

# What model is the multimode optical module



## Overview

A guide to single-mode vs multimode SFP modules. Covers fiber types, wavelengths, distances, BiDi, CWDM/DWDM, SMF vs MMF selection, and application scenarios.

## Key Takeaways

Multimode optical modules are designed to work with OM1, OM2, OM3, OM4, and OM5 fibers, supporting short-range high-speed communication using SFP, SFP+, and QSFP form factors.

## Multimode Fiber Types and Specifications

Multimode fibers (MMF) are classified into five main types, each optimized for different bandwidths, core sizes, and transmission distances: OM1: Legacy 62.5  $\mu\text{m}$  core fiber, LED-based, supports 1G Ethernet up to 275 meters and 10G Ethernet up to 33 meters. Mostly used in older buildings and legacy networks.

OM2: 50  $\mu\text{m}$  core fiber, LED-based, supports 1G Ethernet up to 550 meters and 10G Ethernet up to 82 meters. Suitable for early 50  $\mu\text{m}$  systems but limited for high-speed networks. OM3: 50  $\mu\text{m}$  laser-optimized fiber, designed for VCSEL sources, supports 10G Ethernet up to 300 meters, 40G/100G up to 100 meters.

Common in modern enterprise and data center networks. OM4: Enhanced laser-optimized 50  $\mu\text{m}$  fiber, supports 10G Ethernet up to 550 meters, 40G/100G up to 150 meters. Mainstream for new high-speed deployments.

OM5: Wideband multimode fiber supporting Shortwave Wavelength Division Multiplexing (SWDM), enabling multiple wavelengths over a single fiber for higher aggregate bandwidth.

## Multimode Optical Modules

Optical modules for multimode fiber are typically hot-swappable transceivers that convert electrical signals to optical signals. Common types include: SFP (Small Form-factor Pluggable): Supports 1G to 10G speeds, typically using 850 nm VCSEL lasers for multimode fiber. Example: SFP1G-SX-85, with transmission distances from 100 m to 550 m depending on fiber type.

SFP+: Enhanced SFP supporting 10G to 25G speeds, compatible with OM3/OM4 fibers for longer distances. QSFP/QSFP28: Quad Small Form-factor Pluggable modules for 40G and 100G Ethernet, often used in data centers with OM3/OM4 fibers.

Transceivers: Multimode transceivers include both transmitters and receivers packaged together, available in LC connector interfaces for short-range applications.

## Key Considerations

Fiber Compatibility: Ensure the optical module matches the fiber type (OM1-OM5) and core size (50  $\mu\text{m}$  or 62.5  $\mu\text{m}$ ). Distance and Speed: Module selection depends on required data rate and link distance.

OM3/OM4 fibers are preferred for high-speed 10G-100G links. Connector Type: LC connectors are standard for multimode SFP and QSFP modules. Cost and Power: Multimode modules are generally less expensive and consume less power than single-mode modules, making them ideal for short-range, high-density deployments.

By selecting the appropriate OM fiber type and compatible optical module, network engineers can optimize short-range high-speed communication in enterprise networks, data centers, and campus environments.

## Article Content

Single-mode vs Multimode SFP 2026: Fiber Types and distances

A guide to single-mode vs multimode SFP modules. Covers fiber types, wavelengths, distances, BiDi, CWDM/DWDM, SMF vs MMF selection, and application scenarios.

OM1 vs OM2 vs OM3 vs OM4 vs OM5 Multimode Fiber Guide | EDGE

ISO/IEC 11801 defines the OM1, OM2, OM3, OM4, and OM5 types of multimode fiber. It also lists the key technical requirements for each type. In the two tables above, we've summarized

Single-Mode Vs Multimode Optical Modules: Detailed Differences

Both Single Mode and Multimode Optical Modules commonly use LC, SC, and MPO/MTP connectors. Multimode MPO assemblies are widely used for 40/100G parallel optics in high-density data centers;

What is the model number of the chip used in multimode optical

It typically operates using multimode fiber (MMF), supporting data rates such as 10G, 25G, 40G, 100G, and higher speeds. It is important to emphasize that a multimode optical module is

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

- Single-mode modules typically require LC connectors and operate over longer distances, whereas multi-mode modules often use SC or MPO connectors and shorter link lengths.

Multimode Fiber Types: OM1 vs OM2 vs OM3 vs OM4 vs OM5

Identified by ISO 11801 standard, multimode fiber optic cables can be classified into OM1 fiber, OM2 fiber, OM3 fiber, OM4 fiber and newly released OM5 fiber. The next part will compare

Multimode Fiber: OM1 to OM5 - MapYourTech

This comprehensive guide explores the five primary categories of multimode fiber—designated as OM1, OM2, OM3, OM4, and OM5—each representing progressive

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

SFP (Small Form-factor Pluggable) is a compact, hot-pluggable network interface module used to connect network devices (switches, routers, firewalls) to fiber optic or copper cables.

Multimode Fibers - optical glass fiber, large-core fibers,

Multimode fibers are optical fibers which support multiple transverse guided modes for a given optical frequency and polarization. In most cases, that number of

10GE SFP+ Optical Modules

Fan Modules Installing a Power Surge Protector Pluggable Modules for Ports Understanding Optical Modules Understanding Copper Modules Understanding Hybrid Modules Guide to Using Pluggable

AVLGEAR Ubiquiti 1G Multi-Mode Optical Module 1G Fiber

Ubiquiti 1G Multi-Mode Optical Module SFP Transceiver The Ubiquiti 1G Multi-Mode Optical Module offers seamless performance with 1 Gbps data rates, designed for use in multi-mode fiber networks.

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### Used Ubiquiti 10G Multi-Mode Optical Module UACC-OM-MM-10G-D

10G Multi-Mode Optical Module Model: UACC-OM-MM-10G-D Product Description SFP+ transceiver that supports 10G connections up to 400 m using multi-mode fiber with a duplex LC UPC connector.

### 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 diagnostics, and how to choose the right transceiver for Cisco, Juniper, and more.

### Understanding Optical Modules

Multimode optical modules are used with multimode fibers. Multimode fibers have lower transmission performance than single-mode fibers because of modal dispersion, but their costs are also lower.

### Meaning of Optical Module Pull Tap Colors

① Multimode fiber optic module: The pull tap is black, corresponding to a wavelength of 850nm, suitable for short-distance transmission (such as less than 2km).

### How to Choose the Right Fiber Optic Cable for Your Optical

How to Choose the Right Fiber Optic Cable for Your Optical Transceiver Selecting the right optical transceiver is only half of building a reliable fiber network. Many network failures that appear

### Select The Right Fiber Patch Cables For 1G/10G/25G Modules

Deploying optical modules requires the right fiber patch cable. It directly affects network connection stability, performance, and maintenance. This article will explain how to pick the right fiber

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

