The Nano-Pitch I/O™ Interconnect System from Molex Provides Industry Leading Speed and Size for Next Generation Server and Storage Systems

BUSINESS CHALLENGE

As businesses strive to reduce their data center footprints, equipment/system suppliers are challenged to reduce the physical sizes of their packaging solutions while increasing their speed and performance.

Implementation of high-performance computing solutions is inevitable for mainstream businesses as they look to deploy financial and business analytics, software as a service (SaaS), and participate in cloud architectures. Once used primarily to solve complex computational problems in scientific and engineering applications, today’s supercomputers are becoming ubiquitous. More core business functions including sales and marketing; customer service and support; finance and operations and human resources are finding it necessary to migrate to the higher power solutions offered today.

As demand rises, enterprise data centers are making the necessary moves to be competitive while seeking out smaller packaging solutions that provide added cost and space benefits. Technology such as Solid State Drives (SSDs) is helping propel storage performance forward by providing the speed and efficiency needed for next generation systems. But building a solid and scalable infrastructure to meet today’s high-speed network requirements takes more than just fast storage. It requires interconnects that can rise to the challenge. And, with the growing number of protocols and physical interfaces required to support modern storage systems, including Serial Attached Storage (SAS), Serial ATA (SATA) and Peripheral Component Interconnect Express (PCIe), smaller, multi-protocol cables and connectors are even more important than ever.

SOLUTION

The Molex Nano-Pitch I/O™ Interconnect System System benefits new high-performance applications by delivering robust, small form factor, high-speed and multi-protocol interconnects ideal for both internal and external solutions.

The Nano-Pitch I/O Interconnect System offers a high-density, high-performance, extremely low-profile (4mm) connector solution that supports SAS-3/SAS-4 and PCIe Gen 3/Gen 4 interfaces and currently provides four transmit and receive lanes plus control/management. The x4 connectors are 42 circuit, 0.50mm pitch, metal shell SMT products. They are available in both right angle and vertical versions and include mating cable products that offer positive active or passive detent latches for both right angle and straight-out cable exit styles. Initial usage has focused on inside the box applications but the Nano-Pitch I/O connectors are also intended to support external I/O applications. They have been selected as the OCuLink external and internal connector solution by the PCI Special Interest Group (SIG) and were voted into the INCITS T10 specifications under development for next generation SAS-4 internal interfaces.
CUSTOMER BENEFITS

The Nano-Pitch I/O Interconnect System helps maximize next generation PCIe, SAS and SSD benefits while minimizing space utilization and cost to deliver the most value to the end user.

Many high-speed implementations benefit from the small form factor, high data rate, low-profile packaging and improved air-flow offered by the Nano-Pitch I/O Interconnect System. The economical connectors deliver seamless connectivity with faster speeds and smaller ports while its multi-protocol capability provides inventory and manufacturing assembly efficiencies. Additionally, the reduced cable size provides more effective cable management through the ribbon cable enabled assemblies translating into enhanced airflow for better thermal management within the enclosure. Multiple sources for the Nano-Pitch I/O form factor are expected to be available due to the fact that a license for the connector will be offered to the industry on RAND terms.

To learn more please visit, www.molex.com/ab/nanopitch.html