

2023-2346

In the United States Court of Appeals
for the Federal Circuit



LYNK LABS, INC.,

Appellant,

-v-

SAMSUNG ELECTRONICS CO., LTD.,

Appellee,

KATHERINE K. VIDAL, Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office,

Intervenor.

On Appeal from the USPTO Patent Trial and Appeal Board
No. IPR2022-00149 for U.S. Patent No. 10,687,400

Reply Brief of Appellant Lynk Labs, Inc.

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I. INTRODUCTION

Independent Claim 7 and dependent Claims 8-13 and 17 are at issue in this appeal.

There are three independent bases for reversing the Board’s decision without remand.

First, the Board erroneously construed “LEDs connected in series” so that it does not require LEDs to be electrically connected in series. This issue implicates Claims 7-13.

Second, the Board erroneously construed the limitation that the driver voltage output “matches” the forward voltage of the LEDs as encompassing the driver voltage output being “less than” the forward voltage of the LEDs. This issue implicates Claims 7-13.

Third, the Board committed legal error in finding that the Martin reference, an abandoned patent application that is only prior art under pre-AIA § 102(e)(1), and that published after the priority date of the ’400 Patent, is a prior art “printed publication” under § 311(b). This issue implicates Claims 7-13 and 17.

II. THE BOARD’S CONSTRUCTION OF “A PLURALITY OF LEDs CONNECTED IN SERIES” IS ERRONEOUS

The Board erroneously construed limitation 7(b) as not requiring any LEDs to be connected in series. Appx0022-0024 [FWD]. The Board held that the limitation encompasses a group of LEDs connected in series with another group of LEDs, even

if no individual LED is electrically connected in series with another LED. The Board (correctly) found that no individual LEDs are connected in series in Nerone. Appx0024 [FWD].

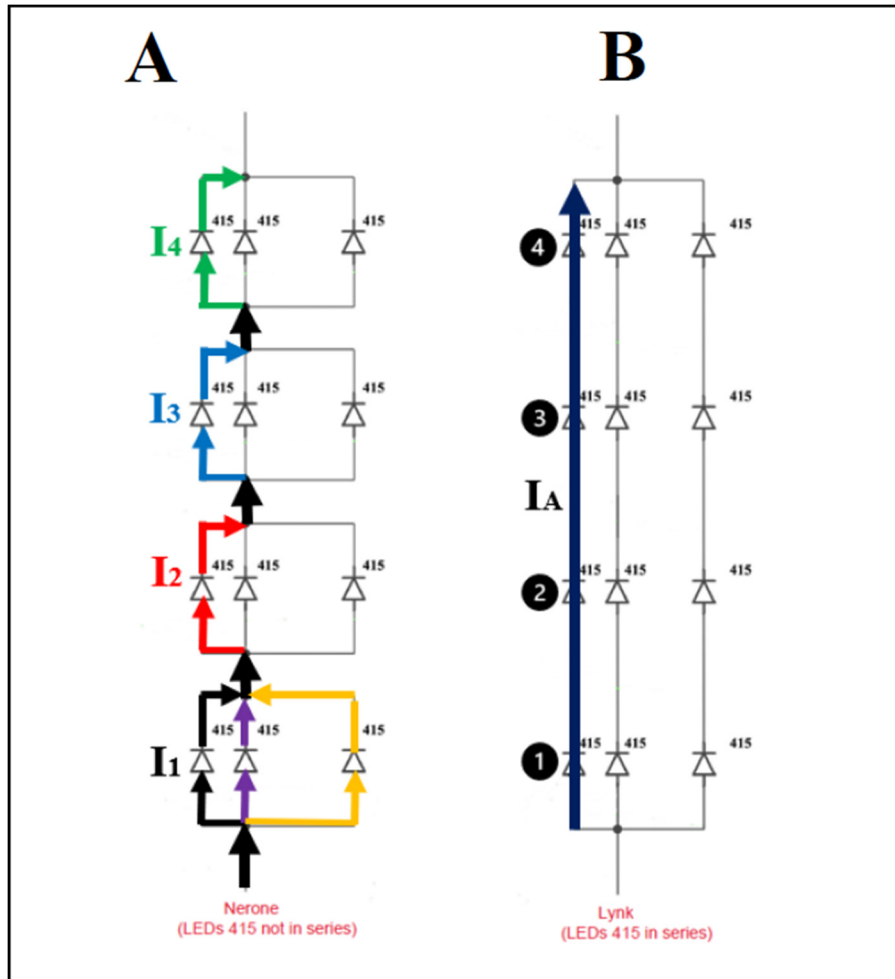
Lynk’s construction for “a plurality of LEDs connected in series” is that “the LEDs are connected end-to-end to form a single path for current.” Lynk Br., 14. In other words, at least two LEDs are connected end-to-end to form a single current path.

A. Ordinary and Customary Meaning of the Claim Language

In the field of circuit design, “connected in series” is a first year electrical engineering principle. It is an electrical engineering concept, not a geometric concept as suggested by Samsung’s argument.

The ordinary meaning of “connected in series” is that the components are connected end-to-end and have a single current path. See Appx5508 [*McGraw-Hill Dictionary of Electronics and Computer Technology*, 4]. Samsung never disputed this ordinary meaning below and does not dispute it now. Appx6388-6399 [Reply, 1-12]; Appx5058-5100 [Baker Reply Decl.]. See Samsung Br., 20-40. Samsung’s expert confirmed this ordinary meaning when he stated: “The only way that the two diodes [LEDs] will be in series is if they have the same current flowing, and they’re physically in series.” Appx5430 [Dep. Trans. Baker, 84:16-18]. The Board did not dispute this ordinary meaning that was made of record.

The figures below illustrate (1) “LEDs connected in series” (Diagram B) in contradistinction to (2) groups of LEDs connected in series with other groups of LEDs where no individual LEDs are connected in series (Diagram A). Diagram B depicts LED1, LED2, LED3, and LED4 as “a plurality of LEDs connected in series” because they are connected end-to-end and have a single current path I_A . On the other hand, Diagram A depicts groups (of parallel-connected LEDs) that are connected in series with other groups. See *Lynk Br.*, 17-18. In Diagram A, there are no individual LEDs connected in series with other LEDs because no two LEDs have the same current path (e.g., LED1 through LED4 have four different current paths I_1 to I_4), a point that Samsung does not dispute. *Samsung Br.*, 26-27.



Appx6325 [POR, 25] (Fig. 4 of Nerone, excerpted and further annotated). See Lynk Br., 16-18.

