



NEWS RELEASE

Editorial Contact:

Tammy Lee
Lee Communications
Phone: 877-677-9533
Tammy@leecomunications.com

Twenty-Five Leading Infrastructure Suppliers Announce Product Support for PCI-X 2.0

All the Elements for a Successful PCI-X 2.0 Launch Are Now in Place

PORTLAND, Ore., July 15, 2002 – The PCI-SIG, the Special Interest Group responsible for PCI, PCI-X and PCI Express industry-standard I/O technologies, announced today that twenty-five leading suppliers of PCI infrastructure have firm plans to support and enable the impending PCI-X 2.0 specification. PCI-X 2.0 is a high-performance extension to the PCI-X specification that offers next-generation performance and backward compatibility to current PCI-based systems, and will be released as an industry standard later this month.

Infrastructure support for PCI-X 2.0 will include: technical training for design engineering; intellectual property of pre-designed silicon blocks; programmable gate arrays for quick product development; software test suites; Basic Input Output Software (BIOS); silicon I/O buffers, clocks and integrated circuits; connectors and testers. The supporting companies include: Agilent Technologies, Altera, American Megatrends, Artisan, Cypress, Foxconn, FuturePlus® Systems, General Software, HP, IBM Microelectronics, Integrated Circuit Systems, LSI Logic Corporation, MindShare, Molex Incorporated, NEC, New Wave,

NurLogic Design, Pericom Semiconductor, Phoenix Technologies, Philips, Synopsys, Tektronix, Texas Instruments, TransEDA and Tyco Electronics.

“Server platforms, in particular, are ready to jump on the PCI-X 2.0 bandwagon to increase their I/O bandwidth as much as possible, as soon as possible,” said Tony Pierce, PCI-SIG chairman. “We’ve already seen support demonstrations from companies that make chipsets and add-in adapter cards, and now with this announcement, the rest of the infrastructure has fallen into place.”

About PCI-X 2.0

PCI-X 2.0 is a high-performance extension to the PCI Local Bus specification that facilitates connections to add-in cards for 10 Gigabit Ethernet, 10 Gigabit Fibre Channel, Serial Attached SCSI, Serial ATA (SATA), 4x and 12x InfiniBand, RAID and cluster interconnects for servers and workstations. PCI-X 2.0 defines two new versions of PCI-X add-in cards: PCI-X 266 and PCI-X 533. The first, PCI-X 266 runs at speeds up to 266 MegaTransfers per second using Double Data Rate (DDR) techniques, enabling sustainable PCI bandwidth of more than 2.1 Gigabytes/second. PCI-X 533 runs at speeds up to 533 MegaTransfers per second using Quadruple Data Rate (QDR) techniques enabling bandwidth of more than 4.3 Gigabytes/second. The specification also provides increased reliability through Error Checking and Correction (ECC™). PCI-X 2.0 will provide customers with needed I/O bandwidth along with investment protection because of its backward compatibility with existing systems.

PCI-X 2.0 TRAINING

Don Anderson, Vice President, MindShare (www.mindshare.com)

“We provided comprehensive design engineering training programs on the first revision of PCI-X, and wrote a detailed text book to help enable the transition to PCI-X. Now we are pleased to offer new custom classes to help our customers make the transition to PCI-X 2.0. We believe that our programs give engineers the knowledge and confidence that can result in weeks being trimmed from the design and verification cycle.”

PCI-X 2.0 INTELLECTUAL PROPERTY

Ken Jansen, Director ASIC and Chipset Development, HP Industry-Standard Servers (www.hp.com)

“HP has long been committed to delivering enterprise customers industry-standard server solutions that address critical business issues such as investment protection, bandwidth optimization, and ease of use. As the extension of existing PCI-X bus standards, PCI-X 2.0 will optimize performance, cost, and resources, without requiring customers to dramatically change their existing infrastructures. HP’s investment in PCI-X bus standards continues to enable us to deliver value through innovation. HP initiated a licensing program, called ‘Golden Master,’ for PCI-X 1.0, in which industry partners benefit from a reference design. The components available to licensees include bus functional model, verilog models, documentation, and technical support. The Golden Master program proved to be a tremendous benefit to the industry enabling rapid deployment of PCI-X technology.”

Dave Jones, Vice President and General Manager, Storage and Computing ASICs Division, LSI Logic Corp. (www.lsillogic.com)

“LSI Logic’s extensive high-speed interface engineering capability, industry-leading host bus adapter customer base and repeated success with PCI and PCI-X will provide customers with an advantage in developing PCI-X 2.0 products. The industry recognizes there are timing and electrical challenges in implementing PCI-X 2.0; however, as a key contributor to the PCI-X 2.0 standard, LSI Logic is providing the necessary building blocks and support to overcome those challenges. LSI Logic is offering the PCI-X 2.0 interface in our Gflx 0.11-micron technology.”

