

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG DISPLAY CO., LTD, SAMSUNG ELECTRONICS CO., LTD,
and SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

POLARIS POWERLED TECHNOLOGIES, LLC,
Patent Owner.

IPR2023-00771
Patent 7,259,521 B1

Before TERRENCE W. McMILLIN, JON M. JURGOVAN, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

SZPONDOWSKI, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
37 C.F.R. § 42.71

I. INTRODUCTION

On November 12, 2024, Patent Owner Polaris PowerLED Technologies, LLC (“Patent Owner”) timely filed a Request for Rehearing (Paper 41, “Request”) of our Final Written Decision (Paper 40, “Decision”) determining by a preponderance of the evidence that claims 1, 2, and 7 of U.S. Patent 7,259,521 B1 (Ex. 1001, “the ’521 patent”) were anticipated by and would have been obvious over Kim. Specifically, Patent Owner asserts that we overlooked certain “arguments explaining why the Kim reference does not disclose the claimed video driver of the ’521 patent.” Request 1.

For the reasons provided below, we *deny* Patent Owner’s Request.

II. ANALYSIS

A. *Legal Standard*

A request for rehearing “must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, a reply or sur-reply.” 37 C.F.R. § 42.71(d). The party challenging a decision bears the burden of showing the decision should be modified. *Id.* A request for rehearing is not an opportunity to present new arguments or evidence or merely to disagree with the panel’s assessment of the arguments or weighing of the evidence. *See, e.g., Presidio Components, Inc. v. AVX Corporation*, IPR2015-01332, Paper 21 at 4 (PTAB Feb. 18, 2016) (“Patent Owner’s arguments in this regard amount to a mere disagreement with our analysis or conclusion. But mere disagreement with our analysis or conclusion is not a sufficient basis for rehearing. It is not an abuse of discretion to provide analysis or conclusion with which Patent Owner disagrees.”).

B. Patent Owner's Arguments on Rehearing

Claim 1 of the '521 patent recites in part “[a]n active matrix organic light emitting diode (AMOLED) display system comprising an AMOLED display panel receiving a video signal to be displayed on the AMOLED display panel, the AMOLED display panel comprising a plurality of organic light emitting diode (OLED) pixel elements, the AMOLED display system comprising: *a video driver receiving the video signal and generating a video drive signal.*” Ex. 1001, 8:47–54 (emphasis added).

In our Decision, we determined that Petitioner had shown, by a preponderance of the evidence, that the identified portion in Kim’s Figure 10 taught the recited “video driver” and “generat[es] a video drive signal.” Dec. 27–34. Patent Owner argues that we overlooked arguments (1) “showing that Kim’s pixel circuit does not generate a video drive signal”; and (2) “showing that Kim’s pixel circuit is not a ‘video driver.’” Request 1–11. We address these arguments below.

1. Patent Owner Fails to Show that We Overlooked Arguments Showing that Kim’s Pixel Circuit Does Not Generate a Video Drive Signal

Patent Owner contends that “the Board completely overlooked Polaris’s arguments that Kim’s pixel circuit is designed to receive a video drive signal from data driver 300 rather than generate one, and makes only minor adjustments to an existing video drive signal.” Request 2; *see id.* at 2–5 (citing PO Resp. 18–19; Ex. 1007, Figs. 3, 4, 19; Ex. 2011 ¶ 91). Patent Owner asserts that the video drive signal is received from Kim’s data driver 300, and the identified portion of Figure 10 “is a portion of the pixel circuit that functions as a compensation circuit.” Request 3 (citing PO Resp. 19).

Patent Owner argues that “[b]ecause the video driver in Kim, data driver 300, does not generate a video driver signal referenced to the positive power supply voltage, [Petitioner] instead asserted that the pixel circuit is a video driver . . . [which is] contrary to a [person of ordinary skill in the art’s] understanding of AMOLED display concepts.” *Id.* at 5 (citing Ex. 2011 ¶¶ 32–51, 90–91).

