THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PHENIX LONGHORN LLC	§	
	§	
v.	§	CASE NO. 2:23-CV-477-RWS-RSP
	§	
AU OPTRONICS CORPORATION, et al.	§	
	§	

CLAIM CONSTRUCTION ORDER

On August 7, 2025, the Court held a hearing to determine the proper construction of disputed terms in United States Patents No. 7,233,305 and 7,557,788. Before the Court is the Opening Claim Construction Brief (Dkt. No. 134) filed by Plaintiff Phenix Longhorn LLC ("Plaintiff" or "Phenix"). Also before the Court are the Responsive Claim Construction Brief (Dkt. No. 141) filed by Defendants AU Optronics Corporation, Hisense Electronica Mexico, S.A. de C.V., Hisense USA Corporation, and Hisense Visual Technology Co., Ltd. (collectively, "Defendants" or "AUO"), Plaintiff's reply (Dkt. No. 143), the parties' May 8, 2025 Joint Claim Construction and Prehearing Statement (Dkt. No. 120), and the parties' July 28, 2025 P.R. 4-5(d) Joint Claim Construction Chart (Dkt. No. 144).

Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing, having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

Table of Contents

I. BACKGROUND **2**
II. LEGAL PRINCIPLES **3**
III. AGREED TERMS **7**
IV. DISPUTED TERMS IN U.S. PATENT NO. 7,233,305 ..... **8**
A. "non-volatile storage cells" 8
B. "coupled to" and "connected to" 13
C. "multiplexer" 19
D. "bank(s)" 23
V. DISPUTED TERMS IN U.S. PATENT NO. 7,557,788 ..... **28**
E. "gamma reference control capability" 28
F. "control circuit" 33
G. "means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor" and "means for executing said predetermined algorithm" 36
H. "predetermined algorithm" 43
I. "gamma reference voltage levels" 45
VI. CONCLUSION **46**
APPENDIX A **48**

I. BACKGROUND

Plaintiff alleges infringement of United States Patents No. 7,233,305 ("the '305 Patent") and 7,557,788 ("the '788 Patent"). Dkt. No. 134, Exs. A–B. Plaintiff submits that "the inventions of the '305 and '788 patents relate to a programmable buffer integrated circuit that can be programmed to output a set of gamma correction reference voltages to be used in various types of displays." Dkt. No. 134 at 3.

The '305 Patent, titled "Gamma Reference Voltage Generator," issued on June 19, 2007, and bears an earliest priority date of June 11, 2003. The '788 Patent, which issued on July 7, 2009,

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

resulted from a continuation of the '305 Patent, has the same title, and bears the same earliest priority date. The Abstracts of the '305 Patent and the '788 Patent are the same and state:

> A programmable buffer integrated circuit which can be programmed to output a set of gamma correction reference voltages to be used in LCD displays. Once programmed, the buffers will continuously output the programmed value. The device incorporates a programming interface to allow the programming of the buffer outputs to the desired values during manufacturing and test of the panel. Multiple sets of values can be programmed to provide different gamma correction curves for different user or application requirements.

Plaintiff submits that "[t]he '788 Patent is a continuation of the '305 Patent, and both patents share the same specification." Dkt. No. 137 at 27 n.9. The Court previously construed disputed terms in the '305 Patent in *Phenix Longhorn, LLC v. Wistron Corp.*, No. 2:17-CV-00711-RWS, Dkt. No. 247, 2019 WL 2568476 (E.D. Tex. June 21, 2019) (Schroeder, J.) ("*Wistron*") (attached to Plaintiff's opening claim construction brief as Exhibit C).

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating discussion. Those preliminary constructions are noted below within the discussion for each term. At the August 7, 2025 hearing, Plaintiff stated that it agrees with the Court's preliminary constructions. Defendants presented oral arguments as to the disputed terms, and Plaintiff responded.

II. LEGAL PRINCIPLES

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). "In

some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva*, 135 S. Ct. at 841 (citation omitted). "In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the 'evidentiary underpinnings' of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal." *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

The Supreme Court of the United States has "read [35 U.S.C.] § 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." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). "A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus,* 134 S. Ct. 2120. "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

"[P]rior orders in related cases do not bar the Court from conducting additional construction in order to refine earlier claim constructions." *TQP Dev., LLC v. Intuit Inc.*, No. 2:12-

cv-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J., sitting by designation).

In general, however, prior claim construction proceedings involving the same patents-in-suit are "entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*." *Maurice Mitchell Innovations, LP v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006) (Davis, J.); *see TQP*, 2014 WL 2810016, at *6 ("[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so."); *see also Teva*, 135 S. Ct. at 839–40 ("prior cases will sometimes be binding because of issue preclusion and sometimes will serve as persuasive authority") (citation omitted); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting "the importance of uniformity in the treatment of a given patent") (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996)).

III. AGREED TERMS

In their May 8, 2025 P.R. 4-3 Joint Claim Construction and Prehearing Statement (Dkt. No. 120 at 2–3) and in their July 28, 2025 Joint Claim Construction Chart Pursuant to P.R. 4-5(d) (Dkt. No. 144 at 2–3), the parties submitted agreed-upon constructions for various portions of the claims of the patents-in-suit. Those agreements are set forth in Appendix A to the present Claim Construction Order.

IV. DISPUTED TERMS IN U.S. PATENT NO. 7,233,305

A. "non-volatile storage cells"

"non-volatile storage cells" ('305 Patent, Claims 1, 2)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"memory cells which retain stored data even when power is removed"	"analog memory cells which retain stored data even when power is removed"

Dkt. No. 120, Ex. A at 1; *id.*, Ex. B at 1; Dkt. No. 144, Ex. A at 1.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "memory cells which retain stored data even when power is removed."

(1) The Parties' Positions

Plaintiff argues that "Defendants cannot provide a strong reason for the Court to depart from its prior construction of this term, as the proposed construction merely repeats the same arguments (*i.e.*, that the term should be limited to 'analog' memory) that this Court has already considered and rejected." Dkt. No. 134 at 7 (citations omitted).

Defendants respond that "Phenix has disavowed . . . digital solutions because the plain disclosure of the '305 patent, the focus of the invention, and the only embodiments are directed to finding an *analog* solution to an '"*analog*" problem' with *analog* memory cells, and because the '305 patent teaches away from a digital solution." Dkt. No. 141 at 3.

Plaintiff replies that the Court has already considered and rejected the same arguments that Defendants are presenting here, and, "[i]n any event, whether the claim is adequately supported is a factual issue that is not addressed during claim construction proceedings." Dkt. No. 143 at 1–2 (citations omitted).

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

Claims 1 and 2 of the '305 Patent recite (emphasis added):

> 1. An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of *non-volatile storage cells*;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said *non-volatile storage cells* are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.
>
> 2. The integrated circuit of claim 1 wherein said *non-volatile storage cells* are reprogrammable.

As a general matter, disavowal can sometimes be inferred when a patent specification disparages a particular aspect of prior art and focuses on addressing an identified deficiency in the prior art. *See Techtronic Indus. Co. v. ITC*, 944 F.3d 901, 906–10 (Fed. Cir. 2019); *see also In re Power Integrations, Inc.*, 884 F.3d 1370, 1377 (Fed. Cir. 2018) (noting that the patent "emphasizes the need to minimize circuit size"). Also, Defendants submit that whether "the embodiments . . . define the outer limits of the claim term" or are "merely . . . exemplary" is a question that must be determined "in the context of the particular patent." Dkt. No. 141 at 5 (quoting *Phillips*, 415 F.3d at 1323–24); *see id.* at 6 (citing *Campbell Soup Co. v. Gamon Plus, Inc.*, No. 2020-2322, 2021 WL 3671366, at *4–*5 (Fed. Cir. 2021) (considering disclosure of what the "advantage of the present invention is" and that "[t]his represents a significant advantage over the prior art")).

