

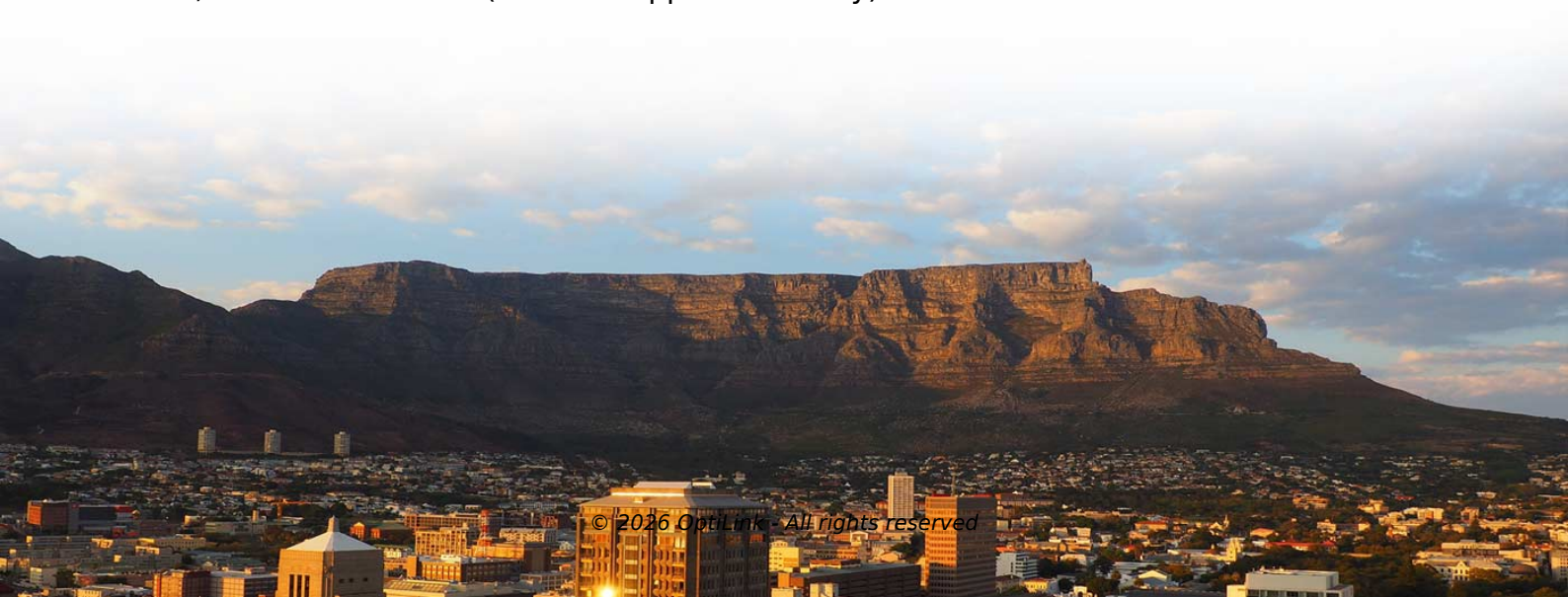
1 64 Splitter Attenuation



Overview

A 1:64 splitter adds ~18dB of insertion loss, leaving less power for attenuation—so it's only viable for short distances (5–10km). Passive optical splitters distribute a single optical input into multiple outputs in FTTH, ODN, and PON deployments. The choice of split ratio—1×2, 1×4, 1×8, 1×16, 1×32, or 1×64—directly impacts optical power budget, network reach, subscriber density, and long-term expansion capability. Each split.

Introduction: The Role of Optical Splitter in PON Network Before delving into split ratios and architectures, it's essential to ground their importance in the broader PON ecosystem. PON networks rely on passive components (no power required) to transmit data between a central OLT (located in a. Optical splitters, encompassing FBT (Fused Biconical Taper) couplers and PLC (Planar Lightwave Circuit) splitters, are prevalent passive optical devices designed to divide fiber optic light into multiple segments based on a specified ratio. Its single-fiber bidirectional transmission mechanism employs WDM, where downstream traffic adopts broadcast mode (1490nm wavelength), and upstream traffic uses TDMA. If we have measured gains in linear units (e. in Watts - W), the loss value in dB is calculated by the formula: $\text{Loss (dB)} = 10 \lg (mW_1 / mW_2)$ When both gains are equal, the loss is 0 dB, so there is no loss (doesn't happen obviously).



Article Content

Mar 14, 2026

Passive Optical Network (PON): Attenuation and

1:16 PLC splitter attenuation is 12.04 dB 1:32 PLC splitter attenuation is 15.05 dB
1:64 PLC splitter attenuation is 18.06 dB ♦ How to choose optical

Oct 22, 2025

How to Calculate Splitter Loss in Optical Fiber

A splitter of 1x64 will result in more loss compared to an 1x2 because the signal power is divided among more outputs. Wavelength: Splitters are most effective at specific

Mar 10, 2026

How to calculate the splitter loss? How the splitter is used in the ...

For example, when the secondary splitter is 1x8, there are just 9 buildings in this block. It is not practical to put an optical fiber from another block, and adding an optical splitter is too wasteful

Nov 11, 2025

RLTECH PON (PON Line Indicators and Split Ratio Design)

RLTECH provides stable PON solutions, supporting commercial deployments for 1:128 high-density users. Recommended products: RH8008GL/RH8016G OLT and ONU terminals

Dec 15, 2025

FS Community

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

Jan 01, 2026

Optical Splitters: Split Ratios, Splitting Architectures & PON Network ...

