

UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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LG DISPLAY CO., LTD.  
Petitioner

v.

SURPASS TECH INNOVATION LLC  
Patent Owner

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**Case: IPR2015-00885**

**Patent 7,202,843**

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**SUPPLEMENTAL DECLARATION OF RICHARD ZECH, PH.D.**

## **I. Introduction**

1. My name is Dr. Richard G. Zech, and I have been retained by the law firm of Mayer Brown LLP on behalf of LG Display Co. Ltd. and LG Display America, Inc. as an expert in the relevant art.

2. I previously submitted a declaration on March 17, 2015, setting forth my opinions regarding the validity of U.S. Patent No. 7,202,843 (“the ’843 patent” or “Shen”) in view of certain prior art references. That declaration was submitted with and cited in LG Display’s Petition for *Inter Partes* Review, filed the same day. I understand that Petition was instituted on September 8, 2015, with respect to claims 4, 8, and 9 in view of Korean Patent Application No. 2000-0073673 (“Lee”).

3. I also understand that Patent Owner (Surpass) filed preliminary and full responses to LG Display’s Petitioner on June 26 and November 24, 2015, respectively. I also understand that in connection with the latter, Surpass submitted a declaration from Mr. William Bohannon, who was deposed on January 28, 2016. I have reviewed the foregoing responses, declaration, and deposition transcript, and accordingly herein supplement my opinions as follows.

## **II. Claim Construction / Scope of ’843 Patent**

4. Surpass and Mr. Bohannon erroneously contend that claim 4 requires overdriving. As a preliminary matter, and as I have previously explained, the term

Supplemental Declaration of Richard Zech, Ph.D.

“overdriving” is not recited in claim 4. The term is, however, explicitly recited in claim 1 (and dependent claims 2 and 3) and throughout the specification. Per my review of the specification and claims, there is no indication that the patentee intended claim 4 to require overdriving, particularly as the specification discloses embodiments that do not require or include overdriving. Surpass’s argument to the contrary is predicated on the misunderstanding that “to control a transmission rate,” recited at the end of claim 4, means “overdriving.” *See* Ex. 2017 at 13.

5. This argument is not supported by the ’843 patent, nor is it consistent with how a person of ordinary skill in the art would interpret “to control a transmission rate” in view of the claims and specification. First, claim 1 (which requires “overdriving”) also contains the “to control a transmission rate” limitation. Thus reading an “overdriving” requirement into this limitation would be superfluous. Second, the ’843 patent provides a specific definition for “overdriving”: “applying a higher or a lower data impulse to the pixel electrode to accelerate the speed of the liquid crystal molecules, so that the pixel can reach the predetermined gray level in a predetermined frame period.” Ex. 1001 at 2:2-7. Mr. Bohannon highlights this definition in his declaration (*see* Ex. 2017 at 13) and stated he agreed with it during his deposition:

Q: So you accept this as a definition of overdriving?

A: Yes.

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Q: Is this consistent with your understanding of overdriving before reading the '843 Patent?

A: Yes.

Ex. 1014, Bohannon Dep. Trans at 33:25-34:6.

6. This definition, “applying a higher or lower data impulse,” does not appear in claim 4, nor does any similar language (much less the word, “overdriving”). Nor does the specification contain any disclosure equating “controlling a transmission rate” with “overdriving.” Nevertheless, Mr. Bohannon contends “LG does not cite to and I am not aware of any instance or embodiment in the '843 where a *transmission rate* is described as being controlled without overdriving.” *Id.* (emphasis added).

7. Mr. Bohannon’s assessment here is incorrect. The specification describes control of the operation of the pixel without referencing overdriving in several instances. For example, at column 1, lines 27-31, the '843 patent states: “Generally when driving an LCD, a driving circuit receives a plurality of frame data and then generates corresponding data impulses, scan voltages, and timing signals, according to the frame data, in order *to control pixel operation of the LCD.*” (Emphasis added). Similarly, at column 3, lines 43-47, the '843 patent states: “The switching device 38 is connected to the corresponding scan line 32 and the corresponding data line 34, and the source driver 18 and the gate driver 20 *control*

*the operation of each pixel 36* via the scan line 32 and the data line 34.”

(Emphasis added).

8. In both instances, the control of the pixel’s operation is described without overdriving. In my opinion one of ordinary skill in the art would understand that controlling the “operation” of the pixel (as per the specification) refers to the amount of light passing through the pixel—*i.e.*, the transmission. One of ordinary skill in the art would also understand that there is a direct correlation between the voltage applied to the pixel and the amount of light that passes through it. Mr. Bohannon conceded this point during his deposition:

Q: So I think you said...that transmission denotes the amount of light that passes through the liquid crystal?

A: Yes I’ve measured it extensively...

Ex. 1014, Bohannon Dep. Trans. at 21:23-22:3.

Q: So there are some scenarios that you can conceive of where the transmissivity is changed as a result of the application of more than one data impulse in a single frame?

A: But the transmissivity is changed whenever you apply a voltage...

*Id.* at 51:12-17.

Q: ...what that percentage value is referring to, the amount of light that’s passing through? So in your example of 10 percent, would that be 10 percent transmission through the pixel?

A: Yes.

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