In the present case, the primary portions of the '305 Patent specification relied upon by Defendants emphasize cost and complexity but do not definitively exclude using digital memory cells:

> Gamma Correction has long been a problem for the manufacturers of Thin Film Transistor (TFT) Flat Panel Displays. The Gamma Correction curve becomes more complex as the display resolution increases. Each display often has a different response to the gamma correction reference voltages, resulting in the need to generate specific gamma reference voltages for each model of display as well as compensating for display to display variation due to manufacturing process variations.
>
> A traditional approach to the Gamma Reference Generation problem has been to use Select-On-Test Resistors. These resistors allow the reference voltages to be fine-tuned to the requirements of the individual display. The testing, selection and mounting of these resistors has become a major production problem since the process is a manual one and prohibits automated assembly and test. In addition, once the resistors are mounted on the display PC board, the resistors cannot be easily changed to meet the growing requirements of individual customers for a specific Gamma characteristic.
>
> Of course, even with the manual labor involved, Select On-Test resistors are still the least expensive solution to this problem. Devices such as potentiometers, Electrically Erasable Potentiometers (E2POTS), digitally-controlled potentiometers (DCPs) and Digital to Analog Converters (DACs) all could perform this function in some ways better than the Select-On-Test resistors, but *the cost is unacceptable*.
>
> * * *
>
> More recently quite complex approaches to Gamma correction have been published. U.S. Pat. No. 6,593.934 (1) and U.S. Pat. No. 6,046,719 (2) are examples of inventions which eliminate the "select-on-test" resistors. Both inventions teach *quite complex digital approaches to this "analog" problem*; consequently both inventions are *quite expensive*. Accordingly, it is desirable to design a gamma reference architecture that automates gamma adjustment and provides reprogrammable capability and achieves acceptable cost.

'305 Patent at 1:19–45 & 2:4–12 (emphasis added); *see id.* at 2:33–35 ("the present invention advantageously allows a stand-alone solution such that it is not necessary to incorporate a micro controller unit (MCU)").

Defendants' expert opines that the only disclosed embodiments exclusively describe analog forms of non-volatile storage cells and that the patent teaches away from using digital memory. *See* Dkt. No. 141, Ex. E, Silzars Decl. ¶¶ 156–57, 159–61. Further, Defendants' expert opines that "[r]eplacing analog cells with digital cells would result in 'a nonoperating device' that 'cannot represent grayscale' and 'could only turn the display fully on or fully off,'" and additional components would be required. Dkt. No. 141, Ex. H, June 10, 2025 Silzars dep. at 80:1–81:3; *see id.* at 80:4–9 ("for every analog cell, we would have to replace it with 10 digital cells").

The Court in *Wistron*, however, analyzed the specification of the '305 Patent, such as regarding analog and digital storage, and found: "[t]he parties and experts substantively agree that in an ordinary meaning a 'non-volatile storage cell' may store either digital values or analog values"; "[t]he primary focus of the description of the storage cells is the programmable nature of the storage cells, not a distinction between analog and digital storage cells"; "[n]owhere in the specification is there any contrasting between analog and digital storage cells"; "the prior art that is criticized includes both analog and digital approaches"; and the defendants in that case "ha[d] not shown a clear intention to limit the ordinary meaning of the term" and had not met "the high bar of disparagement or disavowal." *Wistron* at 23–25 (citation omitted). Defendants' expert in the present case likewise agrees that, as a general matter, non-volatile storage cells can be designed to store digital information. Dkt. No. 141, Ex. H, June 10, 2025 Silzars dep. at 78:20–21.

Defendants here note that they were not parties to the *Wistron* litigation, citing a decision of this Court that noted "where, as here, defendants have had no chance to litigate their claims, the application of *stare decisis* in the form of an adoption of claims construed without Defendants' participation could cause an injustice of precisely the sort that due process seeks to avoid." *Tex. Instr., Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 589–90 (E.D. Tex. 2002) (Folsom, J.)

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

(granting request to hold a claim construction hearing); *see* Dkt. No. 141 at 2. In the present case, however, the Court has received claim construction briefing and conducted a claim construction hearing, so the question presented in *Texas Instruments*—whether to allow a subsequent litigant to present and argue claim construction disputes—is not implicated in the present case.

The *X2Y Attenuators* case cited by Defendants is distinguishable because, there, the patent identified an element as "essential" and referred to a "feature . . . universal to all the embodiments." *X2Y Attenuators, LLC v. Int'l Trade Comm'n*, 757 F.3d 1358, 1362 (Fed. Cir. 2014). Likewise, the *Secure Web* case cited by Defendants found that "the specification repeatedly notes the importance of using an external security device, reinforcing that the security device of the invention is limited to stand-alone security devices." *Secure Web Conference Corp. v. Microsoft Corp.*, No. 2015–1321, 640 F. App'x 910, 914–15 (Fed. Cir. Feb. 17, 2016) (citation omitted). As discussed above, the specification language here at issue is not definitively limiting but rather focuses on relative cost.

The *Automotive Technologies* and *Sitrick* cases cited by Defendants are distinguishable as having addressed enablement, not claim construction. *Auto. Techs. Int'l, Inc. v. BMW of N. Am., Inc.*, 501 F.3d 1274, 1285 (Fed. Cir. 2007); *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008)

Finally, Defendants cite *Ruckus Wireless* for the proposition that a claim can be construed so as to preserve validity. *See Ruckus Wireless, Inc. v. Innovative Wireless Solns., LLC*, 824 F.3d 999, 1004 (Fed. Cir. 2016) ("Because the specification makes no mention of wireless communications, construing the instant claims to encompass that subject matter would likely render the claims invalid for lack of written description.") (citation omitted). In *Phillips*, however,

the Federal Circuit noted that "we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction." 415 F.3d at 1327.

Having considered the *Wistron* analysis, and after an independent analysis, Defendants' reliance on *Ruckus Wireless*, *Secure Web*, and other similar cases is unpersuasive, and Defendants do not persuasively justify departing from the *Wistron* analysis.

The Court therefore hereby construes "non-volatile storage cells" to mean **"memory cells which retain stored data even when power is removed."**

B. "coupled to" and "connected to"

"coupled to" ('305 Patent, Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning	Indirectly or directly linked or joined
"connected to" ('305 Patent, Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning	"directly linked or joined"[1]

Dkt. No. 120, Ex. A at 4 & 10; *id.*, Ex. B at 4 & 8; Dkt. No. 144, Ex. A at 1.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary constructions: "connected to," and "Plain and ordinary meaning [note: rejecting directly]."

[1] Defendants previously proposed: "directly and/or physically linked or joined." Dkt. No. 120, Ex. A at 10.

(1) The Parties' Positions

Plaintiff argues that "[b]oth terms are used in a straightforward manner," and "[n]otwithstanding the jury's ability to easily understand the terms, Defendants' proposed constructions of 'connected to' improperly seeks [*sic*] to limit the term's scope to require a direct or physical connection." Dkt. No. 134 at 8. Plaintiff also argues that "Defendants' proposed construction introduces new and ambiguous terminology, such as 'linked or joined,' which will neither clarify the construction nor aid the jury." *Id.* at 9 (citation omitted).

Defendants respond that "construing these terms is necessary to assist the jury (who might otherwise apply the two terms to have the same meaning) and obviate a potential *O2 Micro* issue: whether extra electronic components may be interposed between two 'connected' elements." Dkt. No. 141 at 7 (citation and footnote omitted). Defendants argue that "[t]he '305 patent consistently depicts the output of storage cells directly connected to an output driver, where stored voltages are sent to the driver without any intervening components," and "[c]onversely, as Dr. Silzars explained, replacing analog cells with digital cells would require at least a digital-to-analog and analog-to-digital converters and other bulky structural components to be interposed between the drivers and storage cells." *Id.* at 9. Defendants urge that "Phenix has presented no intrinsic or extrinsic evidence to support that 'connected' and 'coupled' should have the same meaning." *Id.* (citation omitted).

