

OCP optical module connector



Article Overview

OCP optical module connectors, such as the Mini-QD, enable high-speed, scalable, and liquid-cooled interconnects for OSFP and QSFP modules in modern data centers.

Overview of OCP Optical Connectors

OCP optical module connectors are designed to support high-bandwidth, high-density data center environments. They provide standardized interfaces for pluggable optical modules like OSFP (Octal Small Form-factor Pluggable) and QSFP (Quad Small Form-factor Pluggable), enabling data rates up to 1.6 terabits per second in next-generation systems. These connectors are critical for maintaining signal integrity, thermal management, and scalability in hyperscale and AI-focused data centers.

Mini-QD Micro Quick-Disconnect

A key innovation in OCP optical connectors is the Mini-QD (Micro Quick-Disconnect), developed by Stäubli and introduced at the OCP Global Summit. The Mini-QD is specifically designed for liquid-cooled optical modules, allowing direct integration of liquid cooling into OSFP and QSFP modules. This approach removes thermal constraints that limit bandwidth expansion and system density, supporting future scalability and interchangeability across manufacturers once standardized. The Mini-QD is part of the UQD v2 (Universal Quick Disconnect version 2) standard, which improves upon the original UQD by enforcing tighter flow-performance limits, standardized mechanical geometry, and rigorous testing protocols. These enhancements ensure reliable, interoperable, and blind-mate capable connectors suitable for high-performance computing and AI workloads

Article Content

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PHS West Server Rack Lifter Enhance data center operations with the PHS West Server Rack Lifter designed to provide a safe and

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FireBlade™ FireFly™ OCP OAI EXP Module

Each OCP OAI Universal Baseboard (UBB) can accommodate up to eight FireBlade™ FireFly™ OCP OAI EXP Modules. The

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Open Compute Project Solutions

Amphenol provides high-performance interconnects for OCP-specified server components including acceleration

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Samtec will showcase interconnect solutions at OCP Summit

Samtec, a service provider in the connector industry, will be showcasing its next-generation high-performance optical

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Open Accelerator Infrastructure

Open Accelerator Modules (OAMs) are optimized for scalability and versatility to meet the challenges of new and evolving AI

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Intel® Ethernet Network Adapters for OCP 3.0 Product Guide

This guide provides key features and specifications for Intel® Ethernet Network Adapters for OCP NIC 3.0, up to

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Samtec Demonstrates New 1.6 Tbps OCP OAI EXP Module at SC24

The FireFly OCP OAI EXP Module also incorporates enabling technology from US Conec, whose very small form

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OPTICAL CIRCUIT SWITCHING FOR AI AND

Extended infrastructure lifetimes enabled by protocol- and rate-agnostic optical paths, By enabling higher compute efficiency per

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OCP Accelerator Module Spec v1.1 | PDF | Electrical Connector

This document provides specifications for an OCP Accelerator Module (OAM) design, including: - Mechanical specifications for the

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BCM957504-N425G Quad-Port 25 Gb/s SFP28 Ethernet PCI Express

The Broadcom® BCM957504-N425G is a quad-port 25 Gb/s PCI Express 4.0 x16 network adapter designed to the Open Compute

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Designing 100G optical connections

To do so, we needed to deploy 100G optical connections to connect the switch fabric at higher data rates and allow for

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OCP 3.0 Network Adapters Demystified: Revolutionizing Data Center ...

Learn about OCP 3.0 network cards, their features, benefits for modern data centers, and how they optimize

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Meta 400G FR4 Optical Transceiver Specification for OCP_Rev0.1

2.2 Overview The 400G-FR4 OCP optical specification is based on IEEE 400GBASE-FR4 specification as defined in IEEE 802.3 cu.

Feb 25, 2026

Broadcom Ethernet NIC OCP NIC 3.0 Ethernet Adapters Product Brief

Broadcom offers a complete OCP NIC 3.0 Ethernet portfolio supporting the full range of speeds and feeds, from 1G to 400G, on one

Feb 03, 2026

OCP Accelerator Module Design Specification

The OCP Accelerator Mezzanine Module design specification defines the form factor and common specifications for a compute

Jan 27, 2026

Meta 400G FR4 Optical Transceiver Specification for OCP_Rev0.1

While this specification is focused on 400G operation, the module shall be compliant to the 200G-FR4 QSFP56 OCP Technical

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BCM957508-N2100G Dual-Port 100 Gb/s Ethernet PCI Express 4.0

The adapter supports QSFP56/QSFP28/QSFP+ optical modules and copper direct-attach cables. The network adapter uses the

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OCP NIC 3.0 Form Factors The Quick Guide

OCP NIC 2.0 was the hyper-scalers approach to making a more reusable ecosystem. Gigabyte MZ32 AR0 AMD

Mar 16, 2026

BCM957414N4140C Data Sheet

General Description The Broadcom® BCM957414N4140C is a dual-port 25 Gb/s PCI Express 3.0 x8 network adapter designed to

Jan 04, 2026

Redefining liquid cooling with Mini QD for optical modules

The smallest quick disconnect ever designed for optical modules. Built for AI-driven data centers, compliant with OCP specifications,

Dec 04, 2025

OCP PCIe Extended Connectivity Requirements v0

1.1 Scope To document the various industry usage-model scenarios and requirements for disaggregated NVMe and CXL inter

Oct 26, 2025

Implementation Agreement for a 3.2Tb/s Co-Packaged (CPO) Module

ABSTRACT: This Implementation Agreement specifies key aspects and electro-optical-mechanical details of a

Dec 25, 2025

A Deep Dive into Optical Layer Protection (OCP, OMSP, OLP)

Let's discover the essentials of Optical Layer Protection in DCI with OCP, OMSP, and OLP technologies, ensuring

Oct 09, 2025

Products » Open Compute Project

Products - Features a broad set of stand-alone products such as servers, storage, secure firmware, cables, cards, network devices,

Apr 15, 2026

Co-Packaged Optic Assembly Guidance Document

The optical connectors provide a means to connect the optical module to the front plate of the host switch. The optical module may

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OCP-driven Standardization to Deliver High Volume NPO Switch

CPO Project The OCP community can make an impact by driving commonality of form factor, power envelop and mezz connectors

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OCP NIC 3.0 Form Factors, Connector and Retention Types Explained

Learn the key physical specs, connector types, and retention mechanisms of OCP NIC 3.0. A practical guide to help

May 16, 2026

OSFP OCTAL SMALL FORM FACTOR PLUGGABLE MODULE

More optical connector configurations are added (Section 10.3). Max current to the module is increased to 10A, supporting 30W

Contact Us

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