

NEWS RELEASE



Editorial Contact:
Claire Castellanos
Office: 503-619-0425
Email: pr@pcisig.com

PCI-SIG® RELEASES PCI EXPRESS® 3.0 SPECIFICATION

PCIe® 3.0 specification doubles bandwidth over previous generations

BEAVERTON, Ore. – November 18, 2010 – [PCI-SIG®](#), the organization responsible for the widely adopted [PCI Express®](#) (PCIe®) industry-standard input/output (I/O) technology, today announced the availability of the PCIe Base 3.0 specification to its members. The PCIe 3.0 architecture is a low-cost, high-performance I/O technology that includes a new 128b/130b encoding scheme and a data rate of 8 gigatransfers per second (GT/s), doubling the interconnect bandwidth over the PCIe 2.0 specification. PCIe 3.0 technology also maintains backward compatibility with previous PCIe architectures and provides the optimum design point for high-volume platform I/O implementations across a wide range of topologies. Possible topologies include servers, workstations, desktop and mobile personal computers, embedded systems, peripheral devices and more.

“Each new version of the PCIe spec has doubled the bandwidth of the prior generation,” said Nathan Brookwood, research fellow at Insight 64. “The latest group of PCIe architects and designers drove the standard forward while maintaining complete backward compatibility for Gen 1 and Gen 2 devices. Rarely has a standard advanced so non-disruptively through three major evolutionary cycles. The ability to pull this off demonstrates not only the ingenuity of the Gen 3 developers, but also the insight of those who defined the earlier versions in such an extensible manner.”

The PCIe 3.0 specification extends the data rate to 8 GT/s in a manner compatible with the existing PCIe 1.x and 2.x specifications and products that support 2.5 and 5 GT/s signaling. This bit rate represents the most optimum tradeoff between manufacturability, cost, power, complexity and compatibility. Based on this data rate expansion, it is possible for products designed to the PCIe 3.0 architecture to achieve bandwidth near 1 gigabyte per second (GB/s) in one direction on a single-lane (x1) configuration and scale to an aggregate approaching 32 GB/s on a sixteen-lane (x16) configuration. The new 128b/130b encoding scheme also allows near 100% efficiency, offering a 25% efficiency increase for 8 GT/s as compared to the 8b/10b efficiency of previous versions, which enables the doubled bandwidth.

“The PCI-SIG remains dedicated to I/O innovation and we are proud to release the PCIe 3.0 specification to our members,” said Al Yanes, PCI-SIG chairman and president. “The PCIe 3.0 architecture details significant improvements over our two previous PCIe specifications, providing our members with the performance and functionality they need to continue to be innovators in their fields.”

This evolutionary specification integrates a number of enhancements to the protocol and software layers of the architecture. These enhancements range in scope from data reuse hints, atomic operations, dynamic power adjustment mechanisms, latency tolerance reporting, loose transaction ordering, I/O page faults, BAR resizing and many more

extensions in support of platform energy efficiency, software model flexibility and architectural scalability.

The PCIe Base 3.0 specification is available for member download at <http://www.pcisig.com/specifications/pciexpress/base3/>.

Benefits of PCI-SIG Membership

There are many valuable PCI-SIG membership benefits including the right to receive patent licenses from any other member of the organization, with necessary claims of patent embodied within the PCI-SIG specifications. These licenses may be limited in scope to an implementation of a particular specification, but must be granted to all members on reasonable and non-discriminatory terms.

PCI-SIG members can also participate in the review of all PCI specifications before they are released to the industry, gain access to interoperability testing at Compliance Workshops, participate in PCI-SIG activities such as developer conferences, and receive Vendor ID assignments. PCI-SIG members develop and maintain PCI Express specifications and are actively involved in defining compliance criteria and other technical enabling collateral. To join, visit the PCI-SIG website at www.pcisig.com/membership.

About PCI-SIG

PCI-SIG is the Special Interest Group that owns and manages PCI specifications as open industry standards. The organization defines and implements new industry standard I/O (Input/Output) specifications as the industry's local I/O needs evolve. The PCI Special Interest Group was formed in 1992 and became a nonprofit corporation, named "PCI-SIG," in the year 2000. Currently, more than 900 industry-leading companies are active PCI-SIG members worldwide. PCI-SIG's current directors are employed by the following PCI-SIG member companies: Agilent, AMD, Dell, HP, IBM, Intel, LSI, NVIDIA and Oracle. For more information about the PCI-SIG and its membership benefits, please visit the PCI-SIG Web site at <http://www.pcisig.com> or contact (503) 619-0569 (within the United States).

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