Plaintiff replies that Defendants "d[o] not identify intrinsic support for their proposed construction and instead only point to *other cases* with *other facts* that they believe should be applied to limit the scope of the terms of the '305 Patent." Dkt. No. 143 at 3 (citation omitted).

At the August 7, 2025 hearing, the parties presented oral arguments.

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

(2) Analysis

Claim 1 of the '305 Patent recites (emphasis added):

> 1. An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming *coupled to* a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers *connected to* said storage cells and to the plurality of outputs; and
>
> the plurality of inputs *connected to* said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

"In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings." *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000).

Claim 8 of the '305 Patent, however, recites (emphasis added):

> 8. An integrated circuit for producing voltage signals on a *plurality of outputs* comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs;
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells; and
>
> an output pin *connected to an output through a second multiplexer connected to said plurality of outputs* wherein said output pin is at an output buffer voltage level of said output when said integrated circuit is in a programming mode to program said storage for said output.

At the August 7, 2025 hearing, Plaintiff argued that the word "through" in Claim 8 modifies the meaning of the word "connected," but a fair reading is that the patentee's usage of the phrase

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

"connected to" does not exclude intermediate components. *See Phillips*, 415 F.3d at 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.") (citations omitted).

Defendants argue that this Court's decision in *Arigna* weighs against this interpretation because, Defendants argue, "if 'connected to' were to encompass indirect connections, the term 'through a second multiplexer' would be superfluous." Dkt. No. 141 at 9. In *Arigna*, however, the Court found:

> In each case where "connected to" appears in the claims, the claims recite not only discrete circuit components, but how their ends, collectors, drains, anodes, and cathodes relate to one another. This is not, for example, a case where two integrated circuits are described as being "connected to" one another and a skilled artisan would understand additional circuitry between the ICs is required for operation. In this context, interposed circuit elements could fundamentally change the characteristics of the circuit and potentially render it inoperable for its intended purpose.

Arigna Tech. Ltd. v. Nissan Motor Co., No. 2:22-CV-126, 2022 WL 1449701, at *4 (E.D. Tex. May 9, 2022) (Payne, J.) (citations omitted); *see id.*, at *5 ("As its last example, Plaintiff relies on an excerpt from a reference disclosed during prosecution of the underlying application (Takeshi), which describes that 'a control voltage Vc1 is connected to the positive electrode side of the varactor B1 via a resistor R11.' But this example expressly references the interposed resistor in combination with using 'connected to.' The '318 Patent does not include such language.") (citation omitted).

Also of note, the Court in *Arigna* found that whereas "the specificity in these claims and the disclosure about the arrangement of elements supports Defendants' construction," as a more general matter "the Court agree[d] 'connected to' in isolation includes both direct and indirect

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

connection." *Id.*, at *4. *Argina* thus based its analysis on the specific factual record in that case, and *Arigna* therefore does not control the outcome in the present case.

As for the specification here at issue, Defendants' expert cites disclosure that "[e]ach output is internally connected to an analog storage cell," and Figure 3 illustrates output channels CH0 through CH7 connected to respective analog floating gate memory cells 330 through 337 by drivers 340 through 347. *See id.* at 3:48–4:6. To whatever extent this is interpreted as using the term "connect to" in the absence of any intervening components, this is a specific feature of a particular disclosed embodiment that should not be imported into the claim. *See Phillips*, 415 F.3d at 1323.

Also, the specification uses "coupled to" only once, without any indication that it has a meaning different than "connected to":

> The programming engine 310, *coupled to* the mux, comprises an Analog Input which will be used to set the reference voltage level and a R/W control signal for a corresponding gamma reference controller. The mux 320 *connects* signals from the programming engine 310 to any one of the programmable analog floating gate memory cells 330 through 337, depending on three address inputs (A_0, A_1, and A_2). Address inputs are used to select which cell is being written to at any time.

'305 Patent at 3:52–4:3 (emphasis added). Indeed, this disclosure uses "coupled to" in close proximity to "connects" and with reference to the same "programming engine 310." Any presumption of difference in meaning is therefore rebutted. *See Bancorp Servs., LLC v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004) (although "the use of both terms in close proximity in the same claim gives rise to an inference that a different meaning should be assigned to each," "it is not unknown for different words to be used to express similar concepts, even though it may be poor drafting practice").

Finally, the *Power Integrations*, *ICM Controls*, *Pulse Engineering*, and *Mosaid Technologies* cases cited by Defendants addressed the specific context and evidence presented in

those cases and do not warrant narrowing the meaning of "connected to" in the present case. *See In re Power Integrations, Inc.*, 884 F.3d 1370, 1375–76, 1379 (Fed. Cir. 2018) (reversing a PTAB construction of a "coupled" limitation that was broader than a district court construction that "the 'coupled' limitation requires a specific control relationship between the counter and the converter": "The district court's construction of 'coupled,' an interpretation firmly rooted in the plain claim language and the specification, comports with the broadest reasonable construction of the term.") (citation omitted); *see also ICM Controls Corp. v. Honeywell Int'l, Inc.*, 256 F. Supp. 3d 173, 200–02 (N.D.N.Y. 2017) (Kahn, J.) ("the inventors explicitly use the term 'coupled' when a connection may be indirect"); *Pulse Eng'g, Inc. v. Mascon, Inc.*, No. 08-cv-0595, 2009 WL 755321, at *3–*4 (S.D. Cal. Mar. 9, 2009) (Miller, J.) ("throughout the specifications and claims, where 'connected to' is used without an intervening object, one skilled in the art would recognize the contemplated connection would utilize standard electrical conductors such as wire or solder and not additional electrical components such as inductors or capacitors"); *Mosaid Techs., Inc. v. Samsung Elec. Co.*, No. 01-CV-4340, Dkt. No. 102, slip op. at 32–36 (D.N.J. Mar. 23, 2004) (Martini, J.) ("Taken to an extreme, MOSAID's interpretation of 'connected' would mean that every electrical component on a DRAM chip is connected to all the other components no matter how many millions of intervening components there are. That interpretation does not coincide with the ordinary meaning of the term."; "[I]t is clear that the claim consistently uses the term 'connected' to mean that components are linked together without any intervening circuitry, a fact that MOSAID does not dispute."). Indeed, "claims of unrelated patents must be construed separately." *e.Digital Corp. v. Futurewei Techs., Inc.*, 772 F.3d 723, 727 (Fed. Cir. 2014).

The Court therefore hereby expressly rejects Defendants' proposed constructions, and no further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568 ("Claim construction is a

matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction."); *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015); *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 977–79 (Fed. Cir. 2021).

The Court accordingly hereby construes these disputed terms as follows:

Term	Construction
"coupled to"	**"connected to"**
"connected to"	**Plain meaning**

C. "multiplexer"

"multiplexer" ('305 Patent, Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"one or more circuits that selectively couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)"	"one or more circuits, excluding an I2C serial bus, that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)"

Dkt. No. 120, Ex. A at 7–8; *id.*, Ex. B at 6–7; Dkt. No. 144, Ex. A at 1.

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "one or more circuits that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)."

(1) The Parties' Positions

Plaintiff argues that "in light of [former] Defendant Innolux's position before the PTAB [(Patent Trial and Appeal Board)], Phenix requests that the Court clearly include the functionality of the multiplexer, which is included in Phenix's proposed construction." Dkt. No. 134 at 10. Plaintiff submits that "[t]he proposed 'selectively' language expressly reflects the multiplexer's core functionality wherein it takes one input and selects one of many outputs to send the signal (or in the case of a demultiplexer, it selects one of many inputs to send to a single output)." *Id.*

Defendants respond that "[w]hile Phenix argues that negative limitations are disfavored, in every case it cites[] the parties were not in agreement, as they are here, that the negative limitation is indisputably true." Dkt. No. 141 at 10 (citation omitted). Defendants also argue that "the Court should deny Phenix's request to add 'selectively' to its prior construction because it is redundant, would confuse the jury, and is based on an improper attempt to litigate a validity dispute through claim construction." *Id.* Defendants urge that "any disagreement is not about the meaning of 'multiplexer,' but about its application to a 'serial interface'—a question of fact for the jury." *Id.* at 11.

