

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CIVIL MINUTES - GENERAL

Case No. SACV 18-01571 JVS (DFMx) Date November 26, 2019
Title Polaris PowerLED Tech., LLC v. VIZIO, Inc.

Present: The Honorable **James V. Selna, U.S. District Court Judge**

Lisa Bredahl/Rolls Royce Paschal

Not Reported

Deputy Clerk

Court Reporter

Attorneys Present for Plaintiffs:

Attorneys Present for Defendants:

Not Present

Not Present

Proceedings: [IN CHAMBERS] Order re Claim Construction

Plaintiff Polaris PowerLED Technologies, LLC (“Polaris” or “Plaintiff”) and Defendant VIZIO, Inc. (“VIZIO” or “Defendant”) have submitted proposed claim constructions for nine terms in U.S. Patent No. 8,223,117 (“the ’117 Patent”). See, e.g., Docket No. 78. Both parties have submitted opening and responsive claim construction briefs. Polaris Op. Br., Docket No. 106; VIZIO Op. Br., Docket No. 105; Polaris Resp. Br., Docket No. 140; VIZIO Resp. Br., Docket No. 139.

A hearing was held on the parties’ claim construction disputes on November 20, 2019 and all matters were taken under submission.

The Court construes the claim terms identified herein.

I. BACKGROUND

Two patents are asserted in this case: the ’117 Patent and U.S. Patent No. 7,329,087 (“the ’087 Patent”). In their Joint Claim Construction and Prehearing Statement, the parties identified disputed claim terms in the ’087 Patent. However, the ten most critical claim terms that were identified for claim construction briefing all came from the ’117 Patent.

The ’117 Patent generally relates to a method and apparatus for adjusting the brightness of a display screen.

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The disputed claim terms appear in asserted Claims 1, 2, 4, 5, 9, 13, 14, 15, and 18 of the '117 Patent.¹ *See generally* Joint Claim Construction Statement (“Joint Statement”), Docket No. 78; VIZIO Op. Br.; Third Amended Complaint (“TAC”), Docket No. 95. The language of the two asserted independent claims are included below.

Claim 1 recites:

1. A brightness control circuit with selective ambient light correction comprising:
 - a first input configured to receive a user signal indicative of a user selectable brightness setting;
 - a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level;
 - a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal; and
 - a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

Claim 15 recites:

15. A method to selectively provide ambient light correction, said method comprising:

¹ In its opening brief, VIZIO lists independent Claims 1 and 15 and dependent Claims 2, 4, 5, 6, 7, 9, 13, 16, and 18 as asserted claims. VIZIO Op. Br. at 1. However, Claim 14, not included in VIZIO’s list, is listed as a claim with a disputed term in both the Joint Statement and elsewhere in VIZIO’s briefs. *Id.* at 3; Joint Statement at 1; VIZIO Resp. Br. at 5. Additionally, the Third Amended Complaint lists Claim 14 as one of the asserted claims. Docket No. 95 ¶ 26. As also later discussed, although identified as asserted claims, Claims 9 and 13 were not listed in the Joint Statement Disputed Terms Table for the smaller disputed phrase “configured to,” even though it appears in both of those claims. *See* Joint Statement; '117 Patent, Claims 9, 13.

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receiving a user input signal indicative of a user selectable brightness setting;
selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level; and
adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

II. LEGAL STANDARD

A. General Claim Construction Principles

Claim construction is “exclusively within the province of the court.” Markman v. W. Instruments, Inc., 517 U.S. 370, 372 (1996). Such construction “must begin and remain centered on” the claim language itself. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). But extrinsic evidence may also be consulted “if needed to assist in determining the meaning or scope of technical terms in the claims.” Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1216 (Fed. Cir. 1995).

In construing the claim language, the Court begins with the principle that “the words of a claim are generally given their ordinary and customary meaning.” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). This ordinary and customary meaning “is the meaning that the [claim] term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” Id. at 1313. “[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” Id.

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“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances general purpose dictionaries may be helpful.” *Id.* at 1314 (internal citation omitted). In other cases, “determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art.” *Id.* Then “the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.” *Id.* (internal quotation marks omitted). These sources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.* (internal quotation marks omitted).

But it is improper to read limitations from the specification into the claim. *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005) (“[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim . . . we should never know where to stop.”) (quoting *Phillips*, 415 F.3d at 1312). A court does “not import limitations into claims from examples or embodiments appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that ‘the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.’” *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (internal citations omitted) (emphasis added).

B. Patent Invalidity Due to the Indefiniteness Under 35 U.S.C. § 112 ¶ 2

A patent must conclude “with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112, ¶ 2.² “[A] patent is invalid for indefiniteness if its

² Section 112, ¶ 2 was renamed as § 112(b) by the America Invents Act, Pub. L. No. 112–29 (“AIA”), which took effect on September 16, 2012. Because the inventors here applied for the ’117 Patent before the act’s passage, § 112, ¶ 2 applies.

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claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 901 (2014). The party seeking to show indefiniteness “must establish it by clear and convincing evidence.” Dow Chem. Co. v. Nova Chems. Corp., 809 F.3d 1223, 1227 (Fed. Cir. 2015). Indefiniteness is a question of law. DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245, 1260 (Fed. Cir. 2014) (citing Wellman, Inc. v. Eastman Chem. Co., 642 F.3d 1355, 1365–66 (Fed. Cir. 2011)).

III. ANALYSIS

A. Agreed Construction

Before opening claim construction briefs were filed but after the parties submitted their Joint Claim Construction and Prehearing Statement, VIZIO agreed to Polaris’s proposed construction of the following claim term:

Claim Term	Agreed Construction
“overdrive clamp circuit” (’117 Patent, Claim 6)	Plain and ordinary meaning

See VIZIO Op. Br. at 1 n. 1; Polaris Op. Br. at 25.

B. Disputed Terms

1. “ambient light” (’117 Patent, Claims 1, 14, 15)

Polaris’s Construction	VIZIO’s Construction	Court’s Construction
Plain and ordinary meaning	“light surrounding a visible display”	No construction

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Despite their assertions to the contrary, the parties appear to somewhat agree about the plain and ordinary meaning of “ambient light” itself. Instead, it appears that the parties’ true dispute focuses on the proper reference point for “ambient light” when read within the context of the claims. Specifically, the parties dispute whether the appropriate reference point is a “visual display” or a “light sensor.” See VIZIO Op. Br. at 3; Polaris Op. Br. at 7–8.

a) plain and ordinary meaning

VIZIO states that its proposed construction is “consistent with the meaning of [‘ambient light’] as known to a person of ordinary skill.” See VIZIO Op. Br. at 3. Polaris states both that “‘ambient light’ should be construed to have its plain and ordinary meaning” and that “VIZIO’s proposed construction is not the plain and ordinary meaning.” Polaris Op. Br. at 7–8. However, Polaris’s and VIZIO’s general descriptions of the specific phrase “ambient light” appear to be synonymous. VIZIO’s proposed construction appears to involve “light surrounding” a component. VIZIO Op. Br. at 3. Polaris’s proposed construction appears to refer to ambient light as “light in the environment.” Polaris Resp. Br. at 2.