We disagree that Patent Owner’s arguments were overlooked. These arguments were encompassed in our discussion of why we were persuaded that Kim teaches the recited “video driver” (i.e., that it generates a video drive signal) and why we were not persuaded by Patent Owner’s arguments that the pixel circuit and video driver must be distinct. Dec. 27–34. As discussed in our Decision, the ’521 patent does not explicitly define a “video driver” or explain what it means to “generat[e] a video drive¹ signal.” Dec. 28.² Patent Owner presented arguments that Kim’s pixel circuit in Figure 10

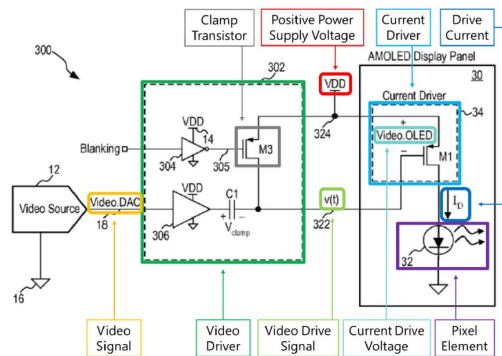
¹ We note several typographical errors in this discussion in the Decision that incorrectly state or refer to “generating a video signal,” rather than “generating a video *drive* signal.” See Dec. 27–28. Because the discussion on pages 27–34 was directed to the limitation “video driver receiving the video signal and *generating a video drive signal* indicative of the video signal,” we think it is clear these were inadvertent errors, but take this opportunity for clarification nonetheless.

² In the Institution Decision, we noted that “neither Patent Owner nor Mr. Credelle elaborates on what it means to ‘generate’ a video drive signal, and why that excludes ‘modifying’ or ‘adjusting’ the received video signal in some manner. See, e.g., Ex. 1001, 1:65–67 (‘[t]he analog video signal Video.DAC is summed with a DC voltage VDC (node 14) at a summer 20 to generate the video drive signal $v(t)$. . .’); *id.* at 4:9–14 (‘[A] video driver 102 is incorporated in an AMOLED display system 100 for receiving input video signals Video.DAC from a video source 12 and *providing a modified video*

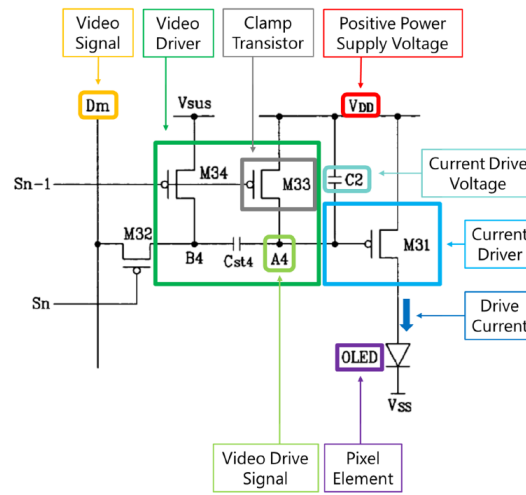
lacked necessary components of a video driver that are responsible for generating a video drive signal (e.g., an amplifier) and does not perform certain functions required to generate a video drive signal, i.e., its function is to receive, not generate a video drive signal. Dec. 27–31. Patent Owner’s arguments included describing certain requirements for generating a video drive signal (i.e., “taking a usually digital video signal and shifting, converting to analog, and amplifying the voltage so that it can properly drive the transistors in the display panel’s pixel circuits”), arguing that a video driver would use amplifiers to generate a drive signal, and arguing that generating a video drive signal does not encompass making adjustments to an existing video drive signal. PO Resp. 13–15, 19. However, Patent Owner stated that these were not claim construction arguments or inherency arguments. Tr. 23:18–24:12.

We were not persuaded by these arguments for the reasons stated in our Decision. Dec. 27–31. For example, Patent Owner’s arguments introduced narrower requirements for the recited video driver and generation of the video drive signal than are recited in claim 1 or are supported by the ’521 patent. Dec. 27–31. As stated, in determining that Kim disclosed the recited “video driver” and “generate[s] a video drive signal,” we were particularly persuaded by Petitioner’s annotated comparison of Figure 4 of the ’521 patent to Figure 10 of Kim, which is reproduced below:

drive signal $v(t)$ for driving the current driver 34 in the AMOLED display panel 30.’) (emphasis added).’ Paper 12, 29.