Plaintiff replies that "defining the term based on what it is *not*, would only serve to confuse the jury." Dkt. No. 143 at 4.

At the August 7, 2025 hearing, the parties presented oral arguments.

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

(2) Analysis

In *Wistron*, the parties there agreed that "multiplexer" means "one or more circuits that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)." *Wistron* at 13. Plaintiff proposes adding the word "selectively" near the beginning of the construction. Defendants propose adding the phrase "excluding an I2C serial bus."

As to "excluding an I2C serial bus," at the August 7, 2025 hearing Defendants argued that their proposed construction is appropriate to avoid a latent claim construction dispute that might resurface later. *See TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180-WCB, 2014 WL 2810016, at *5 (E.D. Tex. June 20, 2014) (Bryson, J., sitting by designation) ("As the Court explained in its earlier order, the need for further construction of the limitation at issue arose because the apparent agreement between the parties as to the proper claim construction masked real disagreement about the meaning of the claim language and the language used in the proposed construction. Without further claim construction, that disagreement would likely manifest itself at trial, when the problem would be more difficult to resolve.").

Plaintiff submits, however, that "[t]he parties agree that an I2C serial bus is a different structure than a multiplexer." Dkt. No. 134 at 11 (citations omitted). As discussed at length on the record during the August 7, 2025 hearing, Plaintiff agrees that an I2C serial bus is not a multiplexer.

The Court agrees that including Defendants' proposed negative limitation would tend to confuse rather than clarify the scope of the claim, and this is unwarranted in light of the absence of any substantive disagreement between the parties. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

controversy, and only to the extent necessary to resolve the controversy."); *see also Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1318–19 (Fed. Cir. 2016) (citing *Vivid*, 200 F.3d at 803); *U.S. Surgical*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.").

As for Plaintiff's proposal of "selectively," Plaintiff submits that, in an IPR proceeding, former Defendant Innolux Corporation relied on a prior art serial interface as being a "multiplexer." *Innolux Corp. v. Phenix Longhorn LLC*, IPR2025-0043, Paper 1 at 39 (P.T.A.B. Oct. 15, 2024) ("While not explicitly called a multiplexer, a POSA would understand the serial interface 1 includes multiplexing functionality to route serial data to multiple registers based on addressing.") (citation omitted); *see id.* at 38–40. Plaintiff argues that a serial interface cannot be a "multiplexer" and therefore urges that including "selectively" in the construction is necessary to resolve an issue regarding the scope of the term.

Plaintiff's argument, which is based on an IPR petition that the PTAB denied, amounts to an attempt to resolve a potential validity dispute through claim construction, and Plaintiff's proposal of "selectively" is therefore hereby expressly rejected.

The Court accordingly hereby construes "multiplexer" to mean **"one or more circuits that couple (1) one input (or one set of inputs) to one of many outputs (or one set of many sets of outputs) or (2) one of many inputs (or one set of many sets of inputs) to one output (or one set of outputs)."**

D. "bank(s)"

"bank(s)" ('305 Patent, Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning	"contiguous sections of addressable computer memory arranged in n by m matrix format"

Dkt. No. 120, Ex. A at 13; Dkt. No. 144, Ex. A at 2.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "contiguous sections of addressable computer memory."

(1) The Parties' Positions

Plaintiff argues that "bank" is a simple term that requires no construction, and "[t]he Court's prior claim construction order in the *Wistron* litigation and the Board in the prior *Wistron* Petition for *inter partes* review both construed claim terms that utilize the term 'bank(s)' without any ambiguity to the word's use in the claim term." Dkt. No. 134 at 13. Plaintiff argues: "The term matrix is not found in the specification at all. Further, to the extent that AUO or its expert contend that the patent's figures exemplify an 'n by m matrix format,' the law is clear that claim terms are not restricted to the embodiments in the patent's figures." *Id.* at 13 (citations omitted).

Defendants respond that "Claim 1 of the '305 patent explicitly requires the non-volatile storage cells to be organized into 'two or more banks of cells'—not just any type of organization," and "Phenix should not be allowed to recapture a broader scope for the organization of nonvolatile storage cells that it abandoned during prosecution." Dkt. No. 141 at 12. Defendants argue that "[g]iving 'banks' an unspecified plain and ordinary meaning would render the term ambiguous and meaningless, allowing Phenix to map banks of cells on any type of memory structure." *Id.* at 13. Defendants further argue that "AUO's construction is not a negative limitation but gives

meaning to the term 'banks' consistent with the specification, the Board's construction, the term's IEEE dictionary definition, and the understanding of a POSA." *Id.*

Plaintiff replies that "[t]here is no support in the intrinsic record for AUO's request to limit the non-volatile storage cells to those organized into an 'n by m matrix format.'" Dkt. No. 143 at 4.

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

Claim 1 of the '305 Patent recites (emphasis added):

> 1. An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more *banks* of cells wherein each *bank* contains a predetermined gamma reference voltage signal display condition; and means to switch between the *banks* based on one or more external signals is provided on said integrated circuit.

In denying a petition for *Inter Partes* Review ("IPR"), the Patent Trial and Appeal Board ("PTAB") found that "the '305 patent does not show or define a cell's bank," and "[g]iven the absence of any explicit definition, we generally give the term 'bank' its ordinary and customary meaning as would be understood by one of ordinary skill in the art at the time of the invention." Dkt. No. 141, Ex. B, IPR2018-01255, Jan. 24, 2019 Decision at 14. The PTAB considered definitions set forth in *The Authoritative Dictionary of IEEE Standards Terms* and "determine[d] the claimed 'banks of cells' are contiguous sections of addressable, computer memory." *Id.* at 14–

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

15; *see id.*, Ex. C, *The Authoritative Dictionary of IEEE Standards Terms* 85 (7th ed. 2000) ("(2) (A) One or more disk drives lined up in a row. (B) Any group of similar devices that are connected together for use as a single device. For example, a row of light-emitting diodes connected to form a display. (C) A contiguous section of addressable memory. For example, eight memory devices, each of which is 64 kB by 1; forming a 64 kB x 8 memory bank.")

Even in this definition cited by Defendants, the so-called "n by m matrix format" of "64 kB x 8" is set forth as an "example." *Id.* The definition itself merely refers to "[a] contiguous section of addressable memory." *Id.*

The specification discloses, for example:

> In one embodiment the AG 1818 has capacity to store and retrieve eight independent *banks* or groups of reference voltages. The *banks* of gamma voltages are stored and selected through the three address inputs B0, B1, B2. This allows the gamma voltages to be changed either for dynamic gamma correction or application based gamma variation. This feature can also be used to switch between different gamma settings based on the information to be displayed for implementing dynamic gamma correction. A block diagram in FIG. 6 illustrates one alternative embodiment.
>
> During read mode, all channels continuously output their corresponding stored voltages based on the *bank* selected by the B0-B2 address inputs. When deemed appropriate an internal damping circuit creates a slow transition, about 10 msec., between *banks* to prevent disruptive display artifacts caused by rapid transitions on the gamma reference voltages during operation. Alternative damping circuits may be employed which allow the transition between *banks* to be considerably slower, for instance, one second, as may be required by the display manufacturer's requirements.

'305 Patent at 5:50–6:21 (emphasis added).

Defendants identify no definitive statement in the specification that would warrant limiting "bank" to a "matrix format" or to being "n by m," and the Court finds none.

