

# What are the equipment options for splitting optical cables

## Article Overview

Optical cables can be split using passive fiber optic splitters, primarily PLC (Planar Lightwave Circuit) and FBT (Fused Biconical Taper) splitters, available in various split ratios, connector types, and packaging options.

## Types of Optical Splitters

1. PLC Splitters (Planar Lightwave Circuit) PLC splitters use integrated waveguide technology on a quartz substrate to evenly distribute optical signals from one input fiber to multiple outputs. They are ideal for high-channel applications (up to 32 or more outputs) and provide uniform signal distribution, insensitivity to wavelength variations, and compact size for easy installation in junction boxes or patch panels. PLC splitters are widely used in GPON, EPON, and FTTH networks due to their reliability and scalability, though they are more expensive and technically complex to manufacture compared to FBT splitters . 2. FBT Splitters (Fused Biconical Taper) FBT splitters are made by fusing and tapering two or more fibers together. They are cost-effective and suitable for small split ratios (e.g., 1x2, 1x4). FBT splitters are simpler to produce but may have less uniformity and higher insertion loss for larger splits. They are often used in smaller networks or where budget constraints are a priority .

## Split Ratios and Configurations

Optical splitters are available in various split ratios, such as 1x2, 1x4, 1x8, 1x16, 1x32, and even 1x64. The split ratio determines how the input signal is divided among output fibers. Higher split ratios increase insertion loss, which can affect network reach and signal quality, so careful planning is required for large deployments .

## Connector and Packaging Options

Splitters come with different connector types including SC, LC, and FC, in both APC (angled) and UPC (ultra-polished) styles. Packaging options include:

- o ABS or Mini Modules: Compact, suitable for indoor or small-scale installations.
- o Rack-mounted or ODF Modules: Designed for central offices or large distribution frames.
- o Outdoor Enclosures: Weatherproof for pole or underground deployment .

## Key Considerations

- o Passive Operation: Splitters do not require power, making them ideal for remote or hard-to-access locations.
- o Bidirectional Functionality: Most splitters can handle signals in both directions, supporting two-way

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communication.

- o Network Compatibility: Ensure the splitter supports the required wavelength range (e.g., 1260-1650 nm for GPON/XGS-PON).
- o Customization: Many suppliers offer OEM options for labeling, packaging, and connector types . In summary, the main equipment options for splitting optical cables are PLC and FBT splitters, available in multiple split ratios, connector types, and packaging formats, with selection guided by network size, cost, and performance requirements.

Learn about optical splitter 1 in 2 out basics, applications, design, performance, and installation from our

Digital Optical Cable Splitter 1. J-Tech Digital Premium Quality Splitter The J-Tech optical

An optical splitter is a device used in fiber optic networks to divide a single optical signal

Splitting an optical cable often requires specialized equipment, such as optical splitters or switches, which can add

Learn about optical splitter split ratios (1:N, 2:N), centralized vs. cascaded architectures, and how to choose the right

Fiber optic splitter, also referred to as optical splitter, fiber splitter or beam splitter, is an

This guide demystifies fiber optic splitters, explaining their design, operating principles,

Our digital optical splitters meet Telcordia GR-1221, Telcordia GR-1209 and G.657A1 industry specifications. Custom Design Options

An optical splitter is a crucial passive fiber optic device that splits and combines optical signals. It can distribute the

Learn how fiber optic splitters work, types (PLC, FBT), and uses in FTTH/data centers. Understand signal splitting, key

Optical splitters enable the distribution of light signals from a single input to various servers, ensuring efficient data routing within the

Master optical splitter selection for FTTH & GPON networks. Compare PLC vs FBT, analyze insertion loss charts, and

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Choosing the right optical splitter can be confusing with so many options available. This guide will simplify the process

In a Passive Optical Network (PON), a single optical fiber carries massive amounts of data using light. Instead of

An optical splitter is a passive device, but it doesn't work alone. It relies on active equipment at both ends of the fiber

Learn how to design an efficient FTTH network by optimizing split levels and split ratios. Get deployment strategies

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