Wearable Motion Sensors Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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Report description:

The Wearable Motion Sensors Market is expected to register a CAGR of 47.2% during the forecast period. Wearable products are expected to deliver valuable services to the owners to help drive a better lifestyle. Specifically, the wrist-worn wearable market requires OEMs to provide wellness and fitness-related services, a key reason the market traction for these devices is increasing quickly. Wearable devices with embedded motion sensors are used to enrich user experience in health and fitness by tracking an individual's physical activities, such as walking, running, and cycling.

Key Highlights
Motion sensors, such as gyroscopes, accelerometers, Microelectromechanical Systems (MEMS), and a combination of these sensors, are the most used type of wearables. Furthermore, health-tracking wearables always integrate motion and MEMS sensors but are not limited to and can also include health-specific sensors, like heart rate monitors, skin temperature sensors, and pulse monitors.
The market for wearable motion sensors is being driven by the shrinking of sensors and related sensor components, increasing demand for sophisticated function sensors in wearable technology, advancements in battery size and efficiency.
Due to consumers' increased interest in tracking real-time motion sensing activities, such as step counting and walking distance covered, sensors are an essential part of wearable devices used by consumers. The analysis of the generated data gives users specific results that can be used to define health and fitness goals.
In particular, wearable motion sensors offer great potential for health-promoting interventions in the older population, patient care and research, and geriatric rehabilitation. Continuous health monitoring and integrated diagnostic devices worn on the body can help to identify and prevent early manifestations of age-related functional decline and disease.
The COVID-19 pandemic positively impacted the wearable motion sensors market and highlighted the need to harness and leverage the digital infrastructure for remote patient monitoring. As current viral tests and vaccines are slow to emerge, there is a

need for more robust disease detection and tracking of individual and population health, which wearable motion sensors could aid.

Wearable Motion Sensors Market Trends

Consumer Electronics Segment to Hold Significant Market Share

The micro-electro-mechanical sensors (MEMS) that have been developed for wearables as technology has advanced and are influenced by the impact of smartphones being used daily, such as GPS or inertial measuring unit (composed of accelerometer, gyroscope, and magnetometer) sensors. This has helped fitness-tracking wearables revolve around these sensors exclusively. For instance, Nintendo Switch Labo edition Joy-cons possess default sensors in the accelerometer and gyroscope, which are usually found in consumer wearables. Joy-cons and cardboard combine to build artificial wearables, such as robots, to apply to a gaming function. It is usually Nintendo's way of breaking barriers for future generations (who are more involved with technology at younger ages) in immersive experiences with simplified custom wearable tech.
Accelerometers are motion sensors used in wearables. Their brand of acceleration, such as gravity and linear, demonstrates their sensing capabilities. Meanwhile, their measuring ability enables the programming of measured data for different purposes. For instance, a user who runs can access their top speed output along with acceleration. Further, accelerometers can track sleep patterns like smartwatches and wristbands, thus driving the demand for wearable motion sensors in the consumer electronics segment.
An accelerometer sensor takes inertial measurements of position and velocity. Usually, on three axes, it can sense the body's inclination, tilt, and orientation. Naturally, this is very important for any fitness tracker as most steps taken by the individual will be recorded by this sensor. The increase in demand for fitness trackers and wellness monitors is a crucial factor driving the demand for wearable motion sensors in consumer electronics.

Asia-Pacific to Witness the Significant Growth

The Asia-Pacific region is expected to witness significant growth during the forecast period, owing to increased awareness of wearable devices and rapid urbanization. Furthermore, this region is home to some of the significant manufacturers of sensors and semiconductors, which is expected to propel the market growth further.
Several big enterprises and various new players in countries like Japan and China are investing hugely in sensor technology advancement due to the adoption of different wearable fitness and health tracking devices among people and their growing popularity. With the development of precise sensing technologies and the miniaturization of sensor technology in wearables from original equipment manufacturers in the Asia-Pacific region, the market is anticipated to grow even further.
In September 2021, IIT Guwahati researchers developed a novel water-repellent material for real-time monitoring of human movements. Wearable motion sensors are used explicitly for the physiological monitoring of human activity. These sensors are used for gait analysis, understanding human and machine interactions, and monitoring patients during rehabilitation. Such motion sensors are typically made of materials that convert the mechanical strain from movement into electrical signals that can be detected.
Also, Original Equipment Manufacturers (OEMs) are making a significant contribution to the development of inertial measurement units and MEMS technology to provide greater accuracy while keeping the price lower for these products, which is one of the factors for the increased adoption of wearables in this region.

Wearable Motion Sensors Market Competitor Analysis

The Wearable Motion Sensors Market is very competitive in nature. The market is highly concentrated due to the presence of various small and large players. All the major players account for a large share of the market and are focusing on expanding their consumer base across the world. Some of the significant players in the market are Panasonic Industry Co., Ltd., Texas Instruments Incorporated, Analog Devices, Inc., General Electric, Samsung Electronics Co. Ltd, TDK Corporation, Infineon Technologies AG, NXP Semiconductors, and many more. The companies are increasing the market share by forming multiple partnerships and investing in introducing new products, earning a competitive edge during the forecast period.

In September 2022, analog devices and HSU researchers collaborated on a wearable device for seizure detection. Study participants wore the watch on their wrist, where multimodal sensors such as an accelerometer, thermometer, a sensor to measure electrical changes in the skin, and additional biometric sensors, recorded physiological data in real-time. The researchers tested whether the watch could correlate the data to the EEG measurements to determine the presence of focal to bilateral tonic-clonic seizures. The project's long-term goal is to build machine learning algorithms to better identify a patient's seizures and eventually develop predictive software for the watch that will warn individuals (and caregivers and families) about a forthcoming seizure.

In May 2022, Qeexo, the developer of the Qeexo AutoML, collaborated with Bosch Sensortec GmbH, a technology leader in MEMS sensing solutions, and announced that machine learning algorithms created using Qeexo's AutoML can now be deployed on Arduino Nicla Sense ME with Bosch BHI260AP and BME688 sensors. Using the Qeexo AutoML, Machine Learning (ML) models that would otherwise run on the host processor-can be deployed in and executed by BHI260AP and BME688. For instance, they can monitor environmental parameters, including humidity and Air Quality Index (AQI), and capture information embedded in motion, such as person-down systems to fitness apps that check posture. These devices have a longer time between charges and provide actionable information.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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