Polaris asserts that VIZIO’s claim construction would improperly require that ambient light always include light from a visible display itself. Polaris Resp. Br. at 3. To support its position, Polaris identifies circumstances where the visible display is not purportedly producing light. Id. However, VIZIO does not necessarily appear to be arguing that “ambient light” must always include light from the display, such that the display must always be producing light. Instead, VIZIO simply states that “ambient light is all light surrounding the display, including light produced by the display itself.” VIZIO Op. Br. at 4. This would appear to be consistent with Polaris’s position. That is, if the display is producing light, that light will likely contribute to “ambient light.” This statement does not show that VIZIO believes, however, that a visible display must always be producing light that contributes to the surrounding ambient light. Polaris does not otherwise appear to disagree that “ambient light” may include light from the display. It states, “the ’117 patent does not restrict ‘ambient light’ to light from any particular

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type of source.” Polaris Resp. Br. at 3. The Court also notes that it is unclear how reading a reference point for the measurement of “ambient light” into a construction of the term (*i.e.*, construing ambient light in relation to, for instance, a visible display) would lead a jury to understand the composition of “ambient light” must always include light from the display.

Based on the parties’ positions, it is not clear that they actually have a dispute on this issue, and instead appear to agree that ambient light is whatever environmental light exists in the particular location at issue. At the hearing, the parties briefly mentioned their dispute regarding the plain meaning of this term, but it remained unclear from their comments whether by its interpretation, VIZIO would require that any time any light is emitted from the display, it must necessarily contribute to the claimed ambient light. Without the necessary clarification regarding the parties’ position, the Court agrees with Polaris that construction of the term is not warranted.

b) reference point for “ambient light” measurement

VIZIO contends that its construction “specifies that ambient light is light surrounding the ‘visual display’ recited in the claims—not other ambient light, such as ambient light simply present in a room not affecting the visual display.” VIZIO Op. Br. at 4. Polaris objects to the “visible display” aspect of VIZIO’s proposed construction, arguing that the embodiments in the specification contain a light sensor that “detects ambient light at the light sensor *not* at some unnamed other location surrounding the visual display.” Polaris Op. Br. at 8 (emphasis in original). The parties did not further address this aspect of their dispute at the hearing.

Claim 1 provides, *inter alia*, “a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level” ’117 Patent, Claim 1 (emphasis added). Claim 14 recites, “[t]he brightness control circuit of claim 13, wherein the light sensor further comprises a low pass filter to reduce sensitivity to transient variations of ambient light.” *Id.* at Claim 14 (emphasis added). Claim 15 recites, *inter alia*, “selectively multiplying the input signal with a sense signal to generate

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a combined signal, wherein the sense signal indicates an ambient light level” Id. at Claim 15 (emphasis added). Claim 1 and 14 both recite a “light sensor,” but Claim 15 only recites “a sense signal.”

It is unclear why the term “ambient light” should be limited by more than the context provided by the surrounding claim language itself. VIZIO points out that Claim 15 does not mention a light sensor at all. VIZIO Resp. Br. at 6. Construing the term “ambient light” to mean “light surrounding a light sensor” would thus not be supported particularly in the context of Claim 15, which does not even recite a “light sensor.” See ’117 Patent, Claim 15. On the other hand, VIZIO has not adequately explained how the claims and specification of the ’117 Patent support a definition of “ambient light” where a visible display is always the appropriate reference point. It is unclear why VIZIO believes a person of ordinary skill in the art would not understand “ambient light” as “surrounding light” and understand the appropriate reference point in the context of the claim at issue. For example, VIZIO points to language in the ’117 Patent specification that discusses “ambient light reflect[ing] off the surface of the LCD.” See VIZIO Resp. Br. at 6; ’117 Patent at 1:27-30. However, in the preceding sentence, the specification uses the term “ambient room lighting.” ’117 Patent at 1:25-27 (emphasis added). This demonstrates that the specification contemplated a definition of “ambient light” that requires a reference point modifier, either by explicit inclusion or by context, and such a reference point is not encompassed within the term itself. In this case, it seems that the surrounding claim language is sufficient to provide the context necessary for the point of reference for the term “ambient light.”

c) conclusion

Without more information about the impact of the parties’ proposals on dispositive issues in this case, such as infringement or invalidity, it would be inappropriate to construe the term “ambient light” as limited in the way either party proposes. This is particularly the case where the phrase “ambient light” would be understandable to a lay juror and the reference point of that “ambient light” will be

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understood in the context of the claim itself. Without fully understanding the basis for this dispute, the meaning of the term will not be limited and it will not be construed.

2. “configured to” Terms (’117 Patent, Claim 1)³

Polaris’s Construction	VIZIO’s Construction	Court’s Construction
“actually programmed or implemented with hardware or software to”	Plain and ordinary meaning	Varies by larger claim term; <u>see</u> Conclusion Section of this Order

The main dispute between the parties appears to be whether the meaning of “configured to” includes “software” across all the claim limitations or whether the terms modified by “configured to” differ in ways that make inclusion of “software” inappropriate with respect to certain claim limitations.

VIZIO contends that Polaris’s construction is too broad because it implies that certain claim elements can be implemented in either software or hardware, even where there is only support in the patent intrinsic record for the claim element being implemented in hardware. VIZIO Op. Br. at 6, 8. VIZIO further argues that “the plain and ordinary meaning of ‘configured to’ is context-dependent as used in patent drafting and the claims at issue here.” VIZIO Reply Br. at 8. However, aside from the specific references to hardware and software, VIZIO appears to agree with Polaris where it states

³ The smaller phrase “configured to” appears in the context of multiple larger claim limitations, including limitations in asserted Claims 1, 9, and 13. The parties’ Joint Claim Construction and Prehearing Statement only refers to the “configured to” term in the context of Claim 1. Joint Statement at 3. However, VIZIO’s opening and responsive claim construction briefs suggest that the parties’ dispute over the meaning of this term also encapsulates the limitations where the “configured to” phrase appears in the asserted dependent claims. VIZIO Op. Br. at 7–8; VIZIO Resp. Br. at 8. VIZIO also mentions “configured to” in the context of Claims 8 and 12, however, these are not asserted claims so the court will not address these limitations. VIZIO Op. Br. at 1, 7. Further discussion of this issue is provided in this section.

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that the term “configured to” “implies a claim element is arranged in a particular way or designed to perform a particular function.” VIZIO Op. Br. at 6.

As the basis for its proposed construction, Polaris relies on the fact that a different district court in another case construed the term “configured to” in the context of the ’117 Patent to mean “actually programmed or implemented with hardware or software to.” See Polaris Op. Br. at 9–10; Polaris PowerLED Techs., Inc. v. Samsung Elecs. Am., Inc., Civil Action No. 2:17-cv-00715-JRG (“Samsung Case”), Docket No. 333 (E.D. Tex. June 7, 2019) (“Samsung Summary Judgment Order”)⁴. However, as VIZIO notes, this construction was given in the context of a dispute about the scope of the claim limitation “a multiplier configured to.” VIZIO Resp. Br. at 10.

