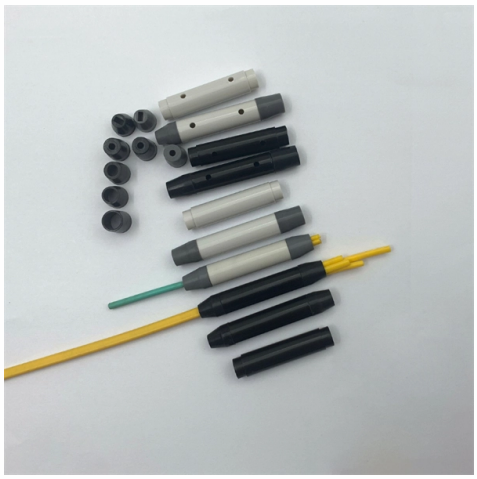
Adicor Photonics Europe S.A.

The architecture of a passive optical network includes



Overview

A PON takes advantage of (WDM), using one wavelength for downstream traffic and another for upstream traffic on a (ITU-T, typically OS2). BPON, EPON, GEPON, and have the same basic wavelength plan and use the 1490 nanometer (nm) wavelength for downstream traffic and 1310 nm wavelength for upstream traffic. 1550 nm is reserved for optional overlay services, typically RF (analog) video.

AI Overview

A Passive Optical Network (PON) is a fiber-optic, point-to-multipoint network that uses unpowered splitters to connect a single Optical Line Terminal (OLT) to multiple Optical Network Terminals (ONTs) or Units (ONUs).Core ComponentsOptical Line Terminal (OLT): Located at the service provider's central office or data center, the OLT manages traffic, encapsulates downstream data, and coordinates upstream transmissions from multiple users .Passive Optical Splitters: These unpowered devices divide a single optical signal from the OLT into multiple branches, enabling one fiber to serve many endpoints without requiring electricity . Splitters can be centralized (directly connected to the OLT) or cascaded (multiple stages connecting to other splitters) to optimize coverage and fiber usage .Optical Network Terminals (ONTs) / Optical Network Units (ONUs): Located at the customer premises, these devices terminate the fiber and interface with end-user equipment such as PCs, phones, or set-top boxes . ONTs filter the downstream data to ensure each user receives only their intended traffic, often using encryption for security .Topology and Signal FlowPONs use a point-to-multipoint (P2MP) topology, where a single fiber from the OLT is split to serve multiple subscribers .Downstream: Data from the OLT is bro...

© 2026 Adicor Photonics Europe S.A. - All rights reserved

Article Content

Passive Optical Network Tutorial

A passive optical network (PON) is a telecommunications technology used to provide fiber to the end consumer domestically and commercially, which is often referred to as the "last mile"

(PDF) Passive Optical Networks

The different components that constitute the Passive Optical networks and the topologies. A complete understanding of the types of Passive Optical Network is discussed which includes the ATM,

Passive Optical Networks

A passive optical network (PON) is defined as a point-to-multipoint communication architecture that utilizes a single optical fiber split among multiple endpoints, allowing for increased bandwidth and

What Is a PON (Passive Optical Network)? FTTH Architecture

FTTH Architecture and PON FTTH is a network architecture where optical fiber extends from the central office directly to individual homes or businesses. In a typical FTTH setup, a PON

Passive Optical Networks Progress: A Tutorial

For many years, passive optical networks (PONs) have received a considerable amount of attraction regarding their potential for providing broadband connectivity to almost every citizen,

Introduction To PON (Passive Optical Network) And Its Network Architecture

PON is short for Passive Optical Network, a mainstream fixed-line access technology that enables simultaneous access for multiple users over a single optical fiber. It has been deployed on a

What Is Passive Optical Networking (PON)?

Passive optical networking (PON), like active optical networking, uses fiber-optic cabling to provide Ethernet connectivity from a main data source to endpoints.

