

Optical Splitter Level 1 and Level 2 Connections



Article Overview

Level 1 (one-stage) and Level 2 (two-stage) optical splitter connections define how a single OLT signal is distributed to multiple end-users in FTTH networks, balancing fiber usage, bandwidth, and deployment cost.

Level 1 (One-Stage) Splitting

Level 1 splitting, also called one-stage or centralized splitting, involves a single optical splitter placed between the Optical Line Terminal (OLT) and the Optical Network Unit (ONU). Its basic configuration is: OLT → Optical Splitter → ONU

- Split Ratios: Typically 1:32 or 1:64, meaning one input fiber is split to serve 32–64 end-users .
- Placement: The splitter is usually installed centrally, either at the OLT location or in a fiber distribution hub, connected via backbone (feeder) fiber to the OLT and distribution fiber to the end-users .
- Advantages: Maximizes OLT port utilization, simplifies network management, and is cost-effective for areas with high-density subscribers .
- Considerations: Higher split ratios increase insertion loss, which may reduce bandwidth per ONU and require higher-power OLT optics .

Level 2 (Two-Stage) Splitting

Level 2 splitting, also called two-stage or cascaded splitting, uses two optical splitte...

Article Content

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How to Design Your FTTH Network Splitting Level and Ratio?

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

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Troubleshooting Optical Splitters | ICT Solutions & Education

Optical splitters in the outside plant (OSP) are used mostly in passive optical networks (PONs) for fiber-to-the-user (FTTx) networks,

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Ubiquitous Fiber Networks with Huawei ODN 3.0

Since 2018, based on ODN 2.0, Huawei has gradually realized pre-connection between distribution optical cables and level-2 optical

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Split Ratios and Splitting Level of Optical Splitters

This article has reviewed some information about the split ratios and splitting level of fiber optic splitters. It is very

Jun 23, 2026

Introduction to Passive Optical Network Splitter Architectures

Fiber Broadband Association Technology Committee February 2025 The choice of splitter architecture for a passive optical network

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PLC Splitter and download the loss chart of PLC splitter

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

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What Is an Optical Splitter?

What's an optical splitter? How does the fiber optic splitter work? How many fiber splitter types? How to choose the

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The Working Principle and Application Scenarios of Fiber Optic Splitters

The working principle of fiber optic splitters is based on optical coupling and splitting . When a light signal enters the

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Optimizing Your FTTH Design: Strategies for Designing Split Levels

Optimizing Your FTTH Design: Unleashing the Power of Split Level and Split Ratio. Explore the 2 Key Architectural Choices that Will

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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

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The FOA Reference For Fiber Optics

These devices are generally bidirectional. With a 1:n device, in one direction they split the signal into n ports/fibers and into the other

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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

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How to Design Your FTTH Network Splitting Level and Ratio?

Learn about the critical role of optical splitters, understand different splitting levels and ratios, and discover how to

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Basic Knowledge about Split Ratio and Insertion Loss of Optical Splitter

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

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What is Fiber Optic Splitter and Types

This post provides a introduction to fiber optic splitters, their types, functions, and several popular Gcabling optical

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Introduction to Passive Optical Network Splitter Architectures

This involves having 2 or more splitter combinations to arrive at the target split ratio. A classic example is the use of a 1x4 and 1x8

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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

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

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

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

Shown in Figure 4, an operator will drop fiber #1 to a local premises' terminal feeding splitter #1, while additional fibers continue

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PASSIVE OPTICAL SPLITTER

The failure of an optical splitter is catastrophic to a PON system because multiple customer connections may be affected.

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Understanding The Split Ratios And Splitting Level Of Optical Splitters ...

Split Ratios There are a multitude of split ratios available. The most common splitters deployed in a PON system is a uniform power

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Optical Splitters Demystified: The Silent Heroes Powering Your FTTH ...

There are two main manufacturing technologies for optical splitters, each with its own advantages and ideal use

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Understanding Optical Splitter Loss

Understanding Optical Splitter Loss – How to Test Splitter Power Levels To accurately assess signal loss and verify

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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,

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Primary and secondary optical splitters in FTTH networks

In the application of two-stage optical splitter, the first stage optical splitter is often installed in the optical junction box

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