

Selection Guide for Safe City-Level Single-Fiber Bidirectional 100G



AI Overview

Single-fiber bidirectional (BiDi) 100G modules enable full-duplex 100Gbps transmission over a single fiber, optimizing fiber usage and reducing deployment costs in urban networks.

Key Considerations for Selection

1. Module Type and Form Factor

- QSFP-100G-SR1.2: Short-reach, duplex LC interface, supports 70–150m over OM3/OM4/OM5 multimode fiber, compatible with 400G breakout mode for future upgrades .
 - QSFP28-BIDI-100G: BiDi transceiver using WDM to transmit and receive on different wavelengths over a single fiber, ideal for metro and data center interconnects .
 - SFP28 BiDi: Compact, single-fiber solution for 25–100G links, suitable for campus, building-to-building, or metro networks .
- #### 2. Wavelength Pairing and WDM Technology
- BiDi modules rely on wavelength division multiplexing (WDM), transmitting on one wavelength (e.g., 1330nm) and receiving on another (e.g., 1270nm) through the same fiber .
 - Always deploy complementary pairs: the transmit wavelength of one module must match the receive wavelength of the other to ensure full-duplex communication .
- #### 3. Fiber Type and Distance
- Multimode Fiber (MMF): OM3, OM4, or OM5 for short-reach links (up to 150m for SR1.2 BiDi modules),

Article Content

Jan 15, 2026

QSFP28 Transceiver: Complete 100G Connectivity

The correct selection requires you to identify your distance needs together with your fiber

May 16, 2026

100G Optical Module Selection Guide: Advantages and Types of

Explore the QSFP28 100G optical module, a vital component for high-speed network connections. Discover its unique

Feb 18, 2026

100G QSFP28 Distance Guide: MMF & SMF Range Comparison

Complete guide to 100G QSFP28 transceiver distances. Compare multimode (70m-500m) vs single-mode (2km)

Nov 01, 2025

100G Over Single Fiber, Simplified | ProLabs

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

Feb 25, 2026

100G QSFP28 Transceivers: Types, Specs and How to Choose

In this guide, we provide a comprehensive, practical overview of 100G QSFP28 modules, covering their working principles, module

Jun 03, 2026

The Ins and Outs of Bidirectional Fiber (BiDi) for 100G

Bidirectional Fiber (BiDi): Ins & Outs of Optics Standard fiber connections use two strands: one to transmit and one to

Nov 05, 2025

Guide | 100G Optical Module: 5 Dimensions And Practical Selection ...

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

Sep 03, 2025

100G Single-Fiber Optical Module: New Choice for High-Bandwidth ...

Unlike traditional dual-fiber optical modules that require two optical fibers for signal transmission and reception, it achieves

Jul 13, 2026

Learning About Qsfp 100g Bidi: Grades, Material Standards, and ...

A QSFP 100G BiDi (Bidirectional) transceiver is a high-speed optical module used in data communication and telecommunications

Aug 06, 2025

QSFP28 100G BiDi Optics: Halve Your Fiber Capacity, Double Your

QSFP28 100G BIDI modules enable 100G Ethernet over duplex LC fiber, offering bidirectional transmission, compact

Aug 10, 2025

100G QSFP28 BiDi : Optical Transceiver Module | NEC

NEC's 100G QSFP28 BiDi optical transceiver enables the transmission and reception of 100Gb/s high-speed data over a single

Jan 21, 2026

Single Fiber vs. Dual Fiber 100G Optical Modules: Key Differences ...

