

RIVO MULTITRADE OPTICAL SYSTEMS

Single-mode fiber optic KVM transceiver



Overview

1080P HDMI KVM Fiber Extender Multifunction HDMI Video Optical Descriptions:
The LNK-KVM-HDMI-1D1BA1GO Fiber optic extender provides extension of HDMI signal.

Key Takeaways

Single-mode fiber optic KVM transceivers enable long-distance, high-speed keyboard, video, and mouse signal transmission over single-mode fiber, typically using SFP modules for hot-swappable connectivity.

Overview
A single-mode fiber optic KVM transceiver is a device that converts electrical KVM signals into optical signals for transmission over single-mode fiber (SMF) and then back into electrical signals at the receiving end. This allows KVM systems to extend control of computers or servers over distances far exceeding traditional copper cabling limits, often up to 10 km or more depending on the module and fiber quality .

Key Features

- Fiber Type: Single-mode fiber with a small core ($\sim 9/125 \mu\text{m}$) optimized for long-distance transmission .
- Wavelength: Commonly operates at 1310 nm or 1550 nm for reliable long-range communication .
- Data Rates: Typical KVM transceivers support 1.25 Gbps for Ethernet-based KVM or serial data rates up to 40 kbps for specialized applications .

- Distance: Standard modules can reach 10 km (e.g., ATEN 2A-137G) or up to 23 km for serial fiber-optic links (e.g., SEL-2829) depending on optical power and fiber quality .
- Form Factor: Often available as SFP (Small Form-factor Pluggable) modules, which are hot-swappable and compatible with KVM switches, extenders, and media converters .
- Connectors: Duplex LC or ST connectors are commonly used for single-mode fiber connections .
- Safety and Compliance: Many modules comply with Class 1 laser safety standards (IEC 825, EN60825-1, FDA 21 CFR 1040.10/1040.11) for safe operation .

Applications

- Data Centers: Extending KVM control across server racks or between buildings.
- Telecommunications: Long-distance management of network equipment.
- Industrial and Automation: Secure, EMI-resistant control of remote devices using fiber-optic links .
- Enterprise Networks: Campus-wide KVM extension for IT management.

Advantages

- Long-Distance Transmission: Single-mode fiber allows KVM signals to travel tens of kilometers without significant signal loss .
- EMI Immunity: Fiber-optic links are immune to electromagnetic interference, providing stable and secure communication .
- Hot-Swappable: SFP modules can be replaced or upgraded without powering down the system .
- Scalability: Supports integration into existing fiber networks and can be used with various KVM switch models .

Example Products

- ATEN 2A-137G: 1.25G single-mode SFP module for KVM, 10 km range, 1310 nm wavelength .
- SEL-2829: Single-mode fiber-optic transceiver/modem for serial data, up to 23 km, ST connectors, 0-40 kbps . Single-mode fiber optic KVM transceivers are essential for extending KVM functionality over long distances while maintaining high signal integrity, reliability, and security, making them ideal for enterprise, data center, and industrial applications.

Article Content

1.25G Single-Mode/10KM Fiber SFP Module

The 2A-137G 1.25G Single-Mode/10KM Fiber SFP Module provides 1 GbE connectivity up to 10 kilometers. The transceiver can be

1000 Mbps (1 Gbps) | Single Mode Fiber | LC | 20 km (12.4 mi ...

Cisco GLC-LH-SMD Compatible SFP Module - 1000BASE-LH - 1GbE Single Mode Fiber SMF Optic Transceiver - 1GE Gigabit

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

Single Mode Fiber Transceivers – Fiber Savvy

Single Mode Fiber Optic Transceivers are essential components in high-speed, long-distance data transfer networks. Their ability to

How Fiber Optics and KVM Extenders Connect Buildings Miles Apart

Fortunately, single-mode fiber optic cables were installed long ago for communication between the two buildings. Let's

4K HDMI Fiber Extender with SFP Module (LC Port) Mini Optical ...

The LNK-MH4K Series 4K HDMI Fiber Extender are designed to support transmission of an uncompressed lossless HDMI 1.4a

HDMI Extender over Fiber with KVM USB Pass-Through

Extreme distance full 4K HDMI extender with KVM that can reach up to 6.2 miles using a duplex single mode fiber cable.

4K HDMI KVM Extender over Fiber

REMOTE ACCESS: USB & 4K HDMI KVM extender over fiber controls a KVM switch/console or PC using a fiber optic cable at

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