B. Samsung and the Board Attempt to Improperly Rewrite the Claim

As a matter of plain English grammar and technical understanding in the field of LED circuit design, a POSITA would readily understand that limitation 7(b) provides that LEDs are connected in series. Appx5284-5285 [Ducharme Decl., ¶ 78]. The limitation requires that (1) there are a plurality of LEDs and (2) the LEDs themselves are connected in series.

Samsung argues that Lynk is improperly rewriting the claim so that “individual” LEDs are connected in series with other LEDs. Samsung Br., 23. This is not rewriting the claim. The plain meaning of the claim language to a POSITA is that individual LEDs are connected in series, not that groups of LEDs are connected in series.

It is Samsung that attempts to rewrite the claim. Samsung argues that limitation 7(b) encompasses “groups of LEDs” connected in series with other “groups of LEDs,” without more. This improperly rewrites “a plurality of LEDs connected in series” as “a group of LEDs connected in series with another group of LEDs.” Put another way, Samsung tries to rewrite the claim as “a plurality of LEDs connected in series with another plurality of LEDs.” See Samsung Br., 21, 25 (“plurality of LEDs ... are connected in series with a plurality of LEDs”). This contradicts the language of the claim.

Samsung’s figure (Br., 24) depicting a first group of parallel-connected LEDs (A, B) connected in series with a second group of parallel-connected LEDs (C, D) is not within the ambit of the claim. No two LEDs are connected end-to-end to have the same current path, as explained *supra* in connection with Lynk’s Diagrams A-B. Notably, Samsung’s figure does not show that any single LED shares the same current path with another LED.

Contrary to Samsung’s assertions, Lynk’s construction does not preclude the recited “LED circuit” from having groups of LEDs and parallel-connected LEDs, so

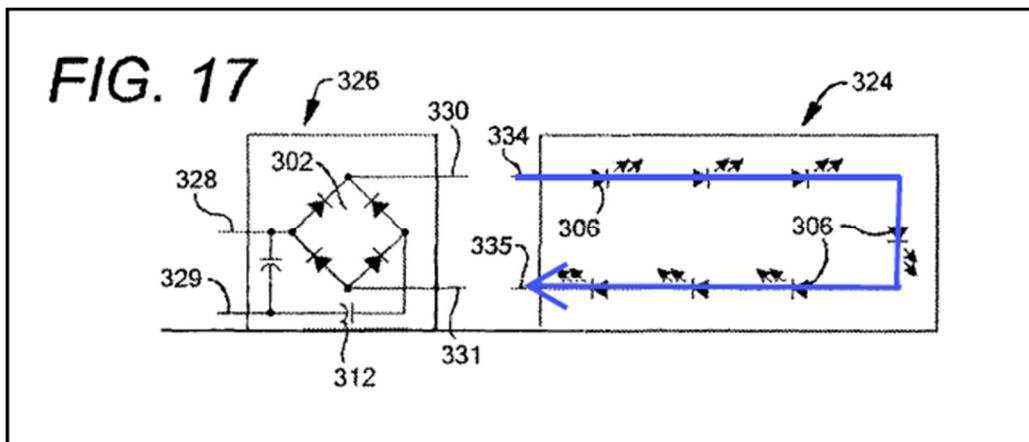
long as the requirement is satisfied that there are at least two LEDs connected in series. Samsung's repetitious argument on this point is a red herring, and it is wrong. See *Lynk Br.*, 24 n.6, 27-29 (discussing Fig. 8 of the '400 Patent).

Lynk's construction is faithful to the ordinary and customary meaning confirmed by the claim language.

C. The Specification Dispositively Confirms That “A Plurality of LEDs Connected in Series” Means That At Least Two LEDs Are Connected In Series

Each time the specification refers to the claim language “LEDs connected in series,” it is describing individual LEDs that are connected in series, not groups of LEDs connected in series. This disclosure from the specification is dispositive.

For example, Figure 17 from the specification depicts a circuit having “multiple LEDs connected in series.” Appx0133 ['400 Patent, 16:50-51]:



**Appx0082 [Fig. 17, annotated in blue].
The “LEDs connected in series” are individual LEDs
connected in series, not groups of LEDs connected in series.**

Elsewhere, the specification characterizes “LEDs connected in series” as individual LEDs connected in series, not groups of LEDs connected in series. See Appx0082, Appx0133 [’400 Patent, 16:21-23 (“additional LEDs 306 added in series” referring to seven LEDs connected in series in Figure 16)]; Appx0083, Appx0133 [’400 Patent, 16:21-23 (“additional LEDs 306 added in series” referring to thirteen LEDs connected in series in Figure 18)].

The *Board itself* characterized Figure 18 (thirteen LEDs in series) and Figure 22 (device 316 with five LEDs connected in series) as having “plural LEDs connected in series.” Appx0004 [FWD]. Lynk Br., 30-31.

The repeated and consistent usage of “LEDs connected in series” in the specification defines the phrase by implication, and also provides concordance with its ordinary and customary meaning as LEDs connected in series, not groups of LEDs connected in series. *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1370 (Fed. Cir. 2016); *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1318 (Fed. Cir. 2014); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 1321 (Fed. Cir. 2005) (en banc); *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004).

Finally, neither Samsung nor the Board identifies a single embodiment in the ’400 Patent corresponding to their incorrect construction, that is, a disclosed embodiment having a group of LEDs connected in series with another group of LEDs without there being any individual LED connected in series with another LED.

See Samsung Br., 32-38. Their construction is erroneous because it fails to read on any embodiment in the specification. See *Kaneka Corp. v. Xiamen Kingdomway Grp. Co.*, 790 F.3d 1298, 1304 (Fed. Cir. 2015) (“A construction that excludes all disclosed embodiments . . . is especially disfavored.”) (cite omitted).

