

Xilinx Technology Enabled Instant Deployment of Real-PCI Express

Xilinx delivered the world's first PCI Express product on the same day the specification was finalized.

By Xilinx Staff

Last July – on the same day the PCI Special Interest Group (SIG) announced the final PCI Express specification – Xilinx delivered the world's first PCI Express intellectual property (IP) core: Real-PCI™ Express. The solution expedited the implementation of PCI Express for Xilinx customers by 12 to 18 months, demonstrating the power of programmable logic over ASIC technology.

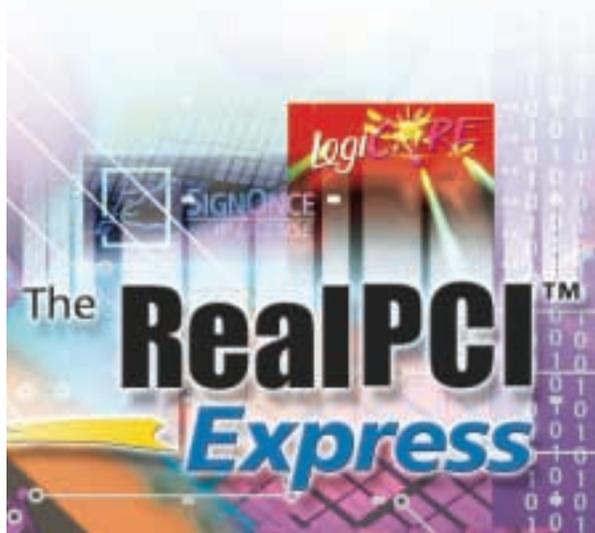
PCI Express is the successor to the legacy peripheral component interconnect local bus standard established by Intel. The new PCI Express standard is targeted at the desktop, mobile, server, storage, and embedded communications markets.

“PCI Express takes PCI to another level, with a high-speed, scalable, serial architecture that provides exciting new I/O options for system partitioning designs and form factors,” said Tony Pierce, PCI-SIG chairman.

The PCI Express Core

The Xilinx Real-PCI Express core uses the proven RocketIO™ 3.125 Gbps serial transceivers on Xilinx Virtex-II Pro™ FPGAs – the only devices on the market capable of implementing the new specification.

The Real-PCI Express interface can be used to maximize performance and feature quality in high-performance workstations as well as consumer gaming devices. Designers can use the core to design high performance PCI Express systems using



Xilinx Smart-IP™ technology to meet critical 2.5 GHz timing requirements. The core reaches a line speed of 2.5 Gbps, utilizing the features of the RocketIO multi-gigabit transceivers, such as clock data recovery, 8B/10B encoding, 3.125 Gbps SerDes, transmit/receive FIFOs, and CRC.

The Logic Advantage

The programmability and serial transceiver capability of Virtex-II Pro FPGAs allowed Xilinx to develop the core simultaneously with the definition of the PCI Express specification as it evolved.

The shipment of the Real-PCI Express core at the same time a final specification was released allowed designers to begin prototyping PCI Express solutions immediately, well ahead of any ASIC-based implementations, according to Cary Snyder, a noted industry expert and analyst.

“By using the programmability and serial transceiver capability of the Virtex-II Pro device, Xilinx was able to develop its core in parallel with its participation in

the definition of the specification – a true testament to the capability and benefits of programmable systems,” Snyder added.

Always Looking Forward

The Xilinx IP core is currently compatible with both the protocol and electrical requirements of the v1.0 base PCI Express specification, but Xilinx is continuing to participate as an active developer in the PCI Express Advanced Switching working group to develop the communications extension for PCI Express. Xilinx plans to incorporate PCI Express with advanced switching into its Virtex-II series FPGAs.

License Price and Availability

The Xilinx PCI Express IP core is available now as a Xilinx LogiCORE™ product under the terms of SignOnce™ IP license and is priced at \$25,000.

Once purchased, it may be configured and downloaded from the Xilinx website at www.xilinx.com/pciexpress/.

For more information and to purchase Virtex-II Pro FPGAs, visit www.xilinx.com/platform/.

Information about licensing and other Xilinx LogiCORE products is available on the Xilinx IP Center at www.xilinx.com/ipcenter/.

For complete information about the PCI Express core, visit www.xilinx.com/systemiol/. 