

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Hisense USA Corporation
Petitioner

v.

Brightplus Ventures LLC
Patent Owner

Patent No. 8,941,331
Filing Date: May 17, 2013
Issue Date: January 27, 2015
Title: SOLID STATE LIGHTING PANELS WITH VARIABLE VOLTAGE
BOOST CURRENT SOURCES

Inter Partes Review No. IPR2023-01401

PETITIONER'S REPLY TO PATENT OWNERS' RESPONSE

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LIST OF EXHIBITS

EXHIBIT	DESCRIPTION
1001	U.S. Patent No. 8,941,331 (“the ’331 Patent”)
1002	Prosecution History of U.S. Patent No. 8,941,331
1003	Declaration of Rafael Betancourt
1004	Curriculum Vitae of Rafael Betancourt
1005	WO 2005/089293 to Lys (“Lys”)
1006	U.S. 2007/0046485 to Grootes (“Grootes”)
1007	CN 1588523 to Xu (“Xu”)
1008	Certified Translation of Xu
1009	U.S. 2005/0047134 A1 to Mueller (“Mueller”)
1010	U.S. 5,663,667 to Blum (“Blum”)
1011	Counterclaim filed by Patent Owner in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774, Dkt. 9 (N.D. Ga. Sep. 16, 2022)
1012	Scheduling Order in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774, Dkt. 35 (N.D. Ga.)
1013	Judicial Caseload Profile for the Northern District of Georgia
1014	Cover Pleading to Patent Owner’s Infringement Contentions in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774 (N.D. Ga.)
1015	Cover Pleading to Patent Owner’s Supplemental Infringement Contentions in <i>Hisense USA Corp. v. Brightplus Ventures LLC</i> , No. 1:22-cv-02774 (N.D. Ga.) served June 21, 2023
1016	Supertex Inc., HV9910 – Universal High Brightness LED Driver
1017	Supertex Inc., Press Release Announcing HV9910 (May 17, 2004)
1021	Bohannon Deposition
1022	Second Betancourt Declaration

I. Introduction

The '331 Patent is invalid. Each of the claim elements is well-known in the art. The Patent Owner (“PO”) Response (“Response”) still attacks the combination of prior art based on fabricated theories that the prior art cannot be physically combined, despite the Board’s discouraging message in Decision of Institution (“DI”). PO also falsely alleges that the prior art fails to disclose claim elements such as those related to the current supply circuit and the PWM controller, which Petitioner has already shown otherwise as further explained below. Further, PO submits no credible expert testimony, instead relying on a declaration that parrots the Response, confirming the futility of PO’s flawed arguments.

The challenged claims should all be canceled as obvious.

II. The Response Parrots Arguments from the Preliminary Response, which the Board Already Addressed and Rejected.

Large swaths of the Response are nearly a word-for-word copy of the Preliminary Response.

For example, with respect to Ground I, *Compare* Response at § V.B with Paper 6 at § V.B; Response at § V.D with Paper 6 at § V.C; Response at § V.E with Paper 6 at § V.D.

And with respect to Ground II, *Compare* Response at § VI.A with Paper 6 at § VI.A; Response at § VI.C with Paper 6 at § VI.B; Response at § VI.D with Paper

6 at § VI.C; Response at § VI.E *with* Paper 6 at § VI.D; Response at § VI.F *with* Paper 6 at § VI.E; and Response at § VI.G *with* Paper 6 at § VI.F.

The Board has already rejected these arguments and should not reconsider them, especially where PO's expert "testimony" is also largely a word-for-word copy of the Response. *See infra* § VI.

