

Radar Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Radar Sensors Market size is estimated at USD 24.54 billion in 2025, and is expected to reach USD 53.12 billion by 2030, at a CAGR of 16.7% during the forecast period (2025-2030).

Key Highlights

- Due to rapidly advancing automation, developments in autonomous driving, and the progression of Industry 4.0, the need for presence and motion detection for advanced safety and control is increasing.
- The automotive sector is undergoing a technological transition to improve safety, comfort, and entertainment and has ample opportunities for radar sensors. The need for radar sensors is being accelerated by the development of sensor-rich applications such as drones, autonomous cars, and advanced driver assistance systems.
- Technological improvements in radar sensors are a significant factor impacting market growth. The introduction of millimeter-wave (mm-Wave) technology, which is expected to become a primary focus in the radar sensors market, significantly improves sensor capabilities and efficiency.
- Radar sensors have become an integral part of the smart home market, particularly offering contactless control for lighting, air conditioning, sanitary systems, and automatic doors, as well as security systems such as alarms, access control, and tracking applications.
- In the aerospace sector, radar sensors are employed to ensure safety and security standards by detecting the position and velocity of an object found at a distance, such as an aircraft. These sensors help enhance the safety and efficiency of commercial and military aircraft through exact distance measurements. It is also used in airborne surveillance systems of spy planes to detect the surprising arrival of enemy forces and track other dubious activities.
- Radar sensors are used in aviation systems to deliver detailed information regarding the missile type, trajectory, and target, and they also help in the prior detection of missile attacks. Additionally, advancements in aerospace and defense equipment and

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instruments to sense the environment and detect obstacles are boosting the growth of the radar sensors market.

- However, some of the main challenges to market growth are factors like a limited field of vision and limitations in detection when there is an acceleration difference.

Radar Sensors Market Trends

The Automotive Sector is Expected to Witness Significant Growth

- Automotive radar plays a vital role in detecting the speed and range of objects in the car's proximity. According to Scotiabank, car sales worldwide grew to around 75.3 million units in 2023, up from around 67.3 million units in 2022.
- Radar sensors play a crucial role in the autonomous driving environment. An ADAS vehicle has multiple radars covering multiple safety and comfort applications, like crash avoidance, self-parking, in-cabin monitoring, cooperative driving, and collective situational awareness.
- AI in the autonomous vehicle ecosystem also drives the market. Digital radar is used with a modern computer vision algorithm to improve AI functionality, making object detection and classification easier.
- These digital radars can deliver a high degree of automatic driving and deploy sophisticated features, such as left turn assist, blindspot monitoring, automatic emergency braking, adaptive cruise control, traffic jam pilot, or highway pilot. In order to significantly increase the efficiency of 5G millimeter-wave communications, a new type of automotive radar system is being developed based on advanced analog technology and providing 5G active and passive reflection arrays.

North America Holds a Significant Share of the Radar Sensors Market

- High-end defense applications, smartphone penetration, autonomous vehicles, and consumer electronics devices are significant growth drivers for the US radar sensors market. As the region has the highest defense budget in the world, the increase in FMCW applications, particularly short-range applications, is gaining momentum.
- New and emerging technologies, like smart grids, smart homes, intelligent transport, smart water networks, and infrastructure with radar sensor technology, are being pioneered in the region. The development of radar sensor technology is expected to open up new use cases in these areas, creating growth opportunities for suppliers.
- The demand for radar sensors is also expected to be driven by the high penetration of smartphones as more manufacturers incorporate new features into their mobile phones. GSMA estimates that almost two-thirds of North America's cellular connections will be 5G by the end of 2025, with approximately 270 million contacts.
- Given the benefits that radar sensors provide, a number of government and commercial organisations are increasing their research and development efforts to further increase the efficiency of these sensors, which is expected to positively impact the market.

Radar Sensors Industry Overview

The radar sensors market is fragmented due to the presence of many significant players. Some prominent players include Robert Bosch GmbH, Lockheed Martin Corporation, NXP Semiconductors, Infineon Technologies, STMicroelectronics NV, and Continental AG.

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- January 2024: NXP Semiconductors NV launched an extension to its automotive radar one-chip family. The new SAF86xx seamlessly integrates a high-performance radar transceiver, a multi-core radar processor, and a MACsec hardware engine to facilitate cutting-edge secure data communication via Automotive Ethernet. This comprehensive system solution lays the groundwork for advanced, software-defined radar technology when coupled with NXP's S32 high-performance processors, vehicle network connectivity, and power management capabilities.
- November 2023: Lockheed Martin Corporation announced that the US Air Force would launch its advanced TPY-4 radar for further evaluation following months of internal testing and tweaks at company facilities in rural New York. The software-defined sensor, capable of detecting and tracking everything from small drones to jets to ballistic missiles, is slated to replace the decades-old TPS-75 radar as part of the Three-Dimensional Expeditionary Long Range Radar effort, or 3DELRR.

Additional Benefits:

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

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