

Telecom Level 1 Optical Splitter



AI Overview

A telecom-grade Level 1 optical splitter is a high-reliability, passive device that divides a single optical signal from an OLT into multiple outputs for ONTs, typically using PLC technology and designed for centralized FTTH deployment.

Overview A Level 1 optical splitter is used in one-stage splitting within FTTH networks, where the optical signal from the Optical Line Terminal (OLT) is split directly to multiple Optical Network Terminals (ONTs). Its basic configuration is: OLT → Optical Splitter → ONU/ONT. This setup is ideal for centralized distribution, maximizing the utilization of OLT ports and serving a large number of end-users efficiently.

Key Features

- Technology:** Most telecom-grade splitters use Planar Lightwave Circuit (PLC) technology for uniform signal distribution, low insertion loss, and high reliability.
- Split Ratios:** Common Level 1 split ratios include 1:2, 1:4, 1:8, 1:16, 1:32, and 1:64, depending on network design and subscriber density.
- Connectors:** Splitters are available with LC, SC, or FC connectors, often APC type for low back-reflection and minimal signal loss.
- Compliance:** Telecom-grade splitters typically meet Telcordia GR-1209-CORE, ISO, and CE standards, ensuring durability and field reliability.
- Passive Operation:** No power is required, reducing operational costs and maintenance needs.

Deployment Considerations

- Centralized Distribution:** Level 1 splitters are installed near the OLT in a central office or distribution hub. This is cost-effective for dense subscriber areas.
- Cascaded Networks:** In some networks, Level 1 splitters can be combined with Level 2 splitters (two-stage splitting) to extend coverage to dispersed users.
- Fiber Selection:** Backbone fibers connecting the OLT to the splitter typically range from 12 to 144 cores, while distribution fibers to end-users are selected based on local requirements.
- Environmental Hardening:** Modern telecom-grade splitters are designed for outdoor and indoor use, with miniaturized steel tube or micro-module packaging for space-constrained installations.

Advantages Scalability...

Article Content

Your Go-to Guide to Optical Splitter

The optical splitter is an optical power distribution device that splits one optical signal into multiple optical fiber signals to achieve multichannel

Fiber Optic Splitter: How It Works & Types Guide

This guide demystifies fiber optic splitters, explaining their design, operating principles, types, key specifications, and real-world applications.

Understanding Fiber Optic Splitters: Principles,

Understanding Fiber Optic Splitters: Principles, Parameters, Types, Applications, and Future Trends 1. Introduction Fiber optic splitters are integral components in

Comprehensive Guide to Optical Splitters

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

Basic Knowledge about Split Ratio and Insertion Loss of

Optical splitters are vital in FTTH PON systems, distributing a single signal efficiently. Key parameters, Split Ratio and Insertion Loss, define their

Introduction to Passive Optical Network Splitter Architectures

The configuration below has individual splitters at a central location, but addresses that are typically not reconfigurable by jumpers, so this configuration is a “distributed” split.

Ultimate Guide to Optical Splitters for FTTH & GPON

The answer lies in one of the most important passive components in modern fiber networks-the optical splitter. An optical splitter enables a single optical signal to be distributed to

Introduction to Passive Optical Network Splitter Architectures

Fiber Broadband Association Technology Committee February 2025 The choice of splitter architecture for a passive optical network (PON) network can impact many aspects of a Fiber to the X (FTTx)

PLC Splitter and download the loss chart of PLC splitter

Optical splitters, including FBT couplers and PLC splitter (Planar Lightwave Circuit) splitters Optical splitters, including FBT (Fused Biconical

Optimising FTTH Design: Split Levels & Split Ratios

The real design trade-offs lie in how you split the optical signals, where you locate the splitters, and the ratio you choose for subscriber sharing.

SC APC 1X2 Singlemode Fiber Optical Splitter, 2pcs

□Performance Parameters□Telecom level. The left line is 1 meter long; the right line is 1 meter long; the working temperature is -40°C□85°C; the working wavelength is 1310-1550nm.

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

This guide focuses on two critical aspects of optical splitters that define FTTH performance: split ratios (how signals are divided) and splitting architectures (how splitters are

What are FTTH splitters and how do they work?

Uniform Signal Distribution: Especially with PLC splitters, telecom operators can be assured of a uniform distribution of optical signals. This is vital

ODN: Optical Distribution Network Explained

Introduction An Optical Distribution Network (ODN) is the passive fiber infrastructure connecting Internet Service Providers (ISPs) to end-users in Fiber

Split Ratios and Splitting Level of Optical Splitters

Optical splitters play an important role in FTTH PON networks where a single optical input is split into multiple output, thus allowing a single PON interface to be shared among many

What is Fiber Optic Splitter and Types

What is a Fiber Optic Splitter? Fiber optic splitter is a passive optical device used to distribute optical signals, which can divide input optical signals

Primary and secondary optical splitters in FTTH networks

There are two different distribution modes of optical splitter in FTTH network: centralized distribution and cascaded distribution, which correspond to

Understanding the Split Ratios and Splitting Level of Optical ...

Split Ratios There are a multitude of split ratios available. The most common splitters deployed in a PON system is a uniform power splitter with a 1:N or 2:N splitter ratio, where N is the

Fiber-optic splitter

Fiber-optic splitter A fiber-optic splitter, also known as a beam splitter, is based on a quartz substrate of an integrated waveguide optical power distribution device, similar to a coaxial cable transmission

How to Design Layers and Splitting Ratios for FTTH Network?-BLOG

In the distributed splitter structure, there can be more than two splitters, which are also called multi-level splitting, and the overall splitting ratio may be different. FTTH network splitter ratio design 1:N

Optical Splitters for Central Office/Headend

CommScope offers a portfolio of bare and connectorized splitters/couplers in a wide range of styles and split ratios, and splitter modules for inside plant (ISP) and

Type of Splitters for FTTH

Type of Splitters for FTTH : In this article, I will discuss about fiber optic splitters that widely used in FTTH network. A lot of telecom site engineers

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

A Guide to Optical Splits to Improve your Fiber Game! |

An optical splitter is a passive device, meaning it does not require power to operate like an optical DWDM amplifier in a fiber deep HFC. The purpose of an optical

How to Design FTTH Network Split Level and Split Ratio?

PLC vs FBT Splitters: How to Choose Selecting the right splitter is crucial for building a reliable fiber optic network. PLC splitters are based on

How Does a Fiber Optic Splitter Work

How Does a Fiber Optic Splitter Work? There are three main working principles of the fiber splitter: 1. Signal Input: The fiber splitter receives the optical

Optical Splitters Demystified: The Silent Heroes

An Optical Splitter, also known as a beam splitter, is a passive optical device that divides a single input optical signal into two or more output

Level 1 and Level 2 Splitting in FTTH Networks-BLOG-Grandway

In two-stage splitting applications, the first-stage optical splitter is often installed in an optical distribution box or a fiber-splitting box, while the second-stage optical splitter is often installed in a local

How to Design FTTH Network Split Level and Split Ratio?

Learn how to design an efficient FTTH network by optimizing split levels and split ratios. Get deployment strategies for high-performance fiber

Contact Us

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