

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

OMNI MEDSCI, INC.,

Plaintiff,

v.

APPLE INC.,

Defendant.

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CIVIL ACTION NO. 2:18-CV-00429-RWS

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

Before the Court is the opening claim construction brief of Omni MedSci, Inc. (“Plaintiff”) (Docket No. 102, filed under seal on May 29, 2019),¹ the response of Apple Inc. (“Defendant”) (Docket No. 125, filed on June 21, 2019),² and Plaintiff’s reply (Docket No. 129, filed on July 1, 2019). The Court held a hearing on the issue of claim construction and claim definiteness on July 16, 2019. After the hearing, the parties submitted supplemental briefing: Defendant’s supplemental brief (Docket No. 144,³ filed on July 31, 2019) and Plaintiff’s response to the supplemental brief (Docket No. 145, filed under seal on August 5, 2019). Having considered the arguments and evidence presented by the parties at the hearing and in their briefing, the Court issues this Order.

¹ Citations to the parties’ filings are to the filing’s number in the docket (Docket No.) and pin cites are to the page numbers assigned through ECF.

² Defendant submitted an amended responsive brief to correct misquoted claim language in the originally submitted brief. Docket No. 133. The Court cites the amended brief (Docket No. 133-1).

³ Defendant incorporated a brief filed under seal on July 29, 2019 as Docket No. 244 in *Omni MedSci, Inc. v. Apple Inc.*, No. 2:18-cv-134-RWS (E.D. Tex.) (the “134 Case”).

Table of Contents

I. BACKGROUND 3

II. LEGAL PRINCIPLES 5

A. Claim Construction 5

B. Departing from the Ordinary Meaning of a Claim Term..... 8

A. Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA) 9

III. CONSTRUCTION OF DISPUTED TERMS..... 10

A. “beam” 10

B. “lens” and “one or more lenses” 12

C. The Modulating Terms 15

D. “spectral filter” 20

E. “two receiver outputs” 22

F. “the measurement device [further] configured to improve [the] signal-to-noise ratio of the output signal by increasing light intensity relative to the initial light intensity of at least the first light emitting diode” 24

G. “wherein the modulation frequency has a phase, and wherein the receiver is configured to lock onto the phase” 26

H. “first reflected portion of the [first / second] output optical beam” 28

I. “generate a second receiver signal from light detected while at least one of the first and second light emitting diodes is on including at least a portion of the first reflected portion of the first output optical beam” 30

IV. CONCLUSION 32

I. BACKGROUND

Plaintiff alleges infringement of four U.S. Patents: Nos. 9,861,286 (the “’286 Patent”), 10,098,546 (the “’546 Patent”), 10,188,299 (the “’299 Patent”), and 10,213,113 (the “’113 Patent”) (collectively, the “Asserted Patents”). The Asserted Patents are subject-matter related and each incorporates the disclosure of the others. The ’286, ’546 and ’113 Patents are related through a series of continuation applications and claim priority to a provisional application filed on December 31, 2012. The ’299 Patent claims priority to a different provisional application filed on December 31, 2012.

The Court recently construed claims of the ’286 Patent and other subject-matter related patents. *Omni MedSci, Inc. v. Apple Inc.*, No. 2:18-cv-00134-RWS, 2019 U.S. Dist. LEXIS 104669 (E.D. Tex. June 24, 2019) (the “’134 Order”). In the ’134 Order, the Court considered the scope of “beam,” “lenses” and “modulating” terms. *Id.* at *11–26. These exact or substantially similar terms are before the Court here.

In general, the Asserted Patents are directed to technology for non-invasively determining characteristics of a material or substance, such as blood within biological tissue, using a light source. For example, the ’286 Patent discloses using spectroscopy to inspect a sample “by comparing different features, such as wavelength (or frequency), spatial location, transmission, absorption, reflectivity, scattering, fluorescence, refractive index, or opacity.” ’286 Patent 9:19–22. This may entail measuring various optical characteristics of the sample as a function of the wavelength⁴ of the source light by varying the wavelength of the source light or by using a broadband source of light. *Id.* at 9:22–33.

⁴ Wavelength and frequency of light are inversely related, and as it concerns the relevant technology and the Asserted Patents, these terms are practically interchangeable. Accordingly, references to the frequency of light in this order also refers to the wavelength, and vice versa.

Claim 16 of the '286 Patent is exemplary of a claimed system:

16. A wearable device for use with a smart phone or tablet, the wearable device comprising:

a measurement device including a light source comprising a plurality of light emitting diodes (LEDs) for measuring one or more physiological parameters, the measurement device configured to generate, by modulating at least one of the LEDs having an initial light intensity, an optical beam having a plurality of optical wavelengths, wherein at least a portion of the plurality of optical wavelengths is a near-infrared wavelength between 700 nanometers and 2500 nanometers;

the measurement device comprising one or more lenses configured to receive and to deliver a portion of the optical beam to tissue, wherein the tissue reflects at least a portion of the optical beam delivered to the tissue, and wherein the measurement device is adapted to be placed on a wrist or an ear of a user;

the measurement device further comprising a receiver configured to:

capture light while the LEDs are off and convert the captured light into a first signal and

capture light while at least one of the LEDs is on and convert the captured light into a second signal, the captured light including at least a portion of the optical beam reflected from the tissue;

the measurement device configured to improve a signal-to-noise ratio of the optical beam reflected from the tissue by differencing the first signal and the second signal;

the light source configured to further improve the signal-to-noise ratio of the optical beam reflected from the tissue by increasing the light intensity relative to the initial light intensity from at least one of the LEDs;

the measurement device further configured to generate an output signal representing at least in part a non-invasive measurement on blood contained within the tissue; and

wherein the receiver includes a plurality of spatially separated detectors, wherein at least one analog to digital converter is coupled to the spatially separated detectors.

The Asserted Patents also disclose various techniques for improving the signal-to-noise ratio for the measurement. For example, the signal-to-noise ratio may be improved by increasing the intensity of the source light. *See, e.g.,* '286 Patent 4:20–24 (“The light source is configured to further improve the signal-to-noise ratio of the optical beam reflected from the tissue by increasing the light intensity relative to the initial light intensity from at least one of the LEDs.”). The signal-to-noise ratio may also be improved by taking the difference between two light measurements.

See, e.g., id. at 4:17–20 (“The measurement device is configured to improve a signal-to-noise ratio of the optical beam reflected from the tissue by differencing the first signal and the second signal.”). Modulation of the light source may also be used to increase the signal-to-noise ratio. *See, e.g., id.* at 24:12–17 (“For example, one way to improve the signal-to-noise ratio would be to use modulation and lock-in techniques. In one embodiment, the light source may be modulated, and then the detection system would be synchronized with the light source.”). Further, the source light may be pulsed and the pulse rate increased to improve the signal-to-noise ratio. *See, e.g.,* ’299 Patent 2:50–55 (“The light source is configured to improve the signal-to-noise ratio of the output signal by increasing light intensity relative to an initial light intensity from at least one of the plurality of LEDs and by increasing pulse rate relative to an initial pulse rate of at least one of the plurality of LEDs.”).

II. LEGAL PRINCIPLES

A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’ ” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d

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