The Court agrees with VIZIO that the meaning of the term “configured to” is context-dependent and its context-specific meaning within a particular claim may differ as the terms modified by “configured to” differ. Since, presumably “configured to” has the same general meaning throughout the claims, this dispute appears to be about the scope of the larger claim limitations that “configured to” appears in, not about the meaning of the smaller term itself. Cf. Paragon Solutions, LLC v. Timex Corp., 566 F.3d 1075 (Fed. Cir. 2009) (discussing the presumption of consistent claim term meaning). For this reason, the Court will analyze whether construction of the larger claim limitations that include the term “configured to” is necessary or appropriate.

As a general matter, however, the Court rejects VIZIO’s arguments to the extent that they de facto exclude software implementations of certain claim limitations simply because such an embodiment is not specifically described in the ’117 Patent’s specification. Similarly, the Court rejects VIZIO’s argument that “the other elements of the system are always implemented in hardware” because the specification describes an embodiment where arguably the multiplier and other elements are all implemented in hardware. VIZIO Resp. Br. at 9. The Federal Circuit has “repeatedly cautioned against limiting claims to a preferred embodiment.” Comaper Corp. v. Antec, Inc., 596 F.3d

⁴ A copy of the Samsung Summary Judgment Order was also filed in this case at Docket No. 139-3.

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1343, 1348 (Fed. Cir. 2010) (citing Linear Tech. Corp. v. Int’l Trade Comm’n, 566 F.3d 1049, 1058 (Fed. Cir. 2009); Comark Commc’ns, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). VIZIO does not argue that the patent has disclaimed embodiments where the components are software-implemented. Instead, it merely points to the absence of descriptions of these embodiments in the specification. Similarly, statements from VIZIO’s expert seem to focus on whether software embodiments are affirmatively described or whether the description of the software multiplier implies software implementation of certain components. See Declaration of Dr. Thomas Katona in support of VIZIO’s Opening Claim Construction Brief (“Katona Decl.”), Docket No. 105-6 ¶ 36 (“[t]here is no reason that a person of ordinary skill in the art would understand that implementing the multiplier in software implies that, for instance, the ‘light sensor’ or ‘dark level bias’ elements can be similarly implemented.”). However, the relevant inquiry is not whether software implementations of each limitation are described as a preferred embodiment, but whether a person of ordinary skill in the art would read the claims and specification of the ’117 Patent and understand the claim limitation as something that could be implemented in software. See Comaper, 596 F.3d at 1348.

However, the Court also rejects Polaris’s arguments to the extent it contends that all claim elements that include the term “configured to” can be understood to be implemented purely in software. This is particularly the case where a software implementation is not described in the specification and it is unclear that the ordinary meaning of the claim limitation would encompass a purely software implementation. Further, the Court rejects Polaris’s arguments to the extent it contends that the claim construction in the Samsung Case provides a sufficient standalone basis for determining that all the claim elements at issue include software implementations. See Polaris Resp. Br. at 4–5; Polaris Op. Br. at 9–10. In that case, the district court found that there was a dispute about the term “configured to” in the context of a summary judgment motion. The accused infringer argued that the accused products did not meet the “configured to selectively generate a combined signal” limitation of the multiplier claim element “when a ‘combined signal’ [was] not generated in [the accused product] by a ‘multiplier’ until end-users have taken manual action.” See Samsung Case, Samsung Summary Judgment

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Order at 3; Samsung Case, Docket No. 195 (E.D. Tex. March 28, 2019) (“Samsung Motion for Summary Judgment of Noninfringement”); Samsung Case, Docket No. 196 (E.D. Tex. March 28, 2019) (“Samsung Partial Motion for Summary Judgment”); VIZIO Resp. Br. Ex. 7. In other words, the actual dispute about claim scope in that case related specifically to “configured to” in the context of the multiplier claim limitation, not to all of the “configured to” limitations across the claims. See id.

In sum, the Court rejects both parties’ arguments as inapplicable across all larger claim limitations. Instead, the Court will address the claim elements in Claims 1, 9, and 13 that include the “configured to” term individually below.

- a) “a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” (’117 Patent, Claim 1)

The parties do not appear to dispute that the context-specific meaning of “configured to” includes “software” in the context of the larger multiplier claim limitation. In particular, the parties agree that embodiments in the specification describe a “multiplier” as a component that can be implemented in software. See Polaris Resp. Br. at 6; VIZIO Resp. Br. at 8–9. Additionally, as noted, the term “configured to” in the context of a dispute over the multiplier limitation was previously construed by the district court in the Samsung case as “actually programmed or equipped with hardware or software to.” Samsung Case, Samsung Summary Judgment Order at 3. At the hearing, VIZIO confirmed its agreement that the multiplier can be implemented in software, recognizing that the point had been conceded in its briefs.

The Court sees no reason why the multiplier claim limitation should not be construed in a way that includes software implementations, since the specification describes embodiments where the multiplier is implemented in software and the parties agree about this understanding of the term. Therefore, this larger multiplier claim limitation will be construed as “a multiplier actually programmed or implemented with hardware or software to selectively generate a combined signal based on both the user signal and the sensing signal.”

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- b) “a first input configured to receive a user signal indicative of a user selectable brightness setting” (’117 Patent, Claim 1)

In his supplemental declaration in support of Polaris’s responsive claim construction brief, Polaris’s expert, Balakrishnan, states, “one of ordinary skill in the art would understand that ‘first input’ (claim 1) . . . can be implemented in either hardware or software.” Supplemental Declaration of Dr. Ravin Balakrishnan in Support of Polaris’s Responsive Claim Construction Brief (“Supp. Balakrishnan Decl.”), Docket No. 140-1 ¶ 15.⁵ Balakrishnan does not provide any further explanation to support his assertion that the “first input” could be implemented in either hardware or software.

VIZIO’s briefs mention this claim limitation but do not make specific arguments about it. VIZIO Op. Br. at 7. VIZIO instead more generally contends that all elements aside from the multiplier are not implemented in software. VIZIO Resp. Br. at 12. However, this contention appears to be based entirely on VIZIO’s assertion that a software implemented embodiment is not specifically described in the ’117 Patent’s specification.

The parties do not focus on this particular limitation in their overall “configured to” dispute. Aside from VIZIO’s contention that claim scope should be limited to the

⁵ In its responsive claim construction brief, VIZIO argues that Polaris’s expert is not a person of ordinary skill in the art because his degrees are in computer science and he “has no experience in ‘analog circuit design, lighting design, and/or optical sensors.’” VIZIO Resp. Br. at 3–4. However, in its opening brief, VIZIO stated that it did “not contend that there is a meaningful difference” between its definition of a person of ordinary skill in the art and Polaris’s definition of a person of ordinary skill in the art from a previous case. VIZIO Op. Br. at 3. Polaris’s definition, which VIZIO quoted in its opening brief, explicitly includes a person with a bachelor’s degree in computer science with experience in “the field of visual displays and related technology”. *Id.* Since Polaris’s expert satisfies the definition of a person of ordinary skill in the art that VIZIO equated with its own definition, the Court rejects VIZIO’s arguments that Polaris’s expert is not a person of ordinary skill in the art. Declaration of Dr. Ravin Balakrishnan in Support of Plaintiff’s Opening Claim Construction Brief (“Balakrishnan Decl.”), Docket No. 106-1 ¶¶ 2-10. The Court otherwise finds VIZIO’s challenge to Balakrishnan’s qualifications unpersuasive at this time.