Optimized Article for Google Ranking: 100G Single-Fiber vs. Dual-Fiber Optical Modules Choosing between a 100G

Jun 12, 2026

Comprehensive Guide to 100G BIDI QSFP28 Transceivers | FiberMall

Unlike traditional transceivers that require two fibers (one for transmitting and one for receiving), the 100G BIDI

Sep 11, 2025

A Complete Guide to Selecting 100G QSFP28 Optical Transceivers:

Choose the best 100g qsfp28 optical transceiver for your network by comparing compatibility, distance, fiber type, and

Jan 27, 2026

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

Oct 08, 2025

Understanding 100G Single Fiber QSFP28 Module for Modern Networks

100G single fiber QSFP28 modules enable fast, cost-effective network upgrades using one fiber strand, ideal for

Aug 22, 2025

100G Over Single Fiber, Simplified | Your Fiber Optic Solution | Proline

100G Over Single Fiber, Simplified Upgrading from 10G to 100G no longer requires complex fiber builds. Our QSFP28 Bidirectional

Mar 22, 2026

1G BiDi SFP Module Selection Guide: Maximize Fiber Efficiency

Choose the right 1G BiDi sfp module by checking compatibility, wavelength pairing, fiber type, and distance to ensure

Jan 19, 2026

Cisco 40/100Gb QSFP100 BiDi Pluggable Transceiver

When the popular QSFP+ 40Gb bi-directional (BiDi) transceiver was released, it enabled data center operators, for the

Jan 09, 2026

Bidirectional SFP Selection Guide for Single-Fiber Links

This guide explains how bidirectional SFP technology works and outlines the key specifications to consider when selecting modules

Jan 20, 2026

Experimental demonstration of 100 Gb/s single-fiber bidirectional ...

Abstract We experimentally demonstrate 100 Gb/s bidirectional transmission over 40 km using a multi-wavelength bidirectional

May 22, 2026

Comprehensive Guide to 100G BiDi QSFP28 Transceivers | FiberMall

The demand for high-speed, cost-effective, and fiber-efficient optical transceivers has surged with the growth of data

Oct 09, 2025

BiDi Optical Modules: Unlocking Single-Fiber Bidirectional Connectivity

Comprehensive guide on BiDi Optical modules, detailing single-fiber bidirectional connectivity, deployment tips,

Feb 11, 2026

Cisco 40/100Gb QSFP100 BiDi Pluggable Transceiver

In both modes, the BiDi reach matches its SR4 counterpart. As a single transceiver with these two modes of operation,

Jun 08, 2026

QSFP-100G-SR1.2 vs. QSFP28-BIDI-100G: Choosing the Right 100G

Explore the key differences between the QSFP-100G-SR1.2 and QSFP28-BIDI-100G. Learn how to select the best

Feb 28, 2026

100G QSFP28 SR4 vs LR4 vs CWDM4: The Architect's Selection Guide

Master 100G QSFP28 selection. Compare SR4, LR4, and CWDM4 on cost, thermal limits, and fiber physics. Learn to

Sep 29, 2025

Cisco QSFP-100G-B20U4-I and QSFP-100G-B20D4-I 100G 20km

Whether it's building a network or upgrading an existing network, the Cisco® QSFP-100G-B20U4-I and QSFP-100G-B20D4-I

Aug 12, 2025

A Complete Guide to Selecting 100G QSFP28 Optical Transceivers:

This definitive guide cuts through the confusion, exploring all major 100G QSFP28 options – from SR4 and LR4 to

Feb 25, 2026

100G Single-Fiber Optical Transceiver: The New Choice for High ...

A 100G single-fiber optical transceiver is an optical transmission device based on Wavelength Division Multiplexing (WDM)

Sep 13, 2025

Introduction to 100G QSFP28 Bidirectional Transceivers

TARLUZ 100G QSFP28 Bidirectional transceivers are a cost saving solution for building a network or

Mar 17, 2026

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

Learn how 100G QSFP28 BiDi optical modules enable single-fiber bidirectional transmission to reduce fiber usage and

Nov 19, 2025

BiDi Transceivers For Beyond 100G Fiber Infrastructure | RAD SFP

BiDi transceivers offer unprecedented fiber savings and network efficiency. Enhance 1G, 10G, 100G, and 200G fiber

Sep 07, 2025

100G Single-Fiber Bidi Transceivers: A Guide to Selection and ...

A 100G single-fiber bidirectional transceiver achieves dual-way communication over a single strand by employing WDM technology

Jul 30, 2025

100G Optical Transceiver Technologies | Juniper Networks

100G optical transceivers can be organized by their wavelength technologies and reach capabilities. Understanding these options

Contact Us

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

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town, 7441, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

