

PEX 8548 Key Features

- ◆ 48-lane PCI Express switch
- ◆ Integrated SerDes
- ◆ Up to 9 configurable ports (x1, x2, x4, x8, x16)
- ◆ Cut-thru architecture with 110ns packet latency
- ◆ Quality-of-Service with ingress port arbitration
- ◆ Non-blocking switch fabric with full line-rates
- ◆ True peer-to-peer switching and host-centric data transfers
- ◆ Hot-Plug controller on three ports
- ◆ I²C interface for configuration
- ◆ 37.5x37.5 mm² PBGA package

PEX 8548 Other Features

- ◆ Selectable upstream port
- ◆ PCIe Base Specification r1.1 compliant
- ◆ End-to-end CRC
- ◆ Poison-bit support
- ◆ Advanced Error Reporting
- ◆ PCIe Baseline Error Reporting
- ◆ Link power management states: L0, L0s, L1, L2/L3 Ready, L3
- ◆ 1KB Max Payload Size
- ◆ Lane and polarity reversal
- ◆ Configuration through strapping pins, I²C, EEPROM, or host
- ◆ JTAG Boundary Scan

Application:

2/4 Processor Servers

PLX Product:

PEX 8548 – 48-Lane PCIe Switch

Key Benefit:

Create PCI Express slots and end-points

PCI Express in Today's Servers

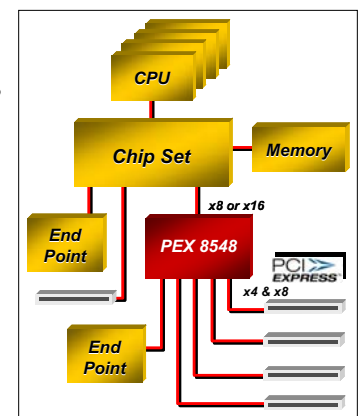
Servers started the transition to PCI Express last year to take advantage of the bandwidth, scalability and ubiquity of this technology. The servers shipping today offer some PCI Express slots, but the majority of the slots are still PCI-X. As new machines are introduced, we will continue to see less PCI-X and more PCI Express as chipset vendors are eliminating PCI-X interfaces from the chipset.

The chipsets from companies like Intel, NVIDIA and Broadcom offer a fixed number (3-4) of PCI Express ports. However, servers used in I/O intense applications such as storage require more ports.



PCI Express Switch Expands Server Feature Set

As the need for connectivity and quick access to information grows, so will the need for more storage and I/O. Additionally, with the emergence of dual and quad-core processors, CPU processing power has increased. The added processing power requires access to the information to/from resources outside of memory attached to the root complex. Consequently, there is an increased need for I/O connectivity. PCI Express, with its scalability, cost, and ubiquity lends itself to these applications.



By using one of the PCI Express Switches available today from PLX Technology, server manufacturers can cost effectively add PCIe slots and end-points to serve the customer needs and differentiate their products from competition.

Flexible & Versatile PCIe Switches

The PEX 8548 is based on PLX's 3rd generation switch architecture that has been optimized for server applications. With its flexibility, 48 PCIe lanes, 9 ports, and enhanced cut-thru architecture, the PEX 8548 can be utilized in many server applications. The

ports shown on the graphic on the right can be also combined to form wider ports.

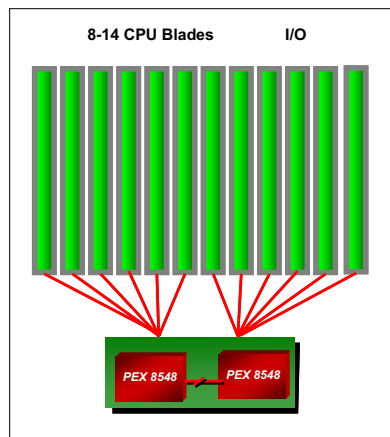
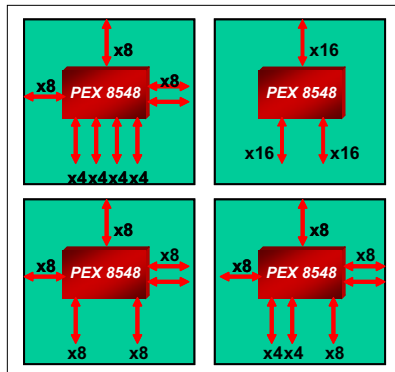
The device supports a moveable upstream port and cross-link feature that allows its use in

failover and dual-host applications. Furthermore, two PEX 8548 switches may be cascaded (as shown below) to create a 16 port configuration to support a blade-server switch fabric or backplane.

All PLX products go through rigorous simulation, pre-silicon emulation, post silicon verification, system interoperability and PCI-SIG compliance testing. Furthermore, the PEX 8548 switch helps in providing interoperability

between motherboards and adapter cards with its versatile ports, which allow any port to be an upstream and dynamically adopting to the LVDS polarity (polarity reversal) and lane orientation (lane reversal) of the adapter.

The PEX 8548 also supports hot-plug controllers on three ports allowing hot insertion and extraction of blades or I/O cards.



Switches & Bridges Available Today!

PLX is shipping three PCIe bridges (PEX 8111, PEX 8114 and PEX 8311) and the PCIe switches listed below.

Device	Lanes	Ports	Availability
PEX 8548	48	9	Dec-06
PEX 8532	32	8	In Production
PEX 8524	24	6	In Production
PEX 8516	16	4	In Production
PEX 8518	16	5	Sampling Now
PEX 8517	16	5	Sampling Now
PEX 8508	8	5	Sampling Now

More than just ports and lanes

- ◆ Cut-thru architecture for increased performance
- ◆ Full line-rate on all ports
- ◆ Advanced error reporting and diagnostics

Design Tools & Documentation:

<http://www.plxtech.com/products/expresslane/pex8548.asp>

- ◆ Data Book, Product Brief
- ◆ HSPICE/BSDL/IBIS Models
- ◆ Rapid Development Kit

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