



SD EXPRESS DELIVERS NEW GIGABYTE SPEEDS FOR SD MEMORY CARDS

Cards reach maximum 4GB/sec transfer rate with PCIe® 4.0 architecture

SAN RAMON, CALIF— May 19, 2020 — The SD Association announced today the SD 8.0 Specification for SD Express memory cards receives even faster transfer speeds by using the popular PCI Express® (PCIe®) 4.0 specification delivering a maximum of nearly 4 gigabytes per second (GB/s) data transfer rate. These full sized cards continue to use the NVMe Express™ (NVMe™) upper layer protocol enabling advanced memory access mechanism. As always SD Express memory cards using SD 8.0 specification maintain backward compatibility.

“SD Express’ use of even faster PCIe and NVMe architectures to deliver faster transfer speeds creates more opportunities for devices to use SD memory cards,” said Mats Larsson, Senior Market Analyst at Futuresource. “This combination of trusted and well-known technologies makes it easier for future product designs to leverage the benefits of removable storage in new ways.”

SD Express gigabyte speeds bring new storage opportunities for devices with demanding performance levels, across a variety of industries. The cards can move large amounts of data generated by data-intense wireless or wired communication, super-slow motion video, RAW continuous burst mode and 8K video capture and playback, 360 degree cameras/videos, speed hungry applications running on cards and mobile computing devices, ever evolving gaming systems, multi-channel IoT devices and automotive to name a few. SD Express will be offered on SDHC, SDXC and SDUC memory cards.

“By dramatically increasing the speeds for SD Express we’re giving device manufacturers and system developers more storage choices,” said Hiroyuki Sakamoto, SDA president. “SD 8.0 may open even more opportunities for extra high performance solutions using removable memory cards.”

“PCI-SIG® is pleased to see that SDA is continuing to adopt even faster PCIe technology configurations using PCIe 4.0 interface and dual lanes for one of the top leading removable memory cards – SD,” said Al Yanes, PCI-SIG president and chairman. “PCIe specification conformance tests are available today by major test vendors, offering a significant advantage for any new PCIe technology adopter.”

“NVMe is the industry-recognized performance SSD interface from the client to the datacenter, shipping in millions of units,” said Amber Huffman, NVM Express™ Inc. president. “Consumers will benefit by SD Association continuing the adoption of the NVMe base specification for their latest SD Express cards.”

SD Express uses the well-known PCIe 4.0 specification and the latest NVMe specification (up to version 1.4) defined by PCI-SIG and NVM Express, respectively. SD 8.0 specification provides two transfer speed options for SD Express memory card. The two transfer speeds are accomplished by supporting either PCIe 3.0 x2 or PCIe 4.0 x1 architectures with up to ~2GB/s and with PCIe 4.0 x2 technology with up to 4GB/s. SD Express cards offering PCIe 4.0 x1 architecture use the same form factor as defined for SD 7.0 specification cards with a second row of pins to deliver transfer speeds up to 2 GB/s. SD Express cards supporting dual PCIe lanes (PCIe 3.0 x2 or PCIe 4.0 x2 technologies) have three rows of pins.

SD Express memory card examples:



Pin layouts of SD Express memory cards using single or dual lane technology:



The SDA makes adoption of SD Express easy allowing companies to use existing test equipment and saving in product development costs. The SD 8.0 specification continues giving system developers access to PCIe and NVMe technologies, such as Bus Mastering, Multi Queue (without locking mechanism) and Host Memory Buffer.

Two revised white papers, “[SD Express Cards with PCIe and NVMe Interfaces](#),” and “[SD Express and microSD Express Memory Cards: The Best Choice for Your Future Product Designs](#)” provide an in-depth look at the opportunities created by SD Express. More information is available on our [website](#).

Visit the SDA [Virtual Tradeshow](#) to learn more about SD Express solutions offered by our members.

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SD Association

The SD Association is a global ecosystem of nearly 900 technology companies charged with setting interoperable SD standards. The Association encourages the development of consumer electronic, wireless communication, digital imaging and networking products that utilize market-leading SD technology. The SD standard is the number one choice for consumers and has earned more than 80 percent of the memory card market with its reliable interoperability and its easy-to-use format. Today, smart phones, tablets, drones, IoT devices, HDTVs, audio players, automotive systems, computers, digital cameras and digital video cameras feature SD interoperability. For more information about SDA or to join, please visit the Association's website, <https://www.sdcard.org>.

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PCI-SIG

PCI-SIG is the consortium that owns and manages PCI specifications as open industry standards. The organization defines industry standard I/O (input/output) specifications consistent with the needs of its members. Currently, PCI-SIG is comprised of nearly 800 industry-leading member companies. To learn more about PCI-SIG, and for a list of the Board of Directors, visit www.pcisig.com. PCI Express® is a registered trademark of PCI-SIG.

About NVM Express, Inc.

With more than 100 members, NVM Express is a non-profit organization focused on enabling broad ecosystem adoption of high performance and low latency non-volatile memory (NVM) storage through a standards-based approach. The organization offers an open collection of NVM Express (NVMe™) specifications and information to fully expose the benefits of non-volatile memory in all types of computing environments from mobile to data center. NVMe-based specifications are designed from the ground up to deliver high bandwidth and low latency storage access for current and future NVM technologies. For more information, visit <http://www.nvmexpress.org>.

PCIe® - PCI Express, is a standard developed by PCI-SIG® and PCIe® is a trademark owned by PCI-SIG.

NVMe™ - NVM Express™, is a standard developed by NVM Express Inc. and NVMe™ is a trademark owned by NVM Express Inc.

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