

Millimeter Wave Technology Market is poised to reach USD 17.9 billion, growing at a 20.4% CAGR by 2032

Millimeter wave technology market share is poised for substantial expansion in the foreseeable future, fueled by the rising demand for high-speed 5G networks.

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According to a new report published by Allied Market Research, titled, "[Millimeter Wave Technology Market](#)" by Component, Product Type, License

Type, Frequency Band, Application, Global Opportunity Analysis and Industry Forecast, 2024-2032". The millimeter wave technology was valued at \$3.4 billion in 2023 and is projected to reach \$17.9 billion by 2032, growing at a CAGR of 20.4% from 2024 to 2032.

Report Insights



Market was valued at
\$3.4 Billion
2023

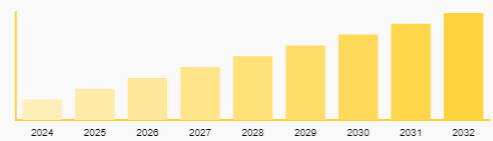


Projected to reach
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Growing at a CAGR
20.4% From
2024-2032

CAGR 20.4%



Millimeter Wave Technology Market
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Millimeter Wave Technology industry growth-demand

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Millimeter wave (mmWave) technology refers to the use of electromagnetic waves with wavelengths between 1 to 10 millimeters, corresponding to frequencies from 30 to 300 GHz. These high-frequency waves are part of the Extremely High Frequency (EHF) band. mmWave technology is notable for its ability to support high data rates and low latency, making it ideal for applications like 5G networks, radar, and advanced communication systems. However, mmWave signals have limited range and are susceptible to atmospheric attenuation and obstacles. Despite these challenges, mmWave technology is crucial for achieving the high-speed, high-capacity wireless communication needed in modern applications.

Millimeter wave (mm Wave) technology plays a pivotal role in advanced communication systems, particularly 5G networks. Its ability to provide ultra-high-speed data transmission and low latency enables faster download speeds and more reliable connections. This is crucial for emerging applications like autonomous vehicles, virtual reality, and Internet of Things (IoT) devices, which require rapid data exchange. In addition to telecommunications, mm Wave is utilized in radar systems, medical imaging, and security screening, where its high-frequency

signals offer precise resolution and penetration through materials. However, mm Wave faces challenges like limited range and susceptibility to environmental obstacles like rain or buildings, prompting ongoing innovation in antennas and beamforming technologies to enhance its effectiveness in real-world applications. Despite these hurdles, mm Wave remains a cornerstone of next-generation wireless communications.

In addition, Millimeter wave (mmWave) technology is experiencing rapid growth due to its role in 5G networks. Communications based on mmWave frequencies, which range from 10 millimeters at 30 GHz to 1 millimeter at 300 GHz, provide high-speed, increased bandwidth, making them ideal for bandwidth-intensive applications like video streaming, virtual reality (VR), and augmented reality (AR). To deliver these fast data rates, mmWave 5G signals are produced using small, low-power cells called small cells, which are deployed in clusters to ensure acceptable coverage. However, due to their high frequency, mmWaves have a limited range, prompting the use of lower-frequency bands called Sub-6 5G to supplement coverage. While Sub-6 5G isn't within the mmWave range, it still delivers faster speeds than 4G LTE, helping balance the limitations of mmWave. This combination of mmWave and Sub-6 5G enhances network performance, particularly in urban areas. Additionally, mmWave is being adopted in automotive, healthcare, and defense industries, with advancements in semiconductor technologies making it more efficient and cost-effective for wider deployment.

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Millimeter wave (mmWave) technology offers several advantages in telecommunications, making it a critical component of next-generation networks like 5G. Compared to lower frequencies used in Wi-Fi and current cellular networks, mmWave enables higher data rates due to its high frequency range, which allows for greater bandwidth tolerance and faster speeds, resulting in reduced latency. Additionally, mm Waves experience less interference, as they do not propagate as far or interfere with neighboring cellular systems. Despite its short propagation distance, mm Wave's high frequency allows for an increase in access points, improving coverage over large areas. Small cells, a key element of mm Wave networks, facilitate channel reuse across wireless local area networks (WLAN), further optimizing bandwidth utilization. The smaller antennas required for mm Wave frequencies also make it well-suited for small internet of things (IoT) devices. Moreover, the higher data capacities offered by mm Wave technology allow networks to handle significantly more traffic compared to lower frequencies, making it ideal for supporting bandwidth-intensive applications and the growing demand for wireless connectivity.

Millimeter wave (mmWave) technology faces several market challenges and hurdles, despite its potential for high-speed communication. One major issue is its limited range and poor penetration through obstacles such as buildings, trees, and even weather conditions like rain. This limits its effectiveness in non-line-of-sight environments, requiring the deployment of numerous small cells to ensure adequate coverage, which increases infrastructure costs. Further the high cost of mm Wave components and equipment, such as specialized antennas and

semiconductor materials, makes widespread adoption difficult, particularly in cost-sensitive markets. Moreover, the complexity of integrating mm Wave with existing lower-frequency technologies, like Sub-6 5G, presents operational challenges for network providers. In addition interference from other devices and the requirement for precise alignment of signals also pose hurdles, as mm Wave signals can easily degrade over distance. Regulatory issues, such as spectrum allocation and licensing, vary by region, complicating global standardization and slowing market growth. Additionally, concerns over heat dissipation in high-frequency devices raise durability and performance issues in mmWave-enabled hardware. These hurdles collectively impede the rapid deployment and expansion of mmWave technology.

The Millimeter wave technology market analysis is segmented into component, product type, license type, frequency band, application and region. By component, the market is analyzed across antenna & transceiver components, frequency sources & related components, communication & networking components, imaging components, rf & radio components, sensors & controls and others. Based on product type, the market is fragmented into scanner systems, radar & satellite systems, and telecommunication equipment. Based on license type, the market is segregated into light licensed frequency, unlicensed frequency, and fully licensed frequency. Based on frequency band, the market is classified from 24 GHz to 57 GHz, 58 GHz to 86 GHz, and 87 GHz to 300 GHz. Based on application, the market is classified into telecom and datacom, military & defense, automotive, industrial, consumer, medical, and others. Region wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

Competitive analysis and profiles of the major Millimeter wave technology market trends players, such as NEC Corporation, L3 Technologies, Inc., Keysight Technologies, Millimeter Wave Products Inc., BridgeWave Communications (REMEC Broadband Wireless Networks) , CableFree: Wireless Excellence, Farran Technology, E-Band Communications, LLC, SAGE Millimeter, Inc., Siklu Communication, Denso Corporation, Fujitsu, and Mitsubishi Electric Corporation are provided in this report. Product launch business strategy was adopted by the major market players in 2023.

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Key Findings of the Study

The Millimeter wave technology market share is poised for substantial expansion in the foreseeable future, fueled by the rising demand for high-speed 5G networks.

The Millimeter wave technology market size is projected to be influenced by the increasing demand for millimeter wave technology within the telecommunication infrastructure sector.

The market exhibits high competitiveness, marked by the active participation of several major players vying for market share. Expectations include an intensification of competition in the coming years with the entry of new players into the market.

The North America region is expected to be a major market for Millimeter wave technology market owing to rapid adoption of 5G technology development inside the country.

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