III. Ground 1 – Claim 17 is Obvious Over the Combination of Lys and Grootes in view of the Knowledge of a POSITA.

A. Motivation to Combine Lys and Grootes

PO argues that Lys is directed to a "completely different purpose" than the '331 patent arguing that Lys is directed to different applications, such as architectural displays and other "high-voltage environments." Response, 6. PO further argues that none of the embodiments in Lys relate to backlighting an LCD display. *Id.*

But Lys is in fact highly relevant. Lys, for example, teaches that its "lighting system" can be used to produce a variety of lighting effects including indirect illumination effects (such as illuminating a wall or another object) or *direct* view effects (such as *displays*). Ex. 1005:24-26; *see also*, 26:8-9 ("lighting system for a large-scale display"); 54:1-7 (disclosing lighting housing for a display); 124:25-31 (lighting units for a display); 136:15-16 (disclosing "backlit display" signs). In fact, Lys explains that its lighting system can be used in a variety of small and large direct

lighting applications including, but not limited to, displays, handheld computers, and phones. *Id.* at 54:1-8; Fig. 10.

Moreover, PO advances a myopic view of the '331 patent when it argues that the '331 patent is limited to “backlighting an LCD display.” Response, 6. The '331 patent is not so limited. First, the claims of the '331 patent are not limited to LCD displays. Ex. 1001, 17:17. Even PO's expert understood that. Ex. 1021 at 14:7-11; 16:19-22. And the Board already rejected this very same argument, noting that PO was attempting to inject unclaimed elements and features into the claim. DI at 17. PO's attempt to do so again here in its response should be rejected, particularly since PO advances no new or different arguments and submits no new evidence.

Second, the claims only recite a “lighting system.” Ex. 1001, 17:17. And as the '331 patent explains, “solid state lighting arrays are used for a number of lighting applications.” Ex. 1001, 1:35-39. The '331 patent goes on to explain that such applications include “architectural and/or accent lighting,” small liquid crystal displays such as “portable electronic devices,” and “larger displays.” Ex. 1001, 1:35-2:43; *See also*, Ex. 1021 at 15:11-24. Accordingly, the '331 patent's claims and its disclosures are highly relevant to Lys's disclosures, which also relate to architectural and accent lighting, small displays, such as mobile phones (e.g. portable electronic devices), and large displays. Ex. 1005, 54:1-8; Fig. 10.

Finally, PO attempts to mash together a number of arguments in support of its erroneous conclusion that one of skill in the art would not combine Lys with Grootes. Response, 7-12. But PO's arguments are legally and factually incorrect.

First, PO's arguments are legally incorrect because they rest on the assumption that obviousness requires that the prior art be physically combined. Response at 8 (regurgitating its prior "impractical if not impossible to modify" argument). For example, PO argues that combining embodiments of Lys and Grootes would lead to problems connecting strings to controllers. Response, 9-10. PO also argues that combining a compact backlight in an LCD panel (discussed in Grootes) to modify a large-scale lighting system (discussed in Lys) would be impractical to account for alleged voltage mismatch. Response, 11-12. But as the Board already recognized, bodily incorporation is not the law. DI at 18-19 (citing *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016)). Rather the focus is whether the prior art "as a whole" would have rendered the claim obvious in view of the prior art. *In re Etter*, 756, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc) (holding that focus is on "whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole.").

Here, both Lys and Grootes relate to lighting systems and provide disclosures related to current supply circuits and controlling such circuits with PWM signals.

And as the Board found, one of skill in the art would have been motivated to combine such disclosures. DI, 16, 19.

Factually, PO's arguments are wrong. For example, PO argues that implementing the low voltage current supply in Grootes with the high voltage DC to DC converters in Lys would "ignore safety and isolation from high voltage AC in consumer electronics design." Response at 12. But, the single stage PFC/DC to DC converter 1908 shown in Figure 17 of Lys integrates a power factor corrector (PFC) plus a DC-DC converter, thereby providing "DC output voltages suitable for light sources 300 such as LEDs." Ex. 1005, 60:18-25. The purpose of having the DC-DC converter is to convert the high voltage to a low voltage suitable for light sources 300. Ex. 1022, ¶48. Thus, PO's argument makes no sense as there is no conflict or incompatibility between the high or low voltage disclosures in view of Lys's PFC/DC-DC converter. Moreover, PO's arguments regarding using separate converters to each string or one converter to multiple strings is wrong as it is trivial to arrange such components in an electrical lighting system as reflected by both Lys and Grootes. Ex. 1022, ¶49. PO's response simply presents the same "unclear," and "conclusory and unsupported" arguments and testimony that was already rejected by the Board. DI, 17. PO's arguments should be rejected.