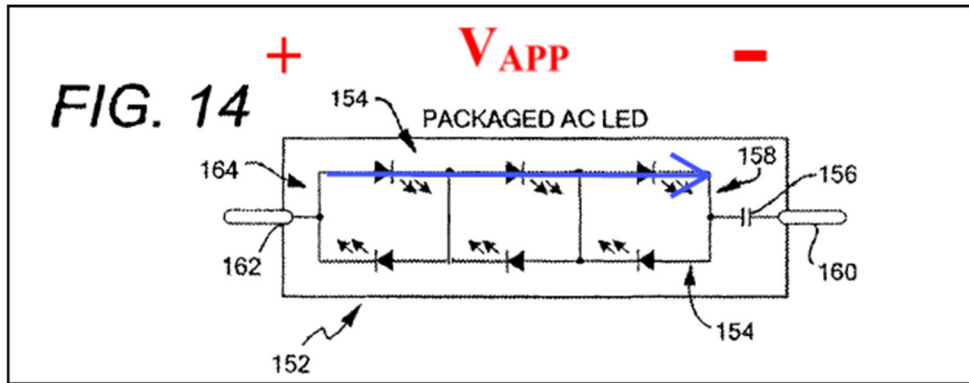
D. Samsung Cannot Dispute the Dispositive Evidence From the Specification

Because it cannot dispute Lynk’s explanation of Figures 8, 14, 16, 17, 18, 21, 22, and 65 (Lynk Br., 24-33), Samsung instead refers to a guideline that disclosed embodiments generally do not limit the claims beyond their plain meaning, citing to *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1359 (Fed. Cir. 2016). Samsung Br., 33. *Unwired Planet* actually supports Lynk’s position because it holds that claim terms are generally given their ordinary and customary meaning as understood in the art, which is precisely the case here. *Unwired Planet*, 829 F.3d at 1358.¹

Samsung tries to spin Lynk’s explanation that limitation 7(b) reads on Figure 14 of the specification as “an important admission.” Samsung Br., 34. But Figure 14 does not redefine “LEDs connected in series” away from its ordinary meaning. The figure depicts two strings of LEDs in opposing parallel configuration. It is easily

¹ Samsung’s repeated references to disclaimer (“clear and unmistakable intent to limit”) are a distraction. Samsung Br., 33. Lynk’s construction is not based on disclaimer. It is based on the ordinary and customary meaning of “a plurality of LEDs connected in series.”

demonstrated that each of the three LEDs in the top string is connected in series. If a positive forward voltage bias is applied (V_{APP}), they will turn on and have the same current path (**blue arrow**), as illustrated below:



**Appx0082 [Fig. 14] (annotated in red/blue);
see Appx0176-0177 [Baker Decl., ¶¶ 40-41]
(current flows when a forward voltage bias is applied).**

Consistent with Lynk’s construction, the three LEDs in Figure 14 are “a plurality of LEDs connected in series” because they have the same current path. See Lynk Br., 30 n.9. Accordingly, Figure 14 supports limitation 7(b).

The specification’s exclusive and repeated use of “LEDs connected in series” to describe individual LEDs connected in series with other LEDs—not groups of LEDs connected to other groups of LEDs—is controlling.

E. Samsung and the Board Ignore Other Claims in the ’400 Patent Supporting the Proper Construction

Samsung avoids addressing the other independent claims in the ’400 Patent that support Lynk’s construction and that were disregarded by the Board. *Compare* Lynk Br., 22-24, *with* Samsung Br., 32.

Claim 14 of the '400 Patent recites “a plurality of LED circuits connected in parallel ... wherein each LED circuit comprises at least two LEDs.” Appx0139 ['400 Patent, Cl. 14, 28:15-16]. Claim 14 thus defines a relationship between groups of LEDs (each group is an “LED circuit compris[ing] at least two LEDs”), whereas Claim 7 defines a relationship between individual LEDs. Claim 14 confirms the meaning of the inventor’s choice of language in Claim 7.

Samsung does not meaningfully dispute that Claim 14’s recitation of a relationship between “LED circuits” (groups of LEDs) confirms that Claim 7’s language defines a relationship between individual LEDs. Samsung Br., 31.

In sum, the intrinsic evidence as a whole demonstrates that “a plurality of LEDs connected in series” means that at least two LEDs are connected end-to-end to form a single current path and does not encompass groups of LEDs connected in series with other groups where no individual LEDs are connected in series.

F. Claim 7 Is Patentable Over the Nerone/Martin Combination When the Proper Claim Construction is Applied

Samsung does not dispute Lynk’s point that the Board’s finding was predicated on its (incorrect) claim construction. Samsung does not dispute that the Board’s finding was based on Nerone’s disclosure of groups of LEDs 410 being connected in series with other groups 410, where no individual LEDs are connected in series with other LEDs. See Lynk Br., 34-36; Samsung Br., 38. Samsung concedes that its

petition never asserted that Nerone discloses individual LEDs that are connected in series with other LEDs. Lynk Br., 37-38; Samsung Br., 39.

Accordingly, this Court can and should reverse without remand the finding of unpatentability of Claim 7 and dependent Claims 8-13 based on the correct claim construction of “a plurality of LEDs connected in series.”

IV. THE BOARD’S CONSTRUCTION OF THE “FORWARD VOLTAGE OF THE LEDs ... MATCHES THE RECTIFIED [] AC VOLTAGE OUTPUT OF THE DRIVER” IS ERRONEOUS

Lynk construed limitation 7(f) per its plain and ordinary meaning that the value of the total forward voltage of the LEDs is equivalent to the value of the rectified AC voltage output of the driver. Lynk Br., 39. Appx4979-4980, Appx5034 [Dep. Trans. Ducharme, 24:21-25:9, 79:14-23] (Lynk expert: “matches” means “equals within manufacturing tolerance.”); Appx0035 [FWD] (“Patent Owner’s contentions are based on the premise that ‘matches’ means an equivalence within a manufacturing tolerance.”). See Samsung Br., 43.

Like the Board, Samsung argues that “matches” encompasses “less than,” a claim construction in search of a legal theory. See Samsung Br., 40-47.

A. The Intrinsic Evidence Confirms that the Ordinary Meaning of “Matches” Is Not Expanded to Encompass “Less Than”

Lynk’s construction of “matches” is supported by the specification, which states:

[I]n order to drop higher voltages any number of LEDs may be connected in series or parallel in a device to *match a desired voltage* and light output. For example, in a lighting device that is run off of a 120 V source and contains LEDs having a forward operating voltage of 3V each connected to a bridge rectifier having diodes also having a forward operating voltage of 3V each, approximately 38 LEDs may be placed in series to drop the required voltage.

Appx0133-0134 [^{'400 Patent, 16:64-17:7]} (italics added).

In that passage, the rectified AC voltage output of the driver after the bridge rectifier is $120\text{ V} - (2 * 3\text{ V}) = 114\text{ V}$. The total forward voltage drop of the 38 LEDs connected in series is $38 * 3\text{ V} = 114\text{ V}$. Accordingly, the 114 V rectified voltage output of the driver matches the 114 V forward voltage drop of the LEDs. Lynk Br., 43. Samsung's own expert agreed. Appx5092-5093 [Baker Reply Decl., ¶ 27] ("A person of ordinary skill in the art would have understood that this discussion in the '400 patent explains that the bridge rectifier drops the voltage by 6V to provide a rectified AC voltage of 114V to 38 LEDs having a forward voltage drop of 114V."). Even Samsung's counsel agreed. See Appx6521 [Hearing Trans., 23:11-17.]