Finally, Defendants cite prosecution history in which an Examiner Amendment added: "wherein said non-volatile storage cells are organized into two or more banks of cells wherein

each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit." Dkt. No. 141, Ex. J, Notice of Allowability (AUO_0000589–90).

Defendants do not, however, demonstrate that the Examiner—or, for that matter, the patentee—ever specified that a "bank" must be in a "matrix format" or must be "n by m." To whatever extent this is a specific feature of particular embodiments, this feature should not be imported into the claim. *See Phillips*, 415 F.3d at 1323. Defendants refer to purported distinctions as to the "Steffensmeier" reference cited by the Examiner in the Notice of Allowability, but Defendants identify no definitive statement or disclaimer or even any commentary by the Examiner regarding the meaning of "bank." Also, Plaintiff further persuasively argues: "Claim 1 was amended to include the allowable subject matter from original dependent claim 6. And since dependent claim 6 was originally allowed by the examiner, no narrowing statements were made during prosecution." Dkt. No. 143 at 4 (citation omitted).

Finally, at the August 7, 2025 hearing, Defendants expressed concern that Plaintiff might point to sections of different memory devices as purportedly being part of the same memory "bank." Plaintiff responded that Defendants did not brief this issue and therefore it is untimely, and Plaintiff also responded that Defendants' new argument lacks any support in the claim language or in any other evidence that Defendants have cited. The Court need not address the issue of the timeliness of Defendants' argument because Defendants have not identified any claim construction evidence that would support this argument; Defendants' argument appears to pertain to implementation-specific factual issues regarding infringement rather than any legal question of claim construction. *See PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) ("after the court has defined the claim with whatever specificity and precision is warranted

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact"); *Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1318–19 (Fed. Cir. 2016) (citing *PPG*, 156 F.3d at 1355).

Nonetheless, in light of "bank" being used here in a technical context, and in light of the first portion of Defendants' proposal being supported by evidence, and in the absence of any apparent substantive dispute in this regard, "some construction of the disputed claim language will assist the jury to understand the claims." *TQP Dev., LLC v. Merrill Lynch & Co.*, No. 2:08-CV-471-WCB, 2012 WL 1940849, at *2 (E.D. Tex. May 29, 2012) (Bryson, J., sitting by designation).

The Court therefore hereby construes "bank(s)" to mean **"contiguous sections of addressable computer memory."**

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

V. DISPUTED TERMS IN U.S. PATENT NO. 7,557,788

E. "gamma reference control capability"

"gamma reference control capability" ('788 Patent, Claim 1)	
Plaintiff's Proposal	**Defendants' Proposed Construction**
Plain and ordinary meaning	Indefinite. Alternatively, to the extent the Court decides the term is not indefinite, the term should be construed as: Function: "programming and storing gamma reference voltage values in storage cells that are used to generate gamma reference voltage outputs and switching between different gamma settings to implement dynamic gamma correction" Structure: "Fig. 2 (programming interface 230, gamma reference controller 210, and gamma reference controller 220) AND Fig. 3 (programming engine 310, Analog Input, R/W, MUX 320, A0, A1, A2, and floating gate memory cells 330-337) AND Fig. 5 (Tdamp) OR Fig. 6 (programming interface, Vpp, MUX, A0, A1, Bank Select, B0, B1, B2, floating gate memory cells) AND Fig. 5 (Tdamp) and equivalents thereof"

Dkt. No. 120, Ex. A at 19–21; *id.*, Ex. B at 15; Dkt. No. 144, Ex. A at 2.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "control interface configured to program, and output, gamma reference voltage levels."

(1) The Parties' Positions

Plaintiff argues that "[t]he term 'gamma reference control capability' is not a means-plus-function term because the claim expressly sets forth a structure," and Plaintiff emphasizes that this term does not use the word "means" and is therefore presumed *not* to be a means-plus-function term. Dkt. No. 134 at 16 (citation omitted). Plaintiff also submits that "the surrounding claim

language denotes that the 'gamma reference control capability' is a functional capability provided to the display and this functional capability is electrically reprogrammable, non-volatile, and can store gamma reference voltage levels." *Id.* (citation omitted).

Defendants respond that "the term 'capability' is a nonce word like 'module' and 'mechanism,' and is thus a means-plus-function term." Dkt. No. 141 at 16 (citation omitted). Defendants argue that "Claim 1 recites the step of '*providing* the display with gamma reference control capability' but does not state that the display *is* the structure that has gamma reference control capability." *Id.* Defendants further argue that this term is indefinite because the specification discloses no corresponding structure. *See id.* at 16–18.

Plaintiff replies that "[u]nlike 'module,' 'gamma reference control capability' is not a means-plus-function term and the surrounding claim language recites sufficiently definite structure." Dkt. No. 143 at 6.

At the August 7, 2025 hearing, the parties presented no oral arguments as to this term.

(2) Analysis

Title 35 U.S.C. § 112(f) (formerly § 112, ¶ 6) provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." "In exchange for using this form of claiming, the patent specification must disclose with sufficient particularity the corresponding structure for performing the claimed function and clearly link that structure to the function." *Triton Tech of Tex., LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1378 (Fed. Cir. 2014).

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

"[T]he failure to use the word 'means' . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply." *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). "When a claim term lacks the word 'means,' the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id.* at 1349 (citations and internal quotation marks omitted).

Williamson, in an *en banc* portion of the decision, abrogated prior statements that the absence of the word "means" gives rise to a "strong" presumption against means-plus-function treatment. *Id.* (citation omitted). *Williamson* also abrogated prior statements that this presumption "is not readily overcome" and that this presumption cannot be overcome "without a showing that the limitation essentially is devoid of anything that can be construed as structure." *Id.* (citations omitted). Instead, *Williamson* found, "[h]enceforth, we will apply the presumption as we have done prior to *Lighting World* . . . ." *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004)).

Here, Claim 1 of the '788 Patent recites (emphasis added):

> 1. A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> a. providing said display with *gamma reference control capability* which is electrically reprogrammable and non-volatile;
>
> b. testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> c. varying gamma reference voltage levels on columns of said display by a control circuit, wherein said control circuit is separate from said display;
>
> d. optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and

> e. storing said gamma reference voltage levels in said *gamma reference control capability*.

The claim, on its face, thus recites that the "gamma reference control capability" is a feature of the recited "liquid crystal display" and is "reprogrammable" and "non-volatile." The claim also recites storing voltage levels "in" the "gamma reference control capability." All four of these recited aspects of "gamma reference control capability" support reading the term as connoting structure. The Summary of the Invention section of the specification likewise discloses:

> The invention is a programmable buffer integrated circuit which can be *programmed to output a set of gamma correction reference voltages to be used in Liquid Crystal Displays (LCDs)*. Once programmed, the buffer will continuously output the programmed value; if power is removed, since the voltage value is stored in non-volatile, programmable memory, the gamma correction is retained. The device incorporates a programming interface to allow the programming of the buffer outputs to the desired values during manufacturing and test of the panel. Multiple sets of gamma values can be programmed and stored to provide optimized gamma correction curves for different user or application requirements.

'788 Patent at 2:17–28 (emphasis added). The specification further discloses "gamma reference controllers":

> FIG. 2 is an architectural diagram, 200, illustrating a gamma reference circuit implementation employing gamma reference controllers, 210 and 220, for a TFT panel 280. The gamma reference circuit comprises a first gamma reference controller 210, a second gamma reference controller 220, a programming interface 230, source drivers 240, 241, and 242, and a TFT panel 280. The gamma reference controller 210 drives a first set of eight gamma reference voltages GM1–GM8 to the source drivers 240, 241, . . . and 242. The gamma reference controller 220 drives a second set of eight gamma reference voltages GM9-GM16 to the source drivers 240, 241, . . . and 242.

Id. at 2:61–3:5.

