

40km optical module operating distance



Article Overview

A 40km optical module is designed to support transmission distances of up to 40 kilometers over single-mode fiber.

Overview

A 40km optical module, such as 40GBASE-ER4, 100G ER4L, or 10GBASE-ER, is engineered for long-reach Ethernet or optical transport applications. These modules are typically used in data center interconnects (DCI), metropolitan area networks, and telecom backbone networks where distances exceed the reach of standard LR (10km) or SR (short-range) modules .

Technical Details

- 40GBASE-ER4 QSFP+: Uses four CWDM wavelengths over a single-mode fiber pair to achieve 40Gbps transmission up to 40km. It multiplexes four ~10Gbps electrical lanes into optical signals and demultiplexes them at the receiver, supporting long-distance connectivity without complex DWDM systems .
- 100G ER4L QSFP28: Operates at 1310nm over single-mode fiber, supporting 100Gbps with a maximum reach of 40km when FEC (Forward Error Correction) is enabled, or around 30km without FEC .
- 10GBASE-ER SFP+: Extends 10Gbps Ethernet up to 40km over single-mode fiber at 1550nm, with a typical optical link budget of 15 dB, suitable for metro and long-haul links .

Key Considerations...

Article Content

SFP-1040-Dxx SFP+ 10G DWDM optical transceiver 40Km, Cisco ready

The SFP-1040-Dxx is a DWDM 10G SFP+ optical module. It is available for all 45 DWDM 100GHz ITU grid wavelength channels.

QSFP-40G-ER4 40Gbps QSFP+ Transceiver, SM, 40KM -AOA Tech

The QSFP+ ER4 transceivers are high performance, cost effective modules supporting data rate of 40Gbps and 40km transmission

40G QSFP+ Optical Transceivers Complete Guide | Fibrecross

40G optical transceivers use fiber optic cables and offer longer reach (up to 40km) and higher flexibility in routing and distance. In

40km line optical module

The 10G SFP+ BiDi WDM Ethernet Line optical transceiver transmits data over single mode fibre at a distance of up to 40km. The

10GBASE-ER SFP Module Explained: Distance, Specs & Use Cases

A 10GBASE-ER SFP module is a long-reach 10Gbps fiber optic transceiver designed to transmit data over single-mode fiber up to

QSFP 40G 80km: Complete Guide to 40G Long-Distance Optics

This guide explains what QSFP 40G 80km modules are, how they work, their key specifications, and when they are the right choice

40G QSFP+ Transceiver Modules | Optical Transceivers

FS 40G QSFP+ optical transceiver module solutions offer a full range of QSFP+ modules from 150m to 80km reach, and used for

What is the relationship between optical module wavelength and ...

The transmission distance of the optical module refers to the distance over which the optical signal can be directly transmitted without relay

40G QSFP+ ER4 DML CWDM4 40km Optical Transceiver

GIGALIGHT 40G QSFP+ ER4 optical transceiver module is designed for long-distance interconnections in data centers. It complies

10G-SFP+ SF-40KM

Overview 10G-SFP+ SF-40KM The 10G SFP+ transceivers is cost effective Bi-Directional transceiver a high performance, module

Multi-mode optical fiber

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

Arista Optics Modules and Cables

Each module is optimized for different media and reach (ranging from 0.5 meters to 80 kilometers). All interface speeds, from 1G to

Wavelength and Transmission Distance of Optical Transceiver Modules

The price of the optical sources and signal converters that are paired with 850nm optical transceiver modules is far lower than the

100G 4WDM-20 & 4WDM-40 MSA

The 4WDM-20 and 4WDM-40 modules comply with the requirements of this document and have the following common features: four

Contact Us

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