

# Selection Guide for QSFP Long-Distance Optical Transceivers for Data Center Interconnection



## Overview

This guide explains how to choose QSFP-DD transceivers step by step, helping you avoid costly mistakes and ensure compatibility across your network. Before selecting reach or connector type, evaluate the form factor based on your current switches and long-term upgrade path. That's where QSFP LC comes in: it combines the high-density QSFP footprint with familiar duplex LC fiber connectivity, making it a practical path to high-speed links without overcomplicating fiber management. 25G is the new 10G; 100G (QSFP28) is the workhorse; design for migration plans to 400G/800G. This article provides a comprehensive comparison of mainstream optical transceivers, including SFP, SFP+, QSFP+, QSFP28, and QSFP-DD. Last March, a mid-sized cloud provider ordered 400 QSFP-DD SR8 modules for a new data center. While their switching platform and target speeds were correct, they overlooked a key detail: connector type.



## Article Content

QSFP28 Module Types: SR4, LR4, CWDM4 & Single-Lambda

This guide provides complete details about QSFP28 module types, including real-world pricing, link budgets, and a practical selection framework. For the complete picture on QSFP28

The Ultimate Reference Table for SFP & QSFP Optical Transceiver ...

The definitive guide to SFP, QSFP, and QSFP-DD standards for 2025. Compare 400G/800G optics, understand PAM4 complexity, and master QSFP-DD vs OSFP deployment

STANDARD SELECTION OF OPTICAL TRANSCEIVERS

The SFP28 transceiver modules are designed to transmit and receive 25G serial optical data over single mode optical fiber up to 15km Digital diagnostics functions are available via a 2-wire serial I2C interface

SFP vs SFP28 vs QSFP28 vs QSFP-DD/OSFP: 2026

A 2026-ready, engineer-focused guide comparing SFP, SFP28, QSFP28, QSFP-DD and OSFP transceivers. Learn decision rules, deployment

QSFP+ 40G LR4 Explained: Your Ultimate Guide to 40G

QSFP+ 40G LR4 enables high-speed, long-range data transfer for data centers, enterprises, and telecoms, supporting reliable 40G network growth

BiDi vs Duplex Fiber: Scalability and Cost Impact

Traditional distance-based optics These are mainly defined by transmission distance:  
#SR (Short Reach) → ~100m-300m Inside data centers, short interconnects between racks  
#LR (Long Reach)

QSFP Transceiver: A Comprehensive Guide

QSFP Transceiver: A Comprehensive Guide QSFP, or Quad Small Form-factor Pluggable, transceivers are high-density, hot-swappable modules designed for data transmission at speeds ranging from 40

QSFP+ LC Transceiver Guide: Types, Distance, Compatibility

Discover what a QSFP+ LC transceiver is, available types, supported distances, fiber requirements, and how to choose the right 40G module.

40G QSFP: The Core of Optical Network Interconnection

Learn how QSFP works, and why it is essential for optical networks. Explore selection tips for data centers and high-speed connectivity.

## QSFP+ LC Transceiver Guide: Types, Distance, Compatibility

This guide focuses on the practical buying and selection considerations for QSFP+ LC transceivers. It explains the different module types, supported distances, compatibility considerations, and real

## How to Choose QSFP-DD: Step-by-Step Selection Guide

Learn how to choose QSFP-DD transceivers for 400G/800G networks, including reach, compatibility, power, and breakout options.

## How to Choose the Best 40G QSFP+ Transceiver for

This article comprehensively explains 40G QSFP+ transceivers core principles, key selection parameters, and provides scenario-based selection guidance to help

## Optical Transceiver: SFP vs SFP+ vs QSFP28 vs QSFP-DD

Compare SFP, SFP+, QSFP+, QSFP28, and QSFP-DD optical transceivers. Learn differences, speeds, and best use cases for data center networks.

## QSFP-DD Optical Transceivers - MapYourTech

QSFP-DD (Quad Small Form-Factor Pluggable Double Density) represents a transformative advancement in optical transceiver technology,

## The Ultimate Guide to QSFP Cables

Explore the ultimate guide to QSFP cables. Learn QSFP types, differences from SFP, installation methods, and benefits for high-speed data

## 40/100G Four-Channel Small Form (QSFP) Optical Transceivers

OptixCom's 40 Gb/s QSFP+ LR4 optical transceiver is designed to operate with 4x CWDM channels for up to 2 km of transmission distance. The transceiver uses 1271, 1291, 1311, and 1331 nm DFB laser

## QSFP LC Transceivers: Selection for High-Speed Fiber

Learn how to choose the right QSFP LC transceiver for 40G and 100G fiber networks — balancing performance, reach, and compatibility.

## NVIDIA Optical Transceivers: QSFP-DD/OSFP 800G

Complete guide to NVIDIA optical transceivers covering QSFP-DD and OSFP form factors for 800G networks. Learn about compatibility, deployment

## Types of Area Network and How Optical Modules Support Them

□□ How Optical Modules Support Different Network Types Optical modules enable high-speed data transmission over fiber optic cabling and are essential in modern LAN, CAN, MAN, WAN, SAN, and

## Understanding the QSFP Cable: A Comprehensive

The quality of the optical parts in these transceivers is marked with low latency, low power consumption, and long-distance signals. Up-to-date technologies,

## Top 10 Optical Module Brand & Manufacturers

Find the Top 10 Optical Module brand, manufacturers, and exporters. Get the contact details and addresses of companies producing Keywords.

## 100G QSFP28 Optical Module Selection Guide: Medium to Long

It uses coarse wavelength division multiplexing technology and uses single-mode optical fiber for data transmission to ensure the reliability of data transmission. When the transmission

## Complete Guide to 400G QSFP-DD Optical Transceivers

Using PAM4 modulation technology, the data rate of each transmission channel can be increased to 50Gb/s, reaching a maximum transmission rate of 400Gbps. 400G QSFP-DD optical

## AOC Vs DAC Vs ACC Vs AEC: Complete Guide To

Understand AOC, DAC, ACC & AEC modules in one guide. Compare features, benefits & best use cases to choose the right cable for your data center.

## Extreme Networks Optical Transceivers: QSFP-DD/OSFP Technical Guide ...

Technical guide to Extreme Networks QSFP-DD and OSFP optical transceivers. Learn about DDM monitoring, compatibility considerations, and deployment strategies for high-speed

## What Is a Single Fiber SFP? A Complete Guide for Beginners

Single fiber SFP is an optical transceiver that transmits and receives data over a single strand of single-mode fiber by using two different wavelengths, enabling full-duplex communication while reducing

## Optical Transceiver Buying Guide: SFP/QSFP Explained for

Whether for data centers, enterprise networks, or service providers, choosing the right optical transceiver is critical for ensuring seamless, high-speed data transmission over fiber optic

## 100G QSFP28 Optical Module Selection Guide: Medium to Long

This article tells you how to choose 100G QSFP28 modules for medium and long transmission distances, as well as the advantages of QSFP28 modules and why you should choose it.

## Contact Us

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