Although the threshold inquiry of whether 35 U.S.C. § 112(f) applies is focused on the claim language, this threshold inquiry can consider context provided by disclosures in the specification. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1296–97 (Fed. Cir. 2014). The above-reproduced disclosures are consistent with finding that the claim uses "gamma reference control

capability" in the structural context of a liquid crystal display. The presence of functional language within the disputed term does not compel otherwise. *See Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018) ("the mere fact that the disputed limitations incorporate functional language does not automatically convert the words into means for performing such functions") (citation omitted). The opinion of Defendants' expert to the contrary is unpersuasive. Dkt. No. 141, Ex. E, May 7, 2025 Silzars Decl. ¶ 115.

Nonetheless, because the term "gamma reference control capability" is used here according to a specialized technical meaning, a construction will assist the finder of fact. *See Intervet, Inc. v. Merial Ltd.*, 617 F.3d 1282, 1287 (Fed. Cir. 2010) ("Idiosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.") (citing *Phillips*, 415 F.3d at 1315). The above-reproduced disclosures demonstrate that "control" in this context includes programming as well as outputting, which should be reflected in the claim construction. *See, e.g.,* '788 Patent at 2:17–28 (reproduced above).

The Court therefore hereby construes "gamma reference control capability" to mean **"control interface configured to program, and output, gamma reference voltage levels."**

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

F. "control circuit"

"control circuit" (’788 Patent, Claim 1)	
Plaintiff's Proposal	**Defendants' Proposed Construction**
Plain and ordinary meaning	Indefinite. Alternatively, to the extent the Court decides the term is not indefinite, the term should be construed as: Function: varying gamma reference voltage levels on columns of a display Structure: Fig. 2 (gamma reference controller 210 AND gamma reference controller 220) AND Fig. 3 (programming engine 310, Analog Input, R/W, MUX 320, A0, A1, A2, and drivers 340-347) OR Fig. 6 (programming interface, Vpp, MUX, A0, A1, Bank Select, B0, B1, B2, and drivers (not numbered))

Dkt. No. 120, Ex. A at 22–23; *id.*, Ex. B at 18–19; Dkt. No. 144, Ex. A at 3–4.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "Plain and ordinary meaning."

(1) The Parties' Positions

Plaintiff argues that "[t]his Court in the *Wistron* litigation and the Federal Circuit have held that the term 'circuit' denotes a known class of structures, generally understood by a POSA." Dkt No. 134 at 18 (citations omitted).

Defendants respond that "[t]he term 'control circuit' is indefinite under 35 U.S.C. § 112 because the patent discloses no structure corresponding to the claimed function," and "Phenix's contention fails because the term 'control circuit' is a purely functional description that does not connote sufficient structure to a POSA." Dkt. No. 141 at 18. Defendants argue that "[w]hile

'circuit' can sometimes connote structure, its use here with the generic, functional modifier 'control' renders the term a nonce word, a mere black box for performing a recited function." *Id.*

Plaintiff replies that "the Court has already construed other 'circuit' terms in the '305 Patent and found them to be sufficiently definite." Dkt. No. 143 at 7.

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

Legal principles regarding 35 U.S.C. § 112(f) are set forth regarding the term "gamma reference control capability," above. Here, Claim 1 of the '788 Patent recites (emphasis added):

> 1. A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
> a. providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
> b. testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
> c. varying gamma reference voltage levels on columns of said display by a *control circuit*, wherein said *control circuit* is separate from said display;
> d. optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
> e. storing said gamma reference voltage levels in said gamma reference control capability.

The term "circuit" as used here is distinguishable from the word "module" in *Williamson*. *See* 792 F.3d at 1348 ("What is important is . . . that the term, as the name for structure, has a reasonably well understood meaning in the art.") (quoting *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)); *see also Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) ("While we do not find it necessary to hold that the term 'circuit' by itself always connotes sufficient structure, the term 'circuit' with an appropriate identifier such as 'interface,' 'programming' and 'logic,' certainly identifies some structural meaning to one of

ordinary skill in the art."); *cf. Greenberg*, 91 F.3d at 1583 (finding that "detent mechanism" was not a means-plus-function term because it denotes a type of device with a generally understood meaning in the mechanical arts).

Further, more recent precedent confirms that "it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." *Skky*, 859 F.3d at 1019 (quoting *TecSec,* 731 F.3d at 1347); *cf. Dyfan, LLC v. Target Corp.*, 28 F.4th 1360 (Fed. Cir. 2022) ("code" and "application" limitations were not means-plus-function).

Also of note, *Wistron* reached the same conclusion as to "circuits for programming" in Claims 1 and 5 of the '305 Patent. *Wistron* at 26–34. The authorities cited by Defendants, such as the *Rain Computing* case involving a "module" term, are unpersuasive. *See Rain Computing, Inc. v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1006 (Fed. Cir. 2021) ("'module' here does not provide any indication of structure," "[n]or does the prefix 'user identification' impart structure because it merely describes the function of the module: to identify a user").

Defendants thus do not overcome the presumption against means-plus-function treatment for this non-means term.

The Court therefore hereby expressly rejects Defendants' proposal, and no further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207 ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

rejected Defendants' construction."); *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291; *Bayer*, 989 F.3d at 977–79.

The Court accordingly hereby construes "control circuit" to have its **plain meaning**.

G. "means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor" and "means for executing said predetermined algorithm"

"means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor" / "means for executing said predetermined algorithm" ('788 Patent, Claim 1)	
Plaintiff's Proposal	**Defendants' Proposal**
As to "means for executing a predetermined algorithm": Function: "executing a predetermined algorithm" Structure: "programming interface such as Fig. 2 (programming interface 230), Fig. 6 (programming interface), 6:1–14, or 6:57–64 (PC based programming interface) and equivalents thereof" Subject to Plaintiff's proposed construction of ["means for executing a predetermined algorithm"], any additional language of [the present disputed term] should be given its plain and ordinary meaning.	Indefinite.

Dkt. No. 120, Ex. A at 24–25 & 27–28; *id.*, Ex. B at 20 & 23; Dkt. No. 134 at 20–21; Dkt. No. 144, Ex. A at 5; *see* Dkt. No. 141 at 24–25.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "Means-plus-function term governed by 35 U.S.C. § 112(f) / Function: 'executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor' / Corresponding Structure: 'programming interface

disclosed in the '788 Patent configured to perform the algorithms disclosed in the '788 Patent at 3:16–30, 6:1–31, and 6:65–7:10; and equivalents thereof.'"

(1) The Parties' Positions

Plaintiff argues that "[t]he specification explains that an integrated circuit incorporates a 'programming interface' that allows for programming circuit's outputs to the desired (*i.e.*, optimized) gamma reference voltage values during manufacturing and testing of the panel." Dkt. No. 134 at 21 (citation omitted).

Defendants respond that this means-plus-function term lacks corresponding structure in the specification and is therefore indefinite. Dkt. No. 141 at 25.

Plaintiff replies that "these limitations are not directed to a specific algorithm that must be performed to optimize the gamma reference voltage levels" but rather "are about a structure that is capable of being programmed to the desired gamma reference voltage level." Dkt. No. 143 at 8. Plaintiff concludes that this term does not invoke a general-purpose processor and, therefore, "no disclosure of a specific algorithm is required." *Id.*

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

Legal principles regarding 35 U.S.C. § 112(f) are set forth regarding the term "gamma reference control capability," above. Here, Claim 1 of the '788 Patent recites (emphasis added):

> 1. A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> a. providing said display with gamma reference control capability which is *electrically reprogrammable* and non-volatile;
>
> b. testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> c. varying gamma reference voltage levels on columns of said display by a control circuit, wherein said control circuit is separate from said display;
>
> d. optimizing said gamma reference voltage levels using *means for executing a predetermined algorithm* according to a predetermined criteria and data

> sensed by said at least one sensor, wherein said *means for executing said predetermined algorithm* is separate from said display to achieve the desired gamma curve; and
>
> e. storing said gamma reference voltage levels in said gamma reference control capability.

