

The function of a port identification splitter



Article Overview

A Port Identification Splitter in a PON network identifies which output port an Optical Network Unit (ONU) is connected to, enabling accurate network management and fault location.

Core Function

A Port Identification Splitter is a passive optical device that not only splits an incoming optical signal into multiple outputs but also allows the network to determine the specific port connected to each ONU. This is crucial in Passive Optical Networks (PONs), where a single Optical Line Terminal (OLT) serves multiple ONUs through a splitter, and the network must track which subscriber is connected to which port for maintenance and troubleshooting purposes .

How It Works

The splitter works by analyzing optical signals received from the OLT and mapping power code combinations to specific output ports. Each port has a unique combination of power ratios and transmittance codes within the passband of the ONU filter. By measuring these parameters, the system can identify the exact optical link output port to which an ONU is connected . This method avoids the need for costly active amplification technologies and simplifies fault detection in the network.

Benefits in PON Networks...

Article Content

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Types of Computer Ports

What are Computer Ports? The computer ports are physical docking points of a computer that facilitate

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The FOA Reference For Fiber Optics

With a 1:n device, in one direction they split the signal into n ports/fibers and into the other end they combine the signals into one

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Understanding Power Splitters

Since the 0° power splitter is a reciprocal passive device it may be used as a power combiner simply by applying each signal

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Understanding Power Splitters

When used as a 0° power splitter, the input is applied to port S and equal outputs appear at ports A and B. When used

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Port Identification Method and Apparatus

To implement the fault locating, it is necessary to accurately identify a port of a splitter connected to the ONT in the ODN. In a related

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AN10-006

The following signal processing functions can be accomplished by power splitter/combiners: Add or subtract signals vectorially.

Dec 10, 2025

WO2021098341A1

The embodiments of the present application are applied to the field of PONs, and provide a port identification method and apparatus,

Dec 14, 2025

Deciphering the Passive Optical Splitter in PON Network

The intelligent scheduling and allocation capabilities of the splitter enable the entire network to function in an organized

Apr 25, 2026

CN113989512A

The embodiment of the invention provides a port identification method and a port identification device of an optical splitter, wherein

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Ethernet Splitter 101: Everything You Need to Know

Everything you need to know about Ethernet splitters, including types, factors to consider when choosing one, and

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Fiber optic splitter – Physics and Radio-Electronics

For a $2 \times N$ optical splitter, when light is injected into one of the input ports, light does not only propagate out of the output ports. Some

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Types of Computer Ports and Their Functions

What Is a Port? This article describes the nature of each of the main external computer ports, their connector types, and common

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17 Different Types Of Computer Ports & Their Functions

A complete guide on various types of Computer Ports like PS/2, USB, HDMI, DVI, RJ45, USB Type C, Serial, Parallel,

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The FOA Reference For Fiber Optics

The specifications for a splitter are loss across the device and the variability of that loss for each port. A well made splitter will have

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Coupler and Splitter Overview – fiberopticnetwork

It is generally accepted that fiber, connectors and splices rank are the most important passive devices. However, what

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Fiber Optic Splitters for PON Networks: 2025 Guide

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

Oct 10, 2025

Ports in Networking

Importance of Ports Service Identification: Multiple applications running on the same device are distinguished using

May 27, 2026

PASSIVE OPTICAL SPLITTER

Optical splitters play an important role in Fiber to the Home (FTTH) networks by allowing a single GPON interface to be shared

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

A split ratio describes how many output ports a splitter has, and how evenly the input optical power is distributed

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Coupler and Splitter Overview

Coupler and Splitter Overview It is generally accepted that fiber, connectors and splices rank are the most important

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Understanding Power Splitters

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

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Optical Splitters are used in PON (Passive Optical Network ...

each fiber optic strand can be split many times and can serve many users. The majority of the existing networks are splitting the

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Introduction to Passive Optical Network Splitter Architectures

A fiber broadband provider typically determines an overall split ratio for the network, such as 1x32 or 1x64, and uses combinations

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RF Power Splitters in Cellular UE Manufacturing

The effect on transmitter (Tx) power measurements of a splitter in the RF path connecting a mobile test system to the Primary and

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Unlocking the Truth: Demystifying USB Splitters – Do They Really Work?

USB splitters work by dividing the signal sent from a single USB port to multiple devices. They function as a hub,

Oct 30, 2025

Understanding Power Splitters and Combiners

Power splitters and combiners execute their functions based on the principles of signal division or aggregation,

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Types of Computer Ports

Ports are logical communication endpoints used by transport layer protocols (TCP/UDP) to identify specific services or

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ISO 11727:1999 (en), Pneumatic fluid power — Identification of ports ...

Flow is directed through and blocked from selected passages in the several components of a pneumatic system. Identification of the

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20 Different Types of Computer Ports & Their Functions

The newer versions of computers have a limited number of ports. Two different models of computers may have

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Ethernet Splitters 101: Everything You Need to Know

Ethernet splitters explained: how they work, when to use them, and why switches are better for high-speed networks. Learn the facts

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15+ Types Of Computer Ports And Their Functions

Computer Ports List Types Of Computer Ports A computer port or a communication port may be a connection point

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Ultimate Guide to Optical Splitters for FTTH & GPON

Master optical splitter selection for FTTH & GPON networks. Compare PLC vs FBT, analyze insertion loss charts, and

Dec 03, 2025

WO/2025/119033 PORT IDENTIFICATION METHOD FOR

The present application belongs to the technical field of communications. Disclosed are a port identification method

Contact Us

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