Nano and Microsatellite Market - Growth, Trends, Covid-19 Impact, and Forecast (2023 - 2028)

Market Report | 2023-01-23 | 105 pages | Mordor Intelligence

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Report description:

The nano and microsatellite market is expected to grow with a CAGR of more than 8% during the forecast period.

The space industry faced unprecedented challenges due to the COVID-19 pandemic. The pandemic negatively impacted overall operations in the space sector, including launches, production, and supply chains. The pandemic led to production halts from major players, postponed satellite launches, and supply chain disruptions, which hindered market growth during the pandemic period. All the launch campaigns at the Guiana Space Center (CSG) in French Guiana were suspended due to the COVID-19 pandemic and to implement the measures decided by the Government of France.

The recent growth in the space sector has generated unprecedented levels of entrepreneurship and start-up activity. Certain industry segments, such as space exploration and science or even satellite manufacturing, are characterized by low production volumes, high levels of specialization, and limited suppliers.

The nature of battles has changed dramatically since the advent of technology. Defense agencies worldwide require space capability to meet the demand for more operationally responsive forces for various military requirements, including communication. Nano and microsatellites can provide high visibility against tactical enemy operations. Rapid access to near-real-time information and imagery can be helpful for the aerial reconnaissance augmentation process. In times of crisis, nano- and microsatellites can also be quickly deployed to fill gaps in military operations.

Furthermore, the demand for satellite networks and services for commercial applications has increased. Satellite communications are an essential part of the 5G infrastructure. To provide seamless connectivity between terrestrial and satellite, a satellite transport conduit is integrated into the overall communication map, which may result in new opportunities for extending satellite

services in urban and rural areas aimed to cover the existing white zones and ensure a seamless connectivity plan for a variety of users, including the emergency services. Such developments may foster the growth of the market.

Nano & Microsatellite Market Trends

Military Segment Will Showcase Remarkable Growth During the Forecast Period

Military satellites are used for two specific mission profiles, namely, surveillance and reconnaissance. Military satellites can provide continuous coverage of an area and can be used for early warning if an intercontinental ballistic missile is detected. The sensors on these satellites can also detect nuclear explosions and pinpoint the location of detonation while relaying critical information for a strategic strike assessment. For instance, in September 2021, South Korea's Defense Acquisition Program Administration (DAPA) announced the development of an indigenous micro-satellite reconnaissance system with an investment of KRW 11.2 billion (USD 9.6 million).

The new generation of military reconnaissance satellites includes the operation of many microsatellites to detect activities that regular military reconnaissance satellites cannot detect. Besides surveillance, military satellites can also perform strategic and tactical operations. Apart from observing enemy weapons development, the satellites can verify international compliance with the arms limitation treaties and aid in strategic targeting by predetermining the deployments of military assets at strategic vantage points in case of an armed conflict. Since nano- and microsatellites can be launched as a secondary payload, their adoption is increasing because of the increasing use of satellites in tactical warfare. The increase in C4ISR requirements of the global defense forces is expected to drive the demand for military satellites during the forecast period.

North America is Projected to Dominate the Market During the Forecast Period

As of 2022, North America had the highest market share in the nano- and microsatellite markets. Increasing expenditure in the space sector, a growing number of space exploration activities, and a rising number of launches of nano- and microsatellites drive the growth of the market across the United States. In 2021, the US government spent approximately USD 54.6 billion on its space programs, becoming the country with the highest space expenditure in the world.

The United States has launched more than half of the world's nano and microsatellites. Furthermore, the country launches many nano- and microsatellites each year for various applications such as earth observation, remote sensing, communications, and military operations. Over 210 nanosatellites were launched by the United States in 2021, with more than 75% launched in 2020.

Furthermore, in November 2021, the US Air Force Research Laboratory (AFRL) signed a contract worth USD 8.4 million with Tyvak Nano-Satellite Systems Inc. to support the flight experiment, which is projected to launch in 2024. Under the contract, the company will provide AFRL a spacecraft capable of maneuvering between VLEO and LEO for conducting sensor payload measurements. Furthermore, the nanosatellite LORIS, which stands for low-orbit reconnaissance imagery satellite, developed by students at Dalhousie University's Space Systems Labs in Canada, is ready to go into space. The nanosatellite is 20 centimeters tall and 10 centimeters wide, with a weight of under 2 kilograms. Therefore, rising space exploration activities and increased space sector spending in the United States and Canada are expected to drive market growth across North America.

Nano & Microsatellite Market Competitor Analysis

Currently, the nano and microsatellite market is highly consolidated, as most of the market is dominated by a few key players, such as Surrey Satellite Technology Ltd (SSTL), Planet Labs Inc., and Spire Global Inc. Many players design and manufacture small custom satellites as per the client's requirements. For instance, in December 2021, SSTL signed a contract with Satellite Vu for a Mid-Wave Infra-Red (MWIR) thermal imaging satellite, which is expected to increase to seven MWIR spacecraft in the coming

years. The satellite is planned to be deployed to measure the heat signature of any building anywhere several times a day. The satellite was expected to be launched by Q4 of 2022.

However, large companies, government organizations, start-ups, and universities are focusing on this sector, given the varied applications of nano and microsatellites, the high success rate, and the low cost involved in launching them. Many new start-ups have already started venturing into the market. For instance, in February 2021, Tel Aviv University launched the first locally manufactured nanosatellite, named TAU-SAT1, which was entirely designed, developed, and assembled by the Israeli university. TAU-SAT1 was planned to conduct several experiments, such as the measurement of cosmic radiation around the earth. The focus of such universities and institutions on the launch of nano- and microsatellites is expected to increase market fragmentation in the coming years.

Additional Benefits:

The market estimate (ME) sheet in Excel format
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