The parties agree that "means for executing a predetermined algorithm" is a means-plus-function term.

In denying a petition to institute an IPR as to the '788 Patent, the PTAB rejected arguments that "means for executing a predetermined algorithm" is not a means-plus-function term or, alternatively, that the specification discloses corresponding structure. *See* Dkt. No. 141, Ex. G, IPR2025-00044, June 9, 2025 Decision at 16–23. The PTAB also noted the algorithm requirement. *Id.* at 16. The PTAB found, however, that indefiniteness is outside the scope of IPR and that the IPR petition failed to meet the requirement to set forth how the claim is to be construed, and "based on this failure alone, we decline to institute an inter partes review." *Id.* at 23; *see id.* at 20.

In the present case, Plaintiff proposes that the corresponding structure is: "programming interface such as Fig. 2 (programming interface 230), Fig. 6 (programming interface), 6:1–14, or 6:57–64 (PC based programming interface) and equivalents thereof." Dkt. No. 134 at 20–21. The specification discloses:

> The device incorporates a *programming interface* to allow the programming of the buffer outputs to the desired values during manufacturing and test of the panel. Multiple sets of gamma values can be programmed and stored to provide optimized gamma correction curves for different user or application requirements.

'788 Patent at 2:23–28 (emphasis added); *see id.* at 1:24–29 ("Each display often has a different response to the gamma correction reference voltages, resulting in the need to generate specific gamma reference voltages for each model of display as well as compensating for display to display variation due to manufacturing process variations."), 3:24–28 ("the *desired* voltage is found by

varying the Analog Input for a particular channel") & 6:54–57 ("Having bank switching capability ensures that the optimum gamma curve is used for each individual display and eliminates the need for re-work due to display manufacturing process variations.").

At the August 7, 2025 hearing, Plaintiff argued that no algorithm is required because the "programming interface" is a special-purpose device, not a general-purpose computer. In the context of "calibrating a liquid crystal display," and in light of the recital of "electrically reprogrammable," the "means for executing a predetermined algorithm" is computer-implemented. This is true regardless of whether reference voltage storage is digital or analog, as a computer implementation could be digital or analog or some combination thereof. Also, the specification refers for example to a "PC based programming interface" ('788 Patent at 6:57–64), and the specification as a whole reinforces that although the disclosed "programming interface" may involve specialized hardware, the corresponding structure is computer-implemented. *See, e.g., id.* at 2:61–3:35 & 6:1–31.

"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." *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999); *see Net MoneyIN Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008) (citing *WMS Gaming*); *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1364 (Fed. Cir. 2012) ("Requiring disclosure of an algorithm properly defines the scope of the claim and prevents pure functional claiming.").

"The algorithm may be expressed as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure." *Williamson*, 792 F.3d at 1352. The

Figures of the '788 Patent do not include any flowcharts, so no algorithms are apparent in the Figures. Plaintiff cites disclosure in the specification that "[a] PC based programming interface is available for prototyping and gamma optimization," and "optimization algorithms may be located in such a PC which also may be connected to monitors feeding back data from the display during the optimization tuning at time of manufacture." '788 Patent at 6:58–64. This disclosure of algorithms being "located" in a PC does not itself set forth the content of any algorithms. *See id.* at 6:52–64.

The specification does disclose, however, steps that a programming interface can perform:

> The writing or programming operation is accomplished by first selecting the output or channel of the device to be programmed with the A2-A0 inputs. At this point, R/W on the device to be written is driven low and the device enters Tracking Mode. During Tracking Mode, the output of the selected channel tracks the input voltage on the Analog Input. (An optional internal voltage multiplier converts the 0-3V Analog Input to a 0-10 Volt output.)
>
> Once the desired voltage is found by varying the Analog Input for a particular channel, the R/W signal is driven high and the value on the Analog Input is written into the nonvolatile memory for the output channel selected by the A2-A0 inputs.
>
> * * *
>
> An independent programming interface allows the device to be programmed in-situ thus providing the ability to individually program or adjust the gamma reference voltages for an individual display. The device can also be programmed prior to mounting on the pc board or display. The programming interface consists of four signals. The V_{PP} is a high voltage input used to select the programming mode and also provides the high voltage pulses used to program the individual cells. In the AG 1818 embodiment, V_{PP} is supplied from an external source, an IC or other means. The A_{OUT} analog output is used to read the cell which is currently being programmed to verify the write operation and proper output voltage level. The A0 through A1 inputs are used in conjunction with the B0-B2 inputs to select the location to be written.
>
> One alternative method of programming the individual cells starts by placing A0, A1, B0, B1, B2 lines in the (1,1,1, 1, 1) state and taking the V_{PP} pin high; this places the AG 1818 in the Program mode; the read mode is the default mode. Next the particular bank is addressed through B0-B2; V_{PP} is pulsed again, latching the bank address. Next the cell to be programmed in the selected bank is addressed using the

> A0, A1, B0, B1, B2 lines; V_{PP} is pulsed again, a third time. At this point programming of the selected Storage cell is initiated by pulsing V_{PP} with adjustable Voltage pulses between approximately 8 and 14 volts. When the selected cell has achieved the desired voltage level the A0, A1, B0, B1, B2 lines are again placed in the (1, 1, 1, 1, 1) state; the V_{PP} pin is pulsed; this returns the AG 1818 to the read mode. Programming of additional cells proceeds from the beginning sequence; any order of programming storage cells, random or sequential, can be applied.

Id. at 3:16–30 & 6:1–31.

Also, the specification further discloses:

> This invention also enables several additional features for the user and manufacturer. Automating the testing of a panel can be achieved with optical sensors and feedback to the gamma correction section of the display. Once the *optical sensors have modulated gamma reference voltage levels* for the columns to *achieve the predetermined light matching* for the display these values can be *saved in the gamma reference circuitry*. In this way different application conditions can be pretested and stored. For the user, a sensor can be supplied with the display which responds to the temperature, lighting or other conditions present. The output of the sensor can be *matched to a predetermined application condition* which selects the corresponding gamma value set.

Id. at 6:65–7:10.

This portion of the specification discloses sensing with optical sensors, matching, and saving values, and the execution of these steps depends on a particular "application condition." This is sufficient disclosure of an algorithm "in prose." *Williamson*, 792 F.3d at 1352. The specification thus also provides context for understanding "optimizing" with reference to application-specific considerations.

Defendants argue that a programming interface is "merely a conduit for data" and is not a sufficient corresponding structure because a programming interface is not capable of executing an algorithm. Dkt. No. 141 at 23. Defendants' argument is unpersuasive in light of the above disclosures as well as in light of Defendants having previously presented an alternative proposal that the corresponding structure is "Fig. 2 (*programming interface* 230), Ain, A0, A1, A2, R/W control signal / or / Fig. 6 (*programming interface*, Vpp, Aout, A0, A1), 6:1–14 / or 6:57–64 (PC

programming interface connected to monitors feeding back data from the display during optimization tuning at a time of manufacturing) / and equivalents thereof." Dkt. No. 120, Ex. A at 27–28 (emphasis added).

Finding an algorithm in the specification is not inconsistent with the above-cited PTAB decision because the PTAB merely found that the Petitioner did not sufficiently identify corresponding structure, and the PTAB expressly declined to "opine on Petitioner's contention that the claim terms are indefinite" because indefiniteness is outside of the scope of IPR. Dkt. No. 141, Ex. G, IPR2025-00044, June 9, 2025 Decision at 22–23.

