Optical Transceiver - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Optical Transceiver Market size is estimated at USD 15.09 billion in 2025, and is expected to reach USD 27.91 billion by 2030, at a CAGR of 13.09% during the forecast period (2025-2030).

An optical transceiver, also known as a fiber optic transceiver, is an interconnect component used to transmit and receive data in a fiber-optic network. It consists of two main parts: a transmitter and a receiver. The transmitter converts electrical signals into light signals, which are transmitted through fiber optic cables. The receiver, on the other hand, receives light signals and converts them back into electrical signals.

Key Highlights
- Optical transceivers enable high-speed data transmission over long distances. They can support high bandwidth applications like video streaming, cloud computing, and data centers. They can transmit data over long distances without significant signal degradation. They are commonly used in telecommunications and networking applications that require data transmission over kilometers of fiber optic cables.
- Due to several factors, the telecom industry is experiencing an increasing need for advanced communication. These factors include the demand for energy efficiency, the focus on delivering advanced connectivity, and the rise of new technologies such as the Internet of Things (IoT) and artificial intelligence (AI). Telecom companies strive to deliver advanced connectivity and higher performance to their customers. This includes deploying technologies like 5G, edge computing, and improved network infrastructure. These advancements enable faster and more reliable communication services. The advanced development and upgrade of the bearer network is anticipated to drive the demand for optical communication network equipment to increase as 5G technology progresses and base stations are deployed.
- Cloud-based services have experienced a significant increase in demand in recent years. Cloud computing allows businesses to

reduce their IT infrastructure costs by eliminating the need for on-premises servers and hardware. Instead, companies can access computing resources and services on demand, paying only for what they use. Cloud services also offer the ability to scale resources up or down based on demand. The increasing adoption of cloud services owing to their significant advantages would create massive demand for advanced communication infrastructure, thereby driving the optical transceivers market.
- Optical transceivers, such as data centers, are critical in high-capacity data transmission networks. In recent years, there has been an increase in network complexity in optical transceivers. The demand for high data rates in modern networks has led to the development of optical transceivers capable of transmitting data at speeds ranging from 1G to 400 G. The higher data rates require more sophisticated designs and technologies to ensure reliable and efficient data transmission.
- The outbreak of COVID-19 increased the usage of data. According to a report on the impact of the COVID-19 pandemic on China's entertainment industry by Maoyan Entertainment, a leading platform providing innovative Internet-empowered entertainment services in China, the movie industry was severely hit by the pandemic, whereas the online entertainment market, including TV and streaming platforms, were booming as people were confined to their homes.? This has led to the growth of the market.

Optical Transceiver Market Trends

Data Centers to the Fastest Growing Application for Optical Transceivers

- The proliferation of data centers, which serve as the backbone of modern digital services, requires efficient and reliable connectivity solutions. Optical transceivers offer the speed, capacity, and scalability required to maintain the uninterrupted data flow within these data centers.
- Data centers are emerging as significant drivers in the market studied. With the proliferation of data and technologies, like AI and high-performance computing (HPC), the need to connect data center assets quickly, reliably, and cost-effectively is growing significantly. Throughput, latency, simplified operations, maintenance, intelligence, and security are becoming significant priorities for data center vendors.
- Data center networks are rapidly adopting fiber optics technology. A fiber-based network for data centers is built by combining many fiber optic devices. In these high-capacity networks, optical transceivers play a significant role. The majority of modern data center networks currently necessitate high-capacity data transmission.
- US-based Inphi is increasingly targeting data center applications and extending its marketplace with advanced products, including 400G data center interconnect optical modules, which leverage their silicon photonics and DSP technologies. According to Cloudscene, as of September 2023, there were 5,375 data centers in the United States, the most of any country worldwide. A further 522 were in Germany, while 517 were in the United Kingdom.
- The growing adoption of cloud applications, AI, and big data drives the demand for data center construction across various regions. As more organizations shift their operations to the cloud, they require more advanced data centers to support their needs. For instance, in January 2023, Metro Edge finalized agreements with Clune Construction and other construction firms to design and build the data center facility. The project is expected to have full entitlements within the next few months and break ground shortly after.
- In November 2023, Microsoft announced it would invest USD 500 million in expanding its cloud computing and AI infrastructure in Quebec over the next two years. The announcement references future data center locations in L'Ancienne-Lorette, Donnacona, Saint-Augustin-de-Desmaures, and Levis, with construction starting soon.

North America Holds Largest Market Share

- North America is one of the significant contributors to the optical transceiver market's development due to the growing communication landscape and the massive internet penetration. These trends demand improved connectivity, increasing the demand for optical transceivers in North America. According to Meltwater, a software-as-a-service solution company and an online media monitoring company, as of October 2023, the internet penetration rate as of October 2023 in the United States was 91.8%.
- The high adoption of the Internet and advanced technologies like AI, 5G, IoT, and high-performance computing in the United States is driving the need for a high data transmission rate, which drives the market's growth.
- Increasing data traffic has created additional demand for developing many data centers that support data generated by businesses and consumers. The use of cloud-computing services and applications is also expected to grow in the United States, leading to the development of large hyperscale cloud-based data centers.
- The presence of some of the key data center companies like Google (US), Microsoft (US), and Amazon (US) has also contributed significantly to the growth of the optical transceiver market in North America. Cloud service providers like Google and Microsoft are implementing high-data-rate optical transceivers in their data centers.
- With the proliferation of data and expansion of technologies like AI and high-performance computing (HPC), the need to connect data center assets quickly, reliably, and cost-effectively is growing significantly. Factors such as throughput, latency, simplified operations and maintenance, intelligence, and security are becoming major priorities for regional data center vendors. The United States is one of the major innovators and investors in the 5G market, owing to a high investment rate for 5G deployment.

Optical Transceiver Market Overview

The optical transceiver market is highly fragmented, with the presence of major players like Coherent Corp. (II-VI Incorporated), Accelink Technologies, Lumentum Operations LLC (Lumentum Holdings), Sumitomo Electric Industries Ltd, and Fujitsu Optical Components Limited (Fujitsu Ltd). Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

- December 2023: II-VI Incorporated introduced its 800G ZR/ZR+ transceiver in ultracompact QSFP-DD and OSFP form factors for optical communications networks. The 800G ZR/ZR+ transceivers from Coherent are the world?s first digital coherent optics (DCO) that can plug directly into QSFP-DD and OSFP transceiver slots on IP routers.
- October 2023: Source Photonics announced the availability of 800 Gbps short-reach multimode (MMF) transceivers and active cables for AI cluster connectivity at ECOC 2023 in Glasgow, Scotland, that enables AI data center infrastructure to achieve dramatically higher speeds for short-reach optical pluggable modules and active cable applications.

Additional Benefits:

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

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