

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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LG ELECTRONICS INC.,  
Petitioner,

v.

IMMERVISION, INC.,  
Patent Owner.

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IPR2020-00179, -00195  
U.S. Patent No. 6,844,990

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**DECLARATION OF RUSSELL CHIPMAN, PH.D. REGARDING CODE V**

I, Russell Chipman, hereby declare the following:

1. My name is Russell Chipman and I am over 21 years of age and otherwise competent to make this Declaration. I make this Declaration based on facts and matters within my own knowledge and on information provided to me by others, and, if called as a witness, I could and would competently testify to the matters set forth herein.

2. I have been retained as a technical expert witness in this matter by Counsel for Petitioner LG Electronics Inc. to provide my independent opinions on certain issues requested by Counsel for Petitioner relating to the petitions for Inter Partes Review of U.S. Patent No. 6,844,990 (“the ’990 Patent”). My compensation in this matter is not based on the substance of my opinions or the outcome of this matter. I have no financial interest in Petitioner. I have been informed that ImmerVision, Inc. (“ImmerVision”) is the purported owner of the ’990 Patent, and I note that I have no financial interest in ImmerVision. I previously submitted a declaration dated November 27, 2019, which I understand was submitted with the Petitions filed as Exhibit 1008 by the Petitioner.

3. A summary of my relevant experience and qualifications are set forth in that November 27, 2019 declaration and my curriculum vitae, which I understand is Ex. 1009 to these proceedings.

4. As I mentioned in my prior declaration, the Code V software merely performs mathematical calculations applying well known principles of optics and physics, which have not changed in any material respects since at least the early 2000s. (Ex. 1008, ¶ 51). In other words, the physics and optics of lenses do not change over time, *i.e.*, the prior art lens system has the same physical and optical properties whether they are calculated using a current Version of Code V, whether they are calculated using an earlier version of Code V, whether they are calculated using other lens design software, or even whether they are calculated by hand. I have personally used the Code V software in connection with optical lens design since the late 1970s beginning with my work for Beckman Instruments from 1978-1981 as an Optical Engineer. I used Code V extensively for my course work and research for my M.S. in Optical Science that I obtained in 1984 and my Ph.D. in Optical Sciences which I received in 1987. I continued to use Code V in connection with my work and my research from that time and still use Code V to this day.

5. I have used Code V to perform an analyses similar to that which I performed and described in connection with my prior declaration since at least 1978. Since that time, the Code V ray trace algorithms that calculate the paths of light rays as the rays refract through lens systems have not operated differently in any relevant aspects.

6. I have been provided with a copy of the 1978 Designer's Manual for Code V (Ex. 1014). I have reviewed the manual and its description of Code V is consistent with my recollection of how Code V operated around that time. Accordingly, the manual appears to be a true and correct copy of the 1978 Designer's Manual.

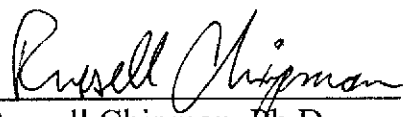
7. I have also personally located a copy of the Code V Version 7.6 Reference Manual (Feb. 1994), relevant excerpts of which are provided as Ex. 1015. I have reviewed the manual and its description of Code V is consistent with my recollection of how Code V operated around that time. Accordingly, the Reference Manual appears to be a true and correct copy of the 1994 Version 7.6 Reference Manual. Moreover, the 1994 Reference Manual describes each of the same operations and functions of the software that I used to perform the analysis I performed in connection with my prior declaration and confirms these operations and functions were available prior to 2001. The principles of optics and physics that Code V relies on for performing these calculations have not changed during this time, so I know of no reason to believe that the Code V software from 1994 (or 1978) would provide any materially different results to the more recent versions of the Code V software.

8. In addition, I have reviewed an article from Proceedings Volume 0766 (1987) of the Society of Photo-Optical Instrumentation Engineers (SPIE), Recent

Trends in Optical Systems Design and Computer Lens Design Workshop titled “A Technical Overview of CODE V Version 7” (Ex. 1016) by Bruce R. Irving of Optical Research Associates, which was the company that developed Code V at that time. The article further evidences the wide availability of Version 7 of the Code V software prior to 2001.

9. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on June 9, 2020 in Tucson, Arizona.

  
Russell Chipman, Ph.D.