The above passage affirms the ordinary meaning in the field of LED circuit design that "matches" means "equals" or "equivalent," not "less than."

Like the Board, Samsung (Br., 43) bases its claim construction on a single sentence in the Background of the Invention section of the '400 Patent quoting the Allen reference:

Allen discloses that for the forward voltage to be "matched," in each series block, the peak input voltage must be less than or equal to the sum of the

maximum forward voltages for each series block in order to prevent overdriving.

Appx0126 [’400 Patent, 2:31-35]. See Appx0036 [FWD].

That sentence does not redefine the ordinary meaning of “matches” for purposes of the claims of the ’400 Patent. Samsung observes that the inventor uses the precise quote from Allen. Samsung Br., 40-42. That point supports Lynk’s position. A POSITA would understand that in using the exact quote from Allen, down to the quotes around “matched,” the inventor was not adopting Allen’s terminology as his own to redefine “matches.” Lynk Br, 40-41.

The only legal theories that could possibly support Samsung’s argument that the term “matches” means “less than” would be: (1) the inventor was acting as a lexicographer to redefine the term, or (2) the inventor was disclaiming the meaning of the term. Lynk Br., 41. Samsung does not address the standard for lexicographic redefinition or the standard for disclaimer, let alone make a showing based on the record that the term was redefined or disclaimed. See Samsung Br., 42-46.

Samsung tries to turn matters on their head, arguing for the first time on appeal that the plain and ordinary meaning of “matches” includes “less than” in addition to “equal to,” and that the inventor failed to disclaim that ordinary meaning. Samsung Br., 45. The newly minted argument that the ordinary meaning of “matches”

includes “less than” is not credible. The argument is invalid on the merits, and it was waived.

Samsung also argues that the ordinary meaning of a term should not be limited to a single embodiment in the specification, absent “words or expressions of manifest exclusion or restriction,” citing *Apple Inc. v. Wi-LAN Inc.*, 25 F.4th 960, 967 (Fed. Cir. 2022). Samsung Br., 45. The citation is off point because the ordinary meaning of “matches” does not include “less than,” and thus, there is nothing to disclaim or exclude for it to maintain its ordinary meaning of “equals.”

Samsung’s citation to *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276-77 (Fed. Cir. 2008) for the proposition that a claim term should be construed beyond its ordinary meaning to encompass a disclosed embodiment is off the mark. Here, there is intrinsic evidence that “matches” does not include “less than.” The mere fact that an alternative embodiment is not encompassed does not justify rejecting a construction that is supported by the intrinsic evidence. *TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1372-73 (Fed. Cir. 2008).

Accordingly, the Court should reverse the Board’s determination that “matches” encompasses “less than.”

B. Independent Claim 7 Is Patentable When the Proper Construction of “Matches” Is Applied to the Nerone/Martin Combination

1. Nerone/Martin Does Not Meet the “Matches” Limitation

Samsung admitted below that the main reference, Nerone, does not meet the “matches” limitation. Samsung relied only on the other reference of Ground 1, Martin, to meet the limitation. Appx6061-6062 [Pet., 18-19].

Samsung does not dispute that the Board’s finding on limitation 7(f) was based on its (erroneous) construction that “matches” encompasses Martin’s disclosure of an AC voltage output that is “less than” the forward voltage of the LEDs. Appx0036 [FWD] (“Consequently, Patent Owner’s contentions that ‘Martin ... is teaching that the voltage drop across individual LEDs is *less than* a maximum voltage’ ... are unavailing.”) (italics added).

It is undisputed that Martin only teaches “less than.” Lynk Br., 46. Appx0031 [FWD] (“Martin discloses selecting the number of LEDs to be 38 LEDs so that the voltage drop across each LED is less than the ‘maximum forward voltage’ ...”); Appx6332-6334 [POR, 32-34]; Appx5291-5292 [Ducharme Decl., ¶ 92] (“voltage drop across each LED is less than the ‘maximum forward voltage’ of 4.5 V”); Appx6063-6064 [Pet., 20-21] (voltage across LEDs is “low enough so as not to damage the LEDs” because it is less than the maximum forward voltage); Appx0246-0247 [Baker Decl., ¶ 123] (Martin discloses that the peak AC voltage

output is less than “maximum forward voltage of 4.5V”). See Appx1877 [Martin, ¶ [0022]].

Accordingly, the Court should reverse the finding of unpatentability because the properly construed limitation for “matches” is not met by Martin’s disclosure of “less than.”

Samsung tries to rehabilitate Martin by arguing for the first time on appeal that “while Martin discloses ‘less than,’ it also *supports* a forward voltage equal to.” Samsung Br., 55 (italics added). The legal inquiry for obviousness is what Martin affirmatively teaches or suggests, not what it “supports,” whatever that means. Attorney argument speculating what Martin would “support” is not evidence, is not tied to valid case law, and at best goes to enablement or reasonable expectation of success, not to what Martin teaches for purposes of meeting the claim limitation.

Samsung also argues that the Board credited its expert’s testimony that a POSITA would have modified Nerone in some unspecified manner so that the voltage output of the driver would “approximately match” the forward voltage of the LEDs. See Samsung Br. 54; Appx0038 [FWD] (citing Appx6064 [Pet., 21]; Appx0247-0248 [Baker Decl., ¶ 124]).² The expert reasons that a POSITA would

² Samsung’s expert’s testimony on “approximately match” is pure *ipse dixit*. It is not based on Martin, which teaches “less than.” It cannot be based on the extraneous references (discussed below in Section IV.B.2), which Samsung states are used only

design an LED circuit by making the driver's voltage output *high enough* to drive the LEDs (a minimum voltage), while keeping the driver's output voltage *low enough* (a maximum voltage) to avoid damaging the LEDs. Samsung Br., 56-57. But Samsung's expert does not (because he cannot) assert that the minimum voltage value or the maximum voltage value of the driver *matches* the forward voltage value of the LEDs. The minimum voltage/maximum voltage defines a voltage *range*, and a voltage *range* cannot and does not match (equal) the value of the forward voltage of the LEDs.

Further, the expert's conclusory testimony cannot cure the defect in Martin to transform it into teaching *matches* or even "approximately matches" when it indisputably only teaches "less than."

