

Active Fiber Optic Patch Cord



Overview

Fiber Optic Computer Cables at Office Depot & OfficeMax. Shop today online, in store or buy online and pick up in stores.

Key Takeaways

An active fiber optic patch cord is a fiber cable with connectors on both ends, designed to connect active optical devices while maintaining high signal integrity and performance.

Overview
An active fiber optic patch cord functions as a bridge between active optical devices, such as transceivers, switches, or ONTs, ensuring reliable data transmission in high-speed networks. Unlike passive patch cords, which simply carry light signals, active patch cords may include features like signal conditioning, amplification, or monitoring capabilities to support demanding applications in data centers, telecom networks, and FTTH deployments .

Structure and Types

Active patch cords typically consist of:

- Single-mode (OS1/OS2) or multimode (OM1-OM5) fibers depending on distance and bandwidth requirements .
- Connectors such as LC, SC, ST, or MPO/MTP, available in simplex (one fiber) or duplex (two fibers) configurations .
- Strength members like Kevlar yarn for durability and protection against bending or pulling .

- Jackets suitable for indoor, outdoor, plenum, or riser environments, sometimes armored for harsh conditions .

Applications

Active fiber optic patch cords are used in:

- Data centers: Connecting servers to top-of-rack switches or inter-rack connections for high-speed 400G/800G networks .
- Telecom networks: Linking optical line terminals (OLTs) to customer premises equipment in FTTH deployments .
- Test and measurement: Connecting OTDRs, power meters, or light sources to active links during commissioning and troubleshooting .
- Cross-connects: Structured patching in main distribution areas or colocation facilities .

Selection Considerations

When choosing an active fiber optic patch cord, consider:

- Fiber type: Single-mode for long distances, multimode for shorter, high-bandwidth links .
- Connector type: LC for high-density data centers, SC for FTTH or CATV .
- Length and jacket type: Match installation environment and routing requirements .
- Insertion loss and return loss: Ensure low loss for high-performance networks .
- Customization: Some suppliers offer pre-terminated or custom assemblies to meet specific project needs .

Suppliers and Options

Leading suppliers provide a wide range of fiber patch cords, including LC duplex, SC duplex, MPO/MTP, and E2000® assemblies, with options for bend-insensitive fibers, armored jackets, and custom lengths . Many offer fast delivery and expert guidance for selecting the right configuration for your network. Active fiber optic patch cords are essential for maintaining high-speed, reliable, and low-latency connections in modern optical networks, ensuring optimal performance for both enterprise and telecom applications.

Article Content

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