Ex.[1001], Fig. 4 (annotated)



Ex.[1007], Fig. 10 (annotated).

Dec. 27–28; Pet. 26, 28. Above is a side-by-side view of Petitioner’s annotated Figure 4 of the ’521 patent on the left and Kim’s Figure 10 on the right. In both Figures, Petitioner has highlighted the video signal in yellow (Video.DAC in the ’521 patent and Dm in Kim), the video driver in a dark green box, the video drive signal that has been generated in light green (v(t) in the ’521 patent and A4 in Kim), the current driver in a dark blue box, and pixel elements in dark purple.

As we explained in our Decision, “as set forth by Petitioner, Kim’s voltage at node A4 (video drive signal generated by the video driver identified in the dark green box) is supplied to the gate of transistor M31, driving the organic light emitting diode OLED by the video driver circuitry identified in the dark green box, similar to how voltage v(t) 322 (video drive signal) is supplied to the gate of transistor M1 driving the OLED 32 by video driver 32 in Figure 4 of the ’521 patent.” Dec. 27–28 (citing Pet. 29). This is further supported by the similarities between the equations set forth for the video drive signal and the current drive voltage signal in the ’521

patent (Ex. 1001, 7:28–45) and Kim (Ex. 1007 ¶¶ 109–112 (Equations 11, 12)). *See* Reply 8.

Regarding Patent Owner’s arguments on pages 18–19 of the Patent Owner Response, Patent Owner argues that switching transistors M33 and M34 and capacitor Cst4 as described in paragraphs 107 and 108 of Kim “makes a local correction to the analog voltage supplied by the video driver to the drive transistor but does not *generate* the video drive signal.” PO Resp. 18–19 (citing Ex. 2011 ¶ 91); Request 3–4. Mr. Credelle’s cited testimony does little more than repeat, verbatim, what is stated in the Patent Owner Response, without further explanation, as to why “mak[ing] a minor adjustment” or “local correction” to an existing video signal does not suffice to “generate a video drive signal.” Ex. 2011 ¶ 91. As stated in our Institution Decision (Paper 12, 29), the ’521 patent does not appear to exclude modification or adjustment of an input video signal to generate a video drive signal. *See, e.g.*, Ex. 1001, 1:65–67 (“[t]he analog video signal Video.DAC is summed with a DC voltage VDC (node 14) at a summer 20 to generate the video drive signal $v(t)$. . .”); *id.* at 4:9–14 (“[A] video driver 102 is incorporated in an AMOLED display system 100 for receiving input video signals Video.DAC from a video source 12 and *providing a modified video drive signal $v(t)$* for driving the current driver 34 in the AMOLED display panel 30.”) (emphasis added).

Further, we note that Patent Owner’s arguments only address paragraphs 107 and 108 of Kim, and do not persuasively address the rest of Kim’s disclosure in paragraphs 109 (Equation 11), paragraph 110 (describing that voltage A4 is applied to capacitor C2 (current drive

voltage), thereby charging capacitor C2), paragraphs 111 and 112 (Equation 12, describing the current drive voltage), and paragraphs 113 and 114 (Equation 13, describing the drive current). This disclosure supports that Kim's voltage at node A4 (video drive signal generated by the video driver circuitry) is supplied to the gate of transistor M31 (current driver), and drives the organic light emitting diode OLED. Dec. 27–28; Pet. 29, 32–35.

2. *Patent Owner Fails to Show that We Overlooked Arguments Showing that Kim's Pixel Circuit is not a "Video Driver"*

Patent Owner argues that we rejected Patent Owner's argument that the video driver and pixel circuits are distinct components "without analysis and ignored the substance of Polaris's argument." Request 5–6 (citing PO Resp. 19–27; Ex. 2011 ¶¶ 32–40, 92–102). Patent Owner argues that the passage of the '521 patent relied upon (i.e., Ex. 1001, 7:52–8:2) "refers to a specific manner in which the video driver can be integrated with the other components of the AMOLED display system, namely as a single integrated circuit." Request 7–8 (citing Ex. 1001, 7:57–59). Patent Owner contends that, in our Decision, we "quote[] only the first part of this sentence, implying that the specification disclosed that the video driver could be integrated with the AMOLED display panel generally, in any number of ways." *Id.* at 8. Patent Owner contends that "the '521 patent's discussion of a possible embodiment where the claimed 'video driver of the present invention can be integrated on the same integrated circuit with . . . the AMOLED display panel' does not eliminate the requirement that the claimed video driver be distinct from the pixel circuits." *Id.* at 8–9 (citing PO Resp. 25–27).