B. The Lys-Grootes Combination Discloses Element 17B (the Current Supply Circuit)

PO argues that Lys does not disclose current supply circuits configured to supply an on state drive current. In advancing this argument, PO again injects numerous unclaimed limitations into element 17B, citing the specification of the '331 patent. Response at 17-18. Such new requirements, conjured from the specification, now apparently include “charging inductor,” continuous conduction or constant current flows, rectifiers, storage capacitors, and voltage boost current supply circuits. But none of this is in the claim language, as the Board already found. Ex. 1001, 17:17; DI at 17. Thus, these arguments should be rejected.

PO also argues that none of the power supplies in Lys, such as the PFC/DC to DC converter 1908, supply an on-state drive current to LED strings. Response at 17-18. This argument ignores common sense of a POSITA, especially in view of a fundamental physical principle known as Ohm’s law, who would understand that voltage supplied against a load results in current. Ex. 1022, ¶50. Even PO’s expert conceded this point. Ex. 1021, 46:11-47:17.

Further, as explained in the Petition, Lys discloses a current supply circuit configured to supply an on state drive current. Lys generally discloses a lighting system 100 comprising a lighting unit 102, a control facility 3500 controlling the lighting unit 102, and a powering facility 1800 providing power. Ex. 1005, 30:6-12. The power facilities 1800 may “be associated with one or more power conversion

devices that convert power received by an external power source to a *form suitable for operation* of the lighting unit 102.” Thus, Lys does not limit its teachings to a specific type of power source so long as the form of the power is suitable for the operation of the lighting unit 102. A POSITA would know, based on these teachings, that one example of such suitable forms would be an on-state drive current for a string of LEDs. Ex. 1022, ¶53.

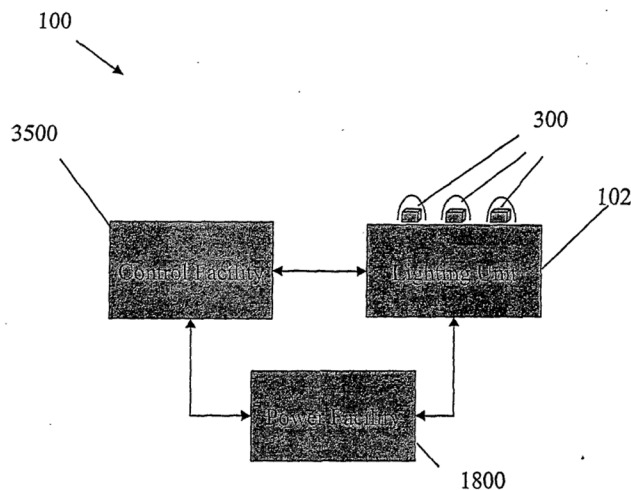


Fig. 1

More specifically, Lys discloses a PFC/DC-to-DC converter 1908, which constitutes a current supply circuit. Claim 17 simply recites a “current supply circuits ... configured to supply an on-state drive current,” without any other further definition. Ex. 1001, 17:22-26. Thus, the claimed “current supply circuit” simply encompasses a circuit that is configured to supply an on-state drive current.

Lys’s PFC/DC-to-DC converter 1908 is such a “current supply circuit” because it supplies an on-state drive current to the LED string. As shown in Figure

17 of Lys, the power factor correction facility 1804 and DC-DC converter 1812 are integrated into a single stage power factor correction/DC to DC converter facility 1908 that is *integrated with the lighting unit* 102. Ex. 1005, 60:18-21; Fig. 17. The lighting unit 102 is electrically connected to its corresponding PFC/DC-DC converter 1908 as a conductive load having a certain resistance, and an on-state drive current flows through the lighting unit 102. *Id.*; Ex. 1022, ¶51. And Ohm's law states that the electric current through a conductive load between two points is directly proportional to the voltage across the two points, namely $I=V/R$. Ex. 1022, ¶50; See also Ex. 1021, 47:8-49:8. The PFC/DC-DC converter 1908 outputs a low voltage of a current flowing through the lighting unit 102. Ex. 1022, ¶51. If the load resistance is known (e.g., calculated by multiplying the forward resistance $R_{FORWARD}$ of each LED by the number N of LEDs in a string), the desired on-state current can be readily achieved by setting the output voltage accordingly. *Id.*

