

HIGH-SPEED ETHERNET OPTICS

12THEDITION | SEPTEMBER 2021



Source: Equinix via Data Center Frontier





Table of Contents

Abstract	4
Executive Summary	5
Chapter 1: Data Center Traffic Fuels the Market	10
North America Remains the Regional Leader in interconnection bandwidth, but other r grow at a faster pace	•
Hyperscale Data Centers: What we know	13
Chapter 2: The Complete Networking Landscape: Ethernet Switching and Routing	24
Data Center Ethernet Switching Remains In The Forefront	24
But Enterprise And Telco Designed Ethernet Switches Cannot Be Ignored	25
Routers Are Key Conerstones In Network Deployments As Well	27
Chapter 3: Merchant Ethernet Switch Silicon and The Evolution to Co-packaged Optics	30
The Ethernet Switch Silicon Market Remains Fiercely Competitive	31
Chapter 4: Forecast Methodology	36
Data traffic growth in mega-datacenters	36
Forecast Assumptions	37
Forecast Accuracy	38
Customer segmentation of the Ethernet transceiver market	41
Chapter 5: Market Forecast for Ethernet Transceivers	44
Market Forecast for 25G and 50G transceivers	51
Market Forecast for 40G transceivers	54
Market Forecast for 100G transceivers	55
Market Forecast for 200G and 400G transceivers	58
Beyond 400G	64
Co-Packaged Optics	67
Appendix 1: Ethernet Roadmap	69
The 2020 Ethernet Alliance Roadmap	69
1.6t Ethernet is closer than you think	72
the IEEE's major decision regarding Serdes still looms	75
Appendix 2: SERDES	76



HIGH-SPEED ETHERNET OPTICS | SEPTEMBER 2021

It's all about the SerDes; the per-lane speed	. 76
The "N x Z" Rate Paradigm	. 76



Abstract

This report analyzes the impact of growing data traffic and the changing architecture of data centers on the market forecast for Ethernet optical transceivers with a focus on the high-speed modules used in data centers. It leverages extensive historical data on shipments of Ethernet modules combined with extensive market analyst research to make projections for sales of these products in 2021-2026. The report offers a comprehensive forecast for more than 50 product categories, including 10GbE, 25GbE, 40GbE, 100GbE, 200GbE, 2x200Gb, 400GbE and first 800G transceivers, sorted by reach and form factors. It provides a summary of technical challenges faced by high-speed transceiver suppliers, including a review of the latest products and technologies introduced by leading suppliers.

The report is based on confidential sales information and on detailed analysis of publicly available data released by leading component and equipment manufacturers along with considerable input from industry experts.

LightCounting Market Research

7726 Gunston Plaza, Unit 1480, Lorton, VA 22079

408-962-4851

www.lightcounting.com

LightCounting is a market research company focused on the in-depth study of high-speed interconnects for the datacom, telecom, and consumer communications markets. Our research covers the whole supply chain from optical and semiconductor components, to modules, subsystems, and their applications in telecom and datacom systems.

Our industry reputation was built by providing solid market data and objective analysis to help industry executives in making tactical and strategic business decisions and see past all the market hype, rumors, press reports, blogs and other distortions that so often complicate and confuse many decision-making processes.

This LightCounting market report contains material that is a confidential, privileged, company product for the sole use of the intended recipients being LightCounting clients and subscribers. Any review, reliance on or redistribution by others or forwarding without LightCounting's expressed permission is strictly prohibited.

For more information, go to: www.lightcounting.com

Or follow us on Twitter at: www.twitter.com/lightcounting