Dual-fiber LC interface fiber optic module



Overview

Many SEL products make use of small form-factor pluggable (SFP) transceivers for fiber optic communication. See the range of SFP data rate and distance options supported.

Key Takeaways

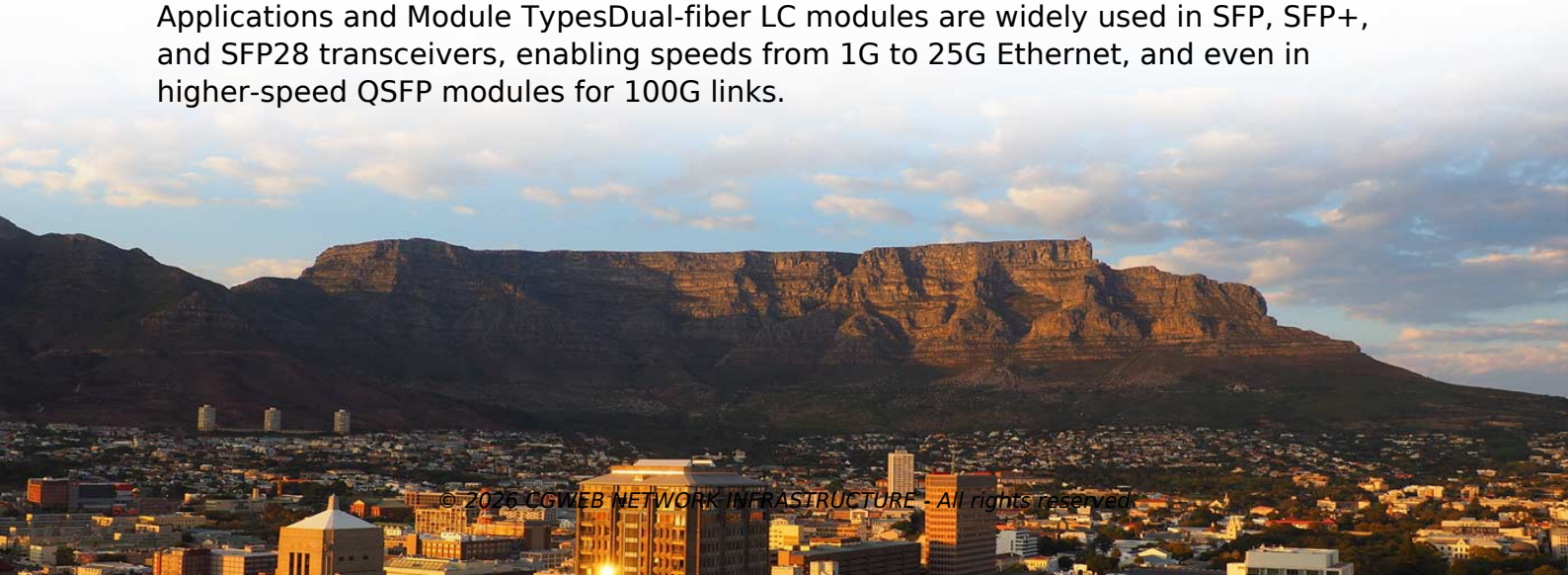
Dual-fiber LC interface modules use two fibers—one for transmitting and one for receiving—to enable full-duplex optical communication in SFP, SFP+, and higher-speed transceivers.

Overview

A dual-fiber LC (Lucent Connector) interface integrates two fibers in a single compact connector housing, allowing one fiber to transmit (TX) and the other to receive (RX) optical signals simultaneously. This full-duplex design is standard for Ethernet and telecom optical links, supporting reliable bidirectional data transmission.

The L

C form factor uses a 1. 25 mm ceramic ferrule, which ensures precise fiber alignment and supports both single-mode fiber (SMF) and multimode fiber (MMF) systems. Applications and Module TypesDual-fiber LC modules are widely used in SFP, SFP+, and SFP28 transceivers, enabling speeds from 1G to 25G Ethernet, and even in higher-speed QSFP modules for 100G links.



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Examples include: 10G SFP+ Single-Mode Dual-Fiber Modules: Operate at 1550 nm wavelength, supporting long-range transmission up to 80 km, ideal for connecting data centers or buildings across a city. 10G SFP+ Multimode Dual-Fiber Modules: Support up to 10 Gbps over distances up to 300 m on MMF, suitable for short-range data center or enterprise backbone links. 100G QSFP BiDi Modules: Use duplex LC connectors for short-reach multimode fiber links, enabling reuse of existing duplex MMF infrastructure for 40G or 100G Ethernet upgrades.

Design Features

A duplex LC connector includes: Ferrules: Two 1. 25 mm zirconia ceramic ferrules for precise alignment and protection of fiber cores. Housing and Latch: Plastic shell with push-pull latch for easy connection and disconnection in dense panels.

