

Single-mode dual-chip fiber optic cable



Overview

Get OS2 single mode duplex fiber patch cables for 1G/10G/40G/100G/400G Ethernet fiber connections to transport data up to 10km at 1310nm and 40km at 1550nm.

Key Takeaways

A single-mode dual-chip fiber optic cable is a fiber with two cores (or channels) that transmits light in a single mode per core, enabling high-speed, long-distance data transmission with minimal signal loss. OverviewSingle-mode fiber (SMF) cables allow only one mode of light to propagate through a narrow core, typically around 8-10 μm in diameter, which minimizes modal dispersion and supports long-distance, high-bandwidth communication. A dual-chip or 2-core configuration means the cable contains two separate cores, effectively doubling the data channels within a single fiber assembly.

This is analogous to a two-lane highway, allowing simultaneous transmission of two independent signals.

Technical Specifications

Core Type: Single-mode, supporting one light path per core for minimal signal distortion. **Standards Compliance:** Often adheres to ITU-T G. 652 specifications, suitable for 1310 nm and 1550 nm wavelength regions, with low attenuation and controlled chromatic dispersion.

Cable Attributes: Includes specifications for attenuation, polarization mode dispersion, and mechanical robustness, ensuring reliable performance over long distances. **Connector Options:** Can be terminated with FC/PC, FC/APC, or hybrid connectors for patching or system integration.

Advantages

Increased Capacity: Two cores allow simultaneous transmission of separate data streams without interference.

Long-

Distance Transmission: Single-mode design ensures minimal signal loss and high integrity over kilometers.

High-

Speed Networks: Ideal for backbone networks, data centers, and telecom applications requiring high bandwidth. **Reduced Crosstalk:** Each core operates independently, maintaining signal quality.

Applications

Telecommunications: Long-haul fiber links and metro networks. **Data Centers:** High-speed interconnects where dual channels improve throughput. **Industrial Networks:** Environments requiring robust, low-loss fiber connections.

Redundant Systems: Dual-core fibers can provide failover paths within a single cable assembly. In summary, a single-mode dual-core fiber optic cable combines the long-distance, low-loss benefits of single-mode fiber with the increased channel capacity of a dual-core design, making it highly suitable for modern high-speed communication networks.

Article Content

Single vs Dual Fiber Media Converters (2025): A/B

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OS2 Single Mode Fiber Optic Cables, SMF Duplex Cables

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Single Mode vs. Multimode Fiber Optic Cables

Whether you're designing a short-range data center network or a long-distance metro backbone, understanding the distinctions between single vs. dual

Single Mode vs. Multimode Fiber: Core Differences and Selection Guide

How do you choose between single mode and multimode fiber? Compare their differences in core size, light source, bandwidth, transmission distance, and cost to identify the right application.

The Key Differences Between 1-core, 2-core, Single

Single Mode fibers have a smaller core, allowing light to travel in a single, straight path, ideal for long distances with less signal loss. Multi-mode

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I'm looking for either a network interface card (PCIe) or media convertor (or other solution) to go from a fiber optic single-mode simplex cable with an SC/APC connector to an RJ-45 Gigabit

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Simplex vs Duplex Fiber Optic Cables: Key Differences & Guide

Confused about simplex vs duplex fiber optic cables? Learn key differences, BiDi & WDM technology, FTTH vs data center use cases, and how to choose the right fiber.

48 Core Fiber Optic Cable GYTY53 Outdoor Armored Double Jacket

Overview: The 48 Core GYTY53 Fiber Optic Cable is a robust, fully armored outdoor cable engineered for long-distance transmission and direct burial applications. It features double steel tape armor and

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