

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,  
Petitioner,

v.

MASIMO CORPORATION,  
Patent Owner.

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IPR2020-01713  
Patent 10,624,564 B1

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Before JOSIAH C. COCKS, ROBERT L. KINDER, and  
AMANDA F. WIEKER, *Administrative Patent Judges*.

KINDER, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining All Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

### *A. Background*

Apple Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–30 (“challenged claims”) of U.S. Patent No. 10,624,564 B1 (Ex. 1001, “the ’564 patent”). Paper 2 (“Pet.”). Masimo Corporation (“Patent Owner”) waived filing a Preliminary Response. Paper 6. We instituted an *inter partes* review of all challenged claims 1–30 on all asserted grounds of unpatentability, pursuant to 35 U.S.C. § 314. Paper 7 (“Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 14, “PO Resp.”) to the Petition, Petitioner filed a Reply (Paper 18, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 21, “Sur-reply”). An oral hearing was held on February 9, 2022, and a transcript of the hearing is included in the record. Paper 30 (“Tr.”).

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, Petitioner has met its burden of showing, by a preponderance of the evidence, that challenged claims 1–30 of the ’564 patent are unpatentable.

### *B. Related Proceedings*

*Masimo Corporation v. Apple Inc.*, Civil Action No. 8:20-cv-00048 (C.D. Cal.) (filed Jan. 9, 2020);

*Apple Inc. v. Masimo Corporation*, IPR2020-01520 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,258,265 B1);

*Apple Inc. v. Masimo Corporation*, IPR2020-01521 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,292,628 B1);

IPR2020-01713  
Patent 10,624,564 B1

*Apple Inc. v. Masimo Corporation*, IPR2020-01523 (PTAB Sept. 9, 2020) (challenging claims of U.S. Patent No. 8,457,703 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01524 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,433,776 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01526 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 6,771,994 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01536 (PTAB Aug. 31, 2020) (challenging claims 1–29 of U.S. Patent No. 10,588,553 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01537 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,588,553 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01538 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,588,554 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01539 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,588,554 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01714 (PTAB Sept. 30, 2020) (challenging claims of U.S. Patent No. 10,631,765 B1);

*Apple Inc. v. Masimo Corporation*, IPR2020-01715 (PTAB Sept. 30, 2020) (challenging claims of U.S. Patent No. 10,631,765 B1);

*Apple Inc. v. Masimo Corporation*, IPR2020-01716 (PTAB Sept. 30, 2020) (challenging claims of U.S. Patent No. 10,702,194 B1);

*Apple Inc. v. Masimo Corporation*, IPR2020-01722 (PTAB Oct. 2, 2020) (challenging claims of U.S. Patent No. 10,470,695 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01723 (PTAB Oct. 2, 2020) (challenging claims of U.S. Patent No. 10,470,695 B2);

*Apple Inc. v. Masimo Corporation*, IPR2020-01733 (PTAB Sept. 30, 2020) (challenging claims of U.S. Patent No. 10,702,195 B1); and

*Apple Inc. v. Masimo Corporation*, IPR2020-01737 (PTAB Sept. 30, 2020) (challenging claims of U.S. Patent No. 10,709,366 B1).  
Pet. 3; Paper 3, 1, 3–4.

Patent Owner further identifies certain pending patent applications, as well as other issued and abandoned applications, that claim priority to, or share a priority claim with, the '564 patent. Paper 3, 1–2.

### *C. The '564 Patent*

The '564 patent is titled “Multi-Stream Data Collection System for Noninvasive Measurement of Blood Constituents,” and issued on April 21, 2020, from U.S. Patent Application No. 16/725,292, filed December 23, 2019. Ex. 1001, codes (21), (22), (45), (54). The '564 patent claims priority through a series of continuation and continuation-in-part applications to Provisional Application Nos. 61/086,060, 61/086,108, 61/086,063, and 61/086,057, each filed on August 4, 2008, as well as 61/091,732, filed on August 25, 2008, and 61/078,228 and 61/078,207, both filed on July 3, 2008. *Id.* at codes (60), (63).

