Imported Optical Electro-optical Hybrid Cable OSFP

Article Overview

OSFP (Octal Small Form Factor Pluggable) hybrid cables support high-speed optical and electrical interconnects with aggregate bandwidths from 200G to 1.6T, optimized for modern data center and AI workloads.

Overview

OSFP hybrid cables combine optical and electrical transmission to deliver high-density, high-bandwidth connectivity for data centers, cloud computing, and AI-optimized networks. They are designed to support 8-lane architectures with signaling protocols ranging from 25G/lane NRZ up to 224G/lane PAM4, enabling aggregate data rates of 200G, 400G, 800G, and 1.6T per cable assembly . These cables are available in passive and active variants, providing flexibility for short-reach and longer-reach applications.

Key Features

o High Bandwidth & Speed: Supports up to 1.6Tbps aggregate with lane speeds of 200-224Gbps, meeting IEEE-compliant performance standards .
o Thermal Management: Integrated heatsinks and airflow-optimized designs allow 30-60W thermal performance, critical for high-power switches and AI cluster deployments .
o Mechanical Flexibility: Available in straight and breakout configurations, with a wide range of gauge sizes (25-32 AWG) for dense rack deployments .
o Backward Compatibility: OSFP1600 and OSFP-XD maintain full backward compatibility with OSFP800, ensuring seamless integration with existing infrastructure .
o Programmability & Management: EEPROM-enabled cables provide enhanced management capabilities for monitoring and configuration .

Applications

o Hyperscale Data Centers: Supports GPU-to-GPU topologies and high-concurrency AI/ML workloads .
o Cloud Computing: Enables high-density switch interconnects for 400G, 800G, and emerging 1.6T networks .
o Next-Generation Optical Modules: Compatible with OSFP-XD and OSFP1600 pluggable optics, supporting breakout and high-speed optical interconnects .

Advantages

o Scalability: OSFP hybrid cables allow data centers to scale bandwidth without redesigning front-panel

layouts .
o Signal Integrity: High-quality electrical and optical integration ensures minimal loss and robust performance at high speeds .
o Thermal Efficiency: Enhanced heat dissipation supports high-power modules and dense deployments .

Summary

Imported OSFP optical/electro-optical hybrid cables are high-performance, versatile interconnect solutions for modern data centers, offering extreme bandwidth, thermal management, and mechanical flexibility. They are ideal for AI clusters, cloud infrastructure, and high-density switch fabrics, supporting both current and next-generation pluggable optics standards. Their combination of optical and electrical channels ensures reliable, scalable, and future-proof connectivity for demanding network environments .

Octal Small Form-factor Pluggable (OSFP) solution that fits into high-density switch and router client ports

Our Electronics Products "Product of the Year" award-winning OSFP (Octal Small Form Factor Pluggable) cable assemblies are

The long-awaited public launch of efforts to develop the Octal Small Form Factor Pluggable (OSFP) optical transceiver module for

Designed for high thermal capacity, electrical scalability, and forward compatibility, OSFP modules now drive

Discover the future of high-speed direct attach cables with insights on OSFP DAC in this

This guide provides an in-depth exploration of optical hybrid cables, detailing their construction, technical standards,

This article provides an in-depth exploration of OSFP copper cable technologies, including DAC, ACC, and AEC, with

Amphenol Commercial OSFP Copper Cable Assemblies feature a comprehensive system integrated interconnect

General Description The OSFP-800G-AOC01 is a OSFP to OSFP active optical cable for short-range data communication and

OSFP connectors enable use with AEC, DAC, ACC and optical cables while offering a range of port

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Available in both passive and soon-to-be-released active variants, our OSFP-XD cables deliver superior performance

The OSFP MSA roadmap provides an excellent mechanical and electrical solution for 800G, 1.6T, and 3.2T pluggable optics with

OSFP-RHS nose shape is updated to avoid a potential interference with a connector (Fig 9-8). OSFP-RHS heatsink contact area is

By leveraging a patented Hybrid architecture that combines the strengths of existing PCC/ACC and AEC methodologies, these

Gain a comprehensive understanding of the OSFP-XD connector, optical transceiver modules, and high-speed

Get diverse armored fiber patch cables for stronger protection of the optical fibers and stable transmission

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