

# Marvell® Scalable mGig SFP+ Modules

AQS-107 10G / AQS-108 5G / AQS-109 2.5G

## Overview

Marvell SFP+ modules are based on Marvell Alaska PHYs, which are low-power, high performance, mGig transceivers that support the following network rates: 10GBASE-T/5GBASE-T/2.5GBASE-T/100BASE-T/100BASE-TX.

AQS-107 SFP+ modules deliver up to 10GbE network speed with Cat 6 cabling up to 30 meters. AQS-108 SFP+ modules deliver up to 5GbE network speed with 100 meters of Cat 5e or better. AQS-109 SFP+ modules deliver up to 2.5GbE network speed with 100 meters of Cat 5e or better.

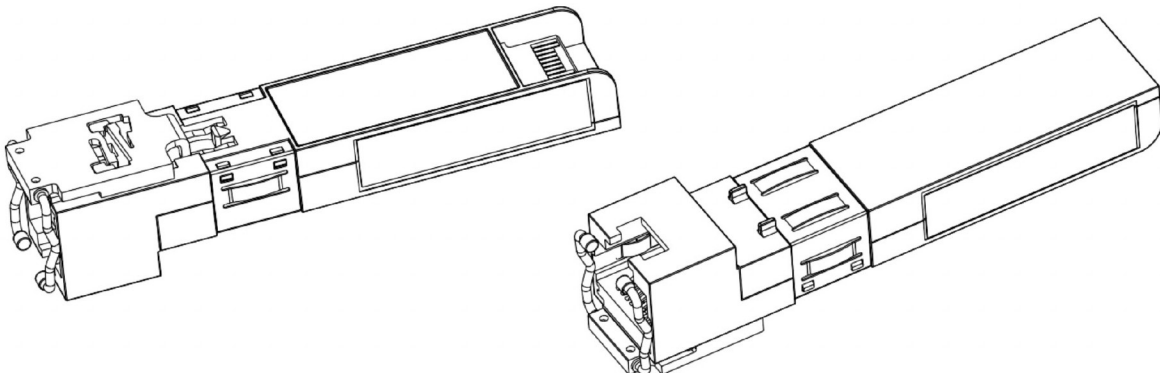
Marvell SFP+ modules enable new use-cases while using the existing cabling infrastructure. The AQS-107/AQS-108/AQS-109 modules are compatible with both the IEEE 802.3an/bz standard and the NBASE-T Alliance PHY specification. The integrated Marvell PHY Alaska technology performs all the physical layer functions required to implement the supported mGig protocols.

Marvell SFP+ modules deliver an active rate-adaptation technology that allows end-users to connect seamlessly using existing SFP+ slots that are 10GbE fiber-optic only—offering a significant cost savings over standard fiber modules.

## SFP+ Modules

## Product Features

- Supports links up to 30 meters for 10G operations using Cat 6 multi-segment cabling
- Supports 5G/2.5G/1G/100M BASE-T operations up to 100 meters using Cat 5e or better cabling
- SFF-8431 and SFF-8432 MSA-compliant
- IEEE 802.3bz compliant and meets the NBASE-T specification
- MDI/MDIX crossover
- I<sup>2</sup>C 2-wire interface for IDs and PHY register access
- Bail latch style ejector mechanism
- Hot-pluggable SFP footprint
- RoHS-6 compliant (lead-free)
- Low power (2.5W maximum)
- Die-cast housing
- Indentions provided for labels on the bottom and sides of die-cast housing



## Key Features

Features	Benefits
Marvell Alaska adaptive rate operation	<ul style="list-style-type: none"><li>• 10GBASE-T over 30 meters of 13dB IL of Cat 6 or better cable</li><li>• 5GBASE-T, 2.5GBASE-T over 100 meters of Cat 5e or better cable</li></ul>
Built-in thermal management capabilities	<ul style="list-style-type: none"><li>• Enables deployment in thermally constrained environments</li></ul>
Supported regulatory standards	<ul style="list-style-type: none"><li>• Electromagnetic Interference (EMI): FCC Part 15, Class B</li><li>• Electrostatic Discharge (ESD): IEC/EN 61000-4-2, MIL-STD-883E, and EIA- JESD22-A115-A</li><li>• Safety Compliance: IEC/EN 60950-1 and UL 60950</li></ul>
Product weight	<ul style="list-style-type: none"><li>• 0.52 oz/14.8 grams (±1 gram)</li></ul>
SFF-8431 and SFF-8432 MSA-compliant	<ul style="list-style-type: none"><li>• Easily implemented into existing infrastructure</li></ul>

## Host Interface Modes

Module	10 GbPS	5 GbPS	2.5 GbPS	1 GbPS	100 MbPS
AQS-107/CX	XFI	XFI	XFI	XFI	XFI
AQS-108/CX		XFI	XFI	XFI	XFI
AQS-109/CX			XFI	XFI	XFI
AQS-109/CB			2500BASE-X	SGMII-with-AN	SGMII-with-AN

## Target Applications

The Marvell AQS-107/AQS-108/AQS-109 SFP+ modules are well suited for use as switch-to-switch interconnects. In Enterprise configurations, switches typically ship with 1G ports and 10G fiberoptic up-link slots to connect multiple switches together.



Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, networking and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. For more information, visit [www.marvell.com](http://www.marvell.com).

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