



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 providing full line-rates
- ◆ True peer-to-peer switching and host-centric data transfers
- ◆ Hot-Plug Controller on 3 ports
- ◆ I²C interface for configuration
- ◆ 37.5x37.5 mm² PBGA package

PEX 8548 Other Features

- ◆ Programmable 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:

Edge Routers

PLX Product:

PEX 8548 – Versatile PCI Express Switch

Key Benefit:

High Throughput & Performance

Packet processing requirement at the edge of the network drives the need for a faster control plane

Edge routers process millions of packets per second in order to support ever-increasing demand for speed and real-time response by modern applications. Routers perform deep packet processing for authentication, access control, security, quality of service, encryption, intruder detection, denial of service attack, route optimization and network management. Several application specific processors or custom ASICs are involved in packet processing. These processors need to be interconnected through efficient, high-speed chip-to-chip or board-to-board interconnects. Typically, routers consist of line cards, router modules, and control modules. An example of a line card with PCI Express as the interconnect technology is shown below.



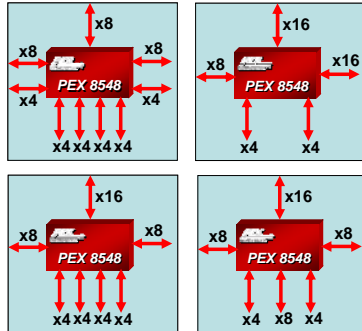
PCI Express Switches

Versatile PCI Express (PCIe) switches from PLX can be used on the Line Cards, Switch Module, and Control Modules. PCIe technology is backward compatible with PCI/PCI-X based software that is used in most router systems today. The PEX 8548 device supports 48 high-speed (2.5 Gb/s in each direction) lanes and up to 9 PCIe ports. The device allows cascading of multiple switches to offer any number of ports needed. The PEX 8548 also offers true peer-to-peer transfers that enable the Line Cards to pass packets to each other without Control Module involvement.

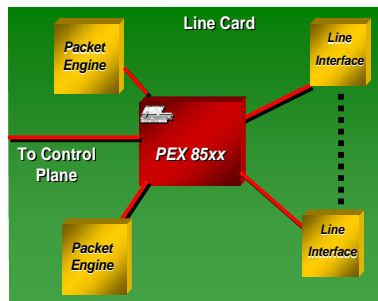
The port arbitration function in PEX 8548 allows certain ports, and therefore the Line Cards attached to those ports, to get higher priority for access to the Control Module.

PEX 8548

The PEX 8548 is a 48-lane, 9-port switch that can be used in switch fabrics, control modules, and line cards. The PEX 8548 is well suited for line cards that require many coprocessors (packet processors) and some management functionality. Other smaller switches from PLX can also be used if the line cards do not require deep packet processing. Control Modules with wide PCIe ports can benefit from the PEX 8548's port flexibility, high port-count, port arbitration, and the industry's lowest latency.



The PEX 8548 supports true peer-to-peer transfers allowing its use in cascade mode to create a large number of lanes and ports for switch fabric and backplane applications.



Key Advantages for PLX

The *ExpressLane™* PEX 8548 is the most versatile and flexible PCI Express switch in the industry. It provides advance features such as flexible port configurations, low latency, large on-chip packet memory, advanced error reporting, on-chip hot plug controllers, and the industry's lowest latency – all at an affordable cost.

Maximize Performance

The packet buffers in the PEX 8548 are not fixed in allocation to any specific port. Instead, the architecture is based on the centralized packet memory. This allows for the optimum use of the packet memory based on the dynamic buffer assignment for specific ports as specified by the user.

Additional PLX Advantages

- ◆ Core competency in PCI Express technology & leadership in developing PCIe specifications and ecosystem
- ◆ Evangelizing and leading efforts in several industry forums for PCI Express adoption

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	Sampling Now
PEX 8533	32	6	Sampling Now
PEX 8532	32	8	Production
PEX 8525	24	5	Sampling Now
PEX 8524	24	6	In Production
PEX 8517	16	5	In Production
PEX 8508	8	5	In Production
PEX 8518	16	5	In Production
PEX 8509	8	8	Samples in Q2-07
PEX 8505	5	5	Samples in Q2-07

Design Tools & Documentation:

On PLX Public Tool Box: www.plxtech.com/8548

- ◆ Data Book, Design Notes, Interoperability Reports
- ◆ Hspice Models, IBIS Models, BSDL Files

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