

1G Single-Mode Fiber



AI Overview

1G single-mode fiber supports 1 Gigabit per second data rates over long distances using single-mode optical fiber, typically with LC connectors and SFP transceivers.

Overview 1G single-mode fiber is used for high-speed network connections over long distances, commonly in enterprise, data center, and telecom environments. It operates at 1 Gigabit per second (1G) and uses single-mode fiber (SMF), which allows light to travel in a single path, minimizing signal loss and enabling longer transmission distances compared to multimode fiber.

Key Specifications

- Distance Support:** Depending on the module and wavelength, 1G single-mode fiber can support distances from 2 km up to 180 km. For example, standard 1000BASE-LX/LH SFP modules support up to 10 km, 1000BASE-EX up to 40 km, and 1000BASE-ZX up to 70 km over single-mode fiber.
- Connector Types:** Common connectors include LC Duplex for standard SFPs and LC Simplex for bidirectional (BiDi) modules.
- Wavelengths:** Typical wavelengths are 1310 nm for medium distances and 1550 nm for long distances, with BiDi modules using paired wavelengths for simultaneous transmit and receive on a single fiber.
- Hot-Pluggable:** Most 1G SFP modules are hot-swappable, allowing easy installation or replacement without powering down the network device.
- Compatibility:** These modules are compatible with a wide range of networking devices, including switches, routers, and servers from vendors like Cisco, Ubiquiti, and FS.

Types of 1G Single-Mode SFP Modules

- Standard SFP (Duplex LC):** Uses two fibers, one for transmit and one for receive, suitable for distances up to 10–40 km depending on the model.
- BiDi SFP (Simplex LC):** Uses a single fiber for both transmit and receive by employing two wavelengths, ideal for fiber-limited installations and distances up to 20 km or more.
- Extended Reach Modules:** 1000BASE-EX and 1000BASE-ZX modules support longer distances (40–70 km) for metropolitan or inter-building connections.

Applications 1G...

Article Content

SMF-28 Ultra Optical Fibers | SMF-28 Ultra 200 and

SMF-28 Ultra single-mode optical fibers combine industry-leading attenuation, macrobend performance exceeding ITU-T G657.A1, and 9.2 μm mode field

1 Gigabit Singlemode SFP Fiber Optic Transceivers

Our 1 Gigabit Singlemode SFP Transceivers offer high-performance, reliable connectivity for singlemode fiber optic networks. These transceivers are

G657A2 at \$25/km: Navigating the Price Storm in the

The global fiber optic industry is in the grip of a perfect storm. At GL FIBER, a Chinese source factory with 22 years of experience manufacturing

Cost of Fiber Optic Cable: Pricing Guide (2026)

Key Takeaways Fiber-optic cable materials typically cost \$1 to \$6 per linear foot, depending on fiber count and cable type. Commercial building

1G SFP Modules: A Deep Dive into Specs & Types

Learn how to choose and optimize 1G SFP modules. Compare specs, fiber vs copper types, troubleshooting tips, and best practices for reliable networks.

Gigabit SFP Module: A Complete Guide to 1G SFP Transceivers

Learn what a gigabit SFP module is, how it works, main types, key specifications, and common use cases to choose the right 1G SFP for your network.

SFP-1G-SX vs SFP-1G-LX Multimode or Single-mode

This guide demystifies the key differences between SFP-1G-SX (850nm, Multimode) and SFP-1G-LX (1310nm, Single-mode) transceivers. We

E72NU02GNZ16010M | EDGE™ 1.6 mm Single-mode Patch Cord,

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AJA 1-Channel 12G-SDI/ST Single Mode ST Fiber Receiver,

Discover the AJA 1-Channel 12G-SDI/ST Fiber Receiver, perfect for extending signals up to 32,808 feet with secure connectivity and excellent performance.

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

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

Fiber Optic Color Code: The Ultimate TIA-598-C Guide

Master the TIA-598-C fiber optic color code standard. Read our complete guide and use our free interactive calculator to easily identify 1-144 core cables.

The Ultimate Fiber Optic Cable Size Reference Chart

Choosing the Right Fiber Size for Your Application Selecting the correct fiber optic size for your specific application is crucial to ensuring optimal

SFP Optical Transceiver | SFP Optical Module | Perle

Perle Protocol and Rate-transparent Media Converters provide conversion between different wavelengths, multimode and single-mode, and dual and single-fiber.

UniFi 1G Bidirectional Single-Mode Optical Module

SFP transceiver that supports 1G connections up to 3 km using single-mode fiber with a simplex LC UPC connector.

SFP Types Explained: 1G Modules, Distances & Selection

1G SFPs aren't "all the same." Media (fiber vs copper), wavelength, reach, connector, temperature grade, and even application domain (Ethernet,

Cisco SFP Modules for Gigabit Ethernet Applications

The 1000BASE-ZX SFP operates on standard single-mode fiber-optic link spans of up to approximately 70 km in length. The SFP provides an optical link budget of 21 dB, but the precise link span length

FPV Drone Optical Fiber Spool — G.657A2 Single-Mode, 1-60 km

FPV Drone Optical Fiber Spool — G.657A2 Single-Mode, 1-60 km von KKPY UG (haftungsbeschränkt) Anbieter jetzt kontaktieren!

1G SFP Transceivers | Mini-GBIC SFP Modules

FS gigabit ethernet transceiver solutions provide fibre or copper options including 1000BASE-SX, 1000BASE-LX/LH, 1000BASE-T etc., from 100m to 160km, for

1 Pair 1.25G SFP Transceiver Single-Mode Single-Fiber SFP Module

Fiber Type and Data Rate: Utilizing single-mode fiber, this transceiver supports a high transmission data rate of 1.25G, suitable for extensive networking requirements and ensuring efficient data handling.

FiDO-R-12G-ST

FiDO-R-12G-ST offers unmatched flexibility and cost efficiency for 12G/6G/3G/HD/SD-SDI Fiber conversion, allowing for cable runs up to 10 km (32,808 ft) over standard single mode fiber optic

Contact Us

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