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specification's preferred embodiments, the only basis in the record to support a particular meaning of the term – and specifically that the “first input” may be implemented in hardware, software, or some combination – comes solely from a single conclusory sentence in a supplemental declaration from Polaris's expert. The Court finds this statement insufficient as a basis to construe this term. *Phillips*, 415 F.3d at 1318 (“conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court”); *Aristocrat Tech. v. Int'l Game Tech.*, 709 F.3d 1348, 1360–61 (Fed. Cir. 2013) (stating “[w]e . . . see nothing improper in discounting conclusory statements as ‘not useful.’”).

At the hearing, Polaris argued that the first input can be implemented in software, but focused many of its arguments on reference to the “user signal” and the assumption that, if the user signal is implemented in software, the first input must be capable of being implemented in software as well. VIZIO sought the opportunity to consult its expert and submit supplemental briefing on “configured to” in the specific context of the “first input” limitation. The parties will be permitted to file supplemental briefs on this dispute as explained in the Conclusion section of this Order.

- c) “second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or a manual mode” (’117 Patent, Claim 9)

For the same reasons as “first input,” the record is insufficient to construe this term at this time. Aside from VIZIO's contention that claim scope should be limited to the specification's preferred embodiments, the only evidence directly addressing this claim limitation comes from a single sentence in the supplemental declaration of Polaris's expert. *See* Supp. Balakrishnan Decl. ¶ 15 (“One of ordinary skill in the art would understand that ‘first input’ (claim 1) and ‘second input’ (claim 9) can be implemented in either hardware or software.”).

As with the “first input” limitation, at the hearing Polaris argued that the “second input” can be implemented in software. VIZIO sought the opportunity to consult its

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expert and submit supplemental briefing on “configured to” in the specific context of the “second input” limitation. Again, the parties will be permitted to do so as further explained in the Conclusion section of this Order.

- d) “a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level” (’117 Patent, Claim 1)

Regarding “a light sensor,” Polaris’s expert appears to essentially concede that the term would not be understood in the context of Claim 1 as being capable of being implemented purely in software. Balakrishnan states that “one of ordinary skill in the art would understand that ‘light sensor’ (claim 1) can similarly involve hardware and software components . . . [i]t is not unusual to have software associated with a light sensor to groom, condition, or modify the output of the light sensor.” Supp. Balakrishnan Decl. ¶ 15 (emphasis added). Although these statements seem to demonstrate that the light sensor could be implemented by a combination of both hardware and software components, they do not provide a basis for concluding that this claim element could be understood as potentially being implemented purely in software.

Balakrishnan’s statements are made in the context of his supplemental declaration, and thus (as with the “first input” and “second input” terms), VIZIO has not had the opportunity to respond to them. The parties’ dispute regarding the scope of this particular claim limitation is unclear. For example, it is unclear if Polaris even contends that this particular limitation can be implemented purely in software. At the hearing, Polaris did not address the “light sensor” limitation or argue that it can be implemented purely in software. VIZIO sought the opportunity to submit supplemental briefing on all “configured to” limitations aside from the multiplier. However, there does not appear to be a dispute about whether the “light sensor” can be implemented purely in software. The Court declines to consider supplemental briefing or construe the term at this time.

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- e) “a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display” (’117 Patent, Claim 1)

The parties’ dispute about the scope of the term “dark level bias” is discussed more extensively in a later section of this Order regarding the parties’ indefiniteness disputes. However, it is worth noting here that Polaris has provided persuasive evidence that “a dark level bias” could either be a tangible electrical signal or a value of a software variable. Balakrishnan states, “[o]ne of ordinary skill in the art would understand that, if the multiplier or the multiplication is performed in software, then the . . . ‘dark level bias’ . . . would also be implemented in software.” Supp. Balakrishnan Decl. at ¶ 12. He also explains that the “‘combined signal’ generated by the software algorithm multiplier will also be in software. If the ‘combined signal’ is in software, then the ‘dark level bias’ would also be in software in order for the ‘dark level bias’ to adjust it.” *Id.* at ¶ 13. The “dark level bias” term is also used in Claim 3, which provides that “the multiplier multiplies a sum of the user signal and the sensing signal by the dark level bias.” ’117 Patent, Claim 3. Balakrishnan explains that “if the software algorithm multiplier is multiplying the ‘dark level bias’ by the ‘sum of the user signal and sensing signal,’ then all values would be in software (e.g., a software variable).” Supp. Balakrishnan Decl. at ¶ 14. Finally, he states that “the only way that the multiplier can be a ‘software algorithm’ is if the signals that it is manipulating (e.g., user signal, sensing signal, dark level bias) are implemented in software (e.g., as software variables).” *Id.*

Unlike the “light sensor” and “fist input” claim elements, Polaris has provided sufficient evidence to show that “a dark level bias” can be implemented purely in software. In fact, Polaris has provided evidence that when the multiplier is implemented in software, as described in the ’117 specification, the “dark level bias” will be implemented in software. For this reason, the Court adopts a construction of this claim limitation that encompasses purely hardware, purely software, and mixed hardware and software implementations.

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At the hearing, VIZIO requested the opportunity to provide supplemental briefing on the larger “a dark level bias configured to . . .” phrase. The Court declines to accept supplemental briefing on the “dark level bias” limitation as the parties’ initial briefs already dedicated significant space to addressing the “dark level bias” term.

The Court construes this claim limitation as: “a dark level bias actually programmed or implemented with hardware or software to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display.”

f) “amplifier configured to generate the sensing signal” (’117 Patent, Claim 13)

VIZIO specifically argues that this claim element would not be implemented in software. VIZIO Op. Br. at 8. VIZIO’s expert states that “a person of ordinary skill in the art would have understood that an ‘amplifier configured to generate the sensing signal’ would include the amplifier component, but not other elements such as software, because amplifiers directly generate signals.” Katona Decl. ¶ 34. Polaris’s expert states that “[o]ne of ordinary skill in the art would have known that such amplifiers could be implemented in hardware or software as was commonly done in the art.” Supp. Balakrishnan Decl. ¶ 18. Additionally, Polaris’s expert states that “[t]here are numerous examples of software applications that amplify a signal digitally in software.” Id. Finally, Balakrishnan refers to some of Polaris’s exhibits as examples of software-implemented amplifiers. Id.

Polaris has provided persuasive evidence that based on the state of the art the “amplifier” claim limitation would be understood as potentially implemented purely in software. Based on Balakrishnan’s opinions, because amplifiers are commonly implemented in software, it is unclear why the “amplifier” term in Claim 13 would be understood to exclude software implementations as VIZIO’s suggests. For this reason, the Court adopts a construction of this claim limitation that encompasses purely

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hardware, purely software, and mixed hardware and software implementations of the amplifier.

Neither party addressed this limitation at the claim construction hearing. Supplemental briefing is unnecessary as VIZIO's initial brief made arguments about how this specific claim element would be implemented. See VIZIO Op. Br. at 8.

Accordingly, the Court construes this claim limitation as: "amplifier actually programmed or implemented with hardware or software to generate the sensing signal."

g) conclusion

The dispute between the parties about "configured to" appears to be about the scope of the larger claim limitations that "configured to" appears in, not about the meaning of the smaller term itself. The Court has analyzed each of these larger claim limitations individually and provided constructions as stated herein and to the extent appropriate on the current record. See supra sections (a)-(f).