The '564 patent discloses a two-part data collection system including a noninvasive sensor that communicates with a patient monitor. *Id.* at 2:47–51. The sensor includes a sensor housing, an optical source, and several photodetectors, and is used to measure a blood constituent or analyte, e.g., oxygen or glucose. *Id.* at 2:38–46, 3:4–6. The patient monitor includes a display and a network interface for communicating with a handheld computing device. *Id.* at 2:54–57.

Figure 1 of the '564 patent is reproduced below.

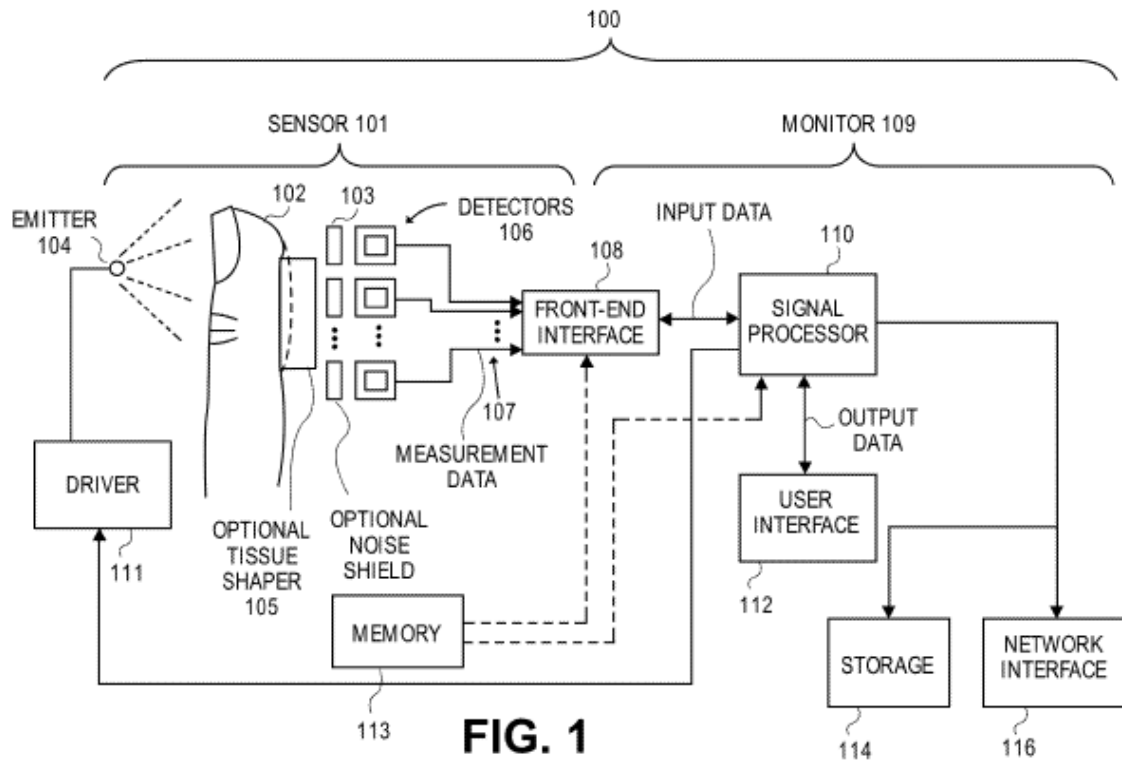


Figure 1 illustrates a block diagram of data collection system 100 including sensor 101 and monitor 109. *Id.* at 11:56–67. Sensor 101 includes emitter 104 and detectors 106. *Id.* at 12:1–5. Emitter 104 emits light that is attenuated or reflected by the patient’s tissue at measurement site 102. *Id.* at 14:11–16. Detectors 106 capture and measure the light attenuated or reflected from the tissue. *Id.* In response to the measured light, detectors 106 output detector signal 107 to monitor 109 through front-end interface 108. *Id.* at 14:16–19, 36–42. Sensor 101 also may include tissue shaper 105, which may be in the form of a convex surface that: (1) reduces the thickness of the patient’s measurement site; and (2) provides more surface area from which light can be detected. *Id.* at 11:7–23.

Monitor 109 includes signal processor 110 and user interface 112. *Id.* at 15:27–29. “[S]ignal processor 110 includes processing logic that

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