Comparison of Huawei optical modules



Overview

Optical Modules in Intelligent Computing Scenarios In the AI era, Huawei provides a full range of GE to 800GE optical modules, featuring three major capabi.

Key Takeaways

Huawei optical modules vary by type, class, and performance, with higher-class GPON modules and higher-speed SFP/QSFP modules offering better transmission, lower fault rates, and higher cost.

GPON SFP Modules

Huawei GPON SF

P modules are widely used in FTTH and broadband access networks. The main classes are B+, C+, and C++, which differ in receiver sensitivity, optical port, and splitter ratio. Key points: B+: Entry-level, lower performance, higher fault rate, not recommended for critical deployments.

C+: Standard performance, commonly used in Huawei MA5600T and MA5800 OLT boards (GPBD, GPFD, GPUF, GPSF, GPHF), offering reliable operation and cost-effectiveness. C++: Highest performance, supports longer distances and higher split ratios, but comes at a higher price. Transmission rates for GPON modules are 2.

488 Gbps downstream and 1. 244 Gbps upstream, with distances up to 60 km. Some combo SFP+ modules support XG-PON, XGS-PON, and 50G-PON, enabling seamless migration to next-generation broadband.

SF

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P, SFP+, SFP28, QSFP, and QSFP28 ModulesHuawei offers a range of pluggable optical modules for data centers and enterprise networks: SFP (Gigabit): Standard 1 Gbps, small form-factor, suitable for short to medium distances. SFP+ (10G): Higher rate, supports 10 Gbps, compatible with LC fiber connectors. SFP28 (25G): Same interface as SFP+, supports 25 Gbps for high-density data center applications.

QSFP+ (40G): Quad SFP, supports 40 Gbps, uses MPO connectors, larger form factor. QSFP28 (100G): Supports 100 Gbps, same interface as QSFP+, suitable for high-speed backbone links. QSFP-DD: Double density, up to 400 Gbps, power consumption around 12–14 W per module.

Modules differ in power consumption, connector type, and maximum transmission distance, with single-mode fibers supporting longer distances and multimode fibers optimized for short-range, high-bandwidth applications.

Value Considerations

Performance vs. Cost: Higher-class GPON modules (C++) and higher-speed SFP/QSFP modules provide better performance but at higher cost. B+ modules are cheaper but less reliable.

Deployment Suitability: Choose modules based on OLT compatibility, network scale, and future upgrade plans. For example, C+ modules are standard for Huawei OLTs, while C++ is used for high-demand scenarios.

Future-

Proofing: Combo SFP+ modules supporting multiple PON standards allow seamless migration to XG-PON, XGS-PON, and 50G-PON. Power and Thermal Management: QSFP-DD and high-speed modules require attention to power consumption and heat dissipation in dense deployments.

Summary

Module TypeSpeedClass / PerformanceTypical UseCost / ValueGPON SFP B+2. 488/1. 244 GbpsLowBasic FTTHLow, higher fault rateGPON SFP C+2.

488/1. 244 GbpsStandardStandard OLT deploymentModerate, reliableGPON SFP C++2. 488/1.

244 GbpsHighHigh-demand FTTHHigh, best performanceSFP1 GbpsStandardEnterprise LANLow to moderateSFP+10 GbpsStandardData center / backboneModerateSFP2825 GbpsStandardHigh-density data centerModerate to highQSFP+40 GbpsStandardBackbone / aggregationHighQSFP28100 GbpsStandardHigh-speed backboneHighQSFP-DD400 GbpsHighUltra-high-speed data centerVery high, high power consumptionSelecting the right Huawei optical module depends on network requirements, OLT compatibility, desired performance, and budget, balancing cost with reliability and future scalability.

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Article Content

Optical Modules in Intelligent Computing Scenarios

In the AI era, Huawei provides a full range of GE to 800GE optical modules, featuring three major capabilities: Spanning (ultra-long transmission), Stable (ultra-high reliability), and Secure (ultra-solid

What Is an Optical Module and Its FAQs (V200)

As an important part of fiber-optic communication, an optical module is a photoelectric converter which converts electrical signals into optical signals and vice versa. An optical module works at the physical

Huawei FTTH ONT Comparison 2026: EG8145, EG8245 & HG8245

Introduction Huawei is the world''s leading manufacturer of GPON optical network terminals (ONTs), serving over 300 million broadband subscribers globally. Understanding the

Optical Access Architecture Reference Document: Huawei vs ZTE

EXECUTIVE SUMMARY rchitectural and performance comparison of the Huawei SmartAX MA5800 series and the ZTE ZXA10 TITAN series Optical Line Terminal (OLT) platforms. As the cornerstone

Huawei PON SFP Modules | GPON XG-PON XGS-PON & 50G-PON

Discover Huawei GPON and XG-PON SFP modules including Class B+, C+, C+ Pro, and D optics. Compare specifications, performance, compatibility,

Huawei GPON SFP B+ C+ C++ Introduction and Comparison

In summary, the fours modules differ from optical port, receiver sensitivity and split ratio. C++ is the highest performance, B+ is the lowest.

DS: Introduction to Huawei''s optical fiber chip technology

Huawei ''s fiber optic chip technology (more accurately called optical communication chips or photonic chips) is the core of its optical network competitiveness.

Huawei Optical Module Common Models

Optical modules are important devices in fiber optic communication systems. Huawei Optical Module is manufactured by Huawei Technologies Co. and originated in Shenzhen.

Optical Access Architecture Reference Document: Huawei Vs ZTE

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This document provides a comprehensive architectural and performance comparison of the Huawei SmartAX MA5800 series and the ZTE ZXA10 TITAN series Optical Line Terminal ...

Optical Modules Market Research Report 2034

Optical Modules Market Outlook 2025-2034 The global optical modules market was valued at $14.8 billion in 2025 and is projected to reach $39.6 billion by 2034, advancing at a compound annual

40Gbps QSFP+ Optical Modules

1Gbps eSFP Optical Modules 10Gbps SFP+ Optical Modules 40Gbps QSFP+ Optical Modules 100Gbps QSFP28 Optical Modules Cables Hardware Installation Maintaining the Hardware

Installing an Optical Module

Installing an Optical Module Context This section describes how to install an optical module. The method used to install a copper transceiver module is the same, except that the copper transceiver module

Economic Watch: From optical modules to chips -

BEIJING, June 7 (Xinhua) -- With the global push for AI computing power unleashing an unprecedented wave of infrastructure buildout, China-made optical modules that shuttle data and the chips that

Displaying Optical Module Information

When certifying an optical module, Huawei comprehensively verifies the functions of the optical module to ensure the optical module quality. The functions include the installation and removal, transmit and

What Is an Optical Module

On an optical network, a sender needs to convert electrical signals into optical signals before sending them to a receiver, and the receiver needs to convert received optical signals into electrical signals.

400G vs 800G Optical Modules: Differences, Use Cases, and

Compare optical modules for data centers and AI clusters. Learn key differences in standards, power, cabling, and use cases.

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals, appearance and structure, key performance counters, common types,

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Troubleshooting Huawei MA5608T vs MA5800-X2: Optical Interfaces ...

Q2: What are the critical differences in optical module and PON technology support between the two? The MA5800-X2 was designed to support next-generation PON technologies, while the MA5608T is

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