

Supplier Single Fiber Bidirectional 100G



Overview

100G Over Single Fiber, Simplified | ProLabsUpgrading from 10G to 100G no longer requires complex fiber builds. Our QSFP28 Bidirectional (Bidi) transceiver.

Key Takeaways

Key manufacturers of 100G single-fiber bidirectional optical modules include Svelol, ProLabs, and NEC, offering QSFP28 BiDi transceivers that enable 100Gbps over a single fiber using WDM technology.

A 100G single-fiber BiDi optical module uses wavelength division multiplexing (WDM) to transmit and receive 100Gbps data over a single optical fiber. Unlike traditional dual-fiber modules, it sends signals on different wavelengths (e.g., TX 1330nm / RX 1270nm) through the same fiber, effectively doubling fiber utilization and reducing cabling costs by 50% . These modules are compatible with standard LC/SC interfaces and can integrate seamlessly into existing network infrastructure.

Key Manufacturers and Products

- Svelol: Offers 100G QSFP28 BiDi modules with PAM4 modulation, supporting distances from 100 meters up to 80 km. These modules are designed for high-density data centers and telecom networks, providing broad compatibility with mainstream switch brands .
- ProLabs: Provides QSFP28 BiDi transceivers with reach options up to 70 km, supporting both standard and industrial temperature ranges. Their single-lambda solutions (e.g., 1291/1311nm) allow doubling connections on existing fiber infrastructure .

- NEC: Supplies 100G QSFP28 BiDi transceivers with ZR4 BiDi technology, using four wavelengths in the LWDM band for bidirectional transmission up to 80 km, suitable for long-haul and metro networks .

Technical Features

- Wavelength Division Multiplexing (WDM): Enables bidirectional traffic on a single fiber using distinct wavelengths, creating a virtual two-lane highway .
- PAM4 Modulation: Encodes 2 bits per symbol, doubling data capacity per wavelength and achieving 100G bandwidth efficiently .
- Reach: Modules support distances from short intra-data center links (100m) to long-haul applications (up to 80 km) depending on the manufacturer and wavelength configuration .
- Temperature Range: Standard modules operate from 0°C to 70°C, while industrial versions can handle -40°C to +85°C .

Applications

- 5G Transport Networks: High-capacity backhaul between 5G core networks and base stations, especially where fiber is limited .
- Data Center Interconnect (DCI): Cost-effective, low-latency 100G connections between data centers, reducing leased fiber costs .
- HD Video & Live Broadcasting: Supports 4K/8K streaming, remote medical imaging, and surveillance with minimal signal loss .

Advantages

- Fiber Savings: Reduces fiber usage by 50%, lowering deployment and cabling costs .
- Simplified Network Architecture: Fewer patch cables and reduced cabling complexity improve operational efficiency .
- Easy Integration: Compatible with existing network equipment, enabling seamless upgrades without replacing fiber infrastructure . These modules are widely adopted in telecom, data center, and enterprise networks, providing a scalable, cost-efficient solution for high-speed 100G connectivity.

Article Content

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Upgrading from 10G to 100G no longer requires complex fiber builds. Our QSFP28 Bidirectional (Bidi) transceivers

100G QSFP28 LR1 BIDI LC Optical Transceiver

The FiberMania 100G QSFP28 LR1 BIDI Transceiver is a high-performance, single-fiber optical module

Cisco QSFP-100G-B20U4-I and QSFP-100G-B20D4-I 100G

The QSFP-100G-B20U4-I and QSFP-100G-B20D4-I transceivers provide single-fiber, full-duplex, 100Gbps connectivity as network

100GBASE BiDi Procurement Guide for Cost-efficient Fiber

Explore what 100GBASE BIDI is, when to choose it, how it compares with SR4 and MPO, and how to buy the right module for cost

100G BiDi QSFP28 Optical Transceiver for Data Center

A 100G BiDi QSFP28 Optical Transceiver is a bidirectional optical module that supports 100Gbps data

100G QSFP28 Modules Fiber Optic Connectivity Solutions

Our 100G QSFP28 transceivers, including BIDI variants, provide high-speed, low-latency connectivity for data centers, enterprise

100G QSFP28 Single Fiber (BiDi) Modules: Technology, Benefits ...

Understand 100G QSFP28 single fiber (BiDi) modules—how they work, benefits vs. duplex 100G, deployment

Single-Lambda 100G Pluggable Optics Solution Overview

TARLUZ single-lambda bi-directional 100G optical transceivers include the QSFP100 BIDI LR, LR-20 ER-30, and ER optics. The

Bidirectional SFP Modules | Bidirectional SFP Transceivers

For applications where fiber availability is limited, VERSITRON also offers single-fiber bidirectional (BiDi) SFP transceivers. BiDi

Explaining 100G Bidirectional (BiDi) Optics

This 100G bidirectional transceiver provides 100Gbs bandwidth over standard duplex multi-mode fiber. The 100G

100GBASE-LR Bi-Directional QSFP28 1280/1310nm 20km LC SM

100GBASE-LR Bi-Directional QSFP28 1280/1310nm 20km LC SM Optical Transceiver Module 100G QSFP28 BIDI optical

Comprehensive Guide to 100G BIDI QSFP28 Transceivers | FiberMall

The 100G BIDI QSFP28 (Bidirectional Quad Small Form-Factor Pluggable 28) transceiver is a standout solution,

100G QSFP28 / SFP-DD Modules and Cables FAQ | FS

The 100G BiDi transceiver refers to the QSFP28 single-mode fiber bidirectional optical module applied to 100G Ethernet. Each

100G QSFP28 BiDi Optical Module: Features, Benefits, and Use Cases

As data centers and metro networks evolve toward 100G speeds, fiber resource constraints and rising cabling costs

NEC begins sale of 100G QSFP28 ZR4 single-fiber bi-directional

It can also achieve bi-directional communication over a single fiber, making it possible to achieve low-power

Single Fiber Transceiver QSFP28-100G

The QSFP28-100G BiDi single fibre transceiver is the latest addition to DWDM.ME's portfolio of solutions The QSFP28

100G QSFP28 SR BiDi 100m LC Optical Transceiver

100G QSFP28 SR BiDi LC Transceiver – A breakthrough single-fiber bidirectional solution for 100G Ethernet, enabling 100m

Open XR Optics Forum expands specifications to include 100G

100G Single-Fiber BiDi Point-to-Point: Enabling compact, cost-effective bi-directional links for access and aggregation

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