

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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IPR2022-01299 (Patent 7,761,127 B2)

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Before JOSIAH C. COCKS, JAMES A. TARTAL, and  
ROBERT A. POLLOCK, *Administrative Patent Judges*.

POLLOCK, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

Petitioner, Apple Inc., filed a Petition for *inter partes* review of claims 1–30 of U.S. Patent No. 7,761,127 B2 (Ex. 1001, “the ’127 patent”). Paper 2 (“Pet.”). Patent Owner, Masimo Corporation, timely filed a Preliminary Response to the Petition. Paper 9 (“Prelim. Resp.”).

For the reasons provided below, we determine Petitioner has satisfied the threshold requirement set forth in 35 U.S.C. § 314(a). Because Petitioner has demonstrated a reasonable likelihood that at least one claim of the ’127 patent is unpatentable, we institute an *inter partes* review of all challenged claims on each of the Grounds raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); *see also* Guidance on the Impact of SAS on AIA Trial Proceedings (April 26, 2018).<sup>1</sup>

### A. Real Parties-in-Interest

Petitioner identifies itself, Apple Inc. as the real party-in-interest. Pet. 70. Patent Owner identifies itself as the real party-in-interest. Paper 5, 1.

### B. Related Matters

In addition to the current matter, Petitioner challenges claims 1–30 of the ’127 patent in IPR2022-01300.<sup>2</sup>

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<sup>1</sup> Available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial> (“Guidance”).

<sup>2</sup> In light of its concurrent challenges to claims 1–30 of the ’127 patent, Petitioner filed a Notice of Ranking Petitions (Paper 3), to which Patent Owner responded (Paper 11). We address Petitioner’s Notice of Ranking arguments and Patent Owner’s response in copending IPR2022-01300.

According to the parties, the '127 patent is among the patents at issue *In the Matter of Certain Light-Based Physiological Measurement Devices and Components Thereof*, Inv. No. 337-TA-1276, pending in the U.S.

International Trade Commission. Pet. 70; Paper 5, 1.

C. The '127 Patent and Relevant Background

The '127 patent, titled “Multiple Wavelength Sensor Substrate,” is directed to sensors comprising optical emitters (e.g., LEDs) and corresponding detectors to non-invasively measure physiological parameters in a subject’s blood. Ex. 1001, code (54), 2:14–28, 2:49–65. These components are commonly used in pulse oximeters, which measure oxygen saturation and pulse rate. *Id.* at 2:14–16.

In general, the sensor has light emitting diodes (LEDs) that transmit optical radiation of red and infrared wavelengths into a tissue site and a detector that responds to the intensity of the optical radiation after absorption (e.g. by transmission or transreflectance) by pulsatile arterial blood flowing within the tissue site.

*Id.* at 2:16–21. According to the Specification,

[o]ne aspect of a physiological sensor is emitters configured to transmit optical radiation having multiple wavelengths in response to corresponding drive currents. A thermal mass is disposed proximate the emitters so as to stabilize a bulk temperature for the emitters. A temperature sensor is thermally coupled to the thermal mass. The temperature sensor provides a temperature sensor output responsive to the bulk temperature so that the wavelengths are determinable as a function of the drive currents and the bulk temperature.

*Id.* 2:57–65; Abstract.

Figure 6 of the '127 patent is reproduced below.