A 1:64 splitter adds ~18dB of insertion loss, leaving less power for attenuation—so it's only viable for short distances (5–10km).

Aug 04, 2025

Why Fiber Optic Splitter Loss Table Is So Important?

Do you know how to realize the performance of the FBT and PLC splitter? The primary important thing is to check its fiber optic splitter loss table.

Mar 24, 2026

All About RF Power Splitters

RF power splitters play a crucial role in distributing RF signals efficiently and accurately across various electronic systems. Whether used in telecommunications, radar systems, or test and

Jul 08, 2025

PON crib: splitters, ratios, gains, losses

A very frequent question is how the splitter ratio in an optical splitter relates to the actual signal gain. In other words, how much attenuation a splitter

Jan 23, 2026

How to design the Splitting Ratio of your FTTH Network project?

According to the mentioned above, if the telecom operators choose the centralized splitting solution, they may need to use a 1×32 or 1×64 splitter. However, if telecom operators choose

Feb 20, 2026

Testing Fiber Optic Couplers, Splitters Or Other Passive

Testing Fiber Optic Couplers, Splitters Or Other Passive Devices A passive device used to split or combine signals on fiber optics may be called a splitter, combiner

May 05, 2026

Optimising FTTH Design: Split Levels & Split Ratios

The split ratio (for example, 1:32, 1:64) determines how many subscribers share an OLT (Optical Line Terminal) port and has a direct impact on

Nov 23, 2025

PASSIVE OPTICAL SPLITTER

GPON deployment uses a splitting ratio of 1:32 or 1:64. Current GPON standards specify up to 128 splits on a single GPON port. These same standards set the distance between active devices at up to 20

Mar 28, 2026

Differences Between 1x2 to 1x64 PLC Splitter Applications

Application differences between 1x2, 1x4, 1x8, 1x16, 1x32, and 1x64 splitters, covering optical performance, PON design, and deployment scenarios.

Jan 21, 2026

1×64 Fiber Splitter, SC/APC SM, 3.0mm ABS Module

BWN-PLC-CT-1X64-SC-APC-3.0 1×64 Fiber Splitter Discover reliable and high-performance fiber distribution with BWNFiber's 1×64 Fiber Splitter. Designed with

Feb 14, 2026

Basic Knowledge about Split Ratio and Insertion Loss of

The splitter ratio in fiber optic networks refers to how optical power is distributed among the output ports of an optical splitter. Expressed as a ratio or

Jun 18, 2026

yingdapc

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Jan 23, 2026

Tutorial of Optical Splitter Loss Test

Optical splitters are widely used in passive optical networks. Splitter loss is an important parameter of fiber optic splitters. How to Test Optical Splitter

Jun 27, 2025

How to Design Your FTTH Network Splitting Level and

Unearth in-depth insights into FTTH Network Design. Learn about the critical role of optical splitters, understand different splitting levels and ratios, and

Aug 01, 2025

Hybrid of GPON and XGPON for splitting ratio of 1:64

This paper discusses compatible hybrid application of the Gigabit Passive Optical Network (GPON) and the 10-Gigabit-capable Passive Optical

Apr 24, 2026

Comprehensive Guide to Optical Splitters

In long-distance transmission systems, optical splitters also need to have high directivity to ensure that optical signals are not affected by excessive

Apr 25, 2026

Fiber optic Splitter, 1:64, 9/125/250 Foss Fiber Optics AS

Splitter 1:64 based on Planar Waveguide technology where the light is guided through waveguides in a substrate. The waveguides are branched out according

Sep 09, 2025

Differences Between 1x2 to 1x64 PLC Splitter Applications

Therefore, 1x2 has low loss, while 1x64 introduces significantly higher loss, affecting maximum transmission distance and allowable attenuation in the PON power budget.

Oct 07, 2025

GPON Splitter Strategies: Optimizing Fiber Network

However, choosing the right GPON splitter strategy is crucial for performance, cost-effectiveness, and scalability. This blog explores different

Feb 01, 2026

Channel insertion loss for 1x64 and 1x128 split EPONs

Subtasks: estimate splitter loss for 1x128 and 1x64 devices based on commercially available devices (survey) evaluate the loss variations in varied stage systems -2,3,4 etc stage systems - cascaded

Dec 10, 2025

Fiber Optic Calculator

Splitter loss values are "Typical" and include a connector in and out. These values are approximate and should not be exceeded by more than 1-1.5 dB, which could indicate dirty connectors, bad splices, or

Apr 23, 2026

RLTECH PON (PON Line Indicators and Split Ratio Design)

PON line design requires comprehensive consideration of optical power budget, split ratio, transmission distance, and scenario demands¹³. RLTECH provides stable PON solutions,

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Understanding Optical Splitter Loss

Understanding splitter ratios and insertion loss is fundamental to building a reliable fibre optic network. The key takeaway is that every split

Apr 11, 2026

PASSIVE OPTICAL SPLITTER

Before large-scale deployments of FTTx, most splitter modules and other passive optical components were installed in central offices within a stable, temperature-controlled environment. When the

Aug 02, 2025

Parameter of Optical Splitter Loss

Parameter of Optical Splitter Loss : I have already written a very detailed article about optical splitter, whose link will be given below. We all already know that optical splitters are of two

Contact Us

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