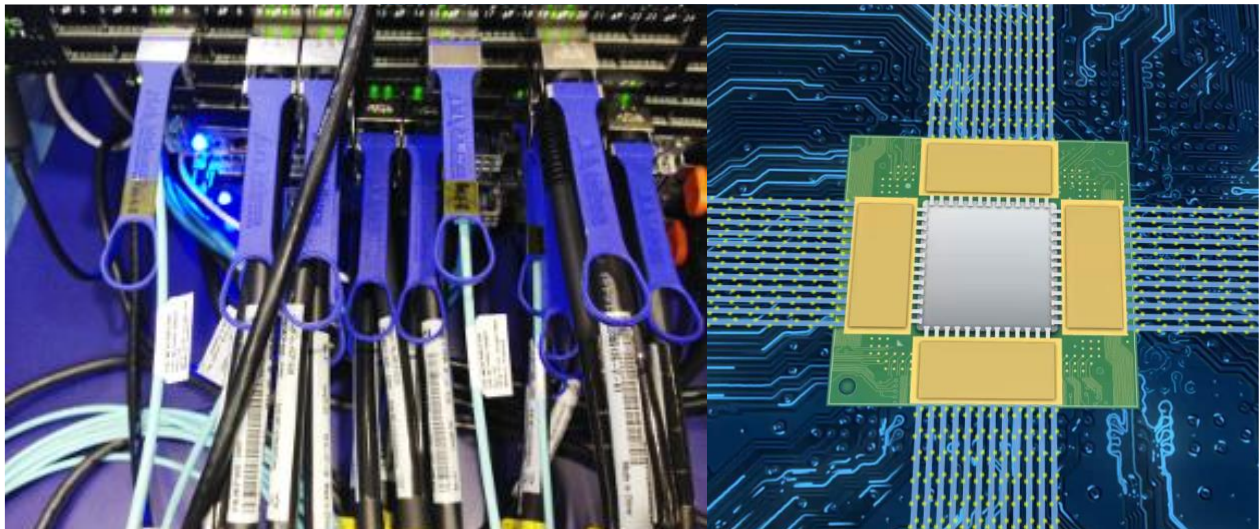


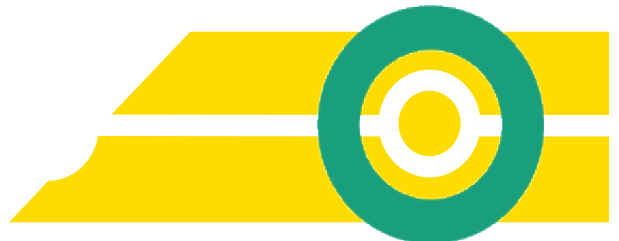


HIGH SPEED CABLES, EMBEDDED AND CO-PACKAGED OPTICS

DECEMBER 2020



SOURCE: MELLANOX & CO-PACKAGED OPTICS COLLABORATION



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ABSTRACT

This report examines the optical interconnect segments that have long served as data bridges between elements of large systems or clusters.

Active Optical Cables (AOCs) embed optical transceiver technologies into enclosed cables that hide the high-speed optics behind two transceiver ends with an electrical interconnect presented to the outside. This factor enables creating high aggregate data rate links at costs significantly below that of two separate connectorized transceivers and fibers. AOCs gained market share by offering longer reaches than passive and active **Direct Attached Copper (DACs)** cables, also examined in this report.

This report also examines the product segment that embeds optical interconnect technologies inside computer and communication systems with **Embedded Optical Modules (EOMs)**. As data rates reach 100Gbps, reducing the length of PCB traces on circuit boards becomes even more critical. Placing on-board optics into one package with ASICs offers a solution for the future. This approach creates a new set of products known as **Co-Packaged Optics (CPO)**.

The report includes historical data (2016-2020) and forecast (2021-2025) for shipments, revenues and average selling prices for the products mentioned above. We analyze technologies, market trends, protocol transitions, data rates, and MSAs for InfiniBand, Ethernet and other protocols. Application segments are reviewed in detail and 20 categories of products are individually tracked, forecasted and mapped into four application segments: High Performance Computing (HPC) and AI Clusters, Cloud (hyperscale datacenter), Core Routing & Optical Transport, and lastly Military/Aerospace/Other applications.

The report is based on confidential sales information and detailed analysis of publicly available data released by leading component and equipment manufacturers. It incorporates new information from numerous interviews across both the supply chain and the consumption side of the industry.

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