as obviousness was inherent to a situation where it was a foregone conclusion that the reference already anticipated the claims at issue. Of course, if the Board were to find that Thomas anticipates claims 1 and 14, it would follow that claims 1 and 14 are obvious in light of Thomas. Here, in contrast, Petitioner analyzed only one reference and presented its obviousness grounds *as an alternative in the event the Board found Thomas did not anticipate the claims*. Pet., 45 ("To the extent that Thomas does not anticipate Claim 1, any differences between Thomas and Claim 1 are such that Claim 1 as a whole would have been obvious..."). Petitioner makes similar arguments regarding dependent claims 3, 7, 9-12, 14, 17, 18, and 20-22. Pet., 46. *Realtime* only stands for the proposition that, if Thomas anticipated claims 1 3, 7, 9-12, 14, 17, 18, and 20-22, they necessarily would have been obvious over Thomas, and the consideration of a separate reference in bolstering that decision would not require a wholesale obviousness analysis.

That, of course, is not what Petitioner argued. Petitioner presented threadbare allegations that failed to satisfy the requirements of an obviousness theory. But Petitioner did not provide *any* actual obviousness analysis, as required, for claims 1, 3, 7, 9-12, 14, 17, 18, and 20-22 aside from a single sentence regarding claim 1 (arguing that a POSITA would have understood that resistors are

current set circuits). Pet., 45. *Realtime* is inapposite here and has no bearing on whether Petitioner is required to present an actual obviousness analysis. Petitioner was required to present an obviousness analysis in the Petition if it wished to allege that Thomas rendered claims 1, 3, 7, 9-12, 14, 17, 18, and 20-22 obvious. It did not, and Petitioner has thus failed to demonstrate that Thomas alone renders obvious claims 1, 3, 7, 9-12, 14, 17, 18, and 20-22 obvious.

III. ZANE GROUNDS (3, 4)

PO explained that Petitioner failed to demonstrate that claims 1, 5, 14, and 16 were obvious over Zane. POR, 34-40. For claims 1 and 14, Petitioner failed to present an obviousness analysis at all, instead simply referring back to its anticipation argument. *Id.* For claims 5 and 16, Petitioner failed to sufficiently show that a POSITA would have been motivated to modify Zane and how such a modification would be accomplished. *Id.* On Reply, Petitioner makes the same flawed *Realtime* argument discussed in Section II.D above—that it is not required to present an obviousness argument when asserting anticipation. Reply, 6. But *Realtime* does not stand for this proposition, and Petitioner has neither shown that Zane renders claims 1 and 14 obvious nor cured this failure. Petitioner further evades Mr. Credelle’s criticisms of its claim 5 and 16 arguments, making non-substantive—and incorrect—semantic arguments and conclusory defenses, failing to rebut the core deficiencies identified in PO’s Response. Reply, 6-12. Finally,

Petitioner cannot sufficiently rebut the bias of Dr. Zane's testimony, and the Board should give Dr. Zane's testimony little or no weight.

A. The Board should not credit Dr. Zane's biased testimony.

PO highlighted a variety of issues with Dr. Zane's testimony. POR, 30-34. Namely, Dr. Zane is a co-author of Petitioner's anticipation reference, and several factors surrounding the Zane reference suggested Dr. Zane would not be able to provide the unbiased testimony expected of an expert, given that he was essentially defending his own patented work. *Id.* Petitioner largely dodges this issue and asserts inapposite cases. Petitioner accordingly has not dispelled legitimate concerns surrounding Dr. Zane's ability to provide unbiased testimony.

First, Petitioner's only cited case supposedly supporting Dr. Zane's lack of bias is hardly apposite and does not address PO's claims. In *Nvidia*, contrary to Petitioner's claims, the expert at issue was *not* an author but rather was a thesis advisor for the thesis that led to the reference, which the Board specifically called out in its decision. *Nvidia Corp. v. Invensas Corp.*, IPR2020-00603, Paper 52 at 16. Furthermore, the reference in *Nvidia* was not asserted as an anticipation or single-reference obviousness ground. It was a secondary reference in a combination. *Id.* at 6. An expert with only tangential connection to and no personal investment or stake in a secondary reference is hardly comparable to the instant matter.