2. The Extraneous References Do Not Cure the Deficiency of Martin

Before the Board, Samsung relied on certain extraneous references (e.g., Cross, Allen, Bockle, and Birrell) as evidence of the knowledge of a POSITA for purposes of a motivation to combine and reasonable expectation of success, but not to fill gaps in Nerone/Martin for the "matches" limitation. Appx0031 [FWD], Appx0034-0035 [FWD] ("Petitioner further contends that is it not using these

to establish the POSITA's level of skill, and not to supply the missing limitation of "matches."

[extraneous] references for ‘gap-filling’ or combining any of Cross, Allen, Bockle, or Birrell with Nerone or Martin.”). Samsung reiterates on appeal that the extraneous references were used only to “support[] a motivation to combine and reasonable expectation of success,” “not to fill gaps in the Nerone/Martin combination.” Samsung Br. 47.

Accordingly, the extraneous references cannot fill the gap in Martin, which fails to teach “matches.”

In summary, the Board and Samsung relied on Martin (as combined with Nerone) to meet the “matches” limitation. Martin does not teach or suggest “matches” when the proper construction is applied. This Court should reverse the determination of unpatentability without remand.

V. THE BOARD COMMITTED OTHER CLAIM CONSTRUCTION ERRORS REQUIRING REVERSAL OF THE DETERMINATION THAT CLAIM 7 IS UNPATENTABLE

A. The Claim Requires that the *Value* of the Rectified AC Voltage Output Matches the *Value* of the Forward Voltage of the LEDs

Limitation 7(f) is satisfied only if the *value* of the rectified AC voltage output of the driver matches (equals) the *value* of the forward voltage of the LEDs. This is required by the plain language of the claim as confirmed by the specification. Appx0133-0134 [’400 Patent, 16:64-17:7] (“matches” when the 114 V value of the

rectified voltage output of the driver equals the 114 V value of the forward voltage of the LEDs.). See Section IV.A.

Samsung argues that Lynk raises this issue for the first time on appeal. Samsung Br., 57-58. Not so. Lynk raised the issue in its patent owner response (Appx6331-6332 [POR, 31-32]) and its sur-reply (Appx6453-6454 [Sur-reply, 12-13]). The Board recognized this claim construction issue because it (incorrectly) determined that Samsung did not have to demonstrate that the values of the voltages match in its proposed prior art combination. Appx0031, Appx0036 [FWD].

The Board implicitly engaged in claim construction by determining that the scope of the claim did not require a comparison of voltage values. *Google LLC v. Ecofactor, Inc.*, 92 F.4th 1049, 1056 (Fed. Cir. 2024) (the court engaged in claim construction because it established the scope of the limitation).

Samsung tries to dodge the claim construction issue by arguing that obviousness only requires a reasonable expectation of success. Samsung Br., 58. The issue is not reasonable expectation of success. It is whether the proposed modified Nerone/Martin system meets the limitation, here, limitation 7(f)'s requirement that the value of the driver voltage output matches the value of the forward voltage of the LEDs.

Samsung responds by asserting “that it would not be difficult” to modify Nerone based on Martin and that “a POSITA would have been capable” of carrying

out a modification because “it is a routine application of basic math and circuit design well within a POSITA’s ability.” Samsung, Br., 59. Along the same lines, the Board reasoned that a POSITA “would have been capable” of configuring Nerone so that the values match. Appx0037 [FWD]. Samsung goes on to say: “A POSITA *could* match the LED forward voltage drop to the rectified AC voltage, *which is all that is required.*” Samsung Br., 59 (italics added).

Samsung is wrong; more is required. The obviousness case must do more than show that the proposed prior art combination *could* meet the claim limitation. Rather, it must establish that the proposed combination *does* meet the claim limitation, in this case, that the value of the rectified voltage output of the driver matches the value of the forward voltage of the LEDs in Samsung’s proposed modification to Nerone. The ’400 Patent discloses an embodiment showing that the 114 V value of the rectified AC voltage output matches the 114 V value of the 38 LEDs. Appx0133-0134 [’400 Patent, 16:64-17:7]. There is no justification for Samsung and its expert to be excused from making a similar showing with its selected prior art combination to prove the claim unpatentable.

Indeed, if it was so easy and within the skill of a POSITA—as Samsung so emphatically claims—then Samsung’s expert, a professor in Electrical and Computer Engineering with over thirty years’ experience, could have made a mathematical showing that the values match in the proposed modified Nerone

system.³ But he did not, even in the 40-page reply declaration submitted after Lynk raised the issue in its POR.⁴ See Appx5058-5100 [Baker Reply Decl.], esp. Appx5096 [Baker Reply Decl., ¶ 29].

Samsung did not establish (because it could not) that in the proposed modified Nerone system the *value* of the voltage output of the driver actually matches the *value* of the forward voltage of the LEDs. Lynk respectfully submits that the finding of unpatentability of Claim 7 and dependent Claims 8-13 should be reversed without remand.

B. The Board Improperly Reads “Rectified” Out Of Limitation 7(f) Which Requires that the “Rectified [] AC Voltage Output” of the Driver Matches the Forward Voltage of the LEDs

Martin discloses an unrectified AC voltage output with a sinusoidal peak value that is configured to be less than the forward voltage of the LEDs. The Board applied an incorrect implicit construction that limitation 7(f) reads on the *unrectified*

