Electromagnetic Compatibility Test Equipment And Testing Services - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Electromagnetic Compatibility Test Equipment And Testing Services Market size is estimated at USD 7.62 billion in 2025, and is expected to reach USD 10.20 billion by 2030, at a CAGR of 6.01% during the forecast period (2025-2030).

Key Highlights
- The increasing usage of electronic devices across various end-user industries makes electromagnetic compatibility (EMC) an essential service, as it helps minimize the possibility that radiated or conducted emissions produced by a device interfere with other electronic products in its vicinity.
- Electromagnetic Compatibility testing equipment and services analyze the ability of electronic devices to operate as anticipated in their electromagnetic environment when in proximity to other electronic devices or in the presence of electromagnetic disturbances that can interfere with their intended operation.
- Hence, electromagnetic compatibility (EMC) testing is a crucial step in electronic device design and manufacturing processes. Various regulatory bodies, including the FCC, FDA, and ISO, have set specific limits/frameworks on the emissions that can be released from an electronic device. These regulations provide improved safety and reliability for anyone using electrical/electronic equipment by assuring the device does not interfere with other equipment or fail to operate as intended.
- To comply with market requirements and avoid costly recalls, manufacturers in industries such as consumer products, medical devices, industrial machinery, railway, automotive, aerospace, and military equipment must ensure that electromagnetic disturbances do not interfere with the function of their products. These manufacturers are also under pressure to maintain quality while reducing costs and time to market owing to the growing presence of related regulatory frameworks.
- Growth in the world's population and economy and rapid urbanization are expected to increase energy demand over the coming years. The United Nations (UN) estimates that the world's population will grow from 7.6 billion in 2017 to 9.8 billion by 2050. This is anticipated to drive the number of electrical/electronic devices in use, thereby creating opportunities in the studied market.

- In recent years, the electrification trend has been gaining traction in the automotive industry. As electric vehicles incorporate many electronic components that emit radio-frequency/electromagnetic interference, they have the potential to negatively impact the vehicle's performance and driving experience. Hence, the electrification of vehicles leads to new EMC challenges because of higher switching frequencies of semiconductors and higher emissions due to high voltages and currents.
- Considering such trends, there are several vendors offering innovative solutions in the market. For instance, in November 2022, to ease and speed up the development process, AVL and Rohde & Schwarz, two of the prominent providers of automotive test systems, presented an innovative solution for automated electromagnetic compatibility data analysis of an electric drivetrain under real driving conditions.
- However, a higher price tag associated with electromagnetic compatibility test equipment and services is among the major factors challenging the studied market's growth. Furthermore, a higher average time period of EMC testing is also among the key restraining factors for the studied market's growth.

Electromagnetic Compatibility Test Equipment Market Trends

The Consumer Electronics Segment is Expected to Drive the Market's Growth

- The density of electronics-based products is increasing in most verticals due to trends such as digitization, smart homes, and connected devices for the Internet of Things (IoT). To ensure the quality of the product from an electromagnetic compatibility (EMC) standpoint, regulatory bodies have enforced constantly evolving rules and directions on designing and manufacturing.
- Moreover, according to Cisco's Annual Internet Report, by 2023, there will be close to 30 billion network-connected devices and connections, up from 18.4 billion in 2018. Additionally, by 2023, IoT devices will make up 50% (14.7 billion) of all networked devices, up from 33% (6.1 billion) in 2018. Further, according to Ericsson, 5G subscriptions are expected to skyrocket globally between 2019 and 2027, rising from over 12 million to over 4 billion. Combined, these factors are anticipated to expand the consumer electronics industry's size significantly.
- Manufacturers must comply with the latest EMC directives and regional and industry-level regulations and standards through certification before market entry. For instance, to pree of EMC problems, the UK government has adopted stringent laws, forcing all importers and manufacturers of electronic goods to ensure that their products are electromagnetically compatible. Such initiations are anticipated to drive the need for EMC test equipment and services in the consumer electronics segment. Hence, such industry regulations are anticipated to drive the growth of the studied market.
- China is a prominent consumer electronics producer, especially in the brown goods product category. It features an extensive electronics manufacturing ecosystem and supply chain. For instance, according to the National Bureau of Statistics of China, in May 2022, around 37 million computers were produced in China, an increase from 32.66 million computers in April 2022. The region's robust consumer electronics manufacturing capabilities offer lucrative opportunities for the growth of the studied market.
- Similarly, according to the Consumer Technology Association (CTA), the retail sales revenue of consumer electronic/technology products in the United States is anticipated to be valued at USD 485 billion in 2023. Although this is a decline compared to the figures of 2022, stable growth is still anticipated during the forecast period, which in turn will drive the demand for EMC testing of consumer electronic products during the forecast period as several countries, especially developed ones such as the United States have stringent laws pertaining to product quality.