3. "dark level bias" Terms

Polaris's Construction	VIZIO's Construction	Court's Construction
Plain and ordinary meaning	Indefinite, for various reasons	"a value deviation from the ambient light level when the ambient light level approaches approximately zero, where the value is a voltage value of an electrical signal or value of a software variable"

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The smaller phrase “dark level bias” appears in different, larger claim phrases in many of the asserted claims of the ’117 Patent. Those larger claim phrases are:

- “a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display” (’117 Patent, Claim 1)
- “wherein the dark level bias is provided to the multiplier such that the amount of adjustment to the combined signal is dependent on the user selectable brightness setting” (’117 Patent, Claim 2)
- “wherein the dark level bias is added to the combined signal such that the amount of adjustment to the combined signal is independent of the user selectable brightness setting” (’117 Patent, Claim 4)
- “wherein the dark level bias is added to an output of the multiplier” (’117 Patent, Claim 5)
- “adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display” (’117 Patent, Claim 15)
- “wherein the dark level bias is added to the combined signal after selective multiplication such that the amount of adjustment to the combined signal is independent of the input signal and the sense signal” (’117 Patent, Claim 18)

VIZIO argues that the smaller term “dark level bias” is indefinite because it is used in “irreconcilable” ways in the various claims of the ’117 Patent. See VIZIO Op. Br. at 10. VIZIO primarily argues that the term is used to refer to a tangible circuit component in independent Claims 1 and 15, but only as a “value or signal” in the dependent claims, rendering the term indefinite as inconsistently used across the claims. Id. VIZIO also alternatively argues that if the term as it appears in independent Claim 1 is interpreted as referring solely to a “value,” Claim 1 is indefinite as a “mixed method-apparatus claim.” Id. at 10–11. VIZIO makes related mixed method-apparatus claim arguments for some of the claims that depend from Claim 1.

As previously provided, Claim 1 of the ’117 Patent recites:

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1. A brightness control circuit with selective ambient light correction comprising:
 - a first input configured to receive a user signal indicative of a user selectable brightness setting;
 - a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level;
 - a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal; and
 - a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

'117 Patent, Claim 1 (emphasis added). Claim 15, meanwhile, is a method claim that requires, *inter alia*, “adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display.”

a) Whether a Known Meaning Exists for the Term “dark level bias”

As an initial matter, the parties somewhat skip over explaining the full technical meaning of the phrase “dark level bias.” VIZIO’s expert suggests that the phrase is coined, stating that he does not believe it has a plain meaning. Katona Decl. ¶ 39 (noting that the terms “bias” and “bias circuit” have known meanings, but asserting that a person of skill in the art would not consider the term “dark level bias” to have a plain and ordinary meaning in the context of the ’117 Patent). Polaris asserts that the phrase has a plain meaning, but does not rely on technical dictionaries or other evidence that might support that persons of skill in the art would be familiar with the full phrase. *See* Polaris Op. Br. at 12. Instead, Polaris notes that the term “bias” has a known meaning in the art and is being used in combination with the adjective “dark level.” *Id.* (citing Balakrishnan Decl. ¶¶ 27–28) (“One of ordinary skill in the art would thus understand that ‘dark level bias’ refers to the ‘bias’ value when the ambient light level is low (*i.e.* at a dark level).”).

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Regarding the meaning of the term “bias” itself, a previous claim construction proceeding involving the term “dark level bias” as it is used in the ’117 Patent provides some context. Samsung Case, Docket No. 138 (E.D. Tex. Jan. 7, 2019) (“Samsung Claim Construction Order”) at 24.⁶ There, the court observed that “[o]ne dictionary of record provides that ‘bias’ is a ‘systemic deviation of a value from a reference value’ or ‘[t]he amount by which the average of a set of values departs from a reference value.’” Id. (citing Harry Newton, Newton’s Telecom Dictionary 95 (2002); Samsung Case, Docket No. 121-10 (E.D. Tex. Oct. 19, 2018) (“Samsung Responsive Claim Construction Brief Exhibit 1”) at 4.

As Polaris’s expert notes, and VIZIO does not appear to meaningfully dispute, the term “dark level” in the phrase refers to when there is a low level of surrounding ambient light. This conclusion is consistent with the claims and specification, which both refer to the purpose of the “dark level bias” as providing some sort of correction when ambient light approaches zero such that there is still some brightness control signal above a predetermined level even in the absence of ambient light. As Polaris clarified at the hearing, this is not to say that the “dark level bias” only exists or can only be used when ambient light is at a “dark level,” but instead that the purpose and effect of the dark level bias is to correct for a complete absence of ambient light. As Polaris explained at the technology tutorial, without the dark level bias, the brightness control signal, which relies on some multiplied combination of a user signal and sensing signal, would go to zero when the sensing signal no longer senses any ambient light. This is also consistent with the claim language, which requires that adjusting the combined signal with the “dark level bias” leads the brightness control signal to be “maintained above a predetermined level when the ambient light level decreases to approximately zero.”

In its tentative order distributed to the parties before the claim construction hearing, the Court found that the plain meaning of “dark level bias” in the context of the

⁶ A copy of the Samsung Claim Construction Order was also filed in this case at Docket No. 140-5.

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asserted claims is “a value deviation from the ambient light level when the ambient light level approaches approximately zero.”

At the hearing, Polaris argued that instead, a proper understanding of the term “dark level bias” should be “a value that causes a deviation from the combined signal.” Polaris based this interpretation on both (1) its understanding of the plain meaning of “bias” and (2) its interpretation of the claim language, which refers to “a dark level bias configured to adjust the combined signal.” Given the other surrounding claim language, Polaris’s modified proposal is acceptable. See, e.g. ’117 Patent, Claim 1 (“a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.”)

b) Whether Claims 1 and 15 Use the Term “dark level bias” to Refer to a Structural Component Like a Circuit, or as a Value

As noted, the parties in this case start by characterizing the “dark level bias” more generally and disputing whether it is being used in the asserted claims as a “value,” consistent with the plain meaning of the term “bias.” or as a “component,” such as a “dark level bias circuit.”

VIZIO argues that because Claim 1 is an apparatus claim to a “brightness control circuit,” the “dark level bias,” as one of the four listed limitations of the brightness control circuit, must be “a component (or arrangement of components) of the circuit designed to perform the recited function.”⁷ VIZIO Op. Br. at 11. VIZIO cites to its

⁷ VIZIO drops a footnote in each of its claim construction briefs suggesting that a similar problem exists for Claim 15 and its dependents, i.e. that Claim 15 refers to “dark level bias” as a component, while the dependent claims refer to it as a signal or value. See VIZIO Op. Br. at 19 n.6; VIZIO Resp. Br. at 18 n.8. VIZIO does not further press its position regarding Claim 15 in either brief. VIZIO’s argument is rejected for the same reasons stated infra as to Claim 1. Moreover, particularly because

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expert's report to argue that "[a] person of ordinary skill in the art would understand language such as 'configured to adjust' and 'to generate a brightness control signal' to suggest that the 'dark level bias' should be characterized as an electrical component of the claimed 'brightness control circuit' . . . because components in a circuit adjust and generate signals." VIZIO Op. Br. at 12 (citing Katona Decl. ¶ 43). Initially, in arguing that the "dark level bias" must be an electrical component, VIZIO's position somewhat appears to assume that VIZIO will be successful in arguing that the "configured to" phrases do not permit implementation of certain Claim 1 components in software. Because VIZIO's "configured to" arguments have been rejected in respects relevant here, VIZIO's (and its expert's) parallel argument here regarding the scope of the "dark level bias" term also carries less weight.