Boot and Duplex Clip: Protects the cable and holds two fibers together. Polish Types: UPC (flat) for general use, APC (angled) for applications sensitive to reflections, such as DWDM. Advanced modules may include real-time signal calibration chips to maintain data integrity and prevent bit errors during transmission.

Advantages

Compact size for high-density port layouts. Full-duplex communication for simultaneous TX/RX. Compatibility with both SMF and MMF.

High reliability for data center, enterprise, and telecom networks. Ease of deployment with polarity-reversible or uniboot LC options to reduce cabling bulk.

Best Practices

Ensure correct TX/RX polarity to maintain stable optical links. Handle connectors carefully to avoid contamination or damage to ferrules. Match modules with compatible fiber types and transceiver standards.

Use duplex LC modules in pairs for proper full-duplex operation.

Dual-fiber L

C interface modules remain a central component in modern optical networks, providing high-speed, reliable, and scalable connectivity for both short- and long-range applications.

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Article Content

300m SFP+ Optical Module

This product need to use in pair and match up with fiber converter and optical Ethernet switch with SFP slot, it can be used in Ethernet, telecom and optical

Duplex LC Connector: Design, Fiber Types, and Best

This article explains what Duplex LC connectors are, how they work, the difference between single-mode and multimode use, how to choose and

Berns gigabit sfp transceiver ⚡ Lc photoelectric conversion ...

Have you ever experienced: the network cable in the computer room suddenly breaks in the middle of pulling, and the fiber optic interface does not match and you stare blankly; temporary

SFP Transceivers Small Form-Factor Pluggable (SFP) Transceivers

Many SEL products make use of small form-factor pluggable (SFP) transceivers for fiber optic communication. See the range of SFP data rate and distance options supported.

Generic Compatible SFP-10G-LRM 10GBASE-LRM SFP+ 1310nm 220m MMF LC

Generic Compatible SFP-10G-LRM 10GBASE-LRM SFP+ 1310nm 220m MMF LC DOM Optical Transceiver Module direcXource''s SFP-10G-LRM optical transceiver is a dual fiber 10.3Gbps Small

AIQ-YP19013 SFp GE LX20-SM1310 20KM Gigabit Single Mode Dual Fiber ...

Transmission distance: 20KM. 1 SFP-GE-LX20-SM1310 20KM Optical Module. Gigabit single-mode dual fiber, 1.25G/sec single channel. Interface: LC dual fiber. If you do not receive our

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport

Optical fiber connector

An optical fiber connector is a device used to link optical fibers, facilitating the efficient transmission of light signals. An optical fiber connector enables quicker

Excelitas OTFI-0285 LED Fiber Optic Illumination Module with

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The Excelitas OTFI-0285 LED Fiber Optic Illumination Module is an integrated medical-grade light engine engineered for high-reliability internal illumination applications—including rigid and flexible

AFL NOYES M200 MM Fiber OTDR w/ VFL 850/1300 nm

Dual-Wavelength Testing: Supports 850/1300 nm (MM) and 1310/1550 nm (SM) for versatile fiber network analysis. Integrated Visual Fault Locator (VFL): Quickly

Excelitas OTFI-0275 LED Fiber-Optic Illumination Module with

Overview The Excelitas OTFI-0275 is a medical-grade LED fiber-optic illumination module engineered for precision endo-illumination in clinical and laboratory environments.

40G QSFP+ Optical Module with LC Multi-Mode 300m Reach ZK

optical module Use Network switches in multiple scenarios Model Number QSFP-40G-SR-BD Brand Name oem Place of Origin Beijing, China Warranty Time 3 years Product name multi-optical

Type-C Gigabit Fiber Ethernet Network Adapter Gigabit Single Mode Optic ...

Type-C Gigabit Fiber Ethernet Network Adapter Gigabit Single Mode Optic Module NIC RTL8153 Description : SFP LCx 1 Bus Type: Type-c Transmission Rate: 1000Mbps Chipset: for Realtek

Fiber Optic Transceiver Guide | PHILISUN

A fiber optic transceiver (also called an optical transceiver) is a compact module that both transmits and receives data signals through optical fibers. It serves a dual purpose — transmitting

EverACQ PXIe-X4114 4-Channel SFP-Based Fiber-Optic Data

The EverACQ PXIe-X4114 is a high-performance, 4-channel fiber-optic data acquisition module engineered for precision, low-latency, and electrically isolated readout of high-speed serial sensor

10G 1550nm LC Interface Singlemode Dual-fiber SFP

Upgrade networks with our 10G SFP+ 80km Module. This 1550nm optical transceiver offers effortless, stable long-range connectivity for data centers and

100GBASE QSFP-100G Modules Data Sheet

The Cisco QSFP-100G-SR-S Module is a pluggable optical transceiver with a duplex LC connector interface supporting link lengths of 70

Amazon : 2Pack BiDi Gigabit Multi-Mode Fiber

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Fiber Optical Port: Features a 1.25Gbps SFP port supporting BiDi LC Dual Multi-Mode transceivers, extending connectivity up to 550 meters (includes 2 SFP SX

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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