

North America Terahertz Technology Market Forecast to 2030 – COVID-19 Impact and Regional Analysis – by Component (Terahertz Sources and Terahertz Detectors), Type (Terahertz Imaging Systems, Terahertz Spectroscopy Systems, and Terahertz Communication System), and Application (Medical & Healthcare, Defense & Security, Food & Agriculture, Industrial, Semiconductor, and Others)

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Abstracts

The North America terahertz technology market is expected to grow from US\$ 209.57 million in 2023 to US\$ 1,032.39 million by 2030; it is estimated to grow at a CAGR of 25.6% from 2023 to 2030.

Growing use of terahertz system in semiconductor industry

The semiconductor is one of the prominent industries in all types of industries. With the growing industrial sector, self-driving vehicles, and consumer electronics, the production of semiconductors is also booming at an exponential rate. With increasing semiconductor production, the adoption of advanced technologies such as terahertz also holds a significant position. Semiconductor packaging inspection; non-destructive fault isolation of packaging systems, fault isolation & defect detection for the microelectronics; wireless communication; semiconductor chips used in communications and mobile computing; transmitters & receivers; and wiring quality of semiconductor packages including wafer-level packages, Flip Chip BGA, and 2.5D/3D ICs are some of the application areas where terahertz is utilized. Also, the application of the terahertz system in semiconductor manufacturing is becoming appealing to

composite materials, solar cells, dielectric film, and polymer films. The semiconductor industry using terahertz provides a large potential market for growth; this technology and system is ideal to evaluate epitaxial wafers and interconnects in the packaged chips.

The terahertz waves can be used to non-destructively inspect semiconductor wafers for defects, such as cracks, voids, and impurities. This can help to improve the yield of semiconductor manufacturing processes. Such types of applications are driving the adoption of terahertz technology in the semiconductor industry.

North America Terahertz Technology Market Overview

North America includes developed economies, including the US, Canada, and Mexico. The technological advancements across North America have created a highly competitive market. North America witness several technological developments from economically robust countries. The regional companies are regularly enhancing the overall business processes to fulfill the customers' demand for high-quality products and services at its best. North America is expected to be a strong player in the global economy, as the largest market for technology-based solutions, particularly in developing and implementing new technologies.

The demand for this technology is the largest in the region due to terahertz being a new technology and North America being one of the earliest adopters. Increasing US helicopter and commercial aircraft production is also expected to drive the terahertz technology market in that region. The United States' huge aerospace industry exports over 60 percent of all aerospace manufacturing. Various research institutes in the region, such as the Jet Propulsion Laboratory, are also expected to contribute to market growth by working on the application and implementation of terahertz technology.

North America Terahertz Technology Market Revenue and Forecast to 2030 (US\$ Million)

North America Terahertz Technology Market Segmentation

The North America terahertz technology market is segmented based on component, type, application, and country. Based on component, the North America terahertz technology market is bifurcated into terahertz sources and terahertz detectors. The terahertz detectors segment held a larger market share in 2023.

Based on type, the North America terahertz technology market is segmented into terahertz imaging systems, terahertz spectroscopy systems, and terahertz communication system. The terahertz imaging systems segment held the largest market share in 2023.

Based on application, the North America terahertz technology market is segmented into medical & healthcare, defense & security, food & agriculture, industrial, semiconductor, and others. The medical & healthcare segment held the largest market share in 2023.

Based on country, the North America terahertz technology market is segmented into the US, Canada, and Mexico. The US dominated the North America terahertz technology market share in 2023.

Advanced Photonix Inc.; Advantest Corporation; H?BNER GmbH & Co. KG; Luna Innovations Inc.; Menlo Systems GmbH; Microtech Instrument Inc.; NTT Electric Co.; Terasense Group Inc.; Teraview limited.; and Toptica Photonics AG are the leading companies operating in the North America terahertz technology market.

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