

OLT optical module for IPRAN



AI Overview

OLT optical modules, such as GPON or EPON SFP/SFP+ transceivers, enable high-speed fiber connectivity in IPRAN networks, supporting distances up to 60 km and multiple ONUs per module.

Overview An OLT (Optical Line Terminal) optical module is a key component in fiber access networks, including IPRAN deployments, providing the interface between the optical fiber network and the service provider's IP backbone. These modules are typically SFP or SFP+ form factor transceivers that support bidirectional communication over a single fiber, enabling efficient deployment in edge, enterprise, or distributed network environments.

Key Specifications

- Data Rates:** GPON OLT modules commonly support TX 2.5 Gbps and RX 1.25 Gbps, while 10G EPON modules support 10 Gbps full duplex.
- Distance:** Modules can operate over distances up to 60 km, suitable for metropolitan and regional IPRAN networks.
- Capacity:** A single module can support up to 128 ONUs, 1024 T-CONTs, and 4096 GEM ports, allowing high subscriber density.
- Optical Components:** GPON modules use 1490 nm DFB continuous-mode transmitters and 1310 nm burst-mode APD receivers, with integrated APC and temperature compensation for stable optical power.
- Interfaces:** Uplink interfaces may include HSGMII, SGMII, or GBIC modes, providing flexibility for integration with IP routers or switches.
- Monitoring and Safety:** Many modules include digital optical monitoring (DDM), burst optical power conversion, and class-1 eye safety compliance.

Deployment in IPRAN In an IPRAN network, OLT optical modules connect the fiber access network to IP aggregation nodes, enabling high-speed backhaul for mobile base stations or enterprise services. They are compatible with GPON, XGS-PON, 10G-EPON, and point-to-point Ethernet architectures, allowing operators to scale bandwidth and subscriber capacity according to network requirements.

Advantages

- Hot-pluggable:** Modules can be replaced or upgraded without shutting down the OLT.
- Scalable:** Support for multiple...

Article Content

White Paper on 50G PON Technology V2.0

The ODN connecting the OLT and ONUs uses optical fibers and passive components to avoid electromagnetic interference, effects of Lightening and provide strong environment adaptability as

What's the OLT (Optical Line Terminal)?

Optical Line Terminal Overview What is an OLT? Definition: An Optical Line Terminal (OLT), also called an Optical Line Termination, is a

OLT Types: Comprehensive Guide to Optical Line Terminal Solutions

OLT (Optical Line Terminal) types represent crucial components in modern fiber optic networks, serving as the endpoint hardware that manages and controls the optical signals in Passive Optical Networks

10G EPON OLT SFP+ PR40 Optical Module

Our main product lines include ONU/ONTs, OLTs, wireless routers, CPE, and other access products to meet the needs of various telecom operators, and we are

PON Module Parameters Guide: How to Choose the Best GPON

Discover key PON module parameters for selecting the best GPON and EPON modules. Understand their impact on network performance and make informed choices.

HISILICON Optical Modules in Telecom Applications | Weyland

In conclusion, HISILICON optical modules provide reliable optical communication solutions for telecom networks, enabling high-capacity, long-distance signal transmission, ensuring smooth

Ubiquiti UISP Fiber XGS/XG Optical Transceiver UACC-UF-OM-XGS

Ubiquiti UISP Fiber XGS/XG Optical Transceiver 10 Gbps optical transceiver module designed for the UISP Fiber OLT XGS. With 10GBase-X technology, enjoy up to 10Gbps data transfer rate over

OLT (Optical line terminal) | G-PON (Gigabit passive optical network ...

A gigabit passive optical network (G-PON) comprises optical line terminals (OLTs) and optical network units (ONUs), and Murata's lineup of products for use in OLTs is introduced here.

What is OLT (Optical Line Terminal)? Types, Features & Applications

The full form of OLT is optical line terminal, which is a device used to connect the optical fiber and transfer signals. It's an important part of PON in FTTx.

(PDF) Research on 5G optical transport schemes

Then, we investigate the optical transport schemes of 5G network, including fronthaul schemes, middlehaul schemes and backhaul schemes, respectively.

Optical Line Terminal (OLT)

OLT Module - It is the key component of the OLT which converts electrical signals into optical signals. Uplink Interfaces - Uplink interfaces are the components that establish connections

Mga Madalas Itanong (FAQ) tungkol sa Pagkuha ng OLT Board: Mga Module ...

Pangkalahatang-ideya Kapag bumibili ng OLT (Optical Line Terminal) board para sa iyong fiber access network, isa sa mga pinakamahalagang tanong bago ang pagbebenta ay kung kasama na ba sa

What's the OLT (Optical Line Terminal)?

Introduction - Why OLT Matters in Modern Fiber Networks In the age of fiber-to-the-home (FTTH) and ultra-broadband connectivity, the Optical Line Terminal - or OLT - is one of the most crucial devices

OLT Buying Guide 2026 | How to Choose Optical Line

Learn how to choose the right OLT for your fiber network. This guide covers GPON vs EPON vs XGS-PON standards, port count selection, top

GPON OLT SFP C++++ Optical Module

Our main product lines include ONU/ONTs, OLTs, wireless routers, CPE, and other access products to meet the needs of various telecom operators, and we are committed to delivering ultra-fast network

What Is an IPRAN? How Does an IPRAN Work?

IPRAN combines the advantages of SDH and IP networks, offering carriers a flexible, reliable, and cost-effective base station backhaul network solution. How Is IPRAN Deployed and

Optical line terminals

Our SDX 6000 Series of software-defined optical line terminals (OLTs) consists of open and disaggregated access devices that support a broad range of PON

EPON, GPON, 10G EPON, 10G GPON OLT: How do They Work?

Such as 8-port GPON OLT interface board (with pluggable ClassB + optical module) requires ODN attenuation within -28db, 8-port GPON OLT interface board (with pluggable ClassC +

Optical line termination

An optical line termination (OLT), also called an optical line terminal, is a device which serves as the service provider endpoint of a passive optical network.

Top Optical Modules for POTN Deployment: SFP, QSFP, and OSFP

Understanding the Role of Optical Modules in POTN Optical modules—often called transceivers—serve as the physical bridge between electrical equipment and optical fiber. They

OLTS + OTDR: A Complete Fiber Optic Testing Strategy

As fiber deployments become commonplace, network owners and technicians are paying more attention to the two crucial devices for testing fiber optical cables: the Optical Loss Test Set (OLTS) and the

OLT Devices| High-Quality Optical Line Terminals

Explore our range of high-quality GPON, EPON, and XG(S)PON OLT products. Find the perfect Optical Line Terminal solutions for your network needs.

OLT in Networking: Definition, Functions & Features

Explore the key functions and working of Optical Line Terminal (OLT) in PON architecture networking for high-speed fiber optic communication In the ever-evolving world of high-speed internet

Cisco Routed Passive Optical Network Deployment Guide, Release

The transceiver module acts as a substitute for the OLT chassis, managing the entire optical span within the access network. The Cisco PON OLT is compatible with various Optical

optical module SFP for OLT and optical module SFP for switches

The optical module SFP (Small Form-factor Pluggable) optical modules used in OLT (Optical Line Terminal) devices and switches serve similar functions, such as providing fiber optic

Introduction to IPRAN Technology

The document provides an introduction to IPRAN (IP Radio Access Network) technology, detailing its architecture, components, and various topologies. It includes links to previous training sessions and

GPON Micro OLT on a Stick

Processor The SFP GPON Stick OLT is a compact, pluggable Optical Line Terminal designed for FTTH GPON applications. Packaged in a Small Form- factor Pluggable (SFP) module

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