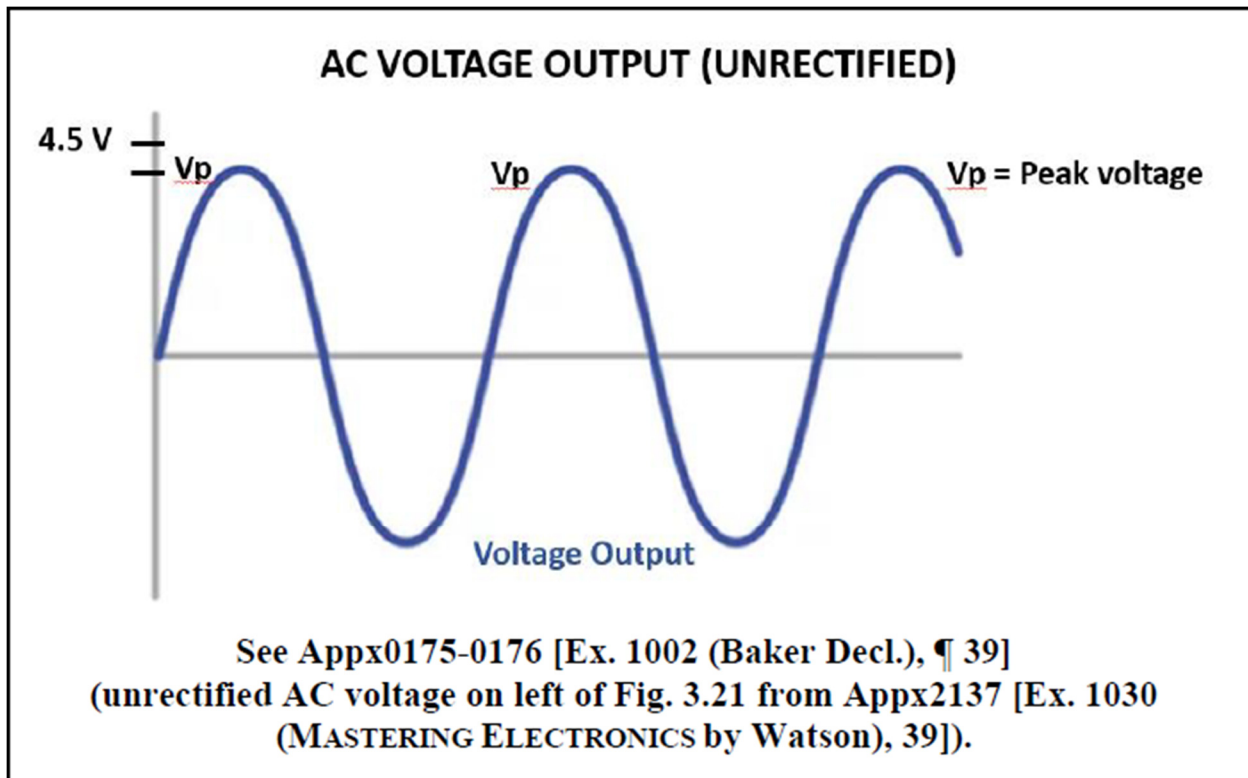
³ Samsung’s expert made many complicated computations for circuits in his declarations. See, e.g., Appx5073-5074, Appx5085-5092, Appx5097 [Baker Reply Decl.]. Yet, when it comes to this limitation the opinion is mathematically silent.

⁴ Nerone’s complex power supply system self-regulates by controlling the amount of current delivered to the LEDs “through the current limiting inductance 430, which limits the *current* supplied to the LEDs 430.” Appx2260 [Nerone, 6:4-6]; Appx6336-6337 [POR, 36-37]. Nerone thus operates by controlling the *current* delivered to the LEDs. This is the reason Samsung and its expert were unable to show that Nerone could be modified so that its driver delivers an output *voltage* that matches the value of the LED *voltage* required by the claim.

AC voltage output of Martin, as opposed to a *rectified* AC voltage output as claimed. Lynk Br., 48-53.

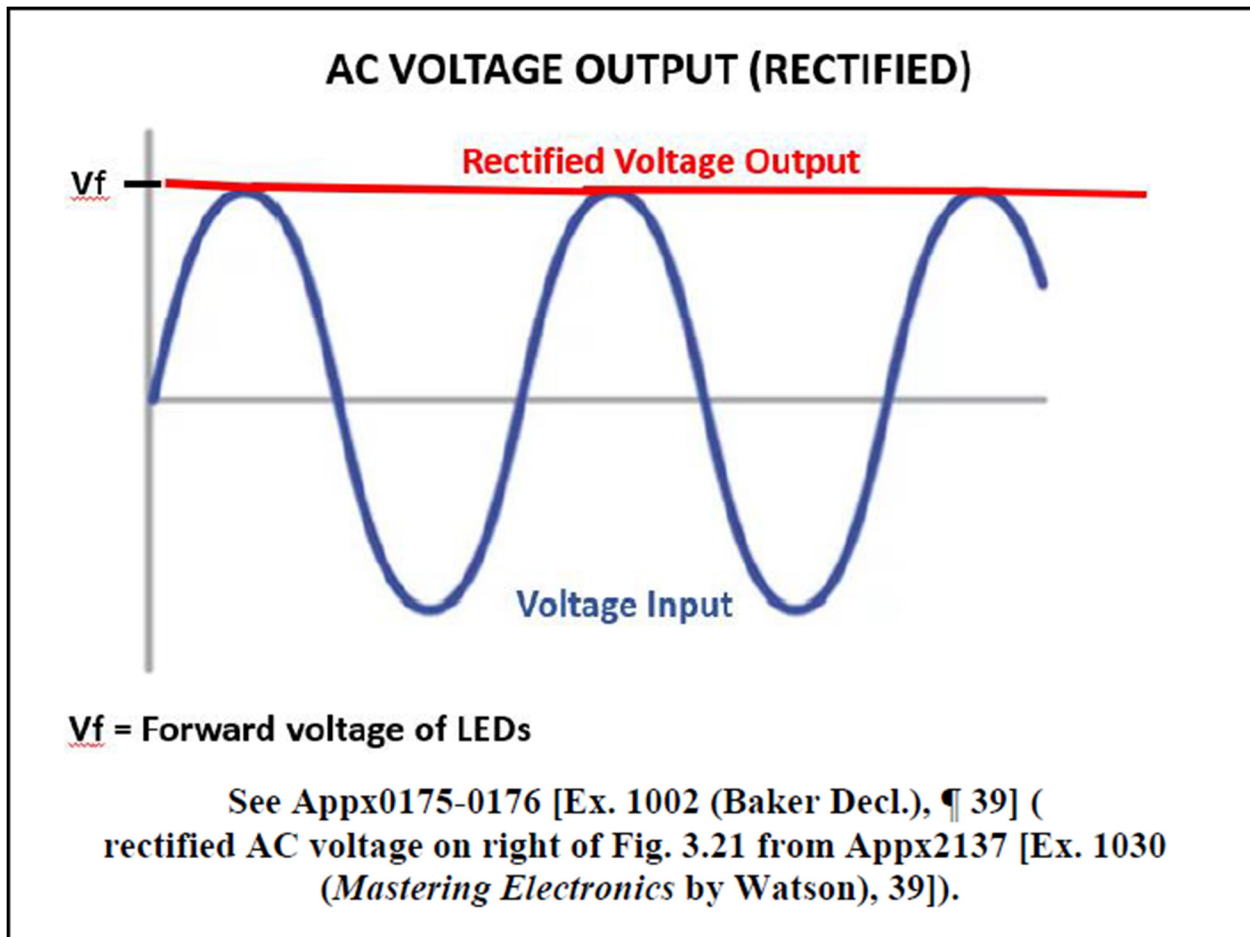
Samsung responds that Martin describes a circuit that provides a rectified AC voltage output. Samsung Br., 48 (citing Fig. 5 of Martin). That is correct. However, Martin does not disclose anything about configuring the value of the rectified AC voltage output of Figure 5 to correspond to the value of the forward voltage of the LEDs. Appx1871, Appx1877 [Martin, Fig. 5, [0023]]. Indeed, Martin discloses no values of voltage in connection with Figure 5.

