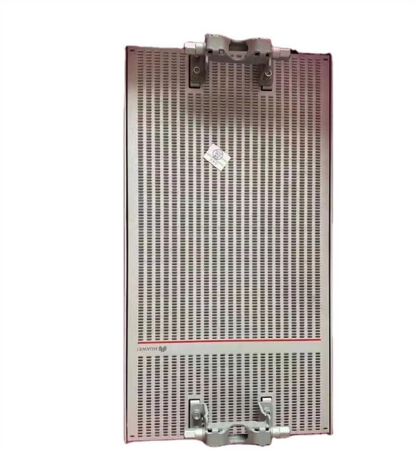
What is a ZR optical module



Article Overview

ZR in optical modules stands for "Extended Reach," referring to high-speed coherent transceivers capable of transmitting data over long distances, typically up to 80–120 km for 400ZR and beyond for ZR+ modules.

Definition and Purpose

ZR modules are a type of coherent optical transceiver designed for high-capacity data transmission over single-mode fiber without the need for intermediate amplification or regeneration for moderate distances . The term "ZR" is commonly used in the context of 10G, 100G, 400G, and 800G optical modules, indicating extended reach compared to standard SR (Short Range) or LR (Long Range) modules . ZR modules typically operate at 1550 nm wavelength and are optimized for longer metro or data center interconnect (DCI) links.

Technical Characteristics

• Data Rates: ZR modules support high-speed Ethernet, such as 400G in 400ZR modules and up to 800G in 800ZR modules .
• Distance: Standard 400ZR modules can reach up to 120 km, while ZR+ modules extend this to hundreds or even thousands of kilometers using advanced modulation and forward error correction (FEC), .
• Modulation: Coherent modulation schemes like DP-QPSK, DP-8QAM, and DP-16QAM are used to maximize spectral efficiency and reach .
• Form Factor: ZR modules are compact and pluggable, typically in QSFP-DD or OSFP form factors, allowing direct integration into routers and switches without external t...

Article Content

Coherent ZR Series

Our family of ZR and ZR+ pluggable transceivers provides cost-efficient coherent transmission up to 400Gbit/s line speeds.

Meaning of SR, LR, LRM, ER, and ZR in Transceiver Modules

What are the similarity and differences? Now let us make a comparison of the similarity and difference, it will help you

Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules Data

Cisco offers a comprehensive range of pluggable optical modules in the Cisco ® pluggables portfolio. The wide variety

800G ZR+ Coherent Pluggable Transceivers

These modules employ Lumentum''s latest hybrid photonic integrated circuit technology, incorporating both the company''s leading

400G ZR/ZR+ pluggable coherent modules

Additionally, 400ZR+ can traverse a limited number of reconfigurable optical add-drop multiplexer (ROADM) nodes, enabling efficient

A Comprehensive Guide to 400G ZR Technology

One of the core technologies of 400G ZR modules is coherent optical communication. Unlike traditional direct-detection technology,

Contact Us

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