UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
TCL INDUSTRIES HOLDINGS CO. AND HISENSE CO., LTD Petitioners,
V.
PARKERVISION, INC. Patent Owner
Case No. IPR2021-00990

# DECLARATION OF MATTHEW B. SHOEMAKE, PH.D. REGARDING U.S. PATENT NO. 7,110,444



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 20, 2021

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Matthew B. Shoemake, Ph.D.

### TABLE OF CONTENTS

I.	QUA	QUALIFICATIONS1						
II.	MAT	MATERIALS REVIEWED10						
III.	PERS	PERSON OF ORDINARY SKILL IN THE ART10						
IV.	STA	ANDARDS OF ANTICIPATION AND OBVIOUSNESS12						
V.	BACKGROUND TECHNOLOGY							
	A.	Wireless Signals	23					
	B.	"Up-Conversion" and "Down-Conversion"	24					
VI.	OVERVIEW OF THE '444 PATENT							
	A.	Alleged Problem	24					
	B.	Alleged Invention	25					
	C.	Patent Owner Added Insignificant Limitations To Obtain the Challenged Claims	29					
VII.	CLAIM CONSTRUCTION							
	A.	"frequency down-conversion module" (Claims 2 and 3)	31					
	B.	"subtractor module" (Claims 2, 3)	32					
	C.	"under-sample" (Claim 2)	34					
VIII.	OVERVIEW OF THE PRIOR ART REFERENCES							
	A.	Tayloe	34					
	B.	TI Datasheet	40					
	C.	Lam	42					
	D.	Enz	44					
	E.	Motivation to Combine	49					



		1.	Tayl	oe with TI Datasheet	49
		2.	Lam	with Enz and Tayloe	52
IX.	SPE	CIFIC	GROU	JNDS FOR PETITION	54
	A.			Claims 2 and 3 Are Obvious Over Tayloe in View of TI	54
		1.	Inde	pendent Claim 2	54
			(a)	Element [2-preamble]: "A wireless modem apparatus, comprising"	54
			(b)	Element [2A]: "a receiver for frequency down-converting an input signal including"	56
			(c)	Element [2B]: "a first frequency down-conversion module to down-convert the input signal, wherein said first frequency down-conversion module down-converts said input signal according to a first control signal and outputs a first down-converted signal"	57
			(d)	Element [2C]: "a second frequency down-conversion module to down-convert the input signal, wherein said second frequency down-conversion module down-converts said input signal according to a second control signal and outputs a second down-converted signal"	65
			(e)	Element [2D]: "a subtractor module that subtracts said second down-converted signal from said first down-converted signal and outputs a down-converted signal"	70
			(f)	Element [2E]: "wherein said first frequency down-conversion module under-samples said input signal according to said first control signal, and"	73
			(g)	Element [2F]: "said second frequency down-conversion module under-samples said input signal according to said second control signal"	75
		2.	Inde	pendent Claim 3	76



		(a)	apparatus, comprising"	.76
		(b)	Element [3A]: "a receiver for frequency down-converting an input signal including"	.76
		(c)	Element [3B]: "a first frequency down-conversion module to down-convert the input signal, wherein said first frequency down-conversion module down-converts said input signal according to a first control signal and outputs a first down-converted signal"	.77
		(d)	Element [3C]: "a second frequency down-conversion module to down-convert said input signal, wherein said second frequency down-conversion module down-converts said input signal according to a second control signal and outputs a second down-converted signal; and"	.77
		(e)	Element [3D]: "a subtractor module that subtracts said second down-converted signal from said first down-converted signal and outputs a down-converted signal"	.77
		(f)	Element [3E]: "wherein said first and said second frequency down-conversion modules each comprise a switch and a storage element"	.77
B.			Claims 2, 3 and 4 Are Obvious Over Lam in View of yloe	.79
	1.	Indep	endent Claim 2	.79
		(a)	Element [2-preamble]: "A wireless modem apparatus, comprising"	.80
		(b)	Element [2A]: "a receiver for frequency down-converting an input signal including"	.81
		(c)	Element [2B]: "a first frequency down-conversion module to down-convert the input signal, wherein said first frequency down-conversion module down-converts said input signal according to a first control signal and outputs a first down-converted signal"	.82



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