

Global Space Semiconductor Market Size Study & Forecast, by Application (Satellite, Launch Vehicles, Deep Space Probe, Rovers and Landers, and Others), By Type (Radiation Hardened Grade, Radiation Tolerant Grade, and Others), By Component (Integrated Circuits, Discrete Semiconductors Devices, Optical Devices, Microprocessor, Memory, Sensors, and Others), and Regional Analysis, 2023-2030

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Abstracts

Global Space Semiconductor Market is valued at approximately USD 0.99 billion in 2022 and is anticipated to grow with a healthy growth rate of more than 6.2% over the forecast period 2023-2030. Space semiconductors refer to electronic components specifically engineered and qualified for use in space applications. These semiconductors are designed to withstand the harsh conditions of space, including extreme temperatures, radiation, vacuum, and mechanical stress. They are critical for the operation of various spacecraft, satellites, space probes, and other space vehicles, where standard commercial-grade components do not survive or perform reliably. Space semiconductors undergo rigorous testing and qualification processes to ensure their reliability and resilience in the demanding environment of space. They play a vital role in powering communication systems, navigation equipment, scientific instruments, and other electronic systems used in space missions. The easing demand for satellite communication, expanding space exploration initiatives, coupled with the growing focus on miniaturization and weight reduction are the key factors that are driving the market demand around the world.

In addition, growing interest in space exploration, both by government agencies and private companies, is driving the demand for advanced and reliable electronics used in spacecraft, satellites, and other spacefaring vehicles. According to the Space Foundation, it was assessed that nearly 1,022 spacecraft placed in orbit during the first six months of 2022. Thus, the rise in space exploration activities is further leveraging growth prospects for the market expansion during the estimated period. Moreover, the ongoing technological advancements in semiconductor manufacturing and processing techniques, as well as rise of commercial space ventures present various lucrative opportunities over the forecast years. However, the rise in geopolitical tensions and the supply chain disruption are hampering the market growth throughout the forecast period of 2023-2030.

The key regions considered for the Global Space Semiconductor Market study include Asia Pacific, North America, Europe, Latin America, and Middle East & Africa. North America dominated the market in 2022 owing to the significant presence of major OEMs and operators. For instance, in August 2022, Microchip Technology finalized a substantial agreement with the U.S. government under the CHIPS and Science Act, aimed at fortifying the local chip industry amidst competitive pressures from China. As part of a strategic initiative to bolster the domestic semiconductor sector, the U.S. government unveiled plans to allocate approximately USD 162 million in funding to a specific company within the industry, as announced by the U.S. Department of Commerce. Whereas Asia Pacific is expected to grow at the highest CAGR over the forecast years. The market demand across the region is being significantly driven by the swift expansion of space exploration programs, the increasing emphasis on miniaturization and weight reduction in spacecraft and satellites, and the growing investments in space technology.

Major market players included in this report are:

Advanced Micro Devices, Inc. (U.S.)

Infineon Technologies AG (Germany)

Microchip Technology Incorporated (U.S.)

Texas Instruments Incorporated (U.S.)

STMicroelectronics N.V. (Switzerland)

Renesas Electronics Corporation (Japan)

Cobham Limited (U.K.)

Solitron Devices, Inc. (U.S.)

BAE Systems Plc (U.K.)

Teledyne Technologies Incorporated (U.S.)

Recent Developments in the Market:

In February 2023, Lux Semiconductors announced that the company has secured USD 2.3 million in funding to propel the advancement and commercialization of its groundbreaking 'System-on-Foil' process. This innovative technology is tailored to optimize the performance of microelectronics while reducing their size. Lux Semiconductors aims to apply the System-on-Foil technology across a spectrum of applications, including spacecraft, aircraft, and diverse industrial domains.

In March 2023, SEEQC, a quantum computer startup headquartered in New York, announced a breakthrough in digital chip technology. They engineered a chip capable of operation at temperatures colder than outer space, aligning with the requirements of quantum processors typically housed in cryogenic chambers. SEEQC is concurrently developing two additional chips expected to function in a slightly warmer zone within the cryogenic chamber.

In November 2022, Texas Instruments (TI) introduced an expansion of its space-grade analog semiconductors and associated products, featuring highly dependable plastic packages crafted for diverse mission applications. The unveiling included a groundbreaking device screening specification, Space High-Grade (SHP), tailored for radiation-hardened products in plastic. TI also unveiled new Analog-to-Digital Converters (ADCs) designed to meet the SHP qualification standards, further enhancing its portfolio of space-grade offerings.

Global Space Semiconductor Market Report Scope:

Historical Data – 2020 - 2021

Base Year for Estimation – 2022

Forecast period - 2023-2030

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Segments Covered - Type, Component, Application, Region

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent up to 8 analyst's working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values to the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within countries involved in the study.

The report also caters detailed information about the crucial aspects such as driving factors & challenges which will define the future growth of the market. Additionally, it also incorporates potential opportunities in micro markets for stakeholders to invest along with the detailed analysis of competitive landscape and product offerings of key players. The detailed segments and sub-segment of the market are explained below:

By Type:

Radiation Hardened Grade

Radiation Tolerant Grade

Others

By Component:

Integrated Circuits

Discrete Semiconductors Devices

Optical Devices

Microprocessor

Memory

Sensors

Others

By Application:

Satellite

Launch Vehicles

Deep Space Probe

Rovers and Landers

Others

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea

RoAPAC

Latin America

Brazil

Mexico

Middle East & Africa

Saudi Arabia

South Africa

Rest of Middle East & Africa

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