

Millimeter Wave Technology Market Demand 2024 Movements by Analysis, Progression Status, Revenue Expectation to 2032

Increasing adoption of scanner systems based on millimeter wave technology at airports are key factors driving market revenue growth.

VANCOUVER, BRITISH COLUMBIA, CANADA, June 12, 2024 /EINPresswire.com/ -- The global [Millimeter Wave \(MMW\) technology market](#) size was USD 2.63 Billion in 2022 and is expected to register a rapid revenue CAGR of 22.3 % during the forecast period. The rapid evolution of Millimeter Wave (MMW) technology in the telecommunications sector, alongside the burgeoning Fifth Generation (5G) technology and the development of wireless transmission base stations, is significantly propelling market growth. The increasing use of MMW-based scanner systems at airports further supports this trend.



Overview of MMW Technology

Millimeter Wave technology utilizes high-frequency radio waves (30-300 GHz) for high-speed data transmission. Known for its ability to provide high-resolution imaging and sensing, MMW technology is vital across various high-tech industries including telecommunications, military, defense, aerospace, automotive, and more.

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Rising Demand for 5G Technology

Global demand for 5G technology is accelerating due to its capability to deliver faster internet speeds and ultra-low latency. Projections indicate a rise in high-spectrum data transfer rates

from 24 GHz in 2023 to 40 GHz by 2030. This surge is driving manufacturers to ramp up production to meet the increasing demand for wireless network infrastructure.

An example of this growth is the partnership between ZTE Corporation, AIS, and Qualcomm Technologies, which successfully completed MMW SA (5G standalone architecture) testing in Thailand on June 29, 2023. This development is a significant step towards commercializing MMW technology, addressing diverse consumer and industry needs.

Challenges in MMW Technology

Despite its advantages, MMW technology faces challenges such as environmental impacts and reduced wave strength. The production and maintenance of devices for 5G connectivity contribute to climate change. Additionally, MMW's limited range necessitates a dense network of transmission base stations and access points, requiring substantial investment and space.

Market Segmentation Insights

Components: The antennas and transceiver segment led the market in 2022 due to the rising demand for 5G technology. These components enable the transmission and reception of large data streams, supporting higher frequency ranges and MIMO technology for simultaneous data streams. Infineon Technologies, for instance, introduced a radar MMIC series on November 3, 2022, enhancing automotive radar applications with reduced development costs and improved performance.

The frequency and related components segment is also growing, driven by the need for high-bandwidth applications and small-cell backhaul. Marki Microwave's expansion of its core amplifier product portfolio on June 30, 2023, exemplifies advancements in this area.

Product: The telecommunication equipment segment is expected to dominate the market, driven by the need for high-bandwidth applications in consumer electronics and mobile devices. This segment supports data-intensive services like video streaming and online gaming, highlighting the importance of MMW technology in telecommunications.

License: The fully licensed frequency segment is projected to grow steadily, as telecommunications operators utilize it for deploying 5G networks and other critical applications. This licensing ensures efficient spectrum management and quality of service.

Frequency: The 24 GHz to 57 GHz segment is expected to register the fastest growth, fueled by the adoption of IoT devices and the demand for broadband services. This frequency range is crucial for 5G networks, supporting high-capacity uses such as video streaming and cloud services.

End-Use: The military, defense, and aerospace segment is anticipated to hold the largest market

share, driven by the demand for advanced radar and imaging systems. This segment requires technologies that offer high data transmission capacity and manage power consumption effectively.

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Major Companies and Competitive Landscape

The global MMW technology market is fragmented, with large and medium-sized players accounting for the majority of market revenue. Major players are deploying various strategies, entering into mergers & acquisitions, strategic agreements & contracts, developing, testing, and introducing more effective Millimeter Wave (MMW) technology. Some of the major companies included in the global MMW technology market report are:

Nokia

Qualcomm Technologies Inc.

Huawei Technologies Co., Ltd.

Fujitsu Limited

Samsung

Intel Corporation

NEC Corporation

L3Hariss Technologies

Keysight Technologies

Siklu Communication Ltd.

LM Erricson

ZTE Corporation

Anokiwave Inc.

Mitsubishi Electric

MACOM

Cisco Systems Inc.

NXP Semiconductors

Broadcomm

Vubiq Network Ltd.

Microsoft

Strategic Development

On 28 August 2023, Fujitsu Limited announced the development of a new millimeter wave chip for 5G that supports multi-beam multiplexing (excluding polarization multiplexing, allowing up to four beams to be multiplexed with a single chip. Millimeter Wave (MMW) for 5G Base Station Radio Units (RUs). The development was carried out under the Advanced Infrastructure Research and Development Project for Post-5G Information and Communications Systems by the Japan New Energy Development Organization and Industrial Technology (NEDO) authorized. It enables high-speed, high-capacity communications over 10Gbps and reduces power consumption by 30%

On 26 June 2023, Nokia announced that it has achieved sustained average downlink speeds of over 2 Gigabits per second (Gbps) using MMW spectrum and Fixed Wireless Access (FWA) 5G, over a distance of 10.86 km. These historic download speeds, the fastest recorded in the world to date, were achieved using Nokia's 5G extended range Millimeter Wave (MMW) solution at the OuluZone test facility in Oulu, Finland.

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Segments Covered in Report

For the purpose of this report, Emergen Research has segmented the global Millimeter Wave (MMW) technology market on the basis of components, product, license, frequency end-use, and region:

Components Outlook (Revenue, USD Billion; 2019-2032)

Antennas & Transceiver

Communications and Networking

Frequency and Related Components

Imaging Components

RF & Radio Components

Sensors and Controls

Others

Product Outlook (Revenue, USD Billion; 2019-2032)

Scanner Systems

Radar and Satellite Communications Systems

Telecommunication Equipment

License Outlook (Revenue, USD Billion; 2019-2032)

Light Licensed

Unlicensed Frequency

Fully Licensed Frequency

Frequency Outlook (Revenue, USD Billion; 2019-2032)

24 GHz to 57GHz

58 GHz to 86 GHz

87 GHz to 300 GHz

End-Use Outlook (Revenue, USD Billion; 2019-2032)

Telecom and Datacom

Military, Defense, and Aerospace

Automotive

Industrial

Consumer

Medical

Others

Regional Outlook (Revenue, USD Billion; 2019–2032)

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Italy

Spain

Benelux

Rest of Europe

Asia Pacific

China

India

Japan

South Korea

Rest of APAC

Latin America

Brazil

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