

# PCI Interface is First New LogiCore™ Module



To date, integrating a PCI interface into an FPGA or ASIC device has been a difficult challenge, often requiring months to learn the PCI specification and to optimize and verify the design. With LogiCore modules, Xilinx is doing the tough work for you (now for PCI, to be followed soon by several other applications).

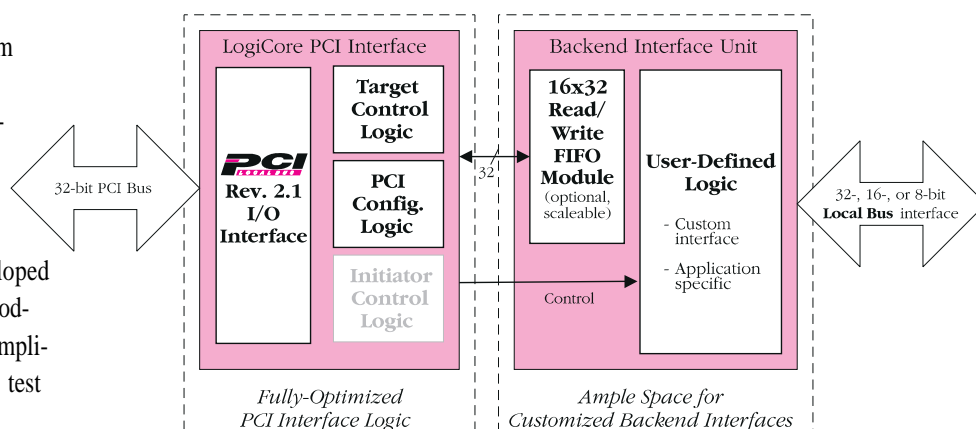
The LogiCore program supplies pre-implemented "drop-in modules" for Xilinx FPGA designs. As a result, users can slash development time, reduce design risk, and obtain optimal performance for their FPGA designs. Since LogiCore modules have pre-defined implementations and are already fully-verified, designers can focus their time and energy on their unique system functions.

The first LogiCore module is a fully-compliant, 32-bit PCI interface for the XC4000E FPGA family. It has pre-defined mapping, relative placement and timing specifications. Jointly developed by Xilinx and HighGate Design, the module has been verified using the PCI-compliant test bench from Virtual Chips. This test bench is approved by the PCI Special Interest Group (PCISIG) and simulates all possible signaling on a PCI bus. Furthermore, 30 designers have beta tested the module, and 17 PCI board designs have been completed using the beta version.

"We chose Xilinx modules because they're fully verified," noted Brian Warren, senior design engineer at Delco Electronics. "The module we used worked the first time, saved us more than six months in development time, and allowed us to focus our resources on our system design." Warren, one of the beta-site users of the module, has designed a Digital Audio Broadcast (DAB) transceiver that includes a RISC

processor and Xilinx XC6200 and XC4013 FPGA devices.

As shown in the diagram, the LogiCore PCI module is partitioned into five major blocks. In addition to the PCI interface, configuration and control logic, the module includes a FIFO buffer and a simple, general-purpose interface to the user's back-end logic. The FIFO buffer uses the Select-RAM™ memory feature of the XC4000E to support burst transfers at the maximum bus speed. The schematic-based module can be easily customized to meet the user's needs. When implemented in an XC4013E FPGA, more than 7,000



programmable gates remain free for integration of the unique, back-end functions of the application. This is a high-performance, one-chip solution.

The LogiCore PCI interface is available with target functionality today, and will be updated with full initiator/target functionality in March. (Contact your local Xilinx representative for ordering information.)

## Coming Attractions

The LogiCore PCI interface is just the first of a planned series of vertical solu-

## LogiCore PCI module block diagram

See LOGICORE, page 32



# LogiCore

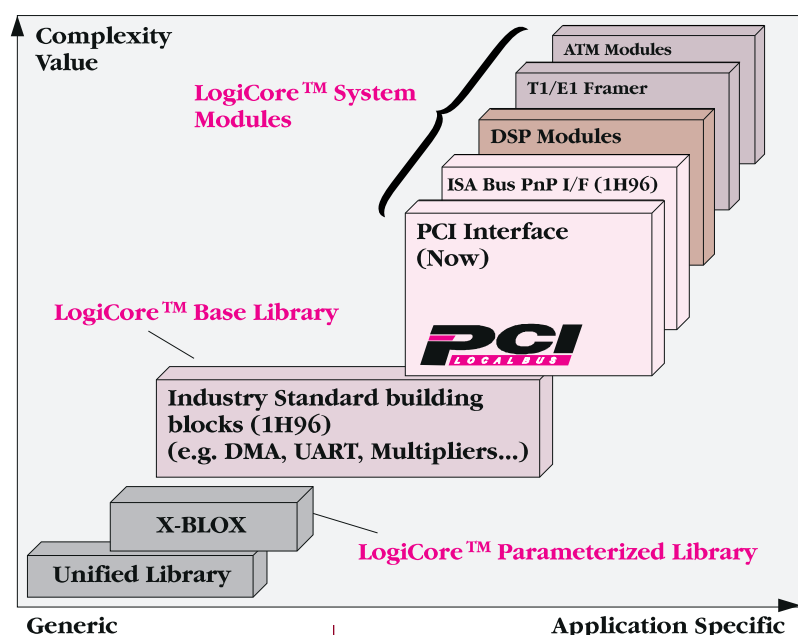
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tions from Xilinx. Several LogiCore system modules are in development, including an ISA bus plug and play interface, DSP building blocks, and ATM modules. In addition to these high-complexity system modules, a collection of medium-sized, industry-standard building blocks will be available in the LogiCore base library. When released this spring, this library will include functions such as DMA controllers, UARTs, multipliers and FIFOs. All the modules are pre-defined, drop-in solutions that maximize utilization and performance, and accelerate time-to-market.

Along with the LogiCore products created and distributed by Xilinx, we will work with third-party intellectual property providers. In order to grow the number of available modules rapidly, Xilinx has initiated the **LogiCore Partners Program**. This program will access existing industry expertise to encourage the creation of a wide range of high-quality FPGA building blocks from third-party vendors. Xilinx will work closely with the LogiCore partners to verify the quality of LogiCore modules. The table below lists the initial members of the program.

Xilinx is the first FPGA vendor to provide pre-designed, fully-verified drop-in modules. By allowing you to focus your time and effort on your system design, these modules can help you save months in development time for your high-performance, high-density systems.

For further information about the LogiCore PCI interface or other modules in the program, please contact your local Xilinx representative or visit the LogiCore section of WebLINX, Xilinx's World Wide Web site (<http://www.xilinx.com>). ♦



## LOGICORE PARTNERS

Company	Application areas of expertise
3Soft Corporation (CA)	Industry standard functions
Comit Systems (CA)	Communication, DSP
CoreEI MicroSystems (CA)	ATM, Sonet
Logic Innovations (CA)	PCI Bus Models, Set Top Box Technologies
Rice Electronics (MO)	Digital Signal Processing (DSP), Image Processing
SAND Electronics (CA)	Bus Interfaces (PCI, ISA, PCMCIA, CardBus)
Sierra Research and Technology (CA)	ATM, 100MB Ethernet, CPU Cores
Toucan Technology (Ireland)	Bus Interfaces including PCI, Telecom
VAutomation (NH)	Micro Processors, Embedded Systems, Communications
Virtual Chips (CA)	PCI, PCMCIA/CardBus, USB, ATM