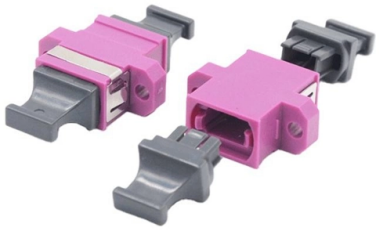
SR4 and LR4 optical modules



Overview

Compare 40G QSFP+ SR4 and 40G QSFP+ LR4 optical modules to make an informed purchasing decision. Learn key differences and choose the right module for your networking needs.

Key Takeaways

SR4 modules are optimized for short-range multimode fiber connections, while LR4 modules are designed for long-range single-mode fiber links. Key Differences1. Transmission Distance and Fiber TypeSR4 (Short Range 4-channel): Uses multimode fiber (MMF) and supports short distances—typically up to 100 meters on OM3 and 150 meters on OM4/OM5 fibers for 40G, and up to 100 meters for 100G and 400G SR4 modules.

LR4 (Long Range 4-channel): Uses single-mode fiber (SMF) and supports long distances—up to 10 km for 40G, 100G, and 400G LR4 modules. 2. Wavelength and Transmission TechnologySR4: Employs parallel optics with four channels at 850 nm for 40G and 100G, or four parallel lanes for 400G, transmitting data simultaneously through multiple fibers.

LR4: Uses Wavelength Division Multiplexing (WDM), combining four distinct wavelengths (e.g., 1271 nm, 1291 nm, 1311 nm, 1331 nm for 40G) over a single fiber pair, enabling long-distance transmission. 3. ConnectorsSR4: Typically uses MPO/MTP connectors for multimode fiber.

LR4: Uses duplex LC connectors for single-mode fiber. 4. Power ConsumptionSR4: More power-efficient, generally under 1.

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5W for 40G modules. LR4: Slightly higher power consumption due to complex laser technology, usually under 2. 5W for 40G modules.

5. ApplicationsSR4: Ideal for intra-data center connections, short-reach links, and cost-sensitive deployments where multiple fibers are acceptable. LR4: Suitable for inter-campus or long-distance connections, wide-area networks, and scenarios requiring fewer fibers with extended reach.

6. Cost ConsiderationsSR4: Lower cost due to simpler optics and shorter reach. LR4: Higher cost because of WDM technology and long-distance capability.

SummarySR4 and LR4 optical modules serve the same fundamental purpose of high-speed data transmission but are optimized for different network scenarios. SR4 is best for short-range, high-density data center links using multimode fiber, while LR4 is designed for long-range connections over single-mode fiber, supporting distances up to 10 km. Choosing between them depends on distance requirements, fiber type, connector availability, and budget.

For 400G networks, SR4 uses parallel optics, whereas LR4 employs long-wavelength division multiplexing to achieve extended reach.

Article Content

40G QSFP+ SR4 vs LR4: Key Differences in Optical Modules

Compare 40G QSFP+ SR4 and 40G QSFP+ LR4 optical modules to make an informed purchasing decision. Learn key differences and choose the right module for your networking needs.

40G QSFP+ SR4 vs LR4 Optical Modules: Key Differences & How to

In this guide, we will compare the 40G QSFP+ SR4 and 40G QSFP+ LR4 optical modules, breaking down their differences in wavelength, fiber type, transmission distance, power consumption,

A Complete Guide to Selecting 100G QSFP28 Optical Transceivers:

Choosing QSFP28 optical transceivers that fit your system helps your network work well and keeps your money safe. This definitive guide cuts through the confusion, exploring all major

100G Optical Module: How to Choose Between SR4,

Multimode modules (e.g., SR4) are generally more affordable, making them ideal for short-distance connections on a budget. Long-distance

A Comprehensive Guide to 400G Optical Modules: Navigating VR4,

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We have presented a comprehensive overview of the transmission standards governing 400G optical modules. We trust this guide will aid you in pinpointing the optimal standard for your

SR4 vs LR4 vs ER4 vs ZR4: Which 100G QSFP28

Confused between SR4, LR4, ER4, and ZR4? We break down 100G QSFP28 modules by performance, cost, and compatibility. Stop guessing —

BlueOptics 40G QSFP+ Transceivers | The Differences Between SR4

Overall, SR4 modules perform best in high-density, short-range setups, whereas LR4 modules suit high-performance, long-range networks. Selecting between them depends on the

100GBASE-SR4 vs. 100GBASE-LR4 | QSFP28 Modules in Direct

This article presents a direct comparison of the two Blueoptics 100G QSFP28 transceivers, SR4 and LR4, highlighting their key differences and providing readers with practical

100G QSFP28 SR4 vs LR4 vs CWDM4: The Architect''s Selection Guide

LR4 modules contain an internal Thermo-Electric Cooler (TEC) to stabilize wavelength drift across multiple LAN-WDM channels. If switch airflow is restricted or hot aisle containment is

100 Gigabit Ethernet

A networking device may support different PHY types by means of pluggable modules. Optical modules are not standardized by any official standards body but are in multi-source agreements (MSAs). One

100GBASE QSFP-100G Modules Data Sheet

Cisco QSFP-100G-SR4-S The Cisco 100GBASE-SR4-S QSFP Module supports link lengths of up to 70m over OM3 and 100m over OM4

How to Choose the Right Fiber Optic Cable for Your Optical Transceiver

How to Choose the Right Fiber Optic Cable for Your Optical Transceiver Selecting the right optical transceiver is only half of building a reliable fiber network. Many network failures that appear

Cisco 400G QSFP-DD Cable and Transceiver Modules

The module provides backward compatibility to two 100GBASE-SR4 transceivers, improving port efficiency to legacy 100G optical interfaces. FEC is

Optical Transceiver Module Wholesale,10g/25g/40g/100g SFP+ Optical ...

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Fiber optic module manufacturer,ETU-Link supply full model optical transceivers,including standard 8g/10g/25g/40g/100g sfp+ optical modules and copper RJ45 transceiver,wholesale at factory price!

The Future of Telecommunications: Next-Generation Coherent Optical Modules

However, emerging technologies such as AI, cloud computing, and 5G require even greater capacity. For this reason, telecommunications companies are increasingly turning to coherent fiber

QSFP28 Optical Transceiver Modules for Sale (100G) | Cables on

QSFP28 Optical Transceiver Modules (100G-SR/LR) Buy 100G QSFP28 Optical Transceiver Modules by Amphenol XGIGA Factory-Direct at Cables on Demand in 100GBASE-SR4 (Short-Range

Understanding High-Speed Transceiver Tests | 100G & 400G Optical ...

In this article, we''ll explain why high-speed optical transceiver testing matters, which tests are most important, and how to choose modules that deliver long-term stable performance.

200G Optical Transceivers | High-Speed QSFP56 Modules for Data

Boost network performance with 200G optical transceivers. Designed for data centers, 5G, and cloud infrastructure, our QSFP56 modules deliver low latency, high reliability, and seamless compatibility.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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