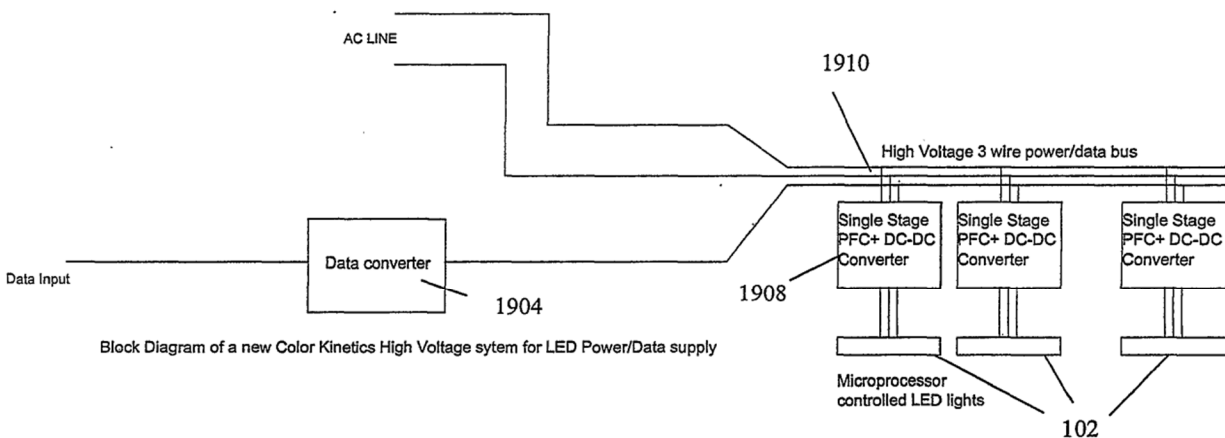


Fig. 17

Accordingly, the PFC/DC-DC converter 1908 supplies the on-state drive current to the corresponding lighting unit 102 when they are “integrated with” each other. Lys plainly discloses element 17B.

Also, as the Board acknowledged, Grootes too discloses this element. Accordingly, Lys in view of Grootes renders this element obvious. For example, Grootes discloses that “[s]eries strings of red LEDs 32, green LEDs 33, and blue LEDs 34” and current sources 40, 41, and 42 are mounted on a single PCB 30, and the cathode of each string is electrically connected to “its own current sources.” Ex. 1006, ¶¶35-37. DI at 15. Thus, Grootes explicitly discloses each of multiple current supply circuits configured to supply an on-state drive current to a respective one of the strings of solid state lighting devices. Ex. 1022, ¶52.

Moreover, it would have been obvious to combine Lys and Grootes to have a current supply circuit for each LED string. For example, color control, brightness control, and brightness uniformity are all characteristics used to achieve a certain white point. Petition, 18-20; Ex. 1003 ¶¶ 82-84, 89, 61. Lys discloses that the light sources can be controlled to provide different colors, including different temperatures of white light. *Id.* Grootes similarly disclose that the current source can control the brightness of the LEDs to obtain a certain white point. Ex. 1006, [0017]. Thus, both references explicitly provide disclosures and teachings related to controlling color, including white light, and similar methods and electrical components for achieving such color control. Ex. 1003, ¶¶ 82-84, 89, 61; Ex. 1006, [0017].

