EXHIBIT 2004

Electrical (ECG) vs. Optical-based (PPG)

Biosensors in Wearable Devices

There are two primary technologies for measuring heart rate metrics: ECG (electrocardiography) and PPG (photoplethysmography). ECG measures the bio-potential generated by electrical signals that control the expansion and contraction of heart chambers, while PPG uses a light-based technology to sense the rate of blood flow as controlled by the heart's pumping action. Until recently, ECG-based electrical biosensors were found only in high-end medical equipment.

The small footprint, low power consumption and low cost of today's technology have enabled personal wearable form factor for convenience and ease of use. With the advent of low cost but highly accurate ECG sensors like NeuroSky BMD101, it has now become possible to design and build products and ecosystem around this technology to deliver a wide range of health and wellness metrics to individuals as well as healthcare providers and organizations.

NeuroSky BMD101 ECG-based Solution	Typical PPG-based Solution
Directly uses electrical signals produced by heart activity	Uses electrical signals derived from changes in reflected light due to changes in blood flow during heart activity
Reference signal used for monitoring Cardio health as well as for deriving and delivering a wide range of health and wellness metrics	Uses ECG signal as reference for HR comparison
HRV (Heart Rate Variability) can be accurately derived from ECG data as Peak Intervals can be extracted with millisecond level accuracy; meaningful HRV data can be obtained with short-duration measurements	Peak Interval accuracy is limited by usable sampling rate due to high power consumption of LEDs; Pulse Rate Variation correlates with HRV for longer periods of measurement (> 5 minutes) but not for short-duration measurement
HR (Heart Rate) can be measured accurately on a beat-by-beat basis	Only suitable for average HR measurement

Meaningful readings can be obtained very shortly after start-up; does not require long settling times	Requires relatively long settling time due to the need for measuring the amount of ambient light and calculating the compensation needed for cancelling its effect; may also require compensation of motion artifacts
2.5mW operating power	Approx. 30mW operating power
Built-in oscillator - no external clock required	External crystal recommended for accurate timing control
Very small PCB footprint 3mmx3mm chip, with no additional components required	Relatively large PCB footprint typically 6mmx6mm chip plus additional PCB area for MCU, battery management, crystal, and LED circuits
On-chip HR measurement	Requires external MCU for HR calculation
SDK (Android/iOS) for easy app development and integration	Requires MCU firmware development and integration in addition to host platform app development and integration

About NeuroSky: Body and Mind. Quantified.

NeuroSky biosensors, biometric algorithms, and consulting services deliver intelligence and innovation to enable breakthrough wearable technologies. Our full solution technology platform enables device manufacturers and enterprise service providers to create best-of-breed solutions that can capture, monitor, quantify, and optimize personal physical and mental performance with detailed metrics for body and mind. **To learn more visit neurosky.com**.

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