The Core Passive Optical Network Components Explained

The components of a Passive Optical Network—the intelligent OLT, the user-facing ONU/ONT, and the simple yet crucial passive splitters and cabling—combine to create a highly

Passive Optical Network Tutorial

© 2026 Adicor Photonics Europe S.A. - All rights reserved

A passive optical network (PON) is often referred to as the "last mile" between an ISP (Internet Service Provider) and the customer. A PON system consists of an OLT at the central office

The next generation of passive optical networks: A review

Passive Optical Networks (PONs) are a series of promising broadband access network technologies that offer enormous advantages when deployed in fiber to the home (FTTH) scenarios.

The Definitive Guide to Passive Optical Network (PON): Architecture ...

To fully comprehend Passive Optical Network, it is essential to first grasp the core concepts that define its unique architecture and operational philosophy. The name itself, while

What is PON? Passive Optical Networks Explained

For IT and networking professionals, familiarity with PON concepts is quickly becoming as important as understanding copper-based LANs. Why PON knowledge matters for IT

Architecture and key digital signal processing techniques of a next ...

A passive optical network (PON) with low cost and high capacity has been explored and recommended for supporting the emerged commercial mobile fronthaul, resident, and industry services. To meet the

Introduction To PON (Passive Optical Network) And Its Network

PON features a point-to-multipoint (P2MP) structure, consisting of three core components: Optical Line Terminal (OLT), Optical Network Unit (ONU), and Optical Distribution

Passive optical local area network (LAN) | White paper | EXFO

The fiber architecture in POL networks includes in-building cabling with singlemode fibers using GPON technology and optical splitters. EXFO recommends a four-step approach for testing passive optical

Design and Implementation of a Passive Optical Network for a ...

The increasing demand for high-speed internet and advanced digital services necessitates the deployment of robust and scalable broadband infrastructure, particularly in smaller urban and

Passive optical network

OverviewNetwork elementsComponents and characteristicsHistoryUpstream bandwidth allocationVariantsEnabling technologiesFiber to the premises

© 2026 Adicor Photonics Europe S.A. - All rights reserved

A PON takes advantage of wavelength-division multiplexing (WDM), using one wavelength for downstream traffic and another for upstream traffic on a single mode fiber (ITU-T G.652, typically OS2). BPON, EPON, GEPON, and GPON have the same basic wavelength plan and use the 1490 nanometer (nm) wavelength for downstream traffic and 1310 nm wavelength for upstream traffic. 1550 nm is reserved for optional overlay services, typically RF (analog) video.

Introduction to Passive Optical Network

A passive optical network (PON) or Gigabit Passive Optical Network (GPON) is a point-to-multipoint (P2MP) network that uses a combination of active transmission equipments and passive cable

PON Architecture and Components

Summary Passive optical networking (PON) is a full duplex technology that uses inexpensive optical splitters to divide a single fiber coming from the backbone network into separate

What Is a Passive Optical Network (PON)?

A Passive Optical Network (PON) is a high-speed, fiber-optic network architecture that delivers broadband internet access to multiple users without requiring active electrical components

The Definitive Guide to Passive Optical Network (PON): Architecture ...

Comprehensive guide to Passive Optical Network (PON) technology, covering GPON, EPON, XGS-PON, NG-PON2, and future 50G/100G standards. Learn PON architecture,

(PDF) Passive optical networks: Principles and practice

We propose and demonstrate a star-ring network architecture and wavelength assignment scheme for multi-wavelength passive optical networks with full path protection capability.

What Is Passive Optical Networking (PON)?

Passive optical networking (PON) provides Ethernet connectivity from a main data source to endpoints, using a technique called passive optical splitting.

© 2026 Adicor Photonics Europe S.A. - All rights reserved

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://adicor.eu
Email: info@adicor.eu
Phone: +33 6 48 37 92 15
Address: 12 Rue de la Paix, 75002 Paris, France

This document is for informational purposes only. Specifications subject to change without notice.

© 2026 Adicor Photonics Europe S.A. - All rights reserved