Ed Bard, Director of DesignWare Marketing, Synopsys (www.synopsys.com)

“As a leading supplier of standards-based verification IP, Synopsys is enhancing our popular PCI/PCI-X verification solution to encompass PCI-X 2.0. The solution will include master and slave bus-transaction models that are used to initiate and respond to PCI-X bus transactions, and a monitor to check for protocol violations. The PCI-X 2.0 solution will be included in the DesignWare IP library and made available later this year.”

GATE ARRAYS

Justin Cowling, IP Marketing Director, Altera Corporation (www.altera.com)

“Designers implementing PCI-X 2.0 in programmable logic can take advantage of Altera’s dedicated DDR and QDR gate array circuitry to maximize performance. Our comprehensive suite of high-performance interface IP will enable customers to develop PCI-X 2.0 designs with the shortest time-to-market.”

TEST SUITES

Scott Winick, Director of System Verification, TransEDA (www.transeda.com)

“Our PCI-X verification suite provides configurable agents and monitors that can be used in any simulation, as well as a formal property library, an intelligent controller and simulation

test suites. This complete verification IP portfolio for PCI-X 1.0 and PCI-X 2.0 buses speeds system verification by allowing engineers to focus effort on their design instead of on developing models of standard interfaces."

BIOS

Bill Clark, Strategic Account Manager, American Megatrends (www.ami.com)

"AMIBIOS, already supporting a wide range of PCI specifications, will enable PC-based platforms to achieve the full benefits of increased system I/O bandwidth introduced by PCI-X 2.0."

Steve Jones, Founder and Chief Technical Officer, General Software (www.gensw.com)

"General Software is committed to its embedded x86 customers who migrate to newer technologies. Just as General Software has packaged industry-standard functionality such as PCI and PCI-X into its embedded firmware products, our support for PCI-X 2.0 will follow in the same way. Of key importance to embedded customers is that PCI-X 2.0 is provided in firmware thus minimizing the time-to-market through easy deployment build options, while minimizing maintenance costs."

Alan McCann, Sr. Vice President & General Manager, Corporate Marketing & Products Division, Phoenix Technologies Ltd. (www.phoenix.com)

"Phoenix Technologies developed the industry's first BIOS support when PCI was introduced nearly ten years ago. As the industry's leading supplier of PCI-enabling firmware and an active member of the PCI-SIG, we have helped our manufacturing customers ship systems that meet PCI's most complex challenges, including providing support for deeply nested bus topologies, systems with mixtures of PCI and PCI-X devices, and Hot-Plug PCI systems. Phoenix looks forward to supporting the introduction of the PCI-X 2.0 specification and the greatly enhanced performance it offers for computer system manufacturers and customers."

I/O BUFFERS

Neal Carney, Vice President of Marketing, Artisan (www.artisan.com)

"Artisan Components has supported PCI and PCI-X with compliant I/O products in multiple foundry processes. We intend to support PCI-X 2.0 in the same fashion as customer adoption accelerates."

Richard Busch, Director of Storage Networking, IBM Microelectronics (www.ibm.com)

"The movement to high-speed I/O solutions demands more bandwidth from the interfaces used to connect I/O subsystems to the processor complex. With the adoption of PCI-X 2.0 the I/O bus should not limit system performance for many years to come."

Hiro Hashimoto, Senior Vice President and Executive General Manager of the System LSI Operations Unit, NEC Electronic Devices, NEC Corp. (www.nec.com)

“NEC has already added a PCI-X 2.0 cell to its 0.13-micron CB-12 ASIC library. The new cell required only minor modifications to our existing PCI-X 1.0 cell, so customers using the new macro will benefit from a proven, robust design and the extensive manufacturing capability of a world leader in this advanced technology.”

Lisa Lipscomb, Vice President of Marketing, NurLogic Design, Inc. (www.nurlogic.com)

“PCI has been an important part of our high-bandwidth product portfolio, which already includes PCI 33, PCI 66 and PCI-X 1.0 in 0.25 through 90nm. Considering PCI-X 2.0 a key future technology, we felt it was important to be one of the first to market. We will have our PCI-X 2.0 I/O buffers available in August for 0.13-micron process technology. By using PCI-X 2.0, designers are left to focus on the product features that make their designs unique.”

CLOCKS

Paul Cheng, Business Unit Director, Timing Technology Division, Cypress (www.cypress.com)

“Cypress offers a family of timing products to support PCI-X 2.0. Our CY2304NZ, C9530 and C9531 are ideal timing solutions for PCI-X applications.”

Ram Iyer, Director of Marketing, Integrated Circuit Systems (www.icst.com)

“ICS takes pride in providing complete and effective timing solutions for leading edge computing technologies. We have in production, over 20 different clocking solutions to support all PCI technologies from 32-bit / 33 MHz PCI, up to PCI-X 533. These products offer significant flexibility to system designers.”