North America is Expected to Hold a Major Market Share

- North America is a prominent region for the EMC testing market players due to favorable economic and social conditions for developing and adopting modern technologies, including supportive government policies, higher consumer awareness, and

developed infrastructure for research and development. The region's consumer electronics industry thrives due to the widespread use of smartphones, tablets, personal computers, HVAC systems, washing machines, and television sets.
- The United States is one of the significant markets for Electromagnetic Compatibility Test Equipment and Testing Services owing to the presence of strong automotive, aerospace, consumer electronics, and healthcare industries. As the adoption of electronic components/devices has increased across all the major end-user sectors in recent years, the demand for EMC test equipment/services is anticipated to grow further during the forecast period.
- Furthermore, the country has stringent regulations pertaining to electromagnetic radiation. For instance, in the United States, the Federal Communications Commission (FCC) regulates all commercial sources of electromagnetic radiation. The Title 47, Part 15 regulation of FCC specifies limits on the radiation from various radiation sources, which include virtually every product that employs a microprocessor, including office equipment, computers and computer peripherals, electronic games, and point-of-sale terminals.
- The North American region has the presence of several electromagnetic compatibility test equipment and testing services providers, which also facilitates the studied market's growth in the region. For instance, Washington Laboratories Ltd's test sites in the United States are listed by the FCC's Equipment Authorizations Branch in Columbia, Maryland, and conform to ANSI C63.4-2003.
- Furthermore, the North American automotive industry is progressing steadily toward autonomous vehicles. As these vehicles are loaded with multiple electronic units, the role of electromagnetic compatibility testing becomes even more important to ensure the error-free working of the automobile. Hence, all such trends together are anticipated to supplement the studied market's growth in North America during the forecast period.

Electromagnetic Compatibility Test Equipment Industry Overview

With the presence of numerous regional and global players, the global electrical test equipment market is expected to be consolidated. Nevertheless, market participants are actively engaging in competitive strategic initiatives, including partnerships, new product development, and market expansion, to strengthen their positions in the global electromagnetic test equipment and test services market.

In April 2023, Emitech, a company specializing in applied testing for product qualification in the automotive sector, inaugurated its state-of-the-art vehicle test center in Montigny-le-Bretonneux, France. Emitech's new EMC chamber is equipped with a comprehensive EMC test system from Rohde & Schwarz, featuring R&S BBA130, R&S BBA150, and R&S BBL200 broadband amplifiers, as well as R&S SMB100B RF signal generators and power meters, along with R&S ESW44 test receivers.

In February 2023, ISRO's Chandrayaan-3 lander successfully underwent EMI/EMC testing at the U R Rao Satellite Centre in Bengaluru. ISRO's testing procedures encompassed Launcher compatibility, Antenna Polarization for all RF systems, Lander & Rover compatibility tests for the post-landing mission phase, and Standalone auto compatibility tests for orbital and powered descent mission phases, ensuring the lander's readiness for its mission.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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