VIZIO's characterization of the claim as supporting that a "dark level bias" must be a structural, circuit-type component because it is "configured to adjust the combined signal to generate a brightness control signal" is otherwise unpersuasive. This claim language does not clearly mandate that the "dark level bias" must be a circuit-type component or even a software program for the claimed functions to be performed. As also discussed *infra*, VIZIO's position assumes that a signal value, either electrical or software-based, is insufficient to constitute a "component" that can contribute to the workings of an apparatus.

VIZIO also refers to a portion of the patent specification that describes a "dark level bias circuit" to support its argument that "dark level bias" as recited in Claim 1 refers to a structural circuit-type component. *Id.* at 13. The specification references a "dark level bias circuit" three times in a generalized paragraph in the Summary of the Invention section. *See* '117 Patent, 2:54–56 ("In various embodiments, the brightness control circuit further includes combinations of a dark level bias circuit, an overdrive clamp circuit, or an automatic shutdown circuit."). The prosecution history similarly

Claim 15 is a method claim that requires "adjusting the combined signal with a dark level bias to generate a brightness control signal," this claim even more strongly supports the conclusion that the "dark level bias" is not a component, but a signal with a value that can be combined with other signals to generate certain outputted signals.

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makes just one reference to a “dark level bias circuit” after citing the same paragraph of the specification. The patent applicant stated, “in an embodiment, the dark level bias circuit ensures a predefined (or minimum) brightness in total ambient darkness.” See ’117 Patent Prosecution History, Response to Office Action, January 23, 2012, Docket No. 105-3 at ECF160 (emphasis added).

The fact that the specification as well as the prosecution history refer to a “dark level bias circuit” strengthens, not weakens, the conclusion that the claimed “dark level bias” is being used consistent with the plain meaning of “bias” as a signal with a particular value, not a circuit-type component. The patent applicant could have chosen to refer to a “dark level bias circuit” in the claims in the same manner it did in the specification, but chose not to. Regarding the prosecution history, it is also not clear from the patent applicant’s statements that the patent applicant was characterizing the claims as opposed to simply explaining a statement in the patent specification. The known, technical meaning of the term “bias” in combination with the remainder of the patent specification, including its disclosure of certain equations to define a value of “dark level bias,” further support the conclusion that the term is referring to a signal with a value. See, e.g., ’117 Patent, 7:15–35 (providing an mathematical equation for a brightness control signal and stating, “[t]he first major term within the brackets corresponds to a scaled dark bias level of the brightness control signal in total ambient darkness.”). VIZIO’s cited references to a “dark level bias circuit” are insufficient to show that Claim 1 uses the phrase “dark level bias” to refer to a tangible electrical component.

Polaris states, “[o]ne of ordinary skill in the art would understand the ‘dark level bias’ in claim 1 to be the value of a signal (e.g., voltage value of an electrical signal or value of a software variable) that adjusts the magnitude of the combined signal to generate a brightness control signal.” Polaris Op. Br. at 10. Polaris’s conclusion is consistent with the plain meaning of “dark level bias” explored supra and statements made by both of the parties in the Samsung case. In Samsung, the court observed, “[t]he parties do not dispute that the dark level bias is a value. Indeed, it is clear from the context of the surrounding claim language that the dark level bias is a value.” Samsung

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Case, Samsung Claim Construction Order at 25. The Court finds the parties' agreed position in Samsung as well as the analysis and conclusions reached by the court in that case are generally persuasive when considered against the patent record. VIZIO's argument that the term "dark level bias" is used inconsistently in Claims 1 and 15 as an electrical component, while used in the dependent claims as a "value" is rejected.

c) Whether Claim 1 and its Dependent Claims are Indefinite as Mixed Method-Apparatus Claims When Understood as a "Value" in All Claims

VIZIO argues that if "dark level bias" is used in Claim 1 to refer to a value, Claim 1 and its dependent claims are invalid as mixed method-apparatus claims. The Federal Circuit has found that patents cannot claim both an apparatus and a method of using the apparatus within a single claim. IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1384 (Fed. Cir. 2005). The Federal Circuit has stated that doing so could make it "unclear whether infringement . . . occurs when one creates a[n infringing] system, or whether infringement occurs when the user actually uses [the system in an infringing manner]." UltimatePointer, L.L.C. v. Nintendo Co., 816 F.3d 816, 826 (Fed. Cir. 2016) (alteration in original) (quoting IPXL, 430 F.3d at 1384). However, the Federal Circuit has since clarified that IPXL applies in a fairly narrow range of circumstances. Among other things, courts must discern whether the claims at issue are actually mixed method-apparatus or merely claim that the system "possess[es] the recited structure [which is] capable of performing the recited functions." Microprocessor Enhancement Corp. v. Texas Instruments Inc., 520 F.3d 1367, 1375 (Fed. Cir. 2008); see also MasterMine Software, Inc. v. Microsoft Corp., 874 F.3d 1307, 1315–16 (Fed. Cir. 2017). In conducting this inquiry, the use of active verbs does not necessarily transform a claim into a mixed method-apparatus claim. MasterMine, 874 F.3d at 1315. Instead, such verbs may still "represent permissible functional language used to describe capabilities" of a claimed apparatus. Id.

The Court observes that solely referring to the "dark level bias" as a "value" omits some relevant context, both in terms of the plain meaning of "bias" but also for other reasons. See VIZIO Resp. Br. at 17 (inserting the word "value" in place of the term

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“dark level bias” in Claim 1 to support its argument that an interpretation of “dark level bias” as “value” “recites no structure at all”). Understanding the term consistent with the examples presented by Polaris,⁸ i.e. as a “voltage value of an electrical signal or value of a software variable,” changes the perspective. See Polaris Resp. Br. at 8, 9. Indeed, VIZIO appears to somewhat agree that at least for the dependent claims of the ’117 Patent, the claims are referring to the “dark level bias” “as a signal or value, which would commonly be ‘provided’ to another component or ‘added’ to another signal.” VIZIO Op. Br. at 19 (emphasis added). Although it may not be a physically tangible component like a circuit, understanding the “dark level bias” as a value of a signal means that the term may still have some “structural” connotation, particularly as an electrical signal. See Polaris Resp. Br. at 19 (citing Arrhythmia Research Tech., Inc. v. Corazonix Corp., 958 F.2d 1053, 1059 (Fed. Cir. 1992) (In the context of a § 101 dispute, stating, “[t]he view that ‘there is nothing necessarily physical about ‘signals’ is incorrect.”)). Even in the context of software, although not structural per se, the Federal Circuit also still acknowledges software-implemented concepts as having pseudo-structural connotation. Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008) (“The instructions of the software program in effect ‘create a special purpose machine for carrying out the particular algorithm.’ Thus, in a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.’”).⁹

⁸ Polaris consistently refers to “voltage value of an electrical signal or a value of a software variable in a software” as examples of what the claimed “dark level bias” might be. Polaris did not state at the hearing what, if anything, beyond these examples it also thinks could constitute the claimed dark level bias. The Court is aware of none, and finds the phrase to be properly understood as coextensive with these two examples.

