How many kilometers is the ER4 optical module

Overview

The 100G QSFP28 ER4 optical transceiver transmits data over single mode fibre at a distance of up to 40km. The transceiver operates on 4 wavelengths and works in point-to-point scenario. LAN-WDM optics transmit the 100 Gigabit Ethernet (100G) signal over duplex single-mode fibers multiplexing/demultiplexing four 25G wavelengths within the transceiver. The module converts 8 channels of 50Gb/s (PAM4) electrical input data to 4 channels of LAN WDM optical signals and multiplexes them into Char nd not the principal indicator of signal strength. The "ER" in its name stands for "Extended Range," clearly indicating its core advantage: the ability to transmit over single-mode fiber for distances. QSFP 40G ER4 is a long-reach 40Gbps optical transceiver designed for up to 40km transmission over single-mode fiber, making it a practical choice for data center interconnection, metro links, and enterprise backbone networks that exceed the 10km range of standard 40G optics.

Article Content

QSFP-100G-ER4-AN

Operating within the wavelength range of 1295-1309 nm, this module supports a remarkable reach of up to 40 kilometers, making it well-suited for long-distance applications in metropolitan and wide-area

QSFP 40G ER4 Transceiver: 40km Long-Reach Optical Solution

A QSFP 40G ER4 transceiver is a 40Gbps long-reach optical module designed for up to 40km transmission over single-mode fiber (SMF), using a QSFP+ form factor and CWDM4 wavelengths to

Everything You Should Know About 100G ER4

The ER4 module follows the IEEE 802.3ba 100GBASE-ER4 standard and supports a transmission distance of up to 40 kilometers. It transmits data in four independent

Custom 40G QSFP+ ER4 Module | 40km APD Receiver

Across a 40-kilometer passive optical network span, ordinary DFB generators suffer from severe spectral line broadening. The ER4-class transceiver utilizes internal micro-cooling circuits (TEC) to

The Value of 100G ER4 in Long-Haul Data Center Interconnect

100G ER4 supports up to 40 km transmission over single-mode fiber, enabling reliable interconnection between data centers within the same city or across metropolitan areas—without the

Is the QSFP-100G-ER4L-S Your Best 40km 100G Solution?

ER4: This is the core optical specification. “ER” stands for Extended Reach, and “4” signifies four optical channels. This standard is designed to achieve a 40-kilometer link length. L:

The Economics of 100G ER4 in Tier-2 and Tier-3 Data Centers

Compared to other 100G optics like CWDM4 (up to 2 km) or LR4 (up to 10 km), ER4 modules eliminate the need for costly optical amplifiers or repeaters in regional interconnect

Custom 100G CFP & CFP2 Transceivers | Dual-Rate OTU4

Dual-Rate modules allow the optic to bridge standard Ethernet environments with specialized carrier Optical Transport Networks. Q: Do ER4/ZR4 variants of CFP/CFP2 require optical attenuation testing?

In-Depth Analysis of the QSFP28 100G ER4 Optical Module

Within the family of 100G optical modules, the positioning of the ER4 is clear. Compared to multi-mode SR4 modules (typically under 100 meters), CWDM4/PSM4 modules (around 2 km), and LR4

100 Gb ER4 Lite 40 km QSFP28 Module

The ER4-Lite QSPF28 module provides a 100 Gb optical Ethernet connection over SMF (single-mode fiber), at distances up to 40 km. LAN-WDM optics transmit the 100 Gigabit Ethernet (100G) signal

100G Optical Transceiver

The 100G QSFP28 ER4 transceiver uses four optical channels and can transmit data up to 40 kilometers through single-mode fiber. The data transmission distance of

400Gb/s QSFP56-DD ER4 SMF 40km Optical transceiver

On the receiver side, the module optically de-multiplexes a 400Gb/s optical input into 4 channels of LAN WDM optical signals and converts them to 8 channels of 50Gb/s (PAM4) electrical output data. Host

Custom 200GBASE-ER4 CFP2 Module | 40km OTN Transport

Upgrade legacy telecom chassis. The 200GBASE-ER4 CFP2 transceiver delivers robust thermal dissipation and 40km single-mode reach for core optical transport networks.

SFP+ 40km (10GBASE-ER): Extended-Reach Optical Module Guide

SFP+ 40km (10GBASE-ER) refers to a 10 Gigabit optical transceiver designed for extended-reach transmission up to 40 kilometers over single-mode fiber (SMF). These modules

NSComm100G Optical Transceiver Modules: A Practical Guide

If you''re upgrading leaf–spine fabrics, stitching campus buildings, or extending metro/edge links, a reliable Optical Transceiver Module at 100 Gbps is table stakes. This guide breaks down NS

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