ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Two jumpers on the optical module



Overview

Fiber jumper cables, called fiber patch cords, are also short optical fibers equipped with connectors at both ends.

Key Takeaways

Optical modules typically use two fiber jumpers—one for transmitting and one for receiving optical signals—requiring duplex connections for standard operation.Why Two Jumpers Are Used

Most optical modules have two ports: one for transmitting (TX) and one for receiving (RX) optical signals. To maintain full-duplex communication, two separate fiber paths are needed, which is why two jumpers are used. Each jumper carries light in a single direction, ensuring that data can flow simultaneously in both directions without interference .

Types of Fiber Jumpers
• Simplex Jumpers: Contain a single fiber and connector at each end, used for modules with a single port that handles bidirectional communication (BIDI) over one fiber .

• Duplex Jumpers: Consist of two fibers side by side, typically used for standard optical modules with separate TX and RX ports. Common duplex connectors include SC duplex and LC duplex .
Connector Compatibility

The choice of jumper depends on the optical module type and connector interface:

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

• SFP, SFP+, XFP modules usually use LC connectors.

• GBIC modules often use SC connectors.

• MPO/MTP jumpers are used for high-density modules like QSFP or OSFP, where multiple lanes are aggregated . If the devices at both ends have different connector types, hybrid jumpers such as LC-SC or LC-ST can be used to ensure compatibility . Practical Considerations
• Ensure the fiber type matches the module: single-mode for long distances (1310nm or 1550nm) and multimode for short distances (850nm) to minimize signal loss .

• Duplex jumpers should be properly oriented to match TX to RX ports to avoid misalignment.

• High-quality jumpers with low insertion loss and good return loss are essential for reliable network performance . In summary, two jumpers are used in optical modules to enable full-duplex communication, with the choice of jumper type, connector, and fiber mode determined by the module specifications and network requirements.

Article Content

How to Choose a Matching Fiber Jumper for Your Optical Module: A 4

The choice between a simplex or duplex fiber jumper is dictated by the optical module type. Standard modules

Understanding Fiber Jumper Cables: A Comprehensive Guide to

Fiber jumper cables, called fiber patch cords, are also short optical fibers equipped with connectors at both ends.

Fiber Optic Jumper, 2 F, LC Duplex to LC Duplex,

Two-fiber cable assemblies are available with a variety of connector and cable combinations. Options

How to choose the fiber jumper of the optical module?

Different optical modules correspond to different optical fiber interfaces. The interface of a common optical module

Types of Fiber Optic Jumpers

Generally, the short-wave optical module uses multimode fiber (orange fiber), and the long

How to choose the fiber jumper of the optical module?

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

We need to choose matching fiber jumpers for optical modules. The fiber jumpers selected

ChallengerOptics / Wavelength Optical Testing and Measurement

ChallengerOptics offers a complete line of simplex and duplex jumpers in single-mode and multimode configurations using Grade A

Optical fiber jump line classification

The transceiver wavelengths of the optical modules at both ends of the fiber jumper must be

What is the Fiber Optic Jumper□

What is a Fiber Optic Jumper? A fiber optic jumper, also known as a fiber optic patch cord, is a cable that consists of

what do you know about the fiber jumper of the optical module?

simplex means that this fiber jumper has only one fiber and only one fiber connector at each end, which is used for single fiber

Fiber-optic testing: Keeping it simple in the field

The two-jumper reference procedure is improperly used quite often, mostly because of its former nomenclature,

Precautions and Connections for Using Optical Fiber Jumpers

The transmit and receive wavelengths of the optical modules at both ends of the fiber jumper must be the same, that is to say, the

Understand one, Two, and Three Jumper Reference Methods

The Two-Jumper Reference Method Sometimes, you might encounter situations where the two-jumper method is

Fiber Jumper Types: Choosing The Best Network

A duplex fiber jumper has two fibers and two connectors per end, where the signal in the

How to Choose a Matching Fiber Jumper for Your Optical Module: A 4

The performance limitations in a single-mode link are determined almost entirely by the optical module itself, not the

Understanding Redundancies in MPO Ports and Fiber Jumpers

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Introduction: In high-density data centers and telecom networks, both optical connectors and fiber jumpers play critical

Compatibility between SFP optical modules and fiber optic jumpers

Although SFP optical modules can be connected with PC and UPC optical fiber jumpers, in order to ensure the

What is a fiber optic jumper? What are the types and differences?

The MPO (Multi-fiber Push On) optical fiber jumper connector is one of the MT series connectors. The two guide holes and pins (also

How to Use Fiber Jumper?

Fiber jumper length must be mastered in the 500mm remaining length range. The length of

A Comprehensive Guide to Optical Patch Cords Types

Optical patch cords, also known as fiber optic jumpers, are indispensable in linking optical

Fiber Jumpers

Precision OT offers a wide selection of fiber cables to further support your optical networking needs and to simplify your procurement

Types of Fiber Optic Jumpers

The transceiver wavelengths of the optical modules at both ends of the fiber jumper must be the same, that is to say,

The difference between optical fiber jumper and pigtail

Fiber optic jumpers are used as jumpers for equipment to fiber optic cabling links. They have a thick protective layer and

How to Test Fiber Optic Link Loss

The 3 jumper method references two connectors, thus eliminating the loss of connection to both ends of the cable

Fiber Optic Jumpers

Listening to customers in the industry, OCC has standardized on the AE series 2.0mm fiber cable for any simplex or duplex jumper

Optical fiber jumper classification and precautions for use

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Precautions for the use of optical fiber jumpers The transceiver wavelengths of the optical modules at both ends of the

What is the Fiber Optic Jumper？

Fiber optic jumpers are essential components in modern telecommunications and networking infrastructure. Their high

What are the Internal Components of an Optical Module?

