

What does wired fiber optic cable mean



AI Overview

Wired fiber optic cables use light to transmit data, offering high-speed, long-distance, and interference-free connectivity for home and business networks.

Overview

Fiber optic cables transmit data using light signals through glass or plastic fibers, unlike traditional copper cables that rely on electrical signals. This allows for higher bandwidth, faster speeds, and longer transmission distances without signal degradation or electromagnetic interference. They are widely used in internet backbones, data centers, and home networking setups.

Types of Fiber Optic Cables

- Single-Mode Fiber (SMF)
 - Features a narrow core ($\sim 9\mu\text{m}$) for long-distance, high-speed transmission.
 - Common types: OS1 (indoor, up to 6 miles, 10 Gbps) and OS2 (outdoor, up to 125 miles, 100 Gbps)
 - Ideal for telecommunications, campus networks, and long-haul connections.
- Multimode Fiber (MMF)
 - Wider core ($50\mu\text{m}$ or $62.5\mu\text{m}$) supports multiple light paths, suitable for shorter distances.
 - Types include OM1, OM2, OM3, and OM4, with OM4 supporting up to 10 Gbps over 400 meters.
 - Common in LANs, data centers, and indoor networking

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