Industry's Highest Performance PCI Solution for FPGAs

You can achieve the highest possible performance in your PCI applications by using our latest LogiCORE™ PCI interface and our new XC4000XLT FPGA family. The XC4000XLT family includes the XC4013XLT, XC4028XLT, and XC4062XLT, all optimized for PCI. The biggest device allows you to integrate the PCI interface plus 124K system gates of application-specific logic. Some Xilinx customers have achieved 124 Mbyte/sec throughput. And, for high-volume applications, you can migrate your design to a low-cost HardWire FpgASIC.

The LogiCORE PCI Interface v2.0 supports fully-compliant zero-wait-state bursts, and has a well-defined and well-documented backend interface, allowing maximum sustained performance. In addition, the XC4000XLT family has the same SelectRAM feature as the rest of the XC4000 series. With SelectRAM memory you can build a dual-port, synchronous or asynchronous FIFO, sized to support your application. So, you have everything you need to quickly design a complete system that supports the highest possible bandwidth over the PCI bus.

The XC4000XLT family is optimized for PCI and the devices include the required upper clamp diodes on the PCI inputs. This clamp diode is mandatory for a 3.3-volt PCI system to ensure data integrity. These diodes are connected to eight separate VTT pins, which are connected to 3.3 volts for a 3.3-volt PCI system or 5 volts for a 5-volt PCI system. **Table 1** lists the supported XC4000XLT device/package combinations and the number of system gates that are available for your specific backend function.

Using the Xilinx PCI core, you can quickly complete your design with a flexible FPGA, debug and verify PCI compliance of your board by plugging it into different vendors' PCs, and then convert the FPGA to a Hard-Wire FpgASIC for low-cost, high-volume production.

During the conversion process, Xilinx will review the design to ensure that the HardWire FpgASIC is fully compatible with the FPGA and automatically generate the necessary test programs for manufacturing. The HardWire solution allows you to complete a customized, one-chip, PCI interface with your unique backend design, at a price that is lower than most standard PCI chips currently available on the market.

Xilinx intends to provide you with PCI solutions that allow you to design the highest performance and highest density PCI systems. When the first LogiCORE PCI interface was released in 1995, Xilinx was the first FPGA vendor to support the PCI market. Today, Xilinx has a complete engineering and applications team dedicated to PCI, and the most robust PCI core in the market, licensed to almost 300 customers.

For more information on the Xilinx PCI solution and other core products, please visit the Xilinx Web site, WebLINX at www.xilinx.com/products/logicore/logicore.htm. ◆

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Table 1:
Supported XC4000XLT devices and available user-gates

Device	P/HQ208	P/HQ240[1]	BG432	Typical Gate Range available for user design[2]
4013XLT	✓	✓		4,000 - 6,000
4028XLT		✓		12,000 - 44,000
4062XLT		✓	✓	34,000 - 124,000

1) All devices pin-compatible in P/HQ240
2) Max values of Typical Gate Range include 20-30% of CLBs used as RAM/FIFO