Second, the thrust of Petitioner's Reply centers on minor or partial aspects of PO's argument. Petitioner suggests that "neither PO nor its expert suggested that Dr. Zane's opinions were incorrect [and] [h]is opinions stand unrebutted." Reply, 3. As a primary matter, Petitioner omits claims 5 and 16, giving the appearance that PO does not dispute any of Dr. Zane's testimony, when in reality Dr. Zane's testimony on these claims is directly disputed at length. POR, 36-40. Furthermore, PO's point was that *all* of Dr. Zane's testimony was suspect. Particularly regarding obviousness, the potential bias by Dr. Zane in analyzing the knowledge of a POSITA affects all testimony he provided on that topic. Thus, PO does, in fact, directly suggest that Dr. Zane's obviousness opinions are incorrect because they necessarily did not provide the unbiased point of view of a POSITA.

Petitioner's counterarguments regarding *Glaxo* similarly miss the point. Petitioner focuses only on the fact that *Glaxo* involved the design of experiments rather than testimony on a prior art reference. Reply, 4. PO acknowledged this, but explained that the holding of *Glaxo* on which it relied was that the expert could not act as a POSITA when they possessed impermissible knowledge of the reference in question. POR, 30-31. So too here, where Dr. Zane has unique knowledge and insight into the Zane reference that a POSITA could not possibly possess.

Petitioner also suggests that it is a "distort[ion]" of Dr. Zane's testimony that he believes he invented what is claimed in the '148 patent. Reply, 4. PO distorted

nothing; when asked if “[he] and Dr. Doshi developed the technology that’s described in Claim 1 before the inventors of the ’148 patent” Dr. Zane responded that it was “an appropriate characterization.” EX2004, 61:22-62:21.

Petitioner attacks PO’s reliance on Dr. Zane’s testimony regarding the peer review process, claiming that it is “irrelevant” to consider. Reply, 5. Petitioner focuses only on “masking author names during the peer-review process.” *Id.* This selective reference avoids PO’s argument. Dr. Zane testified that “objectively review[ing] the content of [a] scientific article” was enabled by “removing a reviewer’s bias.” EX2004, 41:4-42:16. PO’s argument that Dr. Zane could not possibly remove his own bias and, by his own argument, could not objectively review the Zane reference is unaddressed by Petitioner. Reply, 5.

Petitioner similarly attacks PO’s reliance on *Medtronic* and *Medichem*, relying on the differences in procedural posture. *Id.* Again, this avoids the substance of PO’s arguments. These cases noted that inventor or non-independent testimony was suspect when not corroborated by testimony of an unbiased party. Whether or not the instant matter is an interference proceeding and whether the testimony at issue is fact or expert opinion, these cases correctly recognized that a party who inherently has a motivation to testify in favor of a reference is less credible than one who does not. POR, 33. Accordingly, Petitioner has not shown that Dr. Zane’s bias should be ignored.

Third, Petitioner attempts to rebut PO's position that the Board not credit Dr. Zane's testimony as an attempt to exclude the testimony. Reply, 5-6. Petitioner cites *NeuroGrafix*, a case refusing to exclude expert testimony under the *Daubert* or Rule 702 standards. *Id.* Petitioner argues that because the Board cannot exclude Dr. Zane's testimony, PO's assertion that the Zane grounds would be based on "unsupported attorney argument" is incorrect. Reply, 5. However, if the Board does give little or no weight to Dr. Zane's opinions, Petitioner's arguments would be exactly that. Importantly, PO does not ask the Board to strike or otherwise remove Dr. Zane's testimony from the record. PO asks that the Board recognize that Dr. Zane cannot give unbiased testimony regarding Zane, and thus decline to credit his opinions on the Zane reference. POR, 33. If the Board does so, despite Petitioner's semantic argument, the Petition's Zane grounds would be unsupported attorney argument, as the testimony on which it relies would have no weight. Thus, the *admissibility* of Dr. Zane's testimony has no bearing on PO's request.

Because Grounds 3 and 4 rely on Dr. Zane's biased testimony, which should not be credited, Petitioner fails to establish that claims 1-5, 11-17, and 22 are anticipated or obvious in view of Zane.