We again disagree that this argument was overlooked. *See* Dec. 32–34. Initially, we note that Patent Owner is incorrect that we only relied on the disclosure at column 7:52–8:2 of the ’521 patent in reaching our decision. *See* Request 6. Rather, first we determined that neither the claim language nor the portion of the ’521 patent relied upon by Patent Owner (Ex. 1001, 1:5–10) supported Patent Owner’s arguments. Dec. 32–33 (citing Reply 11–13). Then we turned to the disclosure at column 7:52–8:2, which we stated “broadly describes how the video driver circuit may be implemented.” *Id.* at 33. Contrary to Patent Owner’s arguments, we quoted the entirety of this disclosure. *Id.* This disclosure simply does not require that the video driver and the pixel elements are physically distinct. Rather, it states, for example, that “the *video driver circuit of the present invention can be integrated **with** other circuitry of the AMOLED display panel* into a single integrate[d] circuit,” “[t]he embodiments in FIGS. 2–4 are illustrative only and are not intended to require the video driver to be formed outside of the AMOLED display panel,” and “[t]he video driver of the present invention can be integrated *with* the AMOLED display panel when desired to reduce the component count and size of the PC board space used.” Ex. 1001, 7:52–8:2 (emphasis added).

In light of this disclosure, Patent Owner argues that even if the video driver and pixel circuits are incorporated into a single integrated circuit, the video driver must still be distinct from the pixel circuit. Request 9; PO Resp. 25–27. In support, Patent Owner points to various literature purporting to establish that video drivers and pixel circuits must be physically distinct. PO Resp. 20 (Kim), 20–21 (Tsujimura), 25–26 (den

Boer), 26–27 (Onoyama). However, that Patent Owner is able to find examples that purportedly support its position does not establish that is required in general, or more specifically, by claim 1 of the ’521 patent. We note that none of the examples state that this is required, nor do any explicitly refer to a “video driver.”³ Therefore, we are not persuaded, on this record, that claim 1 requires that the video driver be physically distinct from the AMOLED display panel (i.e., pixel elements).

III. CONCLUSION

For the reasons discussed above, Patent Owner does not persuade us that the Decision holding claims 1, 2, and 7 as anticipated and obvious over Kim should be modified.

Outcome of Decision on Rehearing:⁴

Claims	35 U.S.C. §	Reference/Basis	Denied	Granted
1, 2, 7	102	Kim	1, 2, 7	
1, 2, 7	103(a)	Kim	1, 2, 7	
1, 2	102	Hayafuji		
1–3, 5	103(a)	Hayafuji		
1–4	103(a)	Steer		
Overall Outcome			1, 2, 7	

³ As stated in our Decision, Patent Owner states that a “video driver” is “also referred to as a source driver, column driver, and data driver” (PO Resp. 14), but, aside from a conclusory statement from Mr. Credelle (Ex. 2011 ¶ 86), does not provide additional support for this statement. *See* Reply 15–16 (citing Ex. 1015 ¶ 200). Dec. 34.

⁴ Our Decision addressed challenges to claims 1–5 and 7. *See* Dec. 11–12, 81. However, Patent Owner only requests rehearing on the challenges involving Kim, so the challenges involving Hayafuji and Steer have not been addressed.

Outcome of Final Written Decision after Rehearing:

Claims	35 U.S.C. §	Reference/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 7	102	Kim	1, 2, 7	
1, 2, 7	103(a)	Kim	1, 2, 7	
1, 2	102	Hayafuji		1, 2
1–3, 5	103(a)	Hayafuji		1–3, 5
1–4	103(a)	Steer	1–4	
Overall Outcome			1–4, 7	5

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Patent Owner’s Request for Rehearing is *denied*.

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