Optical to Electrical Port Converter for Switches



Overview

41 Optical to Electrical Converters from 7 manufacturers listed on GoPhotonics. Search by specification. Selected filters - Country : global, Fiber Mode : Single Mode, Page-1.

Key Takeaways

An optical-to-electrical port switch or transceiver converts optical signals from fiber into electrical signals for copper-based network connections, enabling short-distance data transmission over RJ45 interfaces.

Overview

An optical-to-electrical port switch uses transceivers or modules that allow a network switch to accept optical fiber input and output electrical signals compatible with Ethernet cabling. These devices are typically hot-swappable SFP (Small Form-factor Pluggable) modules that fit into switch ports and perform photoelectric conversion, translating light signals into electrical signals for copper cabling (RJ45) and vice versa.

Key Features

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Interface Types: Optical-to-electrical transceivers use RJ45 connectors for electrical output, while standard optical port transceivers use LC, SC, MPO, or MTP fiber interfaces. Transmission Distance: Electrical output is generally limited to 100 meters over Cat5/Cat6 cables, making these modules suitable for short-reach applications, whereas pure optical ports can reach up to 120 kilometers with appropriate fiber modules. Transmission Speeds: Common speeds include 100 Mbps, 1 Gbps, and 10 Gbps, depending on the module type and cabling used.

Hot-

Swappable: These modules can be inserted or removed without powering down the switch, providing flexibility in network upgrades or maintenance.

Applications

Data Centers: Reduce the need for additional fiber infrastructure by converting optical signals to electrical for short-distance connections between servers and switches. Network Expansion: When a switch has limited electrical ports, optical ports can accept electrical port modules to extend connectivity using existing copper cabling. Cost and Power Efficiency: Minimizes the number of electrical switches and optical-electrical-optical (OEO) conversions, reducing latency, power consumption, and operational costs in high-performance networks.

Types of Modules

Fast Ethernet Electrical Port Modules: Up to 100 Mbps, used for legacy or low-speed connections. Gigabit Electrical Port Modules: 1 Gbps, commonly used in modern LANs. 10 Gigabit Electrical Port Modules (SFP+): High-speed short-reach connections over Cat6A or higher cabling.

Summary

An optical-to-electrical port switch bridges fiber and copper networks, providing flexibility in network design. By using SFP or SFP+ modules, it allows optical signals to be converted to electrical signals for short-distance Ethernet connections, supporting speeds from 100 Mbps to 10 Gbps and enabling efficient use of existing cabling infrastructure while maintaining hot-swappable convenience and network scalability.

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Article Content

Optical-electrical converter

Find your optical-electrical converter easily amongst the 19 products from the leading brands (Laird, EMA, Maisvch, ...) on DirectIndustry, the industry

Optical to electrical converters.

High bandwidth, broadband optical to electrical converters available in a range of configurations. Choose from 1 or 2 channels, AC or DC coupling and various

Optical to Electrical Converters

Optical-to-electrical converters are designed for measuring optical communications signals. Their broad wavelength range and multi-mode input optics make these devices ideal for applications including

Optical to Electrical Converters

41 Optical to Electrical Converters from 7 manufacturers listed on GoPhotonics. Search by specification. Selected filters - Country : global, Fiber Mode : Single Mode, Page-1.

Optical Power Converters

Broadcom Optical Power Converters convert optical power to electrical power for applications requiring complete isolation in industrial environments.

Media Converter

10GBase media converter supports a 10GbE fiber connection with CAT.6a, CAT7 RJ45 Copper. This converter designed with 2 SFP+ slots, SFP1 port for a SFP+

OPTICAL TO ELECTRICAL CONVERTER

High bandwidth, broadband O-to-E converter. Available in a range of confi gurations; choose from 1 or 2 channels, AC or DC coupling and various conversion gain and operating wavelength ranges.

Optical-to-Electrical Converters

LASER COMPONENTS offers high-bandwidth optical-to-electrical (OE) converters with various configuration options.

Optical to Electrical Converter | OED-3904

The optical to electrical converter offers both manual and auto change-over routing modes. Users can manually configure routing or rely on automatic switching based on signal conditions.

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Media converters

Media converters are simple devices that convert an Ethernet signal from electrical to optical signal (1 or 2 fiber). The industrial media converters have an extended temperature range.

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Optical Digital Audio Cable & Connection Explained

Optical and coaxial digital audio connections offer comparable quality. Optical audio converters and switches can solve connectivity problems between

Gigabit Ethernet Fiber, Switch 8 Optical Port 2 Electrical ...

Gigabit Ethernet Fiber, Switch 8 Optical Port 2 Electrical Port Up To 120km, RJ45 Port SFP Fiber Media Converter, Efficient Transmission Router

Fiber Optic Converters: A Beginner''s Guide | RLH

Fiber Optic Converters (also known as Media Converters) are devices that convert the electrical signal used in copper wiring such as Ethernet or Serial Data into

Single-mode optical fiber

In fiber-optic communication, a single-mode optical fiber, also known as fundamental- or mono-mode, is an optical fiber designed to carry only a single mode of light - the transverse mode.

SFP+, XFP, QSFP+, DAC Twinax Cable 10Gtek Transceivers Co., Ltd

DAC Twinax Cable Maker. CE, FCC, RoHS, ISO9001 Certified. Professional Manufacturer focusing on SFP+ Cables, QSFP+ Cables, MiniSAS Cables, QSFP Cables, XFP Cables, CX4 Infiniband Cables

Fiber Optic Ethernet Switch with 2 Fiber Ports & 8 UTP

What is a 2 fiber port 8 LAN port fiber optic Ethernet switch? It is a hybrid Ethernet switch that integrates two SFP fiber ports (1.25 Gbps) and eight RJ45 UTP ports

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