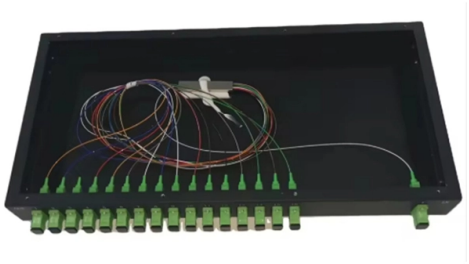
Optical Transceiver Module Model Description



Overview

An optical transceiver module, often simply called an optical module, acts as a signal conversion interface in fiber optic networks.

Key Takeaways

Optical transceiver modules come in various models such as SFP, SFP+, QSFP28, QSFP-DD, OSFP, and CFP, supporting speeds from 1G to 800G for enterprise, data center, and AI applications. Common Optical Transceiver Types and SpeedsSFP (Small Form-factor Pluggable): Typically supports 1G Ethernet, widely used in enterprise and campus networks for short to medium distances. SFP+: Supports 10G Ethernet, sharing the SFP form factor but designed for higher speeds.

QSFP28: Commonly used for 100G Ethernet, suitable for data center and high-performance computing networks. QSFP-DD (Quad Small Form-factor Pluggable Double Density): Supports 200G and 400G applications, offering higher port density for AI clusters and hyperscale data centers.

OSF

P (Octal Small Form-factor Pluggable): High-density modules for 400G and 800G, often deployed in AI and cloud infrastructure. CFP/CFP2/CFP4: Used for 100G and above, typically in long-haul or metro networks.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Key Selection Parameters

When choosing a transceiver module, consider: Network speed requirements: 1G, 10G, 25G, 40G, 50G, 100G, 200G, 400G, 800G. Transmission distance: Short-range (SR), long-range (LR), extended reach (ZR, OpenZR+), or ultra-long-haul applications. Fiber type: Single-mode or multi-mode fiber.

Connector type: LC, SC, MPO, or panel-mount options. Compatibility: Ensure modules are compatible with your switch, server, or router platform (Cisco, Juniper, Arista, Dell, HPE, Huawei, etc.),.

Vendor-

Specific Models

Cisco: Offers QSFP-DD, OSFP, QSFP112, and coherent ZR modules for 400G–800G AI and data center networks, with support for long-haul and high-density deployments. FS.com: Provides modules from 100M to 800G, including energy-efficient and plug-and-play designs for enterprise and gaming data centers.

Digi

Key: Stocks a wide range of pluggable modules including SFP, QSFP, XFP, CFP, and CXP, with options for different wavelengths and mounting types.

Applications

Enterprise networks: SFP and SFP+ for standard LAN and campus connectivity. Data centers: QSFP28, QSFP-DD, and OSFP for high-speed server interconnects and AI/ML workloads. Long-haul and metro networks: CFP and coherent modules for distances up to 1000 km with OpenZR+ technology.

High-density A

I clusters: OSFP and QSFP-DD modules provide maximum bandwidth and port density. By understanding the form factor, speed, distance, and compatibility, you can select the optimal optical transceiver module for your network architecture, whether for enterprise, cloud, or AI-driven data centers.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Article Content

Understanding Optical Transceiver Modules: A Comprehensive Guide

An optical transceiver module, often simply called an optical module, acts as a signal conversion interface in fiber optic networks. It transforms high volumes of electrical signals into

Optical Transceivers-The Ultimate Guide for Beginners and Experts

Optical modules are designed to be small and compact, making them easy to install in any network equipment such as switches. The following will take you to understand how an optical

Cisco Optics | Transform Your Network

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

Optical Transceiver Datasheet Guide: SFP Specs & PDF Downloads

Learn how to read an optical transceiver datasheet, understand SFP specifications, compare 1G/10G modules, and choose compatible optics for enterprise networks.

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 the side that connects to the outside world through a fiber optic

Optical Transceivers: How to Choose the Right Module

The following article will describe the important types of optical transceivers, so you will know which optical transceiver module fits the needs of your unique network

Optical Module Working Principle | SFP Transceiver Technical Guide ...

Learn the complete working principle of optical modules (SFP transceivers), including TOSA/ROSA components, laser types, temperature compensation, and more. Weunion''s high

Optics and Transceivers | Fiber Optical Transceivers

FS offers a growing portfolio of optical transceivers, with speed range from 100M, 1G, 10G, 25G, 40G, 50G, 100G, 200G, 400G to 800G and beyond. The fiber optic transceiver modules can work in any

200G QSFP-DD VCSEL SR4 850nm 100m Optical Transceiver

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

GIGALIGHT 200G QSFP-DD SR4 optical transceiver modules are used for short-range interconnections between devices within data centers and are compliant with 200G Ethernet transport protocols, as

Connectors, Cables, Optics, RF, Silicon to Silicon

Optics Samtec is the industry-leading provider of mid-board optical transceiver solutions. This growing and comprehensive family of products provides reliable

Optical Transceivers-The Ultimate Guide for Beginners and Experts

In today''s world where the Internet and artificial intelligence are developing rapidly, optical modules, as a core network communication equipment, play an increasingly important role.

Optical module

An optical module is a typically hot-pluggable optical transceiver used in high-bandwidth data communications applications. Optical modules typically have an electrical interface on the side that

Physical layer

In the seven-layer OSI model of computer networking, the physical layer or layer 1 is the first and lowest layer: the layer most closely associated with the physical connection between devices. The physical

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals, appearance and structure, key performance counters, common types,

Learn About Optical Transceiver Modules in One Minute

The optical transceiver module works at the physical layer of the OSI model and is one of the key components in the optical fiber communication system. It is mainly composed of

What is an Optical Module?

Today, when we talk about optical modules, we usually mean optical transceivers (and this will be the case throughout the text). Optical modules operate at the physical layer, which is the bottom layer of

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Understanding Optical Transceiver Modules: A Comprehensive Guide

In the world of fiber optic communications, optical transceiver modules play a pivotal role as interfaces that convert electrical signals to optical signals and vice versa.

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://kenhardtprimary.co.za
Technical inquiry: https://kenhardtprimary.co.za/project-desk.html
African project coordination: Century City, Cape Town, Western Cape, South Africa

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved