UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCL INDUSTRIES HOLDINGS CO., HISENSE CO., LTD., and ZYXEL COMMUNICATIONS CORP.
Petitioners,

v.

PARKERVISION, INC.
Patent Owner

Case No. 2021 IPR-00985

DECLARATION OF MATTHEW B. SHOEMAKE, PH.D.

REGARDING U.S. PATENT NO. 7,292,835

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I, Matthew B. Shoemake, Ph.D., do hereby declare and state, that all statements are made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I am over the age of 21 and am competent to make this declaration. These statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: May 17, 2021

Matthew B. Shoemake, Ph.D.

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(b) Element [1A]: "an *oscillator* to generate an in-phase oscillating signal" 72

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(d) Element [1C]: "a *first frequency down-conversion module* to receive the electromagnetic signal and said in-phase oscillating signal"....76

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(k) Element [1J]: "wherein said second frequency down-conversion module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating *a second sampled signal*" 83

2. Claim 12: "The cable modem of claim 1, wherein said sampled signal is a first information output signal, and said second sampled signal is a second information output signal." 84

3. Claim 15: "The cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal." 85

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