

Fiber Optic Router Diagram



AI Overview

A fiber optic router structure diagram shows the flow of optical signals from the service provider to the router, including the ONT, media converters, and internal distribution.

Core Components and Signal Flow

- Central Office (CO) / Internet Service Provider (ISP) Hub The CO houses the Optical Line Terminal (OLT), which generates the optical signals sent over the fiber network. The OLT connects to feeder cables that carry high-speed data to neighborhoods or buildings using single-mode fiber for long-distance transmission .
- Feeder and Distribution Cables
 - Feeder cables: High-capacity fiber bundles (72-1,728 strands) that transport data from the CO to local distribution points .
 - Distribution cables: Intermediate links that branch from the feeder to individual buildings or homes.
 - Drop cables: The final segment connecting the distribution point to the subscriber's premises, typically 1-12 fiber strands .
- Optical Network Terminal (ONT) Installed at the subscriber's location, the ONT converts optical signals into electrical signals for the router. It acts as the interface between the external fiber network and the internal home or office network .
- Router The router receives the electrical signal from the ONT via an Ethernet cable. It manages the local network, distributing internet to multiple devices through wired or Wi-Fi connections. Placement of the router in a central, open area ensures optimal Wi-Fi coverage .
- Media Converters (if needed) In some setups, especially in multi-unit buildings, m...

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