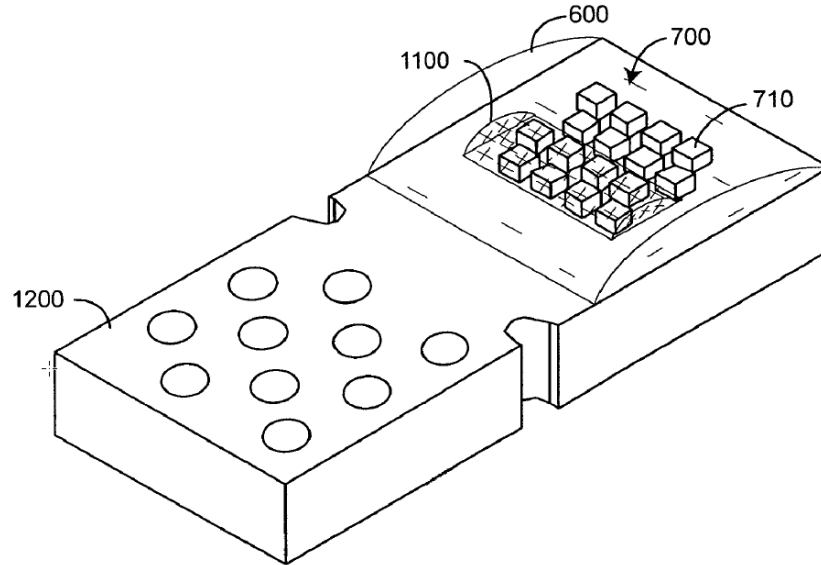


Figure 6 shows an exemplary emitter assembly comprising LEDs 710 arranged in emitter array 700 on a substrate 1200. *Id.* at 3:43–44, 6:48–52. The LEDs of emitter array 700 “are physically arranged and electrically connected in an electrical grid to facilitate drive control, equalization, and minimization of optical pathlength differences at particular wavelengths.” *Id.* at 6:54–58. “[S]ubstrate 1200 is configured to provide a bulk temperature of the emitter array 700 so as to better determine LED operating wavelengths.” *Id.* at 6:60–63. In some embodiments, “substrate 1200 is also configured with a relatively significant thermal mass, which stabilizes and normalizes the bulk temperature so that the thermistor measurement of bulk temperature is meaningful.” *Id.* at 10:62–11:4.

Figure 12 of the '127 patent is reproduced below.

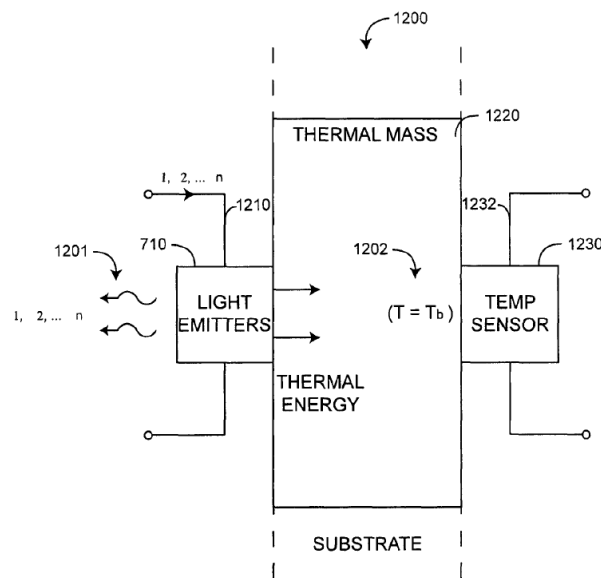


FIG. 12

Figure 12 shows a generalized block diagram of an emitter substrate. *Id.*

3:52. According to the '127 patent, Figure 12

illustrates light emitters 710 configured to transmit optical radiation 1201 having multiple wavelengths in response to corresponding drive currents 1210. A thermal mass 1220 is disposed proximate the emitters 710 so as to stabilize a bulk temperature 1202 for the emitters. A temperature sensor 1230 is thermally coupled to the thermal mass 1220, wherein the temperature sensor 1230 provides a temperature sensor output 1232 responsive to the bulk temperature 1202 so that the wavelengths are determinable as a function of the drive currents 1210 and the bulk temperature 1202.

*Id.* at 10:22–31.

The Specification describes two embodiments involving the use of temperature measurements to determine the operating wavelength of emitters. *Id.* at 10:32–48. One embodiment involves the measurement of temperature of each individual emitter. *Id.* at 10:39–48. The other embodiment involves the determination of bulk temperature of the substrate

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