Finally, PO misrepresents Petitioner's position when it argues that Petitioner somehow recognizes that Lys is weak when Petitioner states that Lys "at least implies" the use of a single power source for each LED string. Response at 18. However, Petitioner actually states that Lys "***discloses*** or at least implies the use of a single power supply circuit *for each string of LEDs.*" Petition at 23 (emphasis added). Petitioner has set forth that Lys discloses the current supply circuit as articulated *supra* and in the Petition. Petitioner's argument on page 23 simply pre-buted PO's argument that to the extent that someone would argue that Lys does not explicitly disclose that the current supply circuit, a POSITA would understand how

and why the combination of Lys and Grootes would unequivocally disclose such an arrangement. Petition at 23. Furthermore, Petitioner also explained that PO takes Petitioner's statement out of context and ignores the sentence right after what PO cites. In fact, PO did not dispute Grootes's disclosure of this feature and cannot dispute that the combination of Lys and Grootes satisfies element 17B but for an unavailing challenge of the motivations to combine Lys and Grootes, which was rebutted above.

C. Lys Discloses Element 17C (the PWM controller and Two PWM Control Signals)

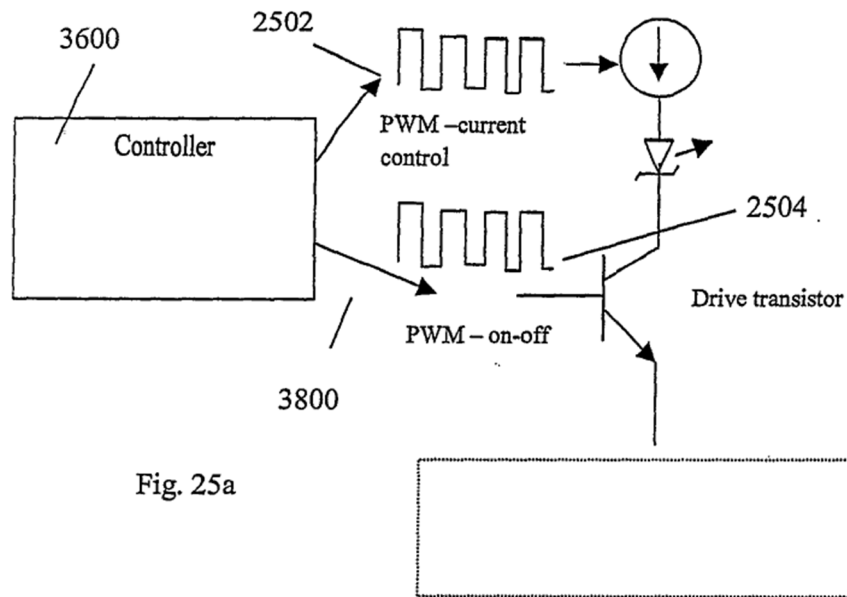
PO re-raises several of the same arguments regarding element 17C that were already rejected by the Board. Petitioner will address each argument again in turn.

As an initial matter, the '331 patent simply recites a PWM controller that generates a first and second PWM control signal that are each supplied to a first current supply circuit (and corresponding first string) and a second current supply circuit (and corresponding second string). Ex. 1001, 17:17-33. This claim language is confirmed by the specification of the '331 patent and Fig. 9.

For example, the '331 specification describes the LED strings receiving control signals (CTRL1 and CTRL2) that are responsible for controlling the on state current flowing through the LED string and the on/off state of the LED string. Ex. 1001, 12:4514:61. As explained by Dr. Betancourt, these control signals are PWM control signals in light of the fact that one of the PWM signals controls the "on state"

current provided by the current supply circuit, while the other PWM signal controls the on/off state of the LED string. Ex. 1022, ¶¶55-60. And as set forth and explained in the Petition, Lys’s controller supplies such PWM control signals to the current supply circuits (and corresponding strings). Petition 25-28; Ex. 1003, ¶¶ 62-65.

For example, Lys expressly discloses a circuit for “creating the two control signals from a controller” to control one or more LEDs in a string. Ex. 1005, 83:20-22.¹ See, e.g., Ex. 1005, Fig. 25a:



As described in Lys, Lys’s control facility 3500 (shown in Figure 25a as controller 3600) provides two different PWM signals to the LED string. One of the

¹ Although Lys describes this particular embodiment in the context of controlling one LED string, Lys explicitly discloses that such a circuit may control “multiple such strings”. Ex. 1005 at 83:23-24.

signals is for current control (for color) and the other is for “on off” control (for intensity). Figure 25b of Lys and its accompanying description then describes how those two signals can be different: “[t]he two PWM signals vary both in current level and width.” Ex. 1005, 82:10; Fig. 25b.² Lys goes on to explain that by adjusting these two signals (on-time and current level), the light source can produce a broader light spectrum. *Id.* 82:7-16. Therefore, Lys discloses element 17C.

