

Europe 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 Europe terahertz technology market is expected to grow from US\$ 172.10 million in 2023 to US\$ 901.05 million by 2030; it is estimated to grow at a CAGR of 26.7% from 2023 to 2030.

Expansion of the 6G technology

Terahertz waves have a much higher frequency than current wireless communication bands, which can support much higher data rates. Terahertz waves can support data rates of up to 100 Gbps, much faster than current wireless communication standards. Terahertz technology could be used in 5G and 6G telecommunications. In the UK, due to rising demand of high-speed networks, the manufacturer and the research organization are developing terahertz technology suitable for 6G connections. For instance, in April 2023, Keysight Technologies, Inc, in collaboration with the National Physical Laboratory (NPL) and the University of Surrey, made the first 6G connection at speeds greater than 100 gigabits per second (Gbps) over sub-terahertz (THz) frequencies. The 6G connection is used for future use cases such as AR (augmented reality) and autonomous vehicles. These future use cases have required a speed from

100 Gbps to 1 terabit per second (Tbps). Sub-THz frequencies are being explored to achieve the extremely high data rates and low latency required for these innovative use cases. Additionally, in March 2022, High-speed data communication and high-precision sensor technology open up new possibilities for future wireless services. Huawei 6G Research Team Developed and Demonstrated Integrated Sensing and Communication Using Terahertz (ISAC-THz) Prototype. Using wireless electromagnetic waves, the prototype can detect and generate images of trapped objects with millimeter resolution and communicate at extremely high speeds of 240 Gbit/s, opening up new service possibilities new for 6G systems.

Europe Terahertz Technology Market Overview

Europe includes developed economies, including the US, Canada, and Mexico. The technological advancements across Europe have created a highly competitive market. Europe 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. Europe 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 Europe 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.

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

Europe Terahertz Technology Market Segmentation

The Europe terahertz technology market is segmented based on component, type, application, and country. Based on component, the Europe 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 Europe 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 Europe 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 Europe terahertz technology market is segmented into France, Germany, Italy, the UK, Russia, and the Rest of Europe. The Rest of Europe dominated the Europe terahertz technology market share in 2023.

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

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