



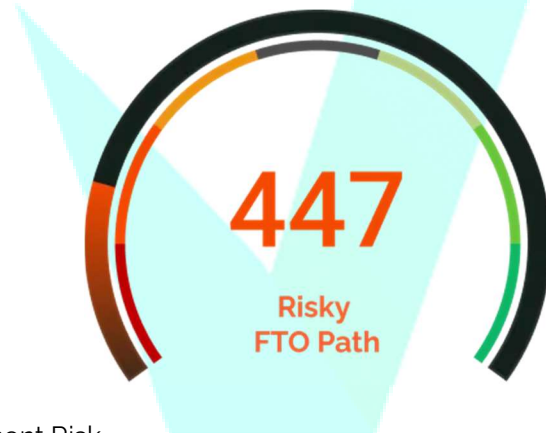
Preliminary Freedom To Operate Analysis

Jawbone

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Patent Data Last Update: **Oct 31, 2011 (retrospective analysis)**

Executive Summary

- Analysis Scope
 - Examined Jurisdictions: **IP5**, i.e., China, Europe, Japan, United States, and South Korea
 - Examined Claims: **pending** patent applications and **granted** patents only
- Overview
 - The new product faces a **High Risk** of Patent Infringement due to considerable similarities with existing patents, including the application of sensors for sleep data tracking, wireless communication, and the capability for real-time health metrics monitoring and alert notifications. The novel aspects of the new product do not provide a clear distinction from the prior art, placing it in a precarious position regarding patent infringement. A detailed technical due diligence is strongly recommended to pinpoint the specific areas of concern. Given the notable overlaps, it is imperative to pursue a careful redesign of the product and to develop strategies to avert or diminish the likelihood of patent infringement conflicts.
- Adjacent Possible Preliminary Freedom To Operate (FTO) Score



- Overall Infringement Risk
 - **High Risk of Patent Infringement**
 - **Significant likelihood of patent infringement claims.** Consider alternative markets or technologies, negotiate licensing agreements, or invest in design-around strategies.
 - Score Indicators
 - ↓ Behind Industry Standard
 - ↓ High Infringement Risk
 - ↓ High Patent Competitors Influence
 - Score Interpretation and Context
 - **High-Risk Zone** Range: 351-450
 - Moderate Risk Zone: 451-550

Analysis Details

- Top Relevant Patents
 - **US7785257B2** - The patent describes a non-invasive system for assessing physiological characteristics of a subject. The system can be used to assess the subject's quality of sleep, with the processor including an algorithm to generate a heart rate and a respiratory rate based on processed electronic signals.
 - **US20080267444A1** - The patent describes a system for managing a person's food intake. The system collects information about the food consumed by the person and provides feedback. The patent also describes a method for managing food intake and a computer program product with instructions for performing the method.
 - **US20100295684A1** - The patent describes a personal health management device. The device can be implemented in software and reside on third-party hardware, or be a wearable device like a bracelet, pendant, wrist-watch, or belt attachment. The device can communicate with external data and voice networks through various means such as analog telephony, VOIP, WiFi, and cellular wireless networks.
 - **US20050190065A1** - The patent describes a mobile terminal device that determines when a user should be awakened based on their sleep characteristics. The device receives a sleep descriptor signal indicating the user's sleep state and processes this signal to provide a stimulation signal. The patent also describes an electronic monitor for monitoring a sleeping person and an electronic device for bringing a user toward an awake state.

