

# Performance Comparison of New Mini PLC Splitter with Delay



## Article Overview

A mini PLC splitter with delay generally maintains low insertion loss and high return loss, offering consistent performance for high-ratio PON deployments while the added delay minimally impacts signal integrity over typical FTTx distances.

### Key Performance Metrics

**Insertion Loss (IL):** IL measures the optical power lost as the signal passes through the splitter. Mini PLC splitters typically exhibit slightly higher base IL for low-ratio splits (1x2: 3.8–4.2 dB) compared to FBT splitters (3.2–3.8 dB), but for high-ratio splits (1x32/1x64), PLC splitters outperform FBT due to their monolithic design, avoiding cascading losses and maintaining total loss around 16.5–17.5 dB. Lower IL ensures stronger signal delivery to end users, supporting longer transmission distances.

**Return Loss (RL):** RL indicates the fraction of light reflected back to the source. High RL values are desirable to protect OLT/ONU lasers from destabilization. Mini PLC splitters maintain high RL, typically above 50 dB, ensuring minimal reflection and stable operation.

**Uniformity and Wavelength Stability:** PLC splitters provide excellent uniformity across output ports, with variations typically under  $\pm 0.5$  dB for low-ratio splits and  $\pm 1$  dB for high-ratio splits. Wavelength-dependent loss is minimal, supporting multi-wavelength PON systems (1310 nm upstream, 1490 nm downstream, 1550 nm video) without significant performance degradation.

**Impact of Delay:** Introducing a small delay in a mini PLC splitter is often used for timing alignment in network synchronization or testing. For typical FTTx distances (up to 20 km), the added delay has negligible impact on signal integrity or bit error rates (BER).

## Article Content

FBT Splitter vs. PLC Splitter: What Are the Differences?

The differences between FBT splitter and PLC splitter lies in the working wavelength, splitting ratio, failure ratio, and

PLC Splitter Mini-module, G657.A2 Fibre, Connectorized

Corning connectorized splitter modules can be used inside all fibre optic hardware products where plug-and-play functionality with

PLC Fiber Splitter, Mini Plug-in

Overview Features Planar lightwave circuit (PLC) splitter is a type of optical power management device that is fabricated using silica

Understanding Power Splitter/Combiner Power Handling with

Understand the effects of phase and amplitude unbalances on power handling in power splitters and combiners.

FBT vs PLC Splitters: A 2025 Comparison for Fiber Optic Networks

FBT splitters still maintain relevance for cost-driven installations. But their fundamental constraints around

The Comparison Between PLC Splitter and FBT Splitter

The PLC splitter multi-channel cost is low. Fused Biconical Tape (FBT) Splitter Fused Biconical tapering

FBT vs PLC Splitters: Key Differences & Cost Comparison 2026

Compare FBT vs PLC fiber splitters: key differences in insertion loss, temperature range, cost & size. Find the right

FBT vs PLC Splitters – Key Differences in Fiber Networks

Discover FBT vs PLC splitters in fiber optic networks. Learn key differences, pros & cons, and best use cases for

Mini PLC Splitter

The mini PLC splitter is compactly packaged using a steel pipe and features a 0.9mm loose tube for fiber outlet. It is equipped with a

Understanding Power Splitters

Understanding Power Splitters How they work, what parameters are critical, and how to select the best value for your application.

Sourcing PLC Splitter: A Complete Buyer's Guide

A PLC Splitter (Planar Lightwave Circuit Splitter) is a passive optical device used to divide a single optical signal into

LVTTL signal splitter

After NIM2TTL the signal looks like this: I am planning a circuit with following functionality: SPLIT the LVTTL signal into

FBT vs. PLC Splitter Comparison: What is the difference? (2026)

In 2026, as fiber-optic communication continues to evolve, the selection of optical splitters as fundamental components

Stock Portfolio Management & Tracker

An easy-to-read view showing your portfolio performance Portfolio and Holdings List gives you quick overviews and comparisons to

Blockless Mini PLC Splitters With Connectors Types Prices & Spec

What is Blockless Mini PLC Splitters With Connectors? Blockless Mini PLC Splitters With Connectors SC LC FC .. model is used for

Mini Module PLC Fiber Splitter Data Sheet | FS

FS Mini Module Splitters are engineered for high-density networks, offering exceptional scalability and reliability. FS PLC splitters

FBT vs PLC Splitter: Choosing the Backbone of Your Optical Network

FBT Splitter vs PLC Splitter: Compare technology, cost, reliability, and best uses to choose the right fiber optic splitter

Mini Module PLC Fiber Splitter Data Sheet | FS

Planar Lightwave Circuit (PLC) Splitter is a type of passive optical component using silica optical waveguide technology to distribute

PLC Splitters | OEM Optical Communication Solutions | Corning

Corning's QuickPath™ PLC optical splitters reduce insertion loss and deliver high performance. These devices enable more effective

PLC Splitters vs FBT Splitters: A Detailed Comparison for Fiber Optic ...

An optical splitter is distributes optical signals from one optical fiber to multiple optical fibers, thereby achieving parallel

Mini PLC & Miniature PLC Buying Guide (2026)

The mini-PLC segment is competitive but fragmented. Regional support presence, free vs paid IDE, and integrated

## The Comparative Analysis of PLC and FBT Optical Splitters

Currently, two principal types of optical splitters have emerged to address the challenges of optical signal distribution:

Mini Module PLC Fiber Splitter -JPT Laser

Mini Module PLC Fiber Splitter Planar lightwave circuit (PLC) splitter is an integrated waveguide optical power distribution device

Data losses and synchronization according to delay in PLC-based ...

The experiment involves transferring data from a PLC to four different databases to assess their respective benefits

## Contact Us

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