Joe Kochanski, International Product Manager - Clocks & Memory Interface Products, Philips (www.semiconductors.philips.com)

“Our PCK2002PLPW PCI Buffer provides ideal support for PCI-X 2.0 buses and will support the entire range of PCI-X buses. We also work closely with leading OEMs and chipset vendors to ensure compatibility on this part device type as well as clock synthesizers such as PCK2022RA, which are now in volume production.”

Raj Gupta, Marketing Manager of CDC Product, Texas Instruments (www.ti.com)

“We are very excited to provide Clock Synthesizer Circuits (CDC950) and Clock Buffers (CDCV304) which support PCI-X 2.0. These devices provide designers with improved timing budget, and we continue to be a leader in delivery of high-performance Clock Distributor Circuits.”

INTEGRATED CIRCUITS

David Raun, VP, Strategic Marketing, Pericom Semiconductor (www.pericom.com)

“As a key supplier of silicon solutions to the leading server manufacturers, Pericom is committed to supporting PCI, PCI-X, and PCI-X 2.0 with timing solutions, switches, buffers, and bridge products.”

Steve Hemmah, Product Marketing Engineer, Texas Instruments (www.ti.com)

“Working with industry leaders, Texas Instruments is developing state-of-the-art mixed-signal hot-plug power controller chips geared specifically to the high-availability requirements of today's latest mission-critical servers. Its advanced architecture, like that of the servers themselves, takes full advantage of the latest technologies and PCI-X 1.0 and 2.0 specifications.”

CONNECTORS

David Pao, Product Manager, Foxconn Electronics (www.foxconn.com)

“As a top connector manufacturer in the world, Foxconn fully supports PCI-X 2.0. Production volume is available as of Q2 2002. Sample product is available by request. Please contact our distributor or regional sales office for more information.”

Bill Kysiak, Product Manager, Molex Incorporated (www.molex.com)

“Molex plans to fully support PCI-X 2.0 with its connectors and is well prepared to meet market demand for this product. As Molex currently produces the connector for the 64-bit PCI, we are in a solid position to support the PCI-X 2.0 standard.”

Greg Sites, Director of Product Management, Tyco Electronics (www.tycoelectronics.com)

“As a leader in the connector industry, we will support PCI-X 2.0. In fact, we already have this connector in production – since it is the same connector that is used to support PCI and PCI-X 1.0 – and we are ready to provide customers with the PCI-X 2.0 connector.”

TESTERS

Perry Keller, Computer I/O Bus Analysis Program Manager, Agilent Technologies (www.agilent.com)

“Agilent has long been a leader in providing the physical layer, analysis, and exerciser test tools that teams rely on for PCI design validation and compliance test. We are excited that we will be able to continue this with PCI-X 2.0. The first PCI-X 2.0 designs are expected this year and Agilent has been working actively with leading OEMs and the PCI-SIG to ensure our tools are ready for 1st silicon turn-on.”

**Gregg Buzard, Strategic Programs Manager, FuturePlus® Systems
(www.futureplus.com)**

"FuturePlus® Systems has been providing PCI test tools since 1992 and was the first to provide debug and analysis for PCI-X at 133 MHz. We have a long history of early support for high-speed buses and are committed to providing test solutions for PCI-X 2.0 to help leading-edge companies quickly bring the power of this new standard to the market."

Mark Briscoe, Logic Analyzer Marketing Manager, Tektronix Inc. (www.tektronix.com)

"As a test and measurement leader, Tektronix provides high-performance instruments that support emerging standards and technologies, such as PCI-X 2.0. Our logic analyzers and oscilloscopes can be easily integrated to provide a seamless analog/digital toolset, necessary for testing and validating high-speed PCI-X 2.0 signals."

Ken Graham, New Products Manager, New Wave (www.busboards.com)

"New Wave's current support for V1.0 of the PCI-X bus is used with Tektronix logic analyzers to provide high-speed timing and state analysis of the PCI-X bus. We are committed to supporting PCI-X 2.0 in the same way."

About the PCI-SIG

The 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 the organization became a nonprofit corporation, officially named "PCI-SIG" in the year 2000. Currently, more than 780 industry-leading companies are active PCI-SIG members. The PCI-SIG's current directors are employed by the following PCI-SIG member companies: Adaptec, AMD, HP, IBM, Intel, Microsoft, Phoenix Technologies, ServerWorks and TI. For more information about the PCI-SIG, and PCI-SIG membership benefits, contact the PCI-SIG by phone, at (800) 433-5177 (within the United States), or by fax at (503) 297-1090, or visit the PCI-SIG web site at: <http://www.pcisig.com>

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