Server optical module model

Summary of Content

Server optical modules are pluggable transceivers installed in network adapters (NICs) to enable fiber-optic communication between servers and switches.

Overview of Optical Modules

An optical module is a photoelectric converter that transforms electrical signals into optical signals and vice versa, operating at the physical layer of the OSI model. It typically consists of a transmitter optical subassembly (TOSA) with a laser diode or LED, a receiver optical subassembly (ROSA) with a photodetector, functional circuits, a control PCB, housing, and optical/electrical interfaces. These modules support various transmission distances and speeds, such as 10Gbps, 25Gbps, 100Gbps, and beyond, depending on the design and form factor (SFP, SFP+, QSFP, CFP, XFP, or XPO) .

Integration with Servers

Servers generally do not have direct ports for optical modules. Instead, optical modules are inserted into network adapters (NICs), which are then installed in the server's PCIe slots. Popular NIC manufacturers include Intel, Broadcom, Mellanox, and QLogic, each with specific compatibility requirements for optical modules. Selecting a module requires confirming that it matches the NIC's supported types and speeds .

Common Optical Module Models

• SFP/SFP+: Small form-factor pluggable modules for 1–10Gbps connections, widely used in enterprise servers.

• QSFP/QSFP28: Quad small form-factor pluggable modules for 40–100Gbps, suitable for high-density server interconnects.

Article Content

The Ultimate Guide to SFP Modules (2026): Types, Speeds

Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM diagnostics, and how to choose the

What is Optical Link Module?

Learn about the different types of optical link modules, their functions, packaging, and key technical concepts like 400G, PAM4, and

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right

What Is an SFP Module? — Complete Guide to SFP, SFP+ & SFP28

Learn what an SFP module is, how it works, its types, specifications, compatibility, and use cases in modern networks, including

Server Optical

Ofering 10GbE, 25GbE, 40GbE, and 100GbE dual-speed optical transceivers, customers with high-bandwidth applications can

How To Choose Optical Modules For Servers

Therefore, when configuring optical modules for servers, it is necessary to select the type of optical modules and

Optical module design resources | TI

View the TI Optical module block diagram, product recommendations, reference designs and start designing.

Cisco Optics | Transform Your Network

Get the highest quality, performance-leading optical transceivers for any network architecture. Find the transceiver model to fit your

XPO: Redefining Pluggable Optics for AI Networking

The Arista XPO (eXtra-dense Pluggable Optics) module is a purpose-built solution designed from the ground up to address the

Optical module

Optical modules typically have an electrical interface on the side that connects to the inside of the system and an optical interface on

Contact Us

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