

Can an optical module be used within a 40km radius



Overview

It works over single-mode fiber for up to 40km. This makes it good for long network connections. These help keep signals strong. The module works with many Cisco and other brands'. 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). Depending on different application scenarios and technical. The SFP BiDi 10G 40km module offers a powerful solution by enabling 10 Gbps full-duplex communication over a single strand of single-mode fiber (SMF) for distances up to 40 kilometers. 10G SFP+ 40KM optical module □1310nm□ 10G SFP+ 40KM optical module equipped with 1310nmDFB laser and PIN detector, duplex LC interface, the highest transmission rate of 10. 10G SFP+ 40KM. While coherent optics for 100G (and beyond) can cover hundreds of kilometers, they are often prohibitively expensive and power-hungry for these “medium-long-haul” 40km links. Utilizing 1550nm wavelength with 15 dB link budget, this 10G Base ER module ensures reliable transmission across metropolitan networks.



Article Content

Jun 29, 2025

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

The 40km reach of the ER4L module allows providers to consolidate hardware and streamline their network topology. They can bypass intermediate regeneration points that would be

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Understanding the 100G LR4 Transceiver for Modern

This comprehensive guide dives deep into the technology, specifications, applications, and best practices for deploying these essential 100G

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1.25G SFP 550m vs 20km vs 80km: Which One Actually

Compare 1.25G SFP 550m, 20km, 40km, and 80km modules by distance, fiber type, and cost. Make the right choice — the first time.

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Comprehensive Guide to SFP BiDi 10G 40km Modules: Selection ...

Q: Can I use an SFP BiDi 10G 40km module with a standard dual-fiber transceiver? A: No. BiDi transceivers require paired single-fiber BiDi modules with matching wavelength pairs for

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The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

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10G SFP+ ER vs ZR: The Definitive Guide to Long-Haul

The 10G SFP+ ER module is the workhorse of medium-to-long distance connections, covering up to 40km. Its primary appeal lies in its efficiency

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What is BiDi Transceiver: A Beginner's Guide

What is a BiDi Transceiver? BiDi transceiver, or Bidirectional or simplex optical transceiver, is an optical module that uses Wavelength Division

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SFP Optical Transceiver Modules for Long Distance: A

Discover everything you need to know about SFP optical transceiver modules for long-distance fiber transmission. Compare LX, EX, ZX models and

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40GBASE-ER4 QSFP+ Guide: Specs, Wavelengths, 40km Optics

Technical guide to 40GBASE-ER4 QSFP+ optics covering CWDM wavelengths, optical specs, power, interfaces, and 40km transmission for data center and metro links.

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SFP 40km vs. DWDM SFP: Which to Choose

This module supports 1Gb data rates and operates with single-mode fiber optics, incorporating advanced modulation technologies to ensure signal integrity over long distances.

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QSFP+ 40G ZR4 Optical Transceiver Module 80km

Asterfusion 40G QSFP+ ZR4 optical transceiver modules support 40GBASE-ZR4 Ethernet. QSFP+ 40G 80km optical modules are designed for Ethernet,

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The relationship between wavelength and transmission

At 1310nm wavelength, 100Mbps, 10G, 40G, and 100G optical modules can transmit up to 40km, and 400G can transmit up to 500m. 3. 1550nm: The attenuation of

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10G Bidi SFP+ Modules Selection Guide

Choose the right 10G Bidi SFP+ Modules by checking compatibility, distance, wavelength pairing, and reliability for optimal network performance.

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Comprehensive Guide to SFP BiDi 10G 40km Modules: Selection ...

In today's bandwidth-intensive environments, efficient use of fiber infrastructure is paramount. The SFP BiDi 10G 40km module offers a powerful solution by enabling 10 Gbps full

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BlueOptics 10G SFP+ Transceiver | How to Achieve Maximum Distance!

Anyone who works with 10G SFP+ transceivers knows that the achievable distance depends on far more factors than just the module used. The fiber optic length, connector quality, cleanliness, and

Jan 25, 2026

Extend Your 100G Reach to 40km Transmission with FS Optics

In this article, we will provide a detailed overview of these different types of 40km 100G modules, analyzing their unique features and application scenarios to help you choose the most

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Guide | 100G Optical Module: 5 Dimensions And

In the field of optical communications, the demand for high-speed connections continues to surge, and 100G optical modules have become the core

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SFP-10G-ER Explained: Powering 40km 10Gbps Optical

It works over single-mode fiber for up to 40km. This makes it good for long network connections. It uses a 1550nm wavelength and LC duplex

Jul 09, 2025

1000BASE EX SFP 40km | Optical Transceivers

Its adherence to strict safety standards, coupled with its robust optical and electrical performance, makes it a trusted choice for modern networking needs. EX SFP

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10G Base ER SFP+ Transceiver | 40km SMF | 1550nm

Our 10G Base ER SFP+ transceiver extends 10 Gigabit Ethernet connectivity up to 40km over single-mode fiber for long-haul applications. Utilizing 1550nm

Jun 28, 2025

40G QSFP+ 10~40km transceiver

The QSFP+ module is designed for use in 40GBASE Ethernet throughput up to 10km, 30km or 40km over single mode fiber (SMF) using a wavelength of 1310nm

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What is the maximum distance for SM fiber□

Commonly, 850nm SFP can reach up to 550 meters with multimode fiber optics, and the 1550nm SFP supports up to a maximum of 160km via single mode fiber cables. On the other hand,

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10G Base ER SFP+ Transceiver | 40km SMF | 1550nm

Compatible 10G Base ER SFP+ for 40km single-mode fiber. 1550nm, 15dB budget, IEEE 802.3ae. Works with 80+ brands.

Mar 15, 2026

50G BIDI QSFP28 TX1309nm/RX1295nm 40km Optics

50G BIDI QSFP28 Optical Transceiver with PAM4 modulation uses the wavelength of TX1309nm/RX1295nm via a Duplex LC connector for 40km transmission over

May 30, 2026

100G QSFP ZR4 S Optical Module Overview

This product family includes QSFP28 modules covering transmission distances of 100 m, 500 m, 2 km, 10 km, 25 km, and 40 km. Now, with the QSFP-100G-ZR4-S, customers can get full

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What Are The 10 GBIT/s SFP+ Optical Modules With A

10G SFP+ 40KM optical module, also known as 10G ER in the industry, is equipped with 1550nmEML laser and PIN detector, duplex LC

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

SFP+ 40km is commonly used for data center interconnect (DCI) when the distance is within 40 km, offering a cost-effective alternative to more complex long-haul solutions.

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The relationship between wavelength and transmission

When paired with multimode, the maximum transmission distance is 2km, and when paired with single-mode, the maximum transmission distance is 40km. At 1310nm

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40G QSFP+ ER4 40km Optical Transceiver

These values represent the damage threshold of the module. Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate catastrophic damage to the module even if all

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.regen-power.co.za>

Email: info@regen-power.co.za

Phone: +49 176 845 2036

Address: Taunusanlage 15, 60325 Frankfurt am Main, Germany

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