- Major Patent Competitors
 - BEST BUY HEALTH, INC.
 - KONINKLIJKE PHILIPS ELECTRONICS N V
 - WISILICA INC.
 - INTELLECTUAL VENTURES I LLC
 - GARMIN LTD.
 - POLAR ELECTRO OY
 - NOKIA TECHNOLOGIES OY

- Risk Determination Insights

Aspects and Technical Features Considered Patentable	Infringement Risk	Decision Rationale
Wearable to understand how you sleep and sleep tracking wake up	Moderate To High	<u>Similarities</u> Both the prior art and the new product involve the use of sensors to collect data related to sleep. The prior art and the new product both process the collected data to provide information about the user's sleep state, including distinguishing between different phases of sleep (REM, light, deep sleep). Both the prior art and the new product

		<p>provide output in a human-readable form, allowing users to understand their sleep patterns and quality. The prior art and the new product both aim to provide actionable insights based on the analyzed data.</p> <p><u>Novelties</u> The new product uses a high-precision motion sensor and bioimpedance technology, which is not explicitly mentioned in the prior art. The new product captures micro-movements during sleep, a feature not explicitly mentioned in the prior art. The new product includes an app that visualizes trends and improvements over time, making complex data accessible and actionable.</p> <p><u>Conclusions</u> Given the similarities and novelties listed above, the infringement risk for the new product can be considered as 'moderate to high.' There are significant overlaps in the basic concepts related to sensors' usage to track and analyze sleep data, which is an enabling step in practicing the invention. A thorough technical due diligence is advised to clarify the risks further.</p>
Wearable to understand how you eat and fitness data	High	<p><u>Similarities</u> Both the prior art and the new product track physical activities and calculate the intensity of these activities. The new product and the prior art from Polar both provide recommendations for daily food intake and exercise based on the user's energy expenditure. The prior art from Philips and the new product both use sensors to monitor food intake. The new product and the prior art from Garmin both provide real-time data about the user's fitness and calorie burn.</p> <p><u>Novelties</u> The new product offers a dual approach to wellness by synchronizing nutrition and fitness data, which is not explicitly mentioned in the prior art. The new product uses a motion sensor to track physical activities, which is not described in any of the examined prior art.</p> <p><u>Conclusions</u> The infringement risk for the new product is 'high.' There are some clear overlaps between the prior art and the new product, and the novel elements may not be enough to differentiate the new product clearly. Therefore, careful redesign around the new product and strategies would be needed to avoid or mitigate likely patent infringement risks.</p>
Wearable wireless integration, connection,	High	<p><u>Similarities</u> Both the prior art and the new product involve wearable devices that use wireless communication for data transfer.</p>

<p>and syncing with device</p>		<p>Both the prior art and the new product provide real-time access to health metrics. Both the prior art and the new product have the capability of alerting the user based on certain conditions or thresholds. Both the prior art and the new product involve the use of Bluetooth technology for data transmission. Both the prior art and the new product have the ability to sync with smartphones and other devices.</p> <p><u>Novelties</u> The new product emphasizes a hands-free and updated view of health stats, promoting constant engagement and immediate feedback on daily activities and progress.</p> <p><u>Conclusions</u> Given the identified similarities and the few differences between the new product and the prior art, the infringement risk can be considered as 'high'. There are significant overlaps in terms of wireless communication, real-time access to health metrics, and alerting capabilities. A thorough technical due diligence would be necessary to determine the exact risk level.</p>
<p>Wearable reminder alarms</p>	<p>Moderate To High</p>	<p><u>Similarities</u> Both the prior art and the new product use sleep cycle analysis to determine the optimal wake-up time. Both the prior art and the new product use a user-defined window for determining the wake-up time. Both the prior art and the new product use non-auditory signals (vibrations, light, etc.) to wake up the user. Both the prior art and the new product use wearable technology to monitor the user's sleep state. Both the prior art and the new product have a user interface for programming alarm settings.</p> <p><u>Novelties</u> The new product uses vibrations for inactivity reminders, which is not described in the prior art. The new product is specifically designed for maintaining an active lifestyle, which is not a focus of the prior art. The new product uses an app for programming and controlling the alarm settings, which is not described in the prior art.</p> <p><u>Conclusions</u> Considering the similarities and novelties, the infringement risk of the new product is 'moderate to high'. While there are significant overlaps between the prior art and the new product, there are also unique but minor features in the new product that differentiate it from the prior art. However, the overlaps are enough to warrant a careful review of the patents and possibly a redesign of the product to avoid potential infringement.</p>



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