B. Zane fails to render claims 5 and 16 obvious.

For claims 5 and 16, Petitioner spends nearly seven pages of focusing on semantics and misinterpretations of Mr. Credelle's opinions in an attempt to

muddy the waters regarding its failure to sufficiently explain why a POSITA would have been motivated to move Zane's SPDT switch to a specific location. Reply, 6-12. All of Petitioner's defenses fail to rebut the fact that a POSITA would not have been motivated to do so because, as Mr. Credelle explained, it would vitiate Zane's operation, and neither Petitioner nor its declarant explained how a POSITA would account for the problems introduced by this change.

First, Petitioner repeatedly argues that Mr. Credelle's opinions are incorrect based on his statement that the analog SPDT switch applies a precision voltage to the op amp. Reply, 9-11. Petitioner claims that this "demonstrates that his understanding of Zane is flawed" because "the SPDT switch does not apply precision voltage to the '+' terminal of the op amp ... The precision voltage ... is applied to the '+' terminal of the op amp by a different component." Reply, 10. Though ignored by Petitioner, Mr. Credelle specified that "[t]he precision voltage Vprog is applied to the op amp **through** an SPDT analog switch," a statement he repeats multiple times. EX2002, ¶54 (emphasis added). In the portion Petitioner cited, Mr. Credelle is stating that the SPDT switch can be considered to "apply" the precision voltage to the op amp because the switch determines whether or not that precision voltage is applied to the op amp. Not only is this criticism accordingly incorrect, it is immaterial.

Second, Petitioner claims that Mr. Credelle "incorrect[ly]" argues that "[if]

the precision voltage V_{prog} is simply applied to Ra...a POSITA would not know how to adjust the op amp settings to achieve the correct voltage on the base of transistor Q.” Reply, 11 (quoting EX2002, ¶57). Petitioner alleges that “Credelle offers no credible reason why a POSITA would be confused by the circuit’s normal operation.” *Id.* This criticism is nonsensical. Mr. Credelle was arguing that modification of the Zane reference, as suggested by Petitioner, would create an uncertain voltage on the base of transistor Q that a POSITA would be unable to adequately address. EX2002, ¶57. Petitioner only addresses what it acknowledges was ultimately Mr. Credelle’s point in a trailing sentence, claiming that the voltage drop would be negligible. Reply, 11-12. But as Mr. Credelle explained, it is not necessarily negligible, as “the properties of the analog SPDT switch are unknown.” EX2002, ¶57.

Third, Petitioner incorrectly alleges that “the SPDT switch does not play a role in setting the value of the current.” Reply, 12. Mr. Credelle explained that this is not the case, noting that the introduction of the unknown and uncontrolled properties of the SPDT switch *after* the op amp is what would affect the current value. EX2002, ¶57. Indeed, the placement of the switch after the op amp prevents the circuit from achieving a precision current flow in a manner identical to the arrangement actually shown in Zane’s Figure 4. *Id.* Petitioner’s arguments that the op amp automatically adjusts its output to compensate in situations where the

SPDT switch is *after* the op amp is incorrect.

Dr. Zane even acknowledged, albeit obliquely, that the position of the SPDT switch would introduce variable impedance into the circuit depending on its position. EX2011, 53:5-10 (“The implementation of the switch itself – and I described that a person of ordinary skill would understand a wide range of solutions for implementing it – the implementation itself would have a certain impedance in each of the positions of the switch.”). While Petitioner claims that “no adjustments would be necessary as a result of the modification,” (Reply, 12) Mr. Credelle explained why this is not the case. Neither Petitioner nor its declarant provide specific calculations or explanations as to why the placement of the switch and the resulting effect on the circuit would be “negligible,” instead engaging in a high-level denial of the issue. Thus, Petitioner failed to show that Zane renders claims 5 and 16 of obvious for this independent reason.

IV. CONCLUSION

Petitioner failed to meet its burden of persuasion. The Board should find all challenged claims not unpatentable.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner's Sur-Reply complies with the type-volume limitation of 5,600 words, comprising 5,590 words, excluding the parts exempted by 37 C.F.R. § 42.24(c).
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I certify that the above-captioned **PATENT OWNER'S SUR-REPLY** and **EXHIBIT 2011** were served in their entireties on October 21, 2024, upon the following parties via electronic mail:

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