

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

APPLE INC., <i>Plaintiff,</i> v. MASIMO CORPORATION and SOUND UNITED, LLC, <i>Defendants.</i>	C.A. No. 22-1377-MN-JLH JURY TRIAL DEMANDED
MASIMO CORPORATION, SOUND UNITED, LLC <i>Counter-Claimants,</i> v. APPLE INC. <i>Counter-Defendant.</i>	
APPLE INC., <i>Plaintiff,</i> v. MASIMO CORPORATION and SOUND UNITED, LLC, <i>Defendants.</i>	C.A. No. 22-1378-MN-JLH JURY TRIAL DEMANDED
MASIMO CORPORATION, CERCACOR LABORATORIES, INC., SOUND UNITED, LLC <i>Counter-Claimants,</i> v. APPLE INC. <i>Counter-Defendant.</i>	

**EXPERT REPORT OF MAJID SARRAFZADEH, Ph.D. REGARDING INVALIDITY OF
U.S. PATENT NOS. 10,687,743 & 10,722,159**

Signed: 
Date: November 22, 2023

TABLE OF CONTENTS

	PAGE
I. INTRODUCTION	1
II. QUALIFICATIONS	1
III. MATERIALS CONSIDERED	3
IV. CLAIM CONSTRUCTIONS USED IN THIS REPORT	3
V. UNDERSTANDING OF THE LAW	4
A. Invalidity	4
1. Conception and Reduction to Practice	4
2. Prior Art	5
3. Claims and Claim Construction	6
4. Anticipation	7
5. Obviousness	8
B. Person Of Ordinary Skill In The Art	10
VI. SUMMARY OF OPINIONS REGARDING THE ASSERTED '743 AND '159 CLAIMS	11
A. Conventional Oximeters	11
B. Masimo was aware of conventional oximeter features	16
C. Devices with multiple light-emitting diodes configured to emit light in an initial pattern or a first shape were known	18
D. Devices with a material configured to change the shape of light were known	23
E. Wrist-worn physiological measuring and monitoring devices were known	26
F. Devices with a plurality of photodiodes configured to detect at least a portion of light after the light passes through tissue were known	31
G. Devices with a plurality of photodiodes configured to detect light and output a signal responsive to the detected light were known	34

H.	Devices comprising a surface with a dark-colored coating configured to be positioned between detectors and tissue, wherein an “opening” defined in the dark-colored coating is configured to allow at least a portion of light reflected from the tissue to pass through the surface, were known	37
I.	Devices comprising a light blocking structure configured to prevent at least a portion of light emitted from light-emitting diodes from reaching photodiodes without first reaching tissue were known.....	41
J.	Devices comprising a processor configured to receive and process at least one signal and determine a physiological parameter of a user responsive to the at least one signal were known	45
K.	Wireless touch-screen devices were known	47
L.	Masimo’s Response To Apple’s Invalidity Contentions	52
VII.	OVERVIEW OF THE ’743 AND ’159 PATENTS	52
A.	The Specification	52
B.	The Asserted ’743 Claims.....	58
C.	The Asserted ’159 Claims.....	60
VIII.	PROSECUTION HISTORY OF THE ’743 AND ’159 PATENTS.....	62
A.	The ’743 Patent.....	63
B.	The ’159 Patent.....	65
IX.	PERSON OF ORDINARY SKILL IN THE ART OF THE ’743 AND ’159 PATENTS.....	67
X.	OVERVIEW OF THE PRIOR ART.....	67
A.	Apple Watch Series 0.....	67
1.	Overview.....	67
2.	Testing of the Apple Watch Series 0	84
B.	United States Patent No. 5,893,364 to Haar et al. (“Haar”).....	105
C.	International Publication Number WO 2011/051888 A2 to Ackermans et al. (“Ackermans”)	110
D.	United States Patent No. 6,158,245 to Savant (“Savant”)	117

E.	United States Patent No. 8,998,815 B2 to Venkatraman et al. ("Venkatraman").....	124
XI.	THE '743 PATENT IS INVALID.....	142
A.	Apple Watch Series 0 Alone And/Or In View Of Haar And/Or Ackermans Invalidates Claims 1, 11, 12, 14, 18, and 19 of the '743 Patent	143
1.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 1 of the '743 Patent And, At A Minimum, Renders Obvious Claim 1 in View of Haar.....	143
2.	Apple Watch Series 0 Alone And/Or In View Of Haar And/Or Ackermans Renders Obvious Claim 11 of the '743 Patent	194
3.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 12 of the '743 Patent And, At A Minimum, Renders Obvious Claim 12 in View of Haar.....	199
4.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 14 of the '743 Patent And, At A Minimum, Renders Obvious Claim 14 in View of Haar.....	200
5.	Apple Watch Series 0 Alone And/Or In View Of Haar And/Or Ackermans, Renders Obvious Claim 18 of the '743 Patent	211
6.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 19 of the '743 Patent And, At A Minimum, Renders Obvious Claim 19 in View of Haar.....	212
7.	Motivations to Combine and Reasonable Expectation of Success	212
B.	Ackermans in View Of Savant and/or Venkatraman Invalidates Claims 1, 11, 12, 14, 18, and 19 of the '743 Patent	223
1.	Ackermans in view of Savant Renders Obvious Claim 1 of the '743 Patent	224
2.	Ackermans in view of Savant Renders Obvious Claim 11 of the '743 Patent	248
3.	Ackermans in view of Savant Renders Obvious Claim 12 of the '743 Patent	249
4.	Ackermans in view of Savant and Venkatraman Renders Obvious Claim 14 of the '743 Patent	250