⁹ Neither party has argued that “dark level bias” is a means-plus-function claim term subject to 35 U.S.C. § 112, ¶ 6. At the hearing, VIZIO requested an opportunity to request further briefing on the issue, which Polaris opposed. Having considered the parties’ dispute, the Court declines to accept further supplemental briefing regarding the “dark level bias” term, particularly because the Court is not persuaded that, if the term was interpreted as a means-plus-function term, it would be found indefinite.

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At the hearing, VIZIO maintained its argument that a value of a signal or software variable does not connote any structure. Even if VIZIO were correct, that does not end the inquiry. VIZIO has not identified sufficient legal authority for the proposition that an apparatus claim to a circuit is de facto transformed into a mixed method-apparatus claim if the claim recites inter alia that the circuit includes a signal of a particular value capable of performing a specific function. And in particular, VIZIO has not shown that there would be confusion here about when infringement occurs. This is the critical question under IPXL.

VIZIO additionally argues that the claims are mixed method-apparatus because there is not information about the origin of the “dark level bias” or how it is generated. The claims require that the “dark level bias” is a component of the “brightness signal circuit.” In other words, Claim 1 itself supports that the brightness signal circuit generates the dark level bias.¹⁰ VIZIO has not shown that more is required under the law for the claim to be found definite. As Polaris notes, VIZIO’s cited cases appear to address circumstances where claims refer to inputs that come from outside of the claimed apparatus and are referenced as performing functions in an apparatus claim. Polaris Resp. Br. at 19–21; see also IPXL, 430 F.3d at 1384 (claim invalid where it required a user to use the claimed input means of the apparatus claim); Power Integrations, Inc. v. ON Semiconductor Corp., No. 16-cv-06371, 2018 WL 5603631, at *15 (N.D. Cal. Oct. 26, 2018) (claim required that a “control signal is received at said control terminal” of the regulator circuit, where “said control signal [is] provided when no feedback signal is provided”). The Court agrees with Polaris that the facts of this case are distinguishable, and thus the concerns addressed by these other courts when

¹⁰ Both parties suggest through various arguments that the preamble of Claim 1, which references the “brightness control circuit,” is limiting. See, e.g., Polaris Resp. Br. at 5, 8, 21 (referring to the “dark level bias” being provided from within the “brightness control circuit”); VIZIO Resp. Br. at 17. Although not an issue affirmatively raised by the parties for claim construction purposes, the Court tends to agree that the preamble of Claim 1 is “‘necessary to give life, meaning, and vitality’ to the claim,” and “should be construed as if in the balance of the claim.” Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). This further supports the Court’s determinations here.

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considering the claims at issue, *i.e.* trying to determine when infringement occurs (as of the making of the apparatus or not until it is used), are not present in this case.

The Court otherwise agrees with Polaris that VIZIO’s mixed apparatus-method claim argument lacks merit because the claim phrase “a dark level bias configured to adjust the combined signal to generate a brightness control signal” is not a method step that starts with an active verb (such as, for instance, a limitation like the one in Claim 15 that states, “adjusting the combined signal with a dark level bias . . .”). At the least, the claim requires the existence of a certain value from either an electrical signal or software that is “configured to adjust the combined signal.” In other words, this limitation describes how the claimed circuit works, rather than necessarily providing the method of using the circuit. Moreover, as Polaris observes and as previously noted, the existence of functional language in an apparatus claim does not automatically turn it into an improper mixed apparatus-method claim. Polaris Resp. Br. at 15 (citing BASF Corp. v. Johnson Matthey Inc., 875 F.3d 1360, 1366 (Fed. Cir. 2017) (“we have long held that nothing in the law precludes, for indefiniteness, ‘defining a particular claim term by its function.’”).).

VIZIO’s similar challenges against the dependent claims are rejected for the same reasons. See VIZIO Op. Br. at 21–22. Although the challenged dependent claims use active verbs, these claims are more appropriately interpreted as establishing the functional capabilities of the claimed brightness control circuit. See MasterMine, 874 F.3d at 1315.

The Court construes the smaller term “dark level bias” as “a value that causes a deviation from the combined signal, where the value is a voltage value of an electrical signal or value of a software variable.”

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4. “the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” (’117 Patent, Claims 1, 15)

Polaris’s Construction	VIZIO’s Construction	Court’s Construction
Plain and ordinary meaning	Indefinite	Not indefinite; Smaller term “approximately zero” is construed as: “zero or a level close enough to zero that a light sensor would measure zero or a corresponding sensing signal would round to zero”

The parties’ only dispute for the claim term “the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” is whether the term “approximately zero” is indefinite. VIZIO argues that this claim phrase is indefinite because “the specification gives no guidance at all on how to determine what ambient light level is ‘approximately zero.’” VIZIO Resp. Br. at 20. Polaris argues that “‘approximately zero’ is not indefinite under the law” and “both the claims and the specification are clear that a light sensor is used to measure ambient light.” Polaris Resp. Br. at 23. At the hearing, VIZIO maintained its position that the “approximately zero” term is indefinite and argued that an infringement analysis would produce different results depending on the sensitivity of the light sensor used in the accused product. Additionally, VIZIO argued that the claims at issue here are analogous to those found indefinite in Teva Pharms. USA v. Sandoz, Inc., 789 F.3d 1335 (Fed. Cir. 2015). Polaris maintained that the scope of the “approximately zero” term as used in the claims is clear when read in the context of the specification as a whole.

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A term of degree may be indefinite if it “lends itself to scattershot infringement analysis” that produces “mixed results.” Liberty Ammunition, Inc. v. United States, 835 F.3d 1388, 1398 (Fed. Cir. 2016). However, it is unnecessary for a term of degree to provide “absolute mathematical precision.” Instead, the claim need only “provide objective boundaries for those of skill in the art.” Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1370–71 (Fed. Cir. 2014); see also Nautilus, 572 U.S. at 910 (“[W]e read § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable.”).

Although VIZIO argued that the claims at issue here are analogous to those found indefinite in Teva, the Court finds Teva distinguishable. In Teva, the claim at issue covered a method of manufacturing a polymer where one of the limitations recited “to result in copolymer-1 having a molecular weight of about 5 to 9 kilodaltons.” Teva, 789 F.3d at 1338. The evidence showed that “molecular weight” could be measured three ways, and the same polymer sample would have a different “molecular weight” value depending on the measurement used. Id. at 1338, 1341. The claim did not specify which measurement was to be used. Id. Additionally, the specification did not define “molecular weight” or even mention the three measurement types. Id. at 1344. “Molecular weight” also did not have a plain meaning to one of skill in the art. Id. at 1345. Based on these facts, the court found that one of skill in the art could not be reasonably certain which of three molecular weight measurements was covered by the claim and therefore found the claim indefinite. Id. The claims in Teva created a situation where an accused infringer could have made a polymer sample with a “molecular weight” of 5 to 9 kilodaltons as measured by one of the three molecular weight types and it still would have been entirely unclear whether the “molecular weight” limitation was satisfied.