As for PO’s arguments, PO first argues that the control facility 3500 (e.g., the controller 3600 shown in Figure 25a) is not controlled by a PWM stream. Response at 19. PO then jumps to the conclusion that as a result, Lys’s controller 3600 is not a PWM controller. But the ’331 claim does not require that the PWM controller be “controlled by a PWM stream.”

In fact, the claim simply recites “a PWM controller ... that is configured to generate ... a first PWM control signal and a second PWM control signal.” Ex. 1001, 17:27-33. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (reaffirming that bedrock principle of claim construction that words of the claim define the scope of the invention). Moreover, nothing in the ’331 specification further limits or defines the claimed PWM controller as one requiring that it also be controlled by a PWM

² PO has argued that Petitioner improperly relies on, or combines, disclosures across Lys’s Figures 17 and 25a-d. But Fig. 17 relates to a power system for lighting systems and Figs. 25a-d relate to methods for driving lighting systems. Ex. 1005, 28; 81-83. Both relate to Lys’s lighting systems.

signal. In other words, what determines whether a controller is a PWM controller or not is the output side of the controller, not the input side of the controller. Thus, PO's argument focuses on the wrong side (the input side) of the controller in attempting to distinguish Lys. Since Lys's controller 3600 generates two PWM control signals (one for current control, the other for on-off control), the controller 3600 is a PWM controller. This is also consistent with the intrinsic evidence of the '331 patent. Ex. 1022, ¶66. Accordingly, Lys discloses a PWM controller.

PO next argues that Lys discloses one PWM controller generating a signal for *one string*, not one PWM controller for *multiple strings*, reasoning that "each string would have its own PWM controller." Response at 20. PO's argument is incorrect and its so-called supporting evidence is wrong. See Ex. 2001, ¶72.

Although Figure 25a shows one LED string and one PWM controller, Lys explicitly discloses that its controller can be used to control "*multiple such strings*," which in turn can be used to create a light fixture that can vary in color and spectrum. *Id.* at 83:23-24. In fact, a POSITA would understand that multiple LED strings can *share* one PWM controller because a PWM controller normally is capable of providing multiple channels for multiple LED strings. Ex. 1022, ¶67. Indeed, Lys only ever describes a single controller and explains how such can control multiple strings. *Id.* Lys never describes the use of multiple controllers to control, respectively, multiple strings.

PO also argues that Lys discloses that each string receives “just one signal” and not two distinct PWM control signals arguing that “*the signal* is passed between the drive circuitry 3800 to control one LED string. Response at 21. But this too is incorrect. PO, with its expert, argues that Figure 25a of Lys shows that “just one signal” is supplied to each string. This fabricated interpretation contradicts Lys’s explicit teaching that provides that its controller “creat[es] *two* control signals from a controller ... to control one or more LEDs *in a string*.” Ex. 1005, 83:20-22. And PO’s argument and interpretation of Lys directly contradict Lys’s disclosure of two different PWM control signals as explained in reference to Fig. 25b. Ex. 1005, 82:7-16. Finally, even PO’s expert concedes this point. Ex. 1021, 58:13-23.

Finally, PO attempts to confuse matters by pointing to Lys’s disclosure of a current control mode 2502 and PWM mode 2504, arguing that the current control mode is controlled by a PWM stream. Response, 19. But Lys discloses that control facility 3500 (e.g., the controller 3600 shown in Figure 25a) can switch between a current control mode 2502 and a *separate* PWM mode 2504. Ex. 1005, 83:17-18. Lys also discloses that its system can include *simultaneous* current control (via PWM) for wavelength control and PWM control (for intensity). *Id.* at 83:18-20. As a result, Lys’s system can control for desired output color and intensity. *Id.*

Moreover, the current control mode 2502 and the PWM mode 2504 are separate modes. And they can be employed simultaneously. They are not mutually

exclusive. Because of these characteristics, the desired output color (by current control mode 2502) and intensity (by PWM mode 2504) can be achieved simultaneously in a balanced manner. Ex. 1022, ¶62.

