

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION**

PARKERVISION, INC.,

Plaintiff,

v.

TCL INDUSTRIES HOLDINGS CO.,
LTD., TCL ELECTRONICS HOLDINGS
LTD., SHENZHEN TCL NEW
TECHNOLOGY CO., LTD., TCL KING
ELECTRICAL APPLIANCES
(HUIZHOU) CO., LTD., TCL MOKA
INT'L LTD., and TCL MOKA
MANUFACTURING S.A. DE C.V.;

HISENSE CO., LTD. and HISENSE
VISUAL TECHNOLOGY CO., LTD. (F/K/A
QINGDAO HISENSE ELECTRONICS CO.),
LTD. and HISENSE ELECTRIC CO., LTD.

Defendants.

Case No. 6:20-cv-00945-ADA

Case No. 6:20-cv-00870-ADA

JURY TRIAL DEMANDED

**DECLARATION OF MATTHEW SHOEMAKE B. SHOEMAKE IN SUPPORT OF
DEFENDANTS' OPENING CLAIM CONSTRUCTION BRIEF**

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: August 23, 2021

A handwritten signature in black ink, appearing to read "Matthew B. Shoemake", written over a horizontal line.

Matthew B. Shoemake, Ph.D.

TABLE OF CONTENTS

I. QUALIFICATIONS 2

II. MATERIALS REVIEWED..... 8

III. PERSON OF ORDINARY SKILL IN THE ART 9

IV. CLAIM CONSTRUCTION..... 10

 A. “Low Impedance Load” 11

 B. “Said Energy Discharged From Said Capacitor Provides Sufficient Power to Drive the Low Impedance Load”..... 16

 C. “Voltage of the Input Modulated Carrier Signal is Not Reproduced or Approximated at the Capacitor During the Apertures or Outside of the Apertures” 18

 D. “A Down-Convert and Delay Module to Under-Sample an Input Signal to Produce an Input Sample of a Down-Converted Image of Said Input Signal, and to Delay Said Input Sample” 21

 E. “Delay Module” Terms 22

 F. “Said Control Signal Comprises a Train of Pulses Having Pulse Widths That are Established to Improve Energy Transfer From Said Input Signal to Said Down-Converted Image” 25

 G. “Wherein Said Energy Transfer Signal Generator in Widening Said Apertures of Said Pulses by a Non-Negligible Amount That Tends Away From Zero Time in Duration to Extend the Time That Said Switch is Closed for the Purpose of Increasing Energy Transferred From Said Input Signal Does So at the Expense of Reproducing Said Input Signal, Such That Said Increased Energy Transferred From Said Input Signal When Said Switch is Closed in Response to Said Energy Transfer Signal Prevents Substantial Voltage Reproduction of Said Input Signal” 26

 H. “Establishing Apertures” Terms 27

I. QUALIFICATIONS

1. I, Matthew B. Shoemake, Ph.D, submit this declaration in support of TCL Industries Holdings Co., Ltd., TCL Electronics Holdings Ltd., Shenzhen TCL New Technology Co., Ltd., TCL King Electrical Appliances (Huizhou) Co., Ltd., TCL Moka Int'l Ltd., and Moka Manufacturing S.A. De C.V. (collectively “TCL”) and Defendants Hisense Co., Ltd. and Hisense Visual Technology Co., Ltd. (f/k/a Qingdao Hisense Electronics Co., Ltd. and Hisense Electric Co., Ltd.) (collectively “Hisense”) (TCL and Hisense are collectively referred to as “Defendants”) opening claim construction brief.

2. Although I am being compensated for my time at a rate of \$670 per hour in preparing this declaration, the opinions herein are my own. I have no stake in the outcome of this proceeding. My compensation does not depend in any way on the outcome of this proceeding or on any IPRs related to this proceeding requested by the Defendants.

3. I graduated *magna cum laude* from Texas A&M University in 1994 upon earning two bachelor’s degrees, one in Electrical Engineering and one in Computer Science. While at Texas A&M I took several classes on analog and RF design including the use of switched capacitors. I also took digital signal processing at Texas A&M.

4. I also earned a master’s degree and a Ph.D. in Electrical Engineering from Cornell University in 1997 and 1999, where my studies focused on communications systems, communication protocols, and information theory. While at Cornell I also was a teaching assistant for digital signal processing courses.

5. I have almost 30 years of experience in a variety of technologies and industries related to communications systems. From 1991 to 1995, I worked as an intern in the Digital Signal Processing Group at Texas Instruments, Inc. in Stafford, Texas. I worked on both product

engineering and applications engineering projects. Our DSP chips were used in a variety of products including wired and wireless communication systems.

6. I was on the founding team of Alantro Communications, Inc. (“Alantro”), a manufacturer of semiconductor products that relate to communication systems. While employed by Alantro, I served as an engineer and engineering manager in the development of an HDSL2 modem, a cable modem, a 2.4 GHz cordless phone, and Wi-Fi technologies. During that time, I was responsible for developing the digital baseband portions of physical layers; the portion of a communication system that is responsible for transmitting information over a physical medium, such as wire, fiber, or air; and successfully decoding the information at the receiver. I also worked on standardized interface technologies such as Ethernet (802.3) and USB. My team at Alantro worked on and pioneered Wi-Fi technology, which was the foundation of the Wi-Fi product line offered by Texas Instruments. Texas Instruments acquired Alantro in 2000.

7. After Texas Instruments acquired Alantro, I became the director of the Wireless Networking Branch in the Texas Instruments DSP Solutions R&D Center from 2000 to 2003. While manager of this group, I developed technologies for increasing throughput and quality of service in communications networks. I also worked with sister organizations including DSL and cable modem teams to integrate Wi-Fi into products such as home gateways.

8. In 2003, I founded WiQuest Communications, Inc. and was the CEO from 2003 to 2008. At WiQuest, I developed and sold the world’s first wireless docking system for notebook computers and the world’s first 1 Gbps ultra wideband chipset. Our products contained RF and analog circuitry for modulating and demodulating high-speed signals transmitted wirelessly.

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.