

IN THE 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

Case IPR2023-00771
U.S. Patent No. 7,259,521

PATENT OWNER'S PRELIMINARY RESPONSE SUR-REPLY

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As explained in the POPR and the Credelle declaration, a POSITA would have understood that a video driver and a pixel circuit are different components in an OLED display system. Kim teaches a pixel circuit, not a video driver, and therefore cannot disclose or render obvious the claimed video driver. Petitioner's Reply does not address this central issue and, thus, does not remedy the failings of Kim. However, Petitioner's arguments are incorrect for the reasons set forth below.

I. CLAIM 1'S VIDEO DRIVER IS DISTINCT FROM ITS DISPLAY

The specification explains that the claimed invention uses a video driver to “isolate[e] *the pixel circuit* from power supply voltage variations.” EX1001, 1:6-9 (emphasis added). Because the teaching of Kim relied upon by Petitioner *is a pixel circuit*, it cannot isolate the pixel circuit, either physically or electrically, from power supply voltage variations. EX1007, ¶¶49-50, 61, 104; POPR, 14-17. Kim's approach, unlike that of the '521 patent, is to attempt to mitigate power supply voltage variations within the pixel circuit to reduce the impact on the current flowing to the pixel element. POPR, 14-17, 25-31. This is the opposite of the approach of the '521 patent, which re-references the video signal in the video driver *before* it reaches the pixel circuit, thus isolating the pixel circuit from power supply voltage variations. EX1001, FIGs. 2-4, 1:6-9, 3:8-21.

The logic of a video driver being distinct from the pixel circuit is consistent with the current driver being part of the display's pixel circuit. The claimed video

driver provides a video drive signal to the current driver in the display's pixel circuit. EX1001, 1:6-9, 4:17-25. Thus, the video driver must be distinct from the pixel circuitry. Similarly, the claimed current driver provides a current to the light-emitting OLED pixel element. EX1001, 3:17-21, 4:19-26, 8:57-64. Thus, the current driver is distinct from the OLED pixel element. EX1001, FIG. 2 (elements 32, 34). The video driver drives a video drive signal to the current driver, which, in turn, provides current to the OLED pixel element. The current driver receives the video drive signal from the video driver, and thus cannot be part of the video driver.

But even if video driver circuitry is incorporated into the same integrated circuit as the current driver and pixel circuit, the components of the video driver on the chip would be physically and logically distinct from those of the pixel circuit. EX2001, ¶54. Placing the components on the same integrated circuit is simply a manufacturing cost savings measure that does not necessitate the video driver and the pixel circuit to share the same components. *Id.* Neither the '521 patent nor Kim teach that the video driver can be incorporated into the pixel circuit, EX1001, FIGS. 2-4; EX1007, FIG. 3, ¶¶[0044]-[0048], as Petitioner arguments require.

II. THE CLAIMED VIDEO DRIVER IS NOT SATISFIED BY KIM'S PIXEL CIRCUIT, WHICH DOES NOT INCLUDE AN AMPLIFIER

Petitioner's claim differentiation argument does not make sense. Dependent claims 3, 4, and 6 specify exactly *how* an amplifier is configured in the circuit that references the video drive signal to the positive power supply voltage. The fact that

claim 1 does not so specify how the amplifier is configured does not mean that it does not require an amplifier. Claim 1 recites a video driver and, as explained by Patent Owner's expert, a POSITA would have understood that a video driver, as a type of data driver, must include an amplifier. EX2001, ¶¶28-30, 73. Further, every embodiment in the '521 patent specification includes an amplifier, which support's Mr. Credelle's opinions. EX1001, FIGs. 2-4.

Petitioner's argument that the specification indicates that "*amplification ... is not required*" and its quotation of column 5, lines 30-36 undermines, rather than supports, Petitioner's argument that the claimed video driver does not include an amplifier. Reply, 3. The portion of the '521 patent that Petitioner relies on states that the *amplifier* has "unity gain," or a gain of one. EX1001, 5:30-36. Therefore, lack of *amplification* means that the *amplifier* has unity gain and not that there is no *amplifier* as Petitioner suggests. The specification requires an amplifier in the video driver in every embodiment and nowhere teaches removing the amplifier.

Finally, Petitioner mischaracterizes Patent Owner's argument with respect to Steer. The reason Steer does not invalidate the claims of the '521 patent is not that it has an amplifier, but rather because Steer's circuit is configured such that the result of the amplification is that the video drive signal is not referenced to the positive power supply voltage. POPR, 58-61. The claims of the '521 patent, even after amplification, are still referenced to the positive power supply voltage.

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE SUR-REPLY** was served in its entirety on August 14, 2023, upon the following parties via electronic mail:

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