Moreover, contrary to PO's argument, the current control mode 2502 itself could be controlled by a PWM stream. Ex. 1005, 83:17-18. In other words, the current control mode 2502 is also implemented by a PWM control signal (i.e., a "PWM stream"). This is consistent with the illustration shown in Figure 25a, where the current control mode 2502 is labeled as "PWM – current control" and the PWM mode 2504 is labeled as "PWM – on-off." Moreover, simply because the PWM control signals are passing through the same drive circuitry 3800 doesn't mean both PWM control signals are identical. Ex. 1022, ¶68.

For at least these reasons, Lys discloses element 17C, and PO's arguments lack merit.

IV. Ground 2 – Claims 18-20 and 22-25 are Obvious Over the Combination of Lys, Grootes, and Xu in view of the Knowledge of a POSITA.

A. Motivation to Combine Lys, Grootes, and Xu

As with Ground 1, PO argues that one of skill in the art would not be motivated to combine Xu to the Lys-Grootes combination by focusing on arguments related to whether one would bodily incorporate Xu's disclosure with Lys-Grootes. However, as discussed above, this is an incorrect understanding of the law of obviousness, as confirmed by the Board. DI at 24 (citing *Allied Erecting*, 825 F.3d at 1381).

Moreover with respect to claim 18, the Petition sets forth explicit reasons why one of skill in the art would combine Xu with the Lys-Grootes combination. Petition, 28-31. And contrary to PO's arguments at 27-40, a POSITA would understand that Xu's teachings regarding slow capacitor charging and discharging, which results in LED series that cannot be turned on or off quickly, would motivate one of skill in the art to provide a pulse current with a constant level to achieve color and brightness uniformity. *Id.*; Ex. 1003, ¶¶93-99. Adopting Xu's teachings to the Lys-Grootes combination would improve the display and, as Dr. Betancourt provides, a POSITA would be motivated to do so. *Id.*

With respect to claim 19, the Petition sets forth explicit reasons why one of skill in the art would combine Xu with the Lys-Grootes combination. Petition, 28-30. And contrary to PO's arguments at 30-34, 38-40, a POSITA would understand that Xu's sense resistor could be incorporated into the Lys-Grootes combination to provide feedback on the system's constant color temperature to improve the overall color and brightness uniformity. Ex. 1003, ¶96.

B. The Combination of Lys, Grootes, and Xu Discloses Claim 18

Other than the motivation to combine argument (addressed above), PO does not contest that Xu discloses a boost converter. Accordingly, PO has waived its right to contest that this element is present in the prior art.

C. The Combination of Lys, Grootes, and Xu Discloses Claim 19

First, PO argues that Xu would not be combined with the Lys-Grootes combination because doing so would add “unnecessary” structure to the circuit. Response, 38. But as explained above in Section IV. A, this is incorrect.

Second, PO again argues for bodily incorporation by stating that the temperature sensor and the sense resistor in Lys must be implemented in the DC-DC converter shown in FIG. 17 of Lys and that one of skill in the art would not do so because of purported interference issues. Response at 38-39. However, a POSITA would appreciate that the temperature sensor and the sense resistor in the current supply circuit could be implemented in conjunction with the DC-DC converter and that there are no technical obstacles to doing so. Ex. 1022, ¶69.

Second, Lys discloses a temperature sensor that is a thermostat. The thermostat is simply one example of a temperature sensor disclosed in Lys. And as explained in the Petition, Lys’s temperature sensor signal is received by the PWM controller, which itself generates or outputs PWM signals. Petition, 35. Thus, Lys discloses the temperature sensor recited in in claim 19.

Finally, it is PO, not Petitioner, that misrepresents Lys’s disclosures. *See*, Response at 39-40. For example, PO alleges that Lys discloses “a feedback system can use a [current measurement]³ sensor to measure the forward voltage of the

³ Bracketed materials inserted by PO.

