

HighPoint's Industry Leading SSD7540 8-Port PCIe Gen4 x16 M.2 NVMe RAID AIC is fully compliant with Immersion Cooled Server Platforms

September 2024, Fremont, CA – HighPoint is proud to announce that our industry leading SSD7540 NVMe RAID AIC is compliant with computing platforms that employ immersion cooling technology. LiquidCool Solutions, a leader in Immersion Cooling technology, has qualified HighPoint's class-leading SSD7540 8-Channel PCIe Gen4 x16 RAID AIC for use with their immersion cooled rack servers.

HighPoint's proven 8-Channel PCIe Gen4 x16 M.2 Workhorse

The SSD7540 was engineered to maximize the storage performance and capacity potential of PCIe Gen4/Gen5 M.2 media. HighPoint's proven x48 lane PCIe Switching technology minimizes latency, optimizes signal clarity, and enables the AIC to allocate a full x16 lanes of upstream bandwidth are allocated to the host connection, and x4 lanes of downstream bandwidth to each device port to ensure each M.2 SSD performs optimally. The slim, single-width form factor was designed to simplify integration and enhance serviceability and is compliant with industry-standard x86 computing platforms and tower/rackmount chassis.

Proposed Solution: Immersion Cooled Rack Server for Challenging Environments

LiquidCool Solutions was contracted to develop a rack-server platform equipped with M.2 NVMe RAID storage capable of performing optimally in a hot, dusty environment. The SSD7540 robust feature suite made it a compelling candidate for platform. However, the AIC was developed for conventional air-cooled environments, and had not been qualified for platforms designed to operate in extreme conditions.

Unlike a standard rack server, which relies on conventional cooling fans or liquid-cooled heat exchangers, and draws air from the working environment, the hardware componentry of an immersion server is fully submerged in an electrically non-conductive liquid within a sealed chassis. The proposed NVMe component would need to function flawlessly under these conditions.

In order to determine the SSD7540's suitability for the customer environment, a series of rigorous I/O and file transfer tests were conducted using two test platforms; a control/baseline server that utilized a standard air-cooled chassis, and the customer's proposed immersion cooled platform. The results of testing sessions were analyzed to determine the SSD7540's suitability for the customer environment, with a particular focus on hardware integrity and transfer capabilities.

Fully Qualified for an Immersion Cooled Environment

SSD7540 proved fully capable of operating in the uniquely challenging server environment, and exhibited no signs of physical or performance degradation. M.2 NVMe media hosted by the SSD7540 benefitted from the significantly improved thermal management and the AIC was able to maintain a high level of sustained transfer throughput under load in the liquid-cooled chassis. LiquidCool Solutions determined that the SSD7540 was the right tool for the job, and incorporated the AIC into finished solution, which has been successfully deployed in the field.

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About HighPoint Technologies, Inc.

HighPoint Technologies stands at the forefront of storage innovation as the industry's -premier manufacturer of high-performance, high-density NVMe Switch and RAID AIC & Adapter solutions for off-the-shelf x86 AMD and Intel platforms. With a rich history spanning nearly three decades, our dedication to delivering innovative, reliable, and high-performance storage solutions has consistently set us ahead in the marketplace. HighPoint's NVMe storage solutions are powered by industry-proven PCIe Switching technology, and are designed to address the dynamic requirements of AI/ML/LLM applications, Data Centers, Edge Servers, and high-performance workstations, enabling customers to keep pace with today's rapidly evolving technology landscape.