Here, the specification supports the conclusion that a light sensor measures “ambient light level” and a sensing signal corresponds to that “ambient light level.” See, e.g., ’117 Patent, 2:36–39, 3:3–11, 7:5–7, Claim 1, Claim 15. Unlike in Teva, VIZIO does not appear to contend that “ambient light level” has multiple meanings. In other

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words, VIZIO has not shown that this is a circumstance like Teva where there are multiple ways for a particular sensor to calculate the same ambient light, with those methods resulting in different ambient light values. Expert testimony from both parties supports the conclusion that one of ordinary skill in the art would understand the claim scope with reasonable certainty, by understanding the “approximately zero” term to refer to an ambient light level that corresponds to a measurement of zero for a particular sensor, taking into account standard deviations and sensitivity variations in light sensor detection. Polaris’s expert states that one of ordinary skill in the art would understand that “as a practical matter, an ambient light sensor will have some threshold at which it will report zero ambient light even though there may still be photons in the environment” and “the language ‘approximately zero’ . . . account[s] for the practical limitation in the sensitivity of light sensors in measuring ambient light in the environment.” Balakrishnan Supp. Decl. ¶ 30. Similarly, VIZIO’s expert states that “a person of ordinary skill in the art would understand that what might constitute ‘approximately zero’ ambient light . . . would vary significantly with the sensitivity of the detection instrument, the detection methods employed, and the spectral make-up of the light the light sensors are detecting.” Katona Decl. ¶ 60. Both experts seem to agree that one of ordinary skill in the art would understand that light sensors cannot achieve absolute precision and have variations in sensitivity. Since Claim 1 does not claim a particular type of light sensor, these expert statements support the conclusion that one of ordinary skill in the art would understand the “approximately zero” term to refer to measurements of zero ambient light within deviations in measurement and sensitivity variations of the light sensor used.

At the hearing, VIZIO emphasized that the claims refer to “when the ambient light level decreases to approximately zero.” But the entire claim phrase is “to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.” An accused infringing product will meet the claim limitation if the dark level bias used in the accused product is capable of maintaining the brightness control signal above a predetermined level when the ambient light approaches approximately zero. And importantly, VIZIO has not shown that the type or sensitivity of the light sensor used in an accused infringing product can produce a variable infringement analysis. As noted, this is not a

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circumstance like Teva where the same light sensor, for instance, could output three different measurements for the same amount of ambient light present.

The claims and specification of the '117 Patent refer to ambient light levels in the context of a light sensor that senses or measures ambient light and/or a sensing signal that is proportional to or indicative of that measurement. See, e.g., '117 Patent, 2:36–39, 3:3–11, 7:5–7, Claim 1, Claim 15. The term “total ambient darkness” is discussed in connection with some of the mathematical equations described in the specification. See '117 Patent, 7:28–31, 10:13–16. In reference to one equation, the first term is described as “the brightness control signal in total ambient darkness” and the second term is described as “introduc[ing] the effect of the visible light sensor.” '117 Patent at 10:8–17. Based on these portions of the '117 Patent specification, the Court interprets the descriptions of “ambient darkness” in the '117 Patent as corresponding to when no light is detected, or so little light is detected that the sensing signal would round to zero. The expert testimony combined with the language of the '117 Patent support that one of ordinary skill in the art would understand the “approximately zero” claim term as accounting for imprecision in light sensing.

To the extent VIZIO argues that absent a specified numerical range or conventionally accepted standard deviation for “approximately zero” in ambient light measurement the Claim’s scope is unbounded, the Court rejects this argument. See Glaukos Corp. v. Ivantis, Inc., No. SACV 18-620 JVS (JDex) (C.D. Cal. Aug. 16, 2019) (finding the terms about 2mm and about 6mm definite.) The term of degree “approximately” modifies the term “zero” which is a value with a specific and bounded scope. The term “zero” denotes a specific value and the term of degree “approximately” accounts for slight variations from that specified baseline. Therefore, the Court finds the claims are not without an objective boundary. See Nautilus, 572 U.S. at 910 (“The definiteness requirement . . . mandates clarity, while recognizing that absolute precision is unattainable.”).

For these reasons, the Court finds that the term is not indefinite. VIZIO has not shown that the claim scope lacks reasonable certainty because one of ordinary skill in the art could understand that the claim covers ambient light levels of zero and light

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levels close enough to zero that a light sensor would measure zero ambient light, or a sensing signal would round to zero.

To ensure resolution of this dispute, the Court construes the term “approximately zero” as “zero or a level close enough to zero that a light sensor would measure zero or a corresponding sensing signal would round to zero.”

IV. CONCLUSION

The parties may file simultaneous supplemental briefs regarding the construction of the “first input” and “second input” terms of seven pages or less by December 9, 2019. Responsive simultaneous supplemental briefs of four pages or less may be filed by December 16, 2019.

Claim Term	Court’s Construction
“a first input configured to receive a user signal indicative of a user selectable brightness setting” (’117 Patent, Claim 1)	DEFERRED
“second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or a manual mode” (’117 Patent, Claim 9)	DEFERRED.

All other disputed terms are construed as follows:

Claim Term	Court’s Construction
“ambient light” (’117 Patent, Claims 1, 14, 15)	No construction
“configured to” (’117 Patent, Claims 1, 9, 13)	No construction (some larger terms containing “configured to” construed)

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“a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal” (’117 Patent, Claim 1)	“a multiplier actually programmed or implemented with hardware or software to selectively generate a combined signal based on both the user signal and the sensing signal.”
“a light sensor configured to sense ambient light and to output a sensing signal indicative of the ambient light level” (’117 Patent, Claim 1)	No construction
“a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display” (’117 Patent, Claim 1)	“a dark level bias actually programmed or implemented with hardware or software to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display”
“amplifier configured to generate the sensing signal” (’117 Patent, Claim 13)	“amplifier actually programmed or implemented with hardware or software to generate the sensing signal”
“a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display” (’117 Patent, Claim 1)	Smaller term “dark level bias” construed as: “a value that causes a deviation from the combined signal, where the value is a voltage value of an electrical signal or value of a software variable”
“wherein the dark level bias is provided to the multiplier such that the amount of adjustment to the combined signal is dependent on the user selectable brightness setting” (’117 Patent, Claim 2)	<u>See supra</u> re: “dark level bias”

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“wherein the dark level bias is added to the combined signal such that the amount of adjustment to the combined signal is independent of the user selectable brightness setting” (’117 Patent, Claim 4)	<u>See supra</u> re: “dark level bias”
“wherein the dark level bias is added to an output of the multiplier” (’117 Patent, Claim 5)	<u>See supra</u> re: “dark level bias”
“adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display” (’117 Patent, Claim 15)	<u>See supra</u> re: “dark level bias”
“wherein the dark level bias is added to the combined signal after selective multiplication such that the amount of adjustment to the combined signal is independent of the input signal and the sense signal” (’117 Patent, Claim 18)	<u>See supra</u> re: “dark level bias”
“the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” (’117 Patent, Claims 1, 15)	Not indefinite; Smaller term “approximately zero” is construed as: “zero or a level close enough to zero that a light sensor would measure zero or a corresponding sensing signal would round to zero”

IT IS SO ORDERED.

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