The Court therefore hereby expressly rejects Defendants' indefiniteness arguments and hereby construes this disputed term as set forth in the following chart:

Term	Construction
"means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor" "means for executing said predetermined algorithm"	**Means-plus-function terms governed by 35 U.S.C. § 112(f)** Function: **"executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor"** Corresponding Structure: **"programming interface disclosed in the '788 Patent configured to perform the algorithms disclosed in the '788 Patent at 3:16–30, 6:1–31, and 6:65–7:10; and equivalents thereof"**

H. "predetermined algorithm"

"predetermined algorithm" ('788 Patent, Claim 1)	
Plaintiff's Proposal	**Defendants' Proposed Construction**
Plain and ordinary meaning	Indefinite.

Dkt. No. 120, Ex. A at 29–34; *id.*, Ex. B at 25; Dkt. No. 144, Ex. A at 5.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "Plain and ordinary meaning (apart from the Court's construction of 'means for executing a predetermined algorithm...' above)."

(1) The Parties' Positions

Plaintiff argues that "[t]here is no ambiguity in the term as 'predetermined' and 'algorithm' are commonly understood words, especially when viewed in light of the intrinsic record," and "when the term is viewed in the context of the claim, this limitation is understood to relate to a set of rules or procedures decided in advance based on a predetermined criteria and data sensed by at least one sensor used for optimizing the gamma reference voltage levels." Dkt. No. 134 at 24 (citation omitted). Plaintiff also argues "[w]hile AUO's construction discusses taking optical sensor data, comparing it to a gamma correction curve, and adjusting gamma reference voltage levels, it does so in overly-specific terms that only seek to import limitations not in the express language of the claim and will only serve to confuse the jury at trial." *Id.* at 25.

Defendants respond that "the patent never discloses an algorithm that performs the functions of the claim," and "[a] patent cannot claim a set of rules without actually disclosing what those rules are." Dkt. No. 141 at 26. Defendants argue that "[b]ecause the specification provides

no rules, no steps, and no procedure, a POSA cannot determine the scope of the claim with reasonable certainty." *Id.* (citation omitted).

Plaintiff replies that "because the structure subject to the means-plus-function term is not a general-purpose computer, but a specific programming interface, the specification need not disclose a specific algorithm." Dkt. No. 143 at 9. Plaintiff also submits that "the specification provides a POSA with guidance on how to program individual cells by initiating predetermined voltage pulses," and "[t]he specification also provides exemplary variables such as programming voltage amplitude, rise and fall time of the pulse, and pulse duration that can be considered when programming the integrated circuit but 'each of these variables is influenced by design and process parameters of the particular wafer fabrication facility.'" *Id.* (citing '788 Patent at 6:1–64).

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

The indefiniteness arguments and corresponding structure inquiry regarding this term are addressed as to the term "means for executing a predetermined algorithm," above. Defendants primarily merely incorporate their arguments as to that term. *See* Dkt. No. 141 at 25–26. As to the present term, Defendants also cite *Kaavo Inc. v. Amazon.com Inc.*, which found indefiniteness as to a claim that used "needs analysis algorithm," but *Kaavo* does not alter the Court's analysis as to the term "means for executing a predetermined algorithm," above. *See* No. 14-353, 2018 WL 3025040, at *3 (D. Del. June 18, 2018) (Stark, J.) ("insufficient guidance to allow a POSA to assess what 'needs' or 'analysis' is covered by the claimed 'algorithm,' or what specific algorithm could be used to determine the user defined provisioning information"). Defendants' arguments are unpersuasive, and no further construction is necessary.

The Court accordingly hereby construes "predetermined algorithm" to have its **plain meaning** (apart from the Court's construction of the "means for executing . . ." terms, above).

I. "gamma reference voltage levels"

"gamma reference voltage levels" ('788 Patent, Claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning	"analog voltage(s) stored in an analog storage cell"

Dkt. No. 120, Ex. A at 36; *id.*, Ex. B at 30; Dkt. No. 144, Ex. A at 5.

Shortly before the start of the August 7, 2025 hearing, the Court provided the parties with the following preliminary construction: "Plain and ordinary meaning."

(1) The Parties' Positions

Plaintiff argues that "[t]he jury will understand the claim's unambiguous and straightforward use of the term 'gamma reference voltage level' to refer to the amount or corresponding value of a gamma reference voltage and, therefore, the term does not require the Court's construction." Dkt. No. 134 at 26 (citation omitted). Plaintiff argues, for example, that "the claims use both 'gamma reference voltages' and 'gamma reference voltage levels,' indicating that the latter is an amount or corresponding value of former." *Id.* at 27 (citation omitted). Plaintiff urges that the intrinsic record contains no support for any disclaimer of digital embodiments. *Id.*

Defendants respond that their proposal is consistent with the specification, and "Phenix fails to identify any disclosure supporting that the inventors possessed anything beyond analog 'gamma reference voltage levels.'" Dkt. No. 141 at 30 (footnote omitted).

Plaintiff replies that "Defendants' argument mirrors its arguments for the '305 Patent's 'non-volatile storage cell' claim term, seeking to limit the term to only analog memory cells." Dkt. No. 143 at 10.

At the August 7, 2025 hearing, the parties presented oral arguments.

(2) Analysis

For essentially the same reasons discussed above as to the term "non-volatile storage cells" in the parent '305 Patent, Defendants do not persuasively justify limiting "gamma reference voltage levels" to analog voltages. The opinions of Defendants' expert are likewise unpersuasive. *See* Dkt. No. 141, Ex. E, May 7, 2025 Silzars Decl. ¶¶ 143–155. The Court therefore hereby expressly rejects Defendants' indefiniteness argument, and no further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207 ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction."); *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291; *Bayer*, 989 F.3d at 977–79.

The Court accordingly hereby construes "gamma reference voltage levels" to have its **plain meaning**.

VI. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patent-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 15th day of August, 2025.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

Phenix Longhorn LLC IPR2025-01004
Ex. 2016

APPENDIX A

Term	Agreed Construction
"An integrated circuit for producing voltage signals on a plurality of outputs comprising" ('305 Patent, Claim 1)	The preamble of claim 1 is a limitation reciting one integrated circuit.
"circuits for programming" ('305 Patent, Claims 1, 5)	Plain and ordinary meaning
"programming said storage cells" ('305 Patent, Claim 1)	Writing data to a storage cell
"drivers" ('305 Patent, Claim 1)	Buffers or amplifiers
"predetermined gamma reference voltage signal display condition" ('305 Patent, Claim 1)	A display condition established by the predetermined gamma reference voltage signals based on the application that is being displayed, external environment such as temperature and ambient light, or the personal preference of the user
"means to switch between the banks based on one or more external signals" ('305 Patent, Claim 1)	Function: switching between the banks based on one or more external signals. Structure: '305 Patent, 5:50-6:21; Figure. 4A (B0 B2); Figure. 4B (pins 20, 22, 23); Figure 5 (Tdamp); Figure. 6 (Bank Select, B0, B1, B2).

"high voltage programming means" ('305 Patent, Claim 5)	Function: programming the non-volatile storage cells using a high voltage signal. Structure: (1) (a) a Program Interface, (b) a Vpp input that is used to select the programming mode, (c) the Vpp input also providing the high voltage pulses used during programming of an individual cell, and (d) address inputs A0 and A1 / bank inputs B0, B1, B2 used to select the location being programmed; as described at '305 Patent 6:22-36, Figure 4A, Figure 4B, Figure 5 and Figure 6. and/or (2) (a) a Program interface, (b) a Vpp input, address inputs A0 and A1, and bank inputs B0, B1, B2 that are used to select the programming mode, (c) the Vpp input also providing the high voltage pulses used during programming of an the individual cell, and (d) address inputs A0 and A1 and bank inputs B0, B1, B2 used to select the location being programmed; as described at '305 Patent 6:37-53, Figure 4A, Figure 4B, Figure 5 and Figure 6
"A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps" ('788 Patent, Claim 1)	The preamble is limiting.

Dkt. No. 120 at 2–3.