5.	Ackermans in view of Savant and Venkatraman Renders Obvious Claim 18 of the '743 Patent	257
6.	Ackermans in view of Savant and Venkatraman Renders Obvious Claim 19 of the '743 Patent	258
7.	Motivations to Combine and Reasonable Expectation of Success	259
C.	Venkatraman in View Of Savant Invalidates Claims 1, 11, 12, 14, 18, and 19 of the '743 Patent	268
1.	Venkatraman in view of Savant Renders Obvious Claim 1 of the '743 Patent	268
2.	Venkatraman in view of Savant Renders Obvious Claim 11 of the '743 Patent	293
3.	Venkatraman in view of Savant Renders Obvious Claim 12 of the '743 Patent	296
4.	Venkatraman in view of Savant Renders Obvious Claim 14 of the '743 Patent	297
5.	Venkatraman in view of Savant Renders Obvious Claim 18 of the '743 Patent	307
6.	Venkatraman in view of Savant Renders Obvious Claim 19 of the '743 Patent	310
7.	Motivations to Combine and Reasonable Expectation of Success	311
XII.	THE '159 PATENT IS INVALID	316
A.	Apple Watch Series 0 Alone, In View Of Haar, And/Or In View Of Ackermans Invalidates Claims 1, 7, 8, 19, and 22 of the '159 Patent	316
1.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 1 of the '159 Patent And, At A Minimum, Renders Obvious Claim 1 in View of Haar	317
2.	Apple Watch Series 0 Anticipates and/or Renders Obvious Claim 7 of the '159 Patent And, At A Minimum, Renders Obvious Claim 7 in View of Haar	320
3.	Apple Watch Series 0 Alone Or In View Of Haar And/Or Ackermans, Anticipates and/or Renders Obvious Claim 8 of the '159 Patent	321



4.	Apple Watch Series 0 (With Apple iPhone) Anticipates and/or Renders Obvious Claim 19 of the '159 Patent And, At A Minimum, Renders Obvious Claim 19 in View of Haar	322
5.	Apple Watch Series 0 (With an Apple iPhone) Anticipates and/or Renders Obvious Claim 22 of the '159 Patent And, At A Minimum, Renders Obvious Claim 22 in View of Haar	346
B.	Ackermans in View Of Savant and/or Venkatraman Invalidates Claims 1, 7, 8, 19, and 22 of the '159 Patent	348
1.	Ackermans in view of Savant Renders Obvious Claim 1 of the '159 Patent	348
2.	Ackermans in view of Savant Renders Obvious Claim 7 of the '159 Patent	352
3.	Ackermans in view of Savant Renders Obvious Claim 8 of the '159 Patent	353
4.	Ackermans in view of Savant and Venkatraman Renders Obvious Claim 19 of the '159 Patent	355
5.	Ackermans in view of Savant and Venkatraman Renders Obvious Claim 22 of the '159 Patent	367
C.	Venkatraman in View Of Savant Invalidates Claims 1, 7, 8, 19, and 22 of the '159 Patent	368
1.	Venkatraman in view of Savant Renders Obvious Claim 1 of the '159 Patent	368
2.	Venkatraman in view of Savant Renders Obvious Claim 7 of the '159 Patent	372
3.	Venkatraman in view of Savant Renders Obvious Claim 8 of the '159 Patent	373
4.	Venkatraman in view of Savant Renders Obvious Claim 19 of the '159 Patent	375
5.	Venkatraman in view of Savant Renders Obvious Claim 22 of the '159 Patent	388
XIII.	NO SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS	389
XIV.	MATERIALITY OF INEQUITABLE CONDUCT REFERENCES	389



1.	Mannheimer '842 would have been “but-for” material prior art for the '743 patent.....	390
2.	Mendelson '799 would have been “but-for” material prior art for the '743 patent.....	397
3.	Mannheimer '842 would have been “but-for” material prior art for the '159 patent.....	405
4.	Mendelson '799 would have been “but-for” material prior art for the '159 patent.....	412
5.	Irrelevance of Other Prior Art.....	422
XV.	RESERVATION OF RIGHTS	422