LEDs.” Response at 40. But the cited portion of Lys actually states that: “To compensate for the *temperature* change, a feedback system can use a *sensor* to measure the forward voltage of the LEDs, which gives *a good indication of the temperature* at which the LEDs are running.” Ex. 1005, 134:27-29. Lys therefore disclose a temperature sensor, not a so-called “[current measurement] sensor.”

D. The Combination of Lys, Grootes, and Xu Discloses Claim 20

First, PO argues that Xu does not teach *two* current supply circuits coupled to the feedback input. Response at 41. This is incorrect. Xu does not have to teach the feedback loop of *each* current supply circuit. Disclosing the feedback loop for *one representative* current supply circuit would enable a POSITA to duplicate the feedback loop for each current supply circuit. Ex. 1022, ¶70.

E. The Combination of Lys, Grootes, and Xu Discloses Claim 23

See discussion in Section III.B above.

F. The Combination of Lys, Grootes, and Xu Discloses Claim 25

See discussion in Section III.B and E.

V. Ground 3 – Claim 21 is Obvious Over the Combination of Lys, Grootes, Xu, and Blum in view of the Knowledge of a POSITA.

A. The Combination of Lys, Grootes, Xu, and Blum Discloses Claim 21

See discussion in Section III.A-C.

VI. PO's Purported Expert is Entitled to No Weight

PO submits a declaration from its expert, Mr. Bohannon. *See* Ex. 2001, (the “Bohannon Declaration”). The Bohannon Declaration is fundamentally suspect because Mr. Bohannon simply parrots the PO Response. Indeed, rather than providing any insightful expert opinions and analysis, Mr. Bohannon simply repeats almost exactly the same text stated in the PO Response. As such, the Bohannon Declaration should not be entitled any weight.

The Board has consistently recognized that a declaration that repeats a Paper *verbatim* is “is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15 (P.T.A.B. Aug. 24, 2022) (precedential) (listing cases).

Simply put, an expert declaration that “merely parrots the [Response]” is entitled to “little to no weight.” *E.g.*, *MarkForged Inc. v. Continuous Composites, Inc.*, IPR2022-01431, Paper 7, at 14 (P.T.A.B. Jan. 18, 2023); *LG Elecs. Inc. v. Jawbone Innovations, LLC*, IPR2023-01111, Paper 10, at 15 (P.T.A.B. Jan. 9, 2024) (“Petitioner’s expert merely parrots the Petition. ...Thus, Petitioner’s conclusory assertion is unpersuasive.”); *see Content Square SAS v. Medallia Inc.*, IPR2022-00316, Paper, at 38 (P.T.A.B. July 14, 2022) (similar); *Man Wah Holdings Ltd. v.*

Rafeel Sys., LLC, IPR2019-00616, Paper 7, at 15–16 (P.T.A.B. Aug. 21, 2019) (same). Such is the case here with respect to the Bohannon Declaration.

Overall, Mr. Bohannon’s declaration is effectively nothing more than a copy of the Response itself. And “merely repeating conclusory arguments does not help the Board, the trier of fact in this proceeding, understand the evidence or to determine a fact in issue.” *Man Wah*, IPR2019-00616, Paper 7, at 15–16. Mr. Bohannon’s unhelpful declaration should therefore be given no weight.

VII. Conclusion

The challenged claims of the ’331 Patent should be cancelled as obvious.

Respectfully submitted,

By: /s/ Matias Ferrario
Matias Ferrario
Registration No. 51,082

CERTIFICATE OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24(d) that the foregoing **PETITIONER’S REPLY TO PO’S RESPONSE** excluding any table of contents, mandatory notices, certificates of service or word count, or appendix of exhibits or claim listing, contains 4540 words according to the word-processing program used to prepare this paper (Microsoft Word). The foregoing word count complies with the 5,600 word type-volume limit specified by 37 C.F.R. § 42.24(c)(1).

Dated: September 23, 2024

By: /s/ Matias Ferrario
Matias Ferrario
Registration No. 51,082

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this
PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE has been
served via email on the following:

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Dated: September 23, 2024

By: /s/ Matias Ferrario
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