

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.

OMNI MEDSCI, INC.,  
Patent Owner.

Patent No. 9,651,533

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Case IPR2019-00916

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**Petitioner's Reply**

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## I. Introduction

Omni MedSci (“Omni”) admits that Lisogurski and Carlson describe devices that meet every limitation of the challenged claims except “*increasing a signal-to-noise ratio by increasing the pulse rate*” of a light emitting diode (LED). But the evidence in this record also clearly establishes that Lisogurski, both alone and in combination with Carlson, teaches and makes obvious that limitation as well.

Initially, Omni admits that Lisogurski describes a device configured to increase the pulse rate of its LED (Resp., 22), and its expert Dr. MacFarlane admits that increasing the pulse rate of an LED generally increases the signal-to-noise ratio (“SNR”) (Ex.1060, 37:17-22). Those admissions are fatal to Omni’s assertions in its Response. That is because the Lisogurski device will, in certain physiological situations, increase the pulse rate of an LED and that increase will necessarily increase SNR as well.

Omni tries to distinguish Lisogurski by asserting its device does not *intend* to increase SNR by increasing the pulse rate. But “intent” is irrelevant for a device claim—the question is whether the prior art device can perform the recited function or not. And just as a device may infringe a claim without intending to do so, a device can satisfy a claim element regardless of intent.

Even if not explicitly taught by Lisogurski alone, the combination of Lisogurski and Carlson makes obvious a device that “*increase[es] a signal-to-*

*noise ratio by increasing the pulse rate” of its LED. As the Board found, Lisogurski discloses a device that increases the pulse rate of its LED, but does not explicitly describe doing that for the purpose of increasing SNR. Inst. Dec., 30-31. Apple explained, however, that Lisogurski teaches the skilled person that the firing of its LED can be varied (e.g., by altering its intensity) for the purpose of improving SNR, and this would have motivated the skilled person to look for additional way to achieve that goal. Pet., 24-26. Carlson specifically identifies increasing an LED’s pulse rate as a way to increase SNR and provides a reason for doing that—to dynamically offset noise from ambient light when performing physiological measurements.*

Omni tries to draw a narrow distinction between the art and the claims, asserting that neither Lisogurski nor Carlson *alone* teaches a device that increases its pulse rate with the intent of increasing SNR. Resp., 26. Not only is Omni wrong about what the art teaches, but Omni ignores that the combined teachings *together* suggest configuring Lisogurski to increase the pulse rate of its LEDs for the purpose of increasing SNR as taught by Carlson. The Board should find the challenged claims obvious.

**II. The Term “*Increas[ing] Signal-to-Noise Ratio by... Increasing a Pulse Rate of at Least One [LED]*” Reflects Common Scientific Knowledge**

Independent claims 5 and 13 are apparatus claims that require “*a light source comprising a plurality of... light emitting diodes...configured to increase*

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