ONU connection to splitter jumper

Overview

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.

Key Takeaways

An ONU connects to a PON network via a fiber jumper that links it to a splitter, which in turn connects to the OLT, enabling downstream and upstream optical signal distribution. Overview of the ConnectionIn a Passive Optical Network (PON), the OLT (Optical Line Terminal) at the service provider's central office manages data transmission, while the ONU (Optical Network Unit) at the customer premises converts optical signals to electrical signals for end-user devices. A splitter is used to distribute the optical signal from a single OLT port to multiple ONUs, allowing a point-to-multipoint topology.

Step-by-

Step ConnectionOLT to Splitter: Use a feeder fiber (SC/UPC or SC/APC) to connect the OLT PON port to the input port of a PLC splitter or other passive optical splitter. The splitter can be centralized (located near the OLT) or distributed (placed closer to end users) depending on network design.

Splitter to ON

U: Connect the output ports of the splitter to the ONUs using drop fibers.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Each ON

U receives a portion of the optical signal according to the splitter ratio (e.g., 1: 8, 1: 16, 1: 32). A jumper cable is used to make the physical connection between the splitter output and the ONU PON port.

ON

U Configuration: Once physically connected, the ONU must be registered and configured with the OLT using management protocols such as CLI, HTTP, SNMP, or TR-069. Proper configuration ensures the ONU can handle downstream and upstream traffic, including VoIP, Ethernet, and WiFi services if supported.

Best Practices

Use AP

C connectors for PON connections to minimize back-reflection and signal loss. Check splitter placement: Centralized splitters allow easier reconfiguration via jumper cables, while distributed splitters are fixed once deployed. Balance optical power: Ensure the splitter ratio and fiber length do not reduce signal strength below ONU sensitivity.

Label jumpers and ports: This simplifies maintenance and troubleshooting.

Summary

Connecting an ONU to a splitter jumper involves linking the OLT to a splitter via a feeder fiber, then connecting the splitter outputs to ONUs using jumper fibers. Proper selection of splitter type, placement, and jumper management ensures reliable signal distribution and network performance in a PON setup.

Article Content

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.

Understand GPON Technology

The structure of primary light splitting is an OLT-optical splitter-ONU, and the optical splitters from OLT to ONU are all connected in parallel. When using primary splitting, the splitter is

Fiber Optic Splitters for PON Networks: 2025 Guide

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

In this guide, you''ll learn how fiber splitters function in PON networks, the difference between PLC and FBT types, and how to choose the best model

Things You Must Know About Connecting to GPON

Connecting to a GPON network requires understanding its technology, selecting suitable equipment, and configuring it correctly for reliable performance. This article explores key aspects of

How to Connect Fiber Splitter & Configure ONU with OLT

How to Connect Fiber Splitter & Configure ONU with OLT | Onu connected Vsol olt through splitter Technical Ahmad #FiberSplitter #ConfigureONU #vsololt #mikrotik ...more

Optical splitter

Optical splitter is a component of PON network. It is a passive device connecting OLT and ONU. Its function is to distribute downstream data and concentrate upstream data. The optical

OLT Network Connection Diagram | PDF | Computers

OLT Network Connection Diagram This diagram shows an OLT connected to clients through a GPON port, Ethernet port, splitter and two ONUs. The OLT is connected to a splitter using a GPON port.

UISP Fiber

Example diagram showing how to inter-connect the UFiber cables, splitters with male connectors and adapters with female connectors. The simplest method of connecting UFiber equipment is to use pre

What Is A Fiber Optical Jumper And What Are The

What is a fiber Optical Jumper? What are the types and differences? Optical fiber jumper (also known as optical fiber patchcord) refers to the fact that both ends of

UISP Fiber

Differences between Connectors and Splices Back to Top Example diagram showing how to inter-connect the UFiber cables, splitters with male connectors and adapters with female connectors. The

The Comprehensive Guide to PON Architecture: Mastering OLT, ONU

Comprehensive guide to Passive Optical Networks (PON), covering OLT, ODN, ONU/ONT, GPON/XGS-PON/NG-PON2 standards, deployment strategies, and FTTH network

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

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.

How to split one wire into two (the easiest way)

If you have minimal tools on hand and need to splice/split one wire into two, all you need is a wire stripper and a soldering iron.This works best for solid ...

Application of Optical Splitter in FTTH Network

Optical splitter is one of the most important passive components in optical fiber links and plays an important role in FTTH passive optical networks. It is an optical fiber device with multiple

How to Make Jumper Wires with Dupont Connectors

□□ Video Description: In this comprehensive DIY tutorial, discover the step-by-step process of crafting custom jumper wires using Dupont connectors. Dupont connectors are perfect for minimizing ...

Understanding Fiber Jumper Cables: A Comprehensive

This technology''s core is fiber jumpers, which are also details for patch cords, including LC duplex and SC fiber optic types used to connect

Dupont Y Cable Splitter Jumper Wire Male to Male – 20 cm

Dupont Y Cable Splitter Jumper Wire Male to Male – 20 cm Length: 20cm Code: JWMM SPLITTER Categories: Arduino, Cables, Connectors Tags: arduino, cable, circuit, electrical, header, jumper,

Strip Power Cables and Jumpers

Strip Power Cables and Jumpers Simplify your strip light wiring with ready-to-use jumpers, pigtails, barrel plug adapters, and RGB/RGBW harnesses. Perfect for bridging gaps or connecting to power.

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Contact Us

Continue your research online:

Website: https://alfa-pro.co.za
Technical inquiry: https://alfa-pro.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved