

Multimode 10 Gigabit Fiber Optic Standard



Article Overview

10GBASE-SR over multimode fiber (OM3/OM4) is the standard short-reach solution for 10 Gigabit Ethernet, supporting distances up to 300-400 meters with 850 nm SFP+ transceivers.

Overview of 10GBASE-SR

10GBASE-SR is an IEEE-standardized short-reach optical interface designed for 10 Gbps Ethernet over multimode fiber (MMF) using 850 nm VCSEL lasers and duplex LC connectors . It is optimized for high-density, short-distance links such as switch-to-server or switch-to-switch connections in data centers and enterprise networks. The SFP+ form factor allows hot-swappable, compact transceivers that are cost-effective and energy-efficient .

Multimode Fiber Types

Multimode fiber is classified by the ISO/IEC 11801 standard into OM1, OM2, OM3, OM4, and OM5, each with different core sizes, bandwidths, and maximum transmission distances :

- OM1 (62.5 μm core): Supports 10GbE up to 33 meters; typically uses LED light sources.
- OM2 (50 μm core): Supports 10GbE up to 82 meters; LED-based.
- OM3 (50 μm core, laser-optimized): Supports 10GbE up to 300 meters; suitable fo...

Article Content

Jul 24, 2026

10 Gigabit Ethernet Fiber Design Considerations

The 10 Gigabit Ethernet operating distances provided in the tables below are limited by the channel insertion loss, the cable

Aug 04, 2025

10-Gigabit Ethernet

10-Gigabit Ethernet provides high-speed connectivity through various physical media options, from short-range

Apr 14, 2026

Fiber-optic communication

Modern fiber-optic communication systems generally include optical transmitters that convert electrical

Feb 02, 2026

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables,

May 15, 2026

Multimode Optical Fiber Selection & Specification

For prevailing 10 Gigabit transmission speeds, OM3 is generally suitable for distances up to 300 m, and OM4 is suitable for distances

Oct 29, 2025

10GBASE-LX4 Application Overview

10GBASE-LX4 Application Overview by Valerie Maguire, BSEE 10GBASE-LX4: 10 Gb/s wavelength-division multiplexed (WDM)

Aug 20, 2025

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

Compare OM1, OM2, OM3, OM4, and OM5 multimode fiber specs, distances, bandwidth, and applications. Essential

Oct 20, 2025

Guide to Multimode Fiber: OM1, OM2, OM3, OM4, OM5

OM5 fiber provides a versatile and reliable solution for applications requiring multi-channel transmission. What's the

Mar 04, 2026

Multimode Fiber and 10GE

This new fiber is referred to by some as 10 Gigabit Ethernet multimode fiber and is an 850 nm, laser-optimized, 50/125 micron fiber

Oct 03, 2025

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for

Jan 18, 2026

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

Multimode fiber is a popular choice for achieving 10 Gbit/s speeds over distances suitable for LAN enterprise and data

Feb 23, 2026

10GBASE-SR Application Overview

The TIA FOTC provides a comprehensive overview of 10GBASE-SR capabilities and multimode optical fiber channel characteristics.

Oct 23, 2025

What Is the SFP-10G-LRM (10GBASE-LRM Multi-Mode) Transceiver?

The SFP-10G-LRM optical transceiver —short for 10 Gigabit Ethernet, Multi-Mode —is designed for 10 Gbps

Apr 28, 2026

Multimode Fiber: OM1 to OM5 - MapYourTech

Multimode optical fiber represents one of the most critical infrastructure components in modern data centers,

Jan 15, 2026

Multimode Fiber Standards Guide: OM1 OM2 OM3 OM4 OM5

In today's information age, fiber-optic communication—known for high speed and large bandwidth—has become the

May 25, 2026

10 Gigabit Multimode SFP+ Fiber Optic Transceivers | High-Speed

Available Configurations for These Products These 10 Gigabit Multimode SFP+ Transceivers are available in several configurations

Jul 10, 2026

Multimode Fiber Data Sheet

This fiber is a laser-optimized, bend-insensitive, graded-index multimode fiber designed for transmission speeds of 10 Gb/s and

May 30, 2026

10 Gigabit Ethernet Fiber Design Considerations

This paper has introduced some basic fiber related concepts and outlined some of the key points to understand and consider when

Mar 04, 2026

Multimode or singlemode-which one is the best for 10-Gigabit Ethernet ...

Opinions vary, but those who've installed multimode fiber exclusively in anticipation of a 10-GbE standard ratification may wish they

Nov 27, 2025

OM1 Vs OM2 Vs OM3 Vs OM4 Vs OM5: Multimode Fibre Guide

Multimode optical fiber is the preferred choice for optical fiber communication systems due to its affordability and

Jun 08, 2026

What Is 10GBASE-SR? Complete Guide to 10G SFP+ SR Optics

In simple terms, 10GBASE-SR is an IEEE-standardized short-reach optical interface designed to deliver 10 Gbps Ethernet

Aug 07, 2025

Multi-mode optical fiber

Optical fiber manufacturers have greatly refined their manufacturing process since that standard was

Dec 10, 2025

10 Gb/s Multimode Fiber Standards Update and 850 nm Justification

Overfilled launch 500/500 @ 850/1300 nm for 50µm multimode fiber is noted as a specification that supports many Application

Nov 23, 2025

Optical Fiber and 10 Gigabit Ethernet

Outside of cabling and mechanical specifications, which are equally addressed in the standards, the primary optical specifications

Contact Us

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