Semiconductor in Military and Aerospace Market Size Expected to Reach $12.9 Billion by 2031

Semiconductor in Military and Aerospace Market was valued at $6.3 billion in 2021, and is estimated to reach $12.9 billion by 2031, growing at a CAGR of 7.6%

WILMINGTON, DE, UNITED STATES, September 17, 2025 /EINPresswire.com/ -- North America includes the U.S., Canada, and Mexico across which the semiconductor in military and aerospace market has been studied. Large number of companies are headquartered in this region, thus making North America a lucrative market for semiconductors. Moreover, the market has strengthened due to multiple military modernization & enhancement programs, and increased spending by government and commercial organizations such as the National Aeronautics and Space Administration (NASA).

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North America is looking forward to strengthen its domestic semiconductor manufacturing industry, therefore, in the U.S., government introduced a $54.2 billion CHIPS Act, which provides investment and incentive funds to build semiconductor manufacturing facilities in the U.S. Moreover, North America increasingly invests on satellite equipment to enhance defense and surveillance capabilities of the armed forces, modernization of existing communication in military platforms, critical infrastructure and law enforcement agencies using satellite systems, which in turn demand for enhanced semiconductor products, and are key factors expected to drive the semiconductor in military and aerospace market in North America. For instance, in March 2022, Vicor Corp. radiation-fault-tolerant DC-DC converter power modules use in Boeing-manufactured O3b mPOWER satellites. The O3b mPOWER ecosystem is a constellation of satellites in medium earth orbit (MEO) that SES use for delivering global connectivity services to customers across the globe.

Semiconductor manufacturers in the U.S. are partnering with defense organizations to manufacture semiconductor solutions for several defense and aerospace applications, which contribute in the growth of the market in the U.S. region. For instance, in February 2021, Global Foundries announced that it has partnered with the U.S. Department of Defense (DOD) to provide semiconductor solutions, manufactured at Global Foundries' most advanced semiconductor manufacturing facility "Fab 8" in Malta, New York. The newly manufactured

semiconductor chips will be utilized in Department of Defense' sensitive applications for land, air, sea and space systems.

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Canada is an eminent country with high-growth innovation hubs, and is working toward the expansion of its semiconductor manufacturing industry. Therefore, Canadian government announced funds to aid the country expand its presence in photonics and the manufacturing of semiconductors. For instance, in March 2022, The Government of Canada announced that it will invest $240 million to become a developer, manufacturer and global supplier of semiconductors with a four-step plan to expand chip development by 2050.

Defense organizations in numerous countries across the globe are awarding contracts to key players operating in the market for the development of advanced sensors, which boosts the growth of the market. For instance, in May 2020, the U.K. Defense and Security Accelerator (DASA) granted about 13 contracts worth $2.8 million for the development of enhanced Electro-Optics and Infrared (EOIR) sensors. Moreover, several different types of sensors are used track far away objects in space through thermal imaging sensors, remote sensing, temperature sensors and magnetic sensors. There are plans in the future of deploying temperature sensors that can measure temperatures at long distances, and measure phenomenon such as solar wind, from long-distance remote locations. An average spacecraft contains some hundreds of sensors to help in various application in space. There are many different types of sensors that are employed in space and include laser communication terminals, thermistor sensors, thermocouples, thermopiles, thin film sensors, and RTD sensors.

Factors such as rise in military expenditure, rise in aircraft upgradation and modernization programs, and use of radiation tolerant semiconductor components are expected to drive the market growth. However, scarcity of semiconductors is the factor that hampers the market growth. Furthermore, growth in investments by several governments in space technology, and defense modernization are the factors expected to offer lucrative opportunities for the market growth.

COVID-19 Impact Analysis

The COVID-19 pandemic impacted the semiconductor in military and aerospace market in a negative manner owing to commute restrictions, shutdown of semiconductor products manufacturing plants and weak financial performance of market players during the COVID-19 period. However, post pandemic, several countries are focusing on upgrading or modernizing their existing military aircraft fleet, which is expected to create demand for semiconductor components, and will supplement the market growth during the forecast period. For instance, in January 2022, Boeing received a contract from the U.S. Deaprtment of Defense (DoD) for the development of new systems for Japan Air Self-Defense Force's (JASDF) F-15 Eagle Super

Interceptors fleet.

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KEY FINDINGS OF THE STUDY

By component, the memory segment is anticipated to exhibit significant growth in the near future.
By technology, the through-hole technology segment is anticipated to exhibit significant growth in the near future.
By end use, the military segment is anticipated to exhibit significant growth in the near future.
By application, the communication, navigation, global positioning system & surveillance segment is anticipated to exhibit significant growth in the near future.
By region, North America is anticipated to register the highest CAGR during the forecast period.

Key players operating in the global semiconductor in military and aerospace market include Advanced Micro Devices Inc. (Xilinx Inc.), Analog Devices, Inc., Infineon Technologies AG, Microchip Technology Inc., Northrop Grumman Corporation, NXP Semiconductors NV, ON Semiconductor Corporation, Raytheon Technologies Corporation, Teledyne Technologies Inc., and Texas Instruments Incorporated.

David Correa
Allied Market Research
+ +1 800-792-5285
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X