

100M Optical Module Wavelength



Article Overview

100M optical modules typically operate at 850nm for multi-mode fiber and 1310nm for single-mode fiber.

Multi-mode vs Single-mode

- Multi-mode (MMF): Used for short distances, generally under 2 km. The standard 100M multi-mode transceivers, such as 100BASE-SX, operate at 850nm wavelength and are cost-effective for campus or data center links .
- Single-mode (SMF): Used for longer distances, exceeding 2 km. Single-mode 100M transceivers, like 100BASE-LX or 100BASE-EX, typically operate at 1310nm wavelength, providing lower signal attenuation and higher bandwidth potential over long hauls .

Duplex and BiDi Modules

- Duplex transceivers: Use two fiber strands, one for transmitting (Tx) and one for receiving (Rx). They often employ different wavelengths on the same strand, such as Tx at 1310nm and Rx at 1550nm, to maximize fiber usage .
- Single-fiber BiDi transceivers: Allow bidirectional communication over a single fiber strand, requiring matched wavelength pairs on both ends of the link. This is ideal when fiber availability is limited .

Typical 100M SFP Examples

- SFP-100FX-31-I: Multi-mode fiber, 2 km reach, 1310nm wavelength, LC connector...

Article Content

Sep 14, 2025

100M SFP Transceiver Modules Data Sheet | FS

The SFP-100FX-31-I transceiver supports up to 2km link lengths over multi-mode fiber (MMF) using a wavelength of

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100G Optical Module Selection Guide: Advantages and Types of

Explore the QSFP28 100G optical module, a vital component for high-speed network connections. Discover its unique

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Optic Modules Datasheet

These platforms support multiple interface types and technologies such as Ethernet, ATM, and SONET. Depending on the

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The relationship between wavelength and transmission distance of ...

At 1550 wavelength, the maximum transmission distance of 100M and 1G optical modules can reach 160km, and the

Jan 11, 2026

Introduction to Optical Fibers, dB, Attenuation and Measurements

This document is a quick reference to some of the formulas and important information related to optical technologies.

Oct 21, 2025

50G SFP56 SR VCSEL 850nm 100m Optical Transceiver Module

The GIGALIGHT 50G SFP56 SR optical transceiver module is used for short-distance interconnection between internal devices in

Jun 30, 2026

100g light module characteristics and application

A 100G optical module is a high-speed optical transceiver that is capable of transmitting data at a rate of 100 gigabits

Oct 17, 2025

SFP-MM 100M Transceivers Module | SOLTECH SINGAPORE

This module delivers 100Mbps over multi-mode fiber up to 2km at a 1310nm wavelength, featuring an SFP LC connector and low

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This bi-directional unit must be used with another transceiver or network equipment of complementary wavelengths. It

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100 Gbit/s QSFP28 Optical Modules

The 100 Gbit/s QSFP28 optical modules can only be used with 100 GE interfaces. The wavelength of these 100 Gbit/s QSFP28

Sep 26, 2025

100G QSFP28 Optical Module Selection Guide: Medium to Long

This article tells you how to choose 100G QSFP28 modules for medium and long transmission distances, as well as

Aug 25, 2025

Single-mode optical fiber

In fiber-optic communication, a single-mode optical fiber, also known as fundamental- or mono-mode, is an optical fiber designed

Feb 26, 2026

Comprehensive Guide to Optical Transceiver Classifications and

Introduction Optical modules are critical components in fiber optic communications, enabling the conversion between

Nov 30, 2025

Cisco SFP Modules for Gigabit Ethernet Applications Data Sheet

This data sheet describes the benefits, specifications, and ordering information for the Cisco SFP Modules for Gigabit

Sep 22, 2025

Things You Need to Know About Optical Modules and Wavelengths

Introduction What are optical modules used to build a campus network? What are differences between various optical

Dec 27, 2025

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

3.100G BiDi SR Asterfusion QSFP28-100G-SR BiDi 850nm 910nm 100m Duplex LC MMF Transmission Distance: Up

Oct 25, 2025

Arista Optics Modules and Cables

Overview Arista's Optical Modules and Cable portfolio offer a wide variety of high-density and low-power 800G (dual 400G), 400G,

Jul 12, 2026

Exploring the Correlation Between Optical Module Wavelength and ...

This article delves into the correlation between optical module wavelength and transmission distance, shedding light

Aug 02, 2025

A Brief Discussion on 100G Optical Modules in Data Centers

100G optical module standard organization Before we start sharing the optical module standards, let's first

Jul 01, 2026

Wavelength-division multiplexing

In fiber-optic communications, wavelength-division multiplexing (WDM) is a technology which multiplexes a

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The applications of 100M Optical Module

Selecting the correct module depends on your fiber type, required distance, and wavelength. As a leading

Feb 04, 2026

Overview of 100G PAM4 Optical Modules with DWDM Technology

100G DWDM PAM4 optical modules are high-performance optical transceivers that utilize PAM4 and operate on

Oct 25, 2025

100GBASE QSFP-100G Modules Data Sheet

QSFP-100G Optical modules Features and benefits of Cisco QSFP modules Hot-swappable input/output device that

Apr 20, 2026

Arista 100G Transceivers and Cables: Q& A

The optical output is a single wavelength (or “lambda”) 100Gbit/s PAM-4 optical signal. The 100G-DR/FR/LR modules include a

May 11, 2026

100BASE FX SFP: Complete Guide to 100Mbps Fiber Transceivers

It specifies 100Mbps data transmission over multimode fiber using a 1310nm wavelength and 4B/5B encoding. In practical terms,

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