100G QSFP28 BIDI Tx1291nm/ Rx1311 nm

Variants

100G BIDI 20Km LC 100G 10km LC

Details

The **100Gbps Bi-Directional (BIDI) Simplex LC QSFP28 Transceiver** is a high-performance optical module designed for **100G Ethernet, data centers, ISP backbone networks, enterprise fiber infrastructure, and telecom applications**. It enables full-duplex 100Gbps communication over a **single strand of single-mode fiber (SMF)**, reducing fiber requirements and lowering deployment costs.

Utilizing **PAM4 modulation**, **EML laser technology**, and an integrated **PIN receiver**, this module supports transmission distances up to **20 km**. It features a **simplex LC connector**, integrated **Digital Diagnostic Monitoring (DDM)**, low power consumption, and compliance with major QSFP28 industry standards.

Speed
100Gbps

Fiber

Single Fiber

Distance

20KM

Connector

Simplex LC

Key Features

? 100Gbps PAM4 Optical Transmission

? Up to 20KM over Single Mode Fiber (SMF)

? Single Fiber Bi-Directional (BIDI) Communication

? EML Laser & PIN Receiver

? QSFP28 MSA Package with Simplex LC Connector

? Integrated Digital Diagnostics Monitoring (DDM)

? Low Power Consumption (4W)

? Hot-Pluggable QSFP28 Form Factor

Applications

- 100G Ethernet Networks
- Data Center Networks
- ISP Backbone Infrastructure
- Enterprise Optical Networks
- Telecommunication Systems
- 100GBASE-LR BIDI Links

Technical Specifications

Category	Specification
Product Type	100Gbps QSFP28 Bi-Directional Optical Transceiver
Data Rate	106.25Gbps PAM4
Electrical Interface	4 × 25.78Gb/s NRZ (CAUI-4)
Fiber Type	Single Mode Fiber (SMF)
Transmission Distance	Up to 20 km
Connector	Simplex LC
Laser Type	EML Laser
Receiver	PIN Photodiode
Operating Wavelength	Tx1291/Rx1311nm or Tx1311/Rx1291nm

Category	Specification
Power Supply	Single +3.3V
Power Consumption	4W
Digital Diagnostics	DDM / DOM Supported
Operating Temperature	0°C to +70°C
Compliance	SFF-8636, SFF-8679, QSFP28 MSA, 100G Lambda MSA, RoHS

Ordering Information

Variant	Laser Configuration	Distance	DDM	Latch Color
A	TX1291 / RX1311	20KM	Yes	Purple
B	TX1311 / RX1291	20KM	Yes	Red

Digital Diagnostics Monitoring (DDM)

Monitoring Parameter	Range	Accuracy
Temperature	0°C to 70°C	±3°C
Supply Voltage	0 to VCC	±3%
TX Bias Current	0–100mA	±10%
TX Optical Power	-0.2 to 6.8dBm	±3dB

Monitoring Parameter	Range	Accuracy
RX Optical Power	-10 to 6.6dBm	±3dB

Note: QSFP28 BIDI transceivers must always be installed as matched wavelength pairs. Use **TX1291/RX1311** on one end and **TX1311/RX1291** on the opposite end to establish a proper 100Gbps optical link over a single fiber.

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