

Article Overview

40G optical modules are classified by form factor, transmission distance, fiber type, and application, with common types including CFP, QSFP, and QSFP+ transceivers.

Form Factor Classification

- o CFP (C Form-factor Pluggable): Designed for 40G Ethernet links over single-mode fiber, supporting digital diagnostics via the MDIO interface and RoHS-6 compliance .
- o QSFP (Quad Small Form-factor Pluggable): Features four independent full-duplex channels, offering high-density solutions with four times the density of XFP and three times that of SFP+ transceivers .
- o QSFP+: An enhanced version of QSFP, optimized for high-density applications, lower system cost, and compatibility with standards like 40G Ethernet and 20G/40G InfiniBand .

Transmission Distance Classification

- o Short Reach (SR4/CSR4): Typically uses 850nm wavelength over multimode fiber. 40GBASE-SR4 supports up to 100m on OM3 and 150m on OM4 fibers, while 40GBASE-CSR4 extends up to 300m on OM3 and 400m on OM4 fibers .
- o Intermediate Reach (IR4/LX4): Supports distances of 2km to 10km over single-mode fiber, suitable for campus or metro networks .
- o Long Reach (LR4/PLR4/ER4): Designed for distances from 10km up to 40km over single-mode fiber, ideal for core network and long-haul applications .

Fiber Type Classification

- o Multimode Fiber (MMF): Used in SR4 and CSR4 modules for short-distance, high-bandwidth connections within data centers .
- o Single-Mode Fiber (SMF): Used in LR4, ER4, and BIDI modules for long-distance transmission and high-speed backbone networks .

Application-Based Classification

- o Data Center and High-Performance Computing: QSFP+ modules like SR4, CSR4, and BIDI are commonly used for high-density, short-distance interconnects .
- o Enterprise Core and Distribution Layers: LR4 and ER4 modules provide reliable long-distance connectivity for backbone networks .
- o Breakout Applications: Some QSFP+ modules support 4x10G breakout mode, enabling interoperability with 10GBASE-SR interfaces using parallel-to-duplex fiber cables .

Classification of 40g Optical Modules

Summary

40G optical modules are systematically classified by form factor (CFP, QSFP, QSFP+), transmission distance (SR4, CSR4, IR4, LR4, ER4), fiber type (multimode or single-mode), and application scenario (data center, enterprise, or long-haul networks). Proper selection ensures network efficiency, high density, and cost optimization while meeting the required bandwidth and distance specifications .

Choosing the correct 40G transceiver is the first step to a successful deployment. Our portfolio, built around the

Below is a vendor-neutral, engineering-grade breakdown of the common QSFP+ Modules optical types. Each sub-type includes the

The optical module range covers the following main rates: Low Rate, 100M, Gigabit, 2.5G, 4.25G, 4.9G, 6G, 8G, 10G, 40G.

This compact hot-swappable optical module usually has 4 transmission channels, and the data rate of each channel is

In modern communication networks, optical modules play a core role in high-speed data transmission between connected devices.

It includes 40GBASE QSFP+ modules, 40G Converter modules, 40G DACs/AOCs and their breakout cables. Featured products

How 40G QSFP+ optical transceivers boost performance in data centers and telecom networks. Learn about types, use cases, and

40GBASE Optical modules are various of optical transceivers with 40Gbps transmission rate, in which the QSFP is the main form

The above is the classification of the optical module which given by ETU-LINK, according to the different application

What is a QSFP+ 40G LR4 Module? A QSFP+ (Quad Small Form-Factor Pluggable Plus) 40G LR4 is a hot

Classification of optical modules A wide range of optical modules has been created to meet a variety of needs. 1.

Classification of 40g Optical Modules

40G QSFP+ Transceiver Module Series include SR4, BIDI, CSR4, PIR4, LX4, IR4, LR4, PLR4 and ER4. The series of product

III. Application of 40g qsf+ optical transceiver As a reliable and responsible optical module manufacturer, we are pleased to share

The types of optical modules are mainly distinguished by their parameters and characteristics. Current classification

40G QSFP+ Cable and Transceiver Modules Data Sheet Product overview The 40G transceiver module portfolio offers

Product Overview The 40G transceiver module portfolio offers customers a wide variety of high-density and low-power 40 Gigabit

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