

Single-receive optical module



Article Overview

A single-receive optical module is a hot-swappable transceiver that receives optical signals over single mode fiber for long-distance, high-speed communication.

Overview

A single-receive optical module, often implemented as a single mode SFP (Small Form-factor Pluggable) transceiver, is designed to receive optical signals transmitted over single mode fiber (SMF) and convert them into electrical signals for network devices such as switches, routers, or media converters . These modules are essential in fiber optic networks where long-distance, high-bandwidth communication is required.

Key Features

- Fiber Type: Single mode fiber with a small core ($\sim 9/125\mu\text{m}$) optimized for minimal signal loss over long distances .
- Wavelengths: Typically operates at 1310nm or 1550nm, which are standard for long-haul transmission .
- Distance: Supports link distances from 10 km up to 80 km or more, depending on optical power and module type .
- Hot-Swappable: Can be inserted or removed without powering down the network device, allowing flexible upgrades and maintenance .
- Applications: Ideal for campus backbones, metro networks, and telecom infrastructure, where long-distance connectivity is critical .

Technical Components...

Article Content

Optical module

In order to save power within the module, optical modules have been made that used the digital interface definition, such as the CEI,

Understanding Optical Modules: Working Principles, Structures, and ...

Explore the working principles, structures, and performance metrics of optical modules, essential components of

Single Mode SFP Transceiver: Complete Guide Explained

A single mode SFP transceiver is a hot-swappable optical module designed to transmit and receive data over single mode fiber

Understanding BIDI SFP Optical Transceiver Modules

Visually, a BIDI module has only one port and uses only one optical fiber for connection. The working principle of a

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

Confused by SFP vs SFP+? Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM

The Difference Between Single/Dual Fiber and Single/Multi-Mode Optical ...

As fiber optic networks continue to evolve, selecting the right optical transceiver becomes increasingly important.

What is Optical Link Module?

Learn about the different types of optical link modules, their functions, packaging, and key technical

Linear Pluggable Optics - An Overview

Comparison of proposed solutions: In response, several solutions such as Linear Receive Optics (LRO), Linear Pluggable Optics

Optical Transceiver Market Size, Share, Analysis 2030

The global Optical Transceiver Market size in terms of revenue was estimated to be worth \$13.6 billion in 2024 and is poised to reach

Understanding Single-mode and Multi-mode Optical Modules and Optical ...

Multi-mode Optical Module: · Paired with Multi-mode Fiber: Multi-mode optical modules are specifically designed to work with multi

Optical Modules Market Size, Growth Trends & Forecast

Optical Modules Market size was valued at USD 3.5 billion in 2025 & is estimated to reach USD 8.2 billion by 2034,

Cisco Transceiver Modules

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and software specifications.

Optical Module Performance: Key Power and Sensitivity Metrics

In modern optical communication systems, optical modules serve as the core photoelectric conversion components

The Complete Guide to BiDi Transceiver

Unlike traditional optical modules that use separate fibers for transmitting and receiving data, BiDi modules

Single Fiber vs Dual Fiber Transceivers Understanding the Key

In fiber optic communication systems, optical transceivers play a critical role in ensuring seamless data transmission.

Optics and Transceivers | Fiber Optical Transceivers

Every FS optical module is tested on real devices in our labs. Use the compatibility tool to check switch compatibility. FS can provide

Optical module design resources | TI

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

The Key External Components of Optical Modules

An optical module serves as the backbone of modern fiber-optic communication. Its appearance often resembles a

Charting the Path Toward 1.6T and 3.2T Optical Module

Furthermore, the shift toward 200G/lane optical links in data centers sets the stage for 1.6T and 3.2T

The FOA Reference For Fiber Optics

Fiber Optic Transceiver Most systems use a "transceiver" which includes both transmission and receiver in a single module. The

Deep Dive: Optical Module Market

Powering next-gen connectivity: How optical modules enable fast, reliable data transfer, and What are the

100G Optical Module: How to Choose Between SR4, DR4, FR4, LR4,

Continuing our discussion on 100G optical modules, let's explore the essential 100G transmission standards—SR4,

Ultrafast Fiber Optic Photoreceivers

The RXM Series of Ultrafast Receivers includes multimode and single mode fiber-coupled photoreceivers

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