Instead, Martin discloses configuring an *unrectified* AC voltage output based on the forward voltage of the LEDs. Appx1877 [Martin, [0022]]. The difference matters. Martin's unrectified AC voltage output system results in the LEDs being "on" less than half of the time, i.e., they are blinking on and off. Appx1877 (Martin, [0022]-[0023]) ("The LEDs are only on during that portion of the positive voltage half of each cycle ..."). In other words, the LED lighting system disclosed by Martin has an unrectified sinusoidal AC voltage output that causes the LEDs to turn on and off multiple times every second, as illustrated below:



See Lynk Br., 51.

On the other hand, the claimed LED lighting system provides a near-constant *rectified* AC voltage output that continuously drives the LEDs to provide steady light, as illustrated below:



See Lynk Br., 52.

Samsung responds that its expert stated that Martin’s disclosure of selecting the number of LEDs for an unrectified AC voltage output “applies equally” to a rectified AC voltage output. Samsung Br., 57. That is virtually an admission that Martin itself does not teach or suggest the limitation which is directed to a rectified AC voltage output.

For this additional reason, the finding of unpatentability of Claim 7 should be reversed.

VI. THE BOARD’S DECISION MUST BE REVERSED BECAUSE MARTIN IS NOT A PRIOR ART “PRINTED PUBLICATION”

The issue before the Court on Martin is a narrow one: Is an abandoned patent application that is prior art only under 35 U.S.C. § 102(e)(1) a prior art “printed publication” under 35 U.S.C. § 311(b)? The issue implicates Claims 7-13 and 17.

Consistently, for over a century, “[t]he statutory phrase “printed publication” has been interpreted to mean that *before the critical date* the reference must have been *sufficiently accessible to the public* interested in the art.” *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989) (italics added); *see Lynk Br.*, 58; *VLSI Br.*, 5-6, 13-14. There is no dispute Martin fails to meet that definition. It thus is not a prior art “printed publication” that can be the basis for this IPR under § 311(b).

A. Samsung Cannot Escape this Court’s Longstanding Precedent

Samsung and the PTO would disregard this Court’s longstanding construction of the term “printed publication.” They seek a novel rule that would deem patent applications to be prior art “printed publications” even where they were *not* publicly accessible before the critical date—that is, where they lack the prior “public accessibility” that is “the touchstone in determining whether a reference constitutes a ‘printed publication.’” *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009); *Lynk Br.*, 64.

There is no basis for this unprecedented construction. Where there is “settled pre-AIA precedent on the meaning of” a term, courts “presume that when Congress reenacted the same language in the AIA, it adopted the earlier judicial construction of th[e] phrase.” *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 139 S. Ct. 628, 633-34 (2019). Before the AIA, this Court and others consistently held that references are prior art “printed publication” only if they were publicly accessible before the critical date. References that become publicly accessible only *after* the critical date, like the abandoned Martin application, are *not* prior art printed publications. Lynk Br., 63-64; VLSI Br. 5-7, 18-19.

Samsung and the PTO dismiss that century-plus of precedent as “beside the point.” PTO Br., 18. They urge that “printed publication” refers only to a reference’s *form*, and not whether it qualifies as *prior art*. Samsung Br., 61; PTO Br. 18. But this Court has consistently held “[t]he statutory phrase ‘printed publication’” imposes a temporal requirement: The reference must have been publicly accessible “‘before the critical date.’” *Cronyn*, 890 F.2d at 1160. The reference’s *form* is beside the point. “When considering whether a given reference qualifies *as a prior art ‘printed publication,’* the key inquiry is whether the reference was made ‘sufficiently accessible to the public interested in the art’ before the critical date,” *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012), “*in whatever form,*” *In re Wyer*, 65 F.2d 221, 227 (C.C.P.A. 1981) (italics added).

Samsung, the PTO, and their amici cite *no* case where this Court has departed from the rule that “a prior art ‘printed publication’” must be “‘sufficiently accessible to the public interested in the art’ before the critical date.” *Voter Verified*, 698 F.3d at 1380. The PTO admits “this issue has not yet come before the Court.” PTO Br., 23 n.2. Cases where nobody questioned whether later-published patent applications were available as prior art in IPRs or reexaminations, *see* PTO Br., 23 n.2; Intel Br., 17-20, are irrelevant, as the issue was neither raised nor decided there. Lynk Br., 64-65; VLSI Br., 21-22.⁵

Cases treating *patents* as prior art in IPRs as of their filing dates under § 102(e)(2), Samsung Br., 60-61; PTO Br., 23 n.2, are also irrelevant. They at most show that, because § 311(b) specifies “patents” as a category of prior art available in IPRs, the usual prior art rules for “patents” (such as § 102(e)(2)) apply in IPRs. Because § 311(b) does *not* refer to “application[s] for patent,” however, there is no similar textual basis for applying prior art rules specific to patent applications (*i.e.*, § 102(e)(1)) in IPRs. Section 311(b) instead refers to “printed publications,” indicating that the usual prior art rules for “printed publications” apply in IPRs. Under those rules, “a prior art ‘printed publication’” must be “‘sufficiently

⁵ The PTO (at 23 n.2) cites *Amgen Inc. v. Sanofi*, 872 F.3d 1367, 1380 (Fed. Cir. 2017), but overlooks that it arose from *district court* litigation, where § 311(b)’s “printed publications” restriction does not apply.

accessible to the public interested in the art’ before the critical date.” *Voter Verified*, 698 F.3d at 1380; *see* *Lynk Br.*, 65-66; *VLSI Br.*, 22-23.

Put another way, § 311(b) requires a reference to be prior art *as a printed publication*—not a “printed publication” on one theory and “prior art” on some other theory. The PTO’s and Samsung’s tortuous argument that prior art printed publication is a bifurcated inquiry that encompasses any document (1) that is “prior art” under any subsection of 102 including but not limited to 102(e)(1), and (2) that becomes a “printed publication” at some point in time after the critical date (*PTO Br.*, 16-18; *Samsung Br.*, 61-63) is illogical and without basis in the statute or the case law. A reference is prior art *as a printed publication* only if it is publicly accessible before the critical date.

Samsung and the PTO would give the term “printed publication” different meanings in § 102 and § 311. In § 102, the term would require public accessibility before the critical date; in § 311, it would not. But “when Congress uses a term in multiple places within a single statute, the term” should have “consistent meaning throughout.” *Azar v. Allina Health Servs.*, 139 S. Ct. 1804, 1812 (2019).