The optical module is composed of many devices, including optoelectronic devices, functional circuits, and optical

Things You Need to Know About Optical Modules and Wavelengths

Unlike general optical modules with two ports (Tx and Rx), BiDi optical modules have only one optical port and use

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right

Fiber-optic testing: Keeping it simple in the field

The two-jumper reference procedure is improperly used quite often, mostly because of its former nomenclature,

Precautions and Connections for Using Optical Fiber Jumpers

The transmit and receive wavelengths of the optical modules at both ends of the fiber jumper must be the same, that is to say, the

Understand one, Two, and Three Jumper Reference Methods

The Two-Jumper Reference Method Sometimes, you might encounter situations where the two-jumper method is

Fiber Jumper Types: Choosing The Best Network

A duplex fiber jumper has two fibers and two connectors per end, where the signal in the

How to Choose a Matching Fiber Jumper for Your Optical Module: A 4

The performance limitations in a single-mode link are determined almost entirely by the optical module itself, not the

Understanding Redundancies in MPO Ports and Fiber Jumpers

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Introduction: In high-density data centers and telecom networks, both optical connectors and fiber jumpers play critical

Common Problems And Solutions When Using Optical Modules

The problems that occur during the use of optical modules are not only related to the operator''s own experience but also closely

Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules

Corning Advises How To Keep It Simple When Testing Fiber-Optics

Keep it simple: Reference out a connector pair by using a two-jumper reference when the system under test is

B 2 OI module with optical jumpers.

In the module architecture, optical transmitters and receivers are placed on the line cards and the signals are routed to the optically

Compatibility between SFP optical modules and fiber optic jumpers

Although SFP optical modules can be connected with PC and UPC optical fiber jumpers, in order to ensure the

What is a fiber optic jumper? What are the types and differences?

The MPO (Multi-fiber Push On) optical fiber jumper connector is one of the MT series connectors. The two guide holes and pins (also

How to Use Fiber Jumper?

Fiber jumper length must be mastered in the 500mm remaining length range. The length of the inadequate fiber jumper

A Comprehensive Guide to Optical Patch Cords Types

Optical patch cords, also known as fiber optic jumpers, are indispensable in linking optical devices and ensuring

How to Choose a Matching Fiber Jumper for Your Optical Module: A 4

The choice between a simplex or duplex fiber jumper is dictated by the optical module type. Standard modules

Understanding Fiber Jumper Cables: A Comprehensive Guide to

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Fiber jumper cables, called fiber patch cords, are also short optical fibers equipped with connectors at both ends.

Fiber Optic Jumper, 2 F, LC Duplex to LC Duplex,

Two-fiber cable assemblies are available with a variety of connector and cable combinations. Options

How to choose the fiber jumper of the optical module?

Different optical modules correspond to different optical fiber interfaces. The interface of a common optical module

Types of Fiber Optic Jumpers

Generally, the short-wave optical module uses multimode fiber (orange fiber), and the long

How to choose the fiber jumper of the optical module?

We need to choose matching fiber jumpers for optical modules. The fiber jumpers selected

ChallengerOptics / Wavelength Optical Testing and Measurement

ChallengerOptics offers a complete line of simplex and duplex jumpers in single-mode and multimode configurations using Grade A

Optical fiber jump line classification

The transceiver wavelengths of the optical modules at both ends of the fiber jumper must be

What is the Fiber Optic Jumper□

What is a Fiber Optic Jumper? A fiber optic jumper, also known as a fiber optic patch cord, is a cable that consists of

what do you know about the fiber jumper of the optical module?

simplex means that this fiber jumper has only one fiber and only one fiber connector at each end, which is used for single fiber

How to Choose a Matching Fiber Jumper for Your Optical Module: A 4

The choice between a simplex or duplex fiber jumper is dictated by the optical module type. Standard modules

Understanding Fiber Jumper Cables: A Comprehensive Guide to

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Fiber jumper cables, called fiber patch cords, are also short optical fibers equipped with connectors at both ends.

Fiber Optic Jumper, 2 F, LC Duplex to LC Duplex,

Two-fiber cable assemblies are available with a variety of connector and cable combinations. Options

How to choose the fiber jumper of the optical module?

Different optical modules correspond to different optical fiber interfaces. The interface of a common optical module

Types of Fiber Optic Jumpers

Generally, the short-wave optical module uses multimode fiber (orange fiber), and the long

How to choose the fiber jumper of the optical module?

We need to choose matching fiber jumpers for optical modules. The fiber jumpers selected

ChallengerOptics / Wavelength Optical Testing and Measurement

ChallengerOptics offers a complete line of simplex and duplex jumpers in single-mode and multimode configurations using Grade A

Optical fiber jump line classification

The transceiver wavelengths of the optical modules at both ends of the fiber jumper must be

What is the Fiber Optic Jumper□

What is a Fiber Optic Jumper? A fiber optic jumper, also known as a fiber optic patch cord, is a cable that consists of

what do you know about the fiber jumper of the optical module?

simplex means that this fiber jumper has only one fiber and only one fiber connector at each end, which is used for single fiber

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Contact Us

Continue your research online:

Website: https://zithatech.co.za
Technical inquiry: https://zithatech.co.za/contact.html

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

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved