

Ultra-Wideband Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Ultra-Wideband Market will register a CAGR of 17.37% throughout the forecast period. The increasing popularity and penetration of consumer electronic devices, such as mobile phones and smartphones, drive the market's growth. The ongoing advancements in new applications of UWB technology in wireless sensor networks directly impact the market's growth.

Key Highlights

The rapidly growing demand for the Industrial Internet of Things (IIoT) is a significant factor driving the growth of the ultra-wideband market. IIoT uses smart sensors to improve manufacturing and other industrial applications. Reducing labor and enabling industries to automate processes increases the efficiency of industrial operations. The demand for UWB technology in the real-time location system (RTLS) increased significantly due to its various applications.

Increasing urbanization, modernization, and globalization are driving the market's growth. Growing industrial infrastructure, technological advancements to improve the operation of semiconductor tools, and increasing digitization in healthcare and retail sectors across the world are other factors driving the market's growth. New applications of UWB technology are also expected to boost the market's growth.

Due to the higher accuracy offered by UWB technology, various end-user industries of RTLS have shifted from Wi-Fi and RFID to UWB technology to improve efficiency, shorten lead times, and decrease costs. Such factors further propelled the demand for ultra-wideband technology, thus driving the market over the forecast period.

The UWB market is getting stiff competition from substitute products such as Bluetooth, GPS, and Wi-Fi. UWB has many advantages over Bluetooth and Wi-Fi, like high security, low power, high bandwidth, bi-directional communication, etc., which make it suitable for various applications. However, the high price of UWB compared to other substitute products may limit its adoption among end-user industries.

Ultra-wideband, a wireless technology that can measure a device's location within a few centimeters inside and out, enables

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unprecedented accuracy in real-time position and distance monitoring. To prevent the pandemic from spreading further, apps for COVID-19 contact tracing and social distancing are being developed in many different nations, which has created an opportunity for UWB-based devices during the pandemic because their accuracy makes UWB a very good fit for these applications.

Ultra Wideband Market Trends

Consumer Electronics to Hold Significant Market Share

The ultra-wideband (UWB) technology is finding significant applications in consumer electronic products in the past few years due to its capability of providing high data rate wireless communications. The ultra-wideband technology is largely being deployed in various high-end smartphones (Apple, Samsung, Google Pixel), some premium laptops (Lenovo), speakers (Homepod Mini) wearable devices, and its uses are rapidly increasing in various smart home applications, thus providing vast potential for the growth of the UWB market in the consumer electronics segment in coming years.

UWB technology is gaining significant adoption in smartphones over the past few years, with Apple smartphone launching UWB chips (U1) in its iPhone 11 for spatial awareness allowing iPhone 11 Pro to precisely locate other U1-equipped Apple devices in September 2019. Since then, the company has deployed UWB technology in its flagship products, such as iPhone 12, iPhone 13, and iPhone 14. The company is also using UWB technology in wearables such as Apple Watch Series 6, Series 7, and Series 8.

Further, UWB technology is also being positioned as a personal item-tracking technology for various consumer applications. Smartphones with embedded ultra wideband chips are capable of locating items such as wallets, keys, and other personal items with a UWB tag attached to them, with UWB providing highly accurate, directional, and low-latency positioning.

Smartphones are analyzed to hold the highest share shipment-wise owing to the high smartphone penetration in countries such as China, India, the United States, etc. Although not all smartphones have included the UWB technology, since the launch of iPhone 11 in September 2019, many players, including Google, Samsung, and Xiaomi, have launched products integrated with the UWB technology. Therefore, with the significant sales of smartphones with the UWB technology, the shipments are analyzed to be high compared to the IoT devices.

In IoT, the devices such as airtags, AirPods, and devices in the smart home market are considered.

Asia Pacific is Expected to Witness Fastest Growth

The Asia Pacific region consists of many emerging economies such as China, India, Taiwan, Japan, Vietnam, South Korea, etc. The region has been witnessing rapid industrial growth in developing countries. According to GSMA, many Asia Pacific countries have developed plans to assist Industry 4.0 in their marketplaces. Additionally, manufacturing and healthcare are the top sectors expected to immediately experience the benefits of Industry 4.0.

The low-power UWB wireless transceiver ICs created by various local enterprises enable a new class of short-range wireless connectivity applications, including battery-free IoT sensors. UWB wireless transceivers offer continuous, rich data streaming as well as precise range and locating with orders of magnitude greater energy efficiency, latency, and throughput than Bluetooth Low Energy or ZigBee. This is because UWB technology allows wireless devices such as sensors to work without batteries and dramatically extends the battery life of electronic gadgets when paired with energy-harvesting technologies, driving the adoption of UWB technology in the APAC region because the region's companies are prioritizing energy conservation strategy.

The growth of connected cars and EVs in the market creates an opportunity for regional UWB technology solution providers. Companies are partnering to develop UWB-enabled automobile products, which drive the APAC market. For instance, in July 2022, NXP Semiconductors and Taiwan's Hon Hai Technology Grove signed a memorandum of understanding to build platforms for a new generation of smart connected automobiles that feature the NXP S32 domain embedded with UWB technology.

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The adoption of IoT in the manufacturing and automobile sectors is creating an opportunity for the market due to the increasing requirement for UWB technologies in IoT devices. In addition, the region includes semiconductor hubs such as Taiwan, China, and India's semiconductor mission would support the market for UWB technology chips in the region.

Ultra Wideband Market Competitor Analysis

The market for Ultra-Wideband is exceptionally competitive, mainly due to the presence of various critical vendors in the market operating in both international and domestic markets. The market appears to be moderately concentrated, with the significant players adopting strategies such as mergers, acquisitions, and product innovation to widen their product portfolio and extend their geographic reach. Some vital players in the market are Texas Instruments, DecaWave Limited, and NXP Semiconductors, among others.

July 2022 - Humatics set up the HRNS on a single test vehicle and 1.5 km of the Hitachi Rail test track in Naples, Italy, to evaluate the HRNS's position and speed performance compared to real-world sensors and Hitachi Rail's CBTC odometry criteria. Additionally, the HRNS was connected to a Communication Based Train Control (CBTC) simulator, and various tests were run, which included Ultra-Wideband (UWB) and sensors like Inertial Measurement Units (IMU) and GNSS technology provided by Humatics.

Jul 2022 - NXP Collaborates with ING and Samsung to test the first peer-to-peer payment application based on UWB. The pilot intends to improve the usability and seamlessness of peer-to-peer payments by leveraging ING's payment expertise and NXP's ultra-wideband technology.

Additional Benefits:

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

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