B. Samsung and the PTO’s “Agency Practice” Argument Fails

Dismissing this Court’s longstanding construction of prior art “printed publications,” Samsung and the PTO offer a novel, convoluted theory: Because § 311(b) took the phrase “prior art consisting of patents or printed publications”

from the pre-AIA reexamination statute, Congress must have silently acquiesced to the PTO's supposed practice in reexaminations of treating applications for patent as prior art "printed publications" as of their filing dates. See Samsung Br. 60, 65-67; PTO Br. 23-25; *see* HTIA Br. 12-19.

Samsung and the PTO (and their amici) do not identify a *single* PTO regulation or decision articulating the PTO's supposedly well-established view. They cite decisions that *happened* to treat patent applications as prior art in reexaminations as of their filing dates, *without considering* whether that comported with the statute or this Court's construction of prior art "printed publications." See Samsung Br., 65-66. "The fact that the PTO may have failed to adhere to a statutory mandate over an extended period of time does not justify its continuing to do so." *In re Donaldson Co.*, 16 F.3d 1189, 1194 (Fed. Cir. 1994) (en banc). And Congress cannot have adopted an agency interpretation the agency failed to articulate. There is "no evidence" that "Congress was specifically aware of the PTO's allegedly sweeping" view of prior art printed publications. *Id.* at 1193 n.3.

Samsung notes that, when Congress created *inter partes* reexamination, it "wished to maintain the then-'current law'" governing *ex parte* reexamination. Samsung Br., 66; *see* PTO Br., 14, 20-21; Intel Br., 10-11. But under "then-'current law,'" later-published patent applications were indisputably *not* prior art printed publications and could *not* be asserted in *ex parte* reexamination, because § 102(e)(1)

covering “application[s] for patent” did not yet exist. See VLSI Br., 15-16 (discussing 1999 amendments). That Congress maintained, unchanged, the same “patents or printed publications” limitation from *ex parte* reexamination in 1980, to *inter partes* reexamination in 1999, to *inter parties* review in 2011, favors Lynk’s interpretation, not Samsung’s.

Samsung and the PTO (and their amici) point to the MPEP. That “looseleaf training and instruction manual” is not binding on this Court and ““does not have the force of law.”” *Racing Strollers, Inc. v. TRI Indus., Inc.*, 878 F.2d 1418, 1422 (Fed. Cir. 1989) (en banc). Nor is there evidence Congress considered it. If Congress *had* considered the MPEP, it would have found that it supports *Lynk*’s position. It states that “an abandoned patent application” is considered a “prior art” “‘printed’ publication” only “as of its patent application *publication* date.” MPEP § 901.02 (8th ed. Aug. 2001) (emph. added); *see id.* § 901.03 (“U.S. patent application publications are prior art under 35 U.S.C. § 102(a) and 102(b)”—provisions addressing prior art printed publications—“as of the publication date”).⁶ The MPEP thus recognizes that, although patent applications may be considered prior art as of their filing dates for

⁶ The PTO cites this MPEP version. PTO Br., 23. The same language appears in the version immediately preceding the enactment of the AIA (8th ed., rev. 8, July 2010) and the current version.

other purposes, *see id.* § 901.02 (citing § 102(e)), they are not *prior art printed publications* until their *publication* makes them publicly accessible.

Samsung and the PTO point to MPEP §§ 2217 and 2258. But, unlike § 901.02, those provisions nowhere analyze when a reference qualifies as a prior art “printed publication.” Those provisions merely block-quote § 102, supposedly to illustrate grounds for reexamination. But the block quote includes unquestionably irrelevant provisions like § 102(g)(1), which concerns “interference[s],” not reexaminations. That block quote—the crux of Samsung’s and the PTO’s argument—gives no indication the MPEP’s compilers even *considered* whether § 102(e)(1) properly applies in reexaminations, much less that such an approach reflected the agency’s reasoned judgment. It is no basis for concluding that Congress abandoned the clear, longstanding judicial construction of prior art “printed publications.”

Samsung’s *post-AIA* IPR cases, *Samsung Br.*, 67, shed no light on Congress’s intent in enacting the AIA. And none considered this issue.

C. Samsung’s and the PTO’s Policy Arguments Are Unavailing

Lacking support in text or precedent, Samsung, the PTO, and their amici invoke their views of desirable policy and supposed statutory “purpose.” But neither policy considerations nor “‘even the most formidable argument concerning [a] statute’s purpose’” can overcome a statute’s text, which controls regardless of why Congress chose it. *Nichols v. United States*, 578 U.S. 104, 112 (2016).

For example, the PTO suggests it would be better policy for IPRs to encompass all “document-based prior art.” PTO Br., 20-22; *see* Intel Br., 12-13; HTIA Br., 11. But § 311(b) does not say “document-based” prior art—it says prior art “patents” and “printed publications,” terms with well-established meanings.

The PTO argues those established meanings should be disregarded because, in its view, the language Congress chose in § 311(b) is “attributable to historical accident” and including other kinds of document-based prior art in reexaminations and IPRs would promote the “purpose” of “provid[ing] an efficient post-issuance process.” PTO Br., 22. The statutory history indicates Congress acted deliberately, not accidentally, in limiting the prior art available in reexaminations and IPRs. *See* VLSI Br., 15-16. In all events, the statute’s text controls regardless of why Congress chose it—and even if the PTO thinks a different “approach might make for the more efficient policy.” *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 368 (2018).

This Court has made it clear, moreover, that *not* all document based prior art qualifies as prior art “patents” or “printed publications.” *See Qualcomm Inc. v. Apple Inc.*, 24 F.4th 1367, 1372-76 (Fed. Cir. 2022) (holding that applicant-admitted prior art appearing in patent document cannot be basis for IPR under § 311(b)). The same is true here. Martin may be a “document.” But because it was not publicly accessible before the critical date, it is not a prior art “printed publication” that could be the

basis for this IPR. The Board's decision with respect to Claims 7-13 and 17 must be reversed.

VI. CONCLUSION

For the foregoing reasons, this Court should reverse the Board's rulings and hold all Claims 7-13 and 17 patentable.

Date: June 14, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the undersigned date, I caused this Reply Brief of Appellant to be filed electronically with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to all parties who are registered CM/ECF users.

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June 14, 2024

CERTIFICATE OF COMPLIANCE

The foregoing filing complies with the relevant type-volume limitation of the Federal Rules of Appellate Procedure and Federal Circuit Rules because the filing has been prepared using a proportionally-spaced typeface and includes 6793 words.

Respectfully submitted,

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