

PEX 8518 Key Features

- ◆ 16-lane PCI Express switch
- ◆ Integrated SerDes
- ◆ Up to five configurable ports (x1, x2, x4, x8)
- ◆ Cut through architecture with 150 ns latency
- ◆ Quality-of-Service (QoS) with up to 2 Virtual Channels/port
- ◆ Non-blocking switch fabric with full line rates
- ◆ Peer-to-peer switching and host centric data transfers
- ◆ SHPC r1.1 compliant Hot-Plug controller on all ports
- ◆ Dual-clocking support w/ SSC & Constant Frequency domains
- ◆ I²C interface for configuration
- ◆ 23x23 mm² PBGA package

PEX 8518 Other Features

- ◆ Selectable Non-Transparent bridge port
- ◆ PCIe Base specification r1.1 compliant
- ◆ End-to-end CRC and Poison bit support
- ◆ Basic and Advanced error reporting
- ◆ Hardware fixed and Round Robin Virtual Channel Port arbitration
- ◆ Link power management states
- ◆ 256 byte payload size
- ◆ Lane and polarity reversal
- ◆ Configuration through I²C, host or optional EEPROM
- ◆ JTAG Boundary Scan AC/DC

Application:

Multi-Monitor Systems

PLX Product:

PEX 8518 – 16-Lane PCI Express Switch

Key Benefit:

Increased Fan-out & Bandwidth

Multiple Monitor Systems with PCI Express

Multiple monitor computing, traditionally employed by financial and graphics professionals, is now becoming affordable for mainstream computer users. The factors that are playing a key role in this development are newer operating systems, lower RAM prices, enhancements in LCD technology, lower LCD monitor prices and enhanced GPU devices.

In utilizing multiple monitors, users can move and size a variety of information and images across any or all screens to increase productivity and expand capabilities.



In addition to increasing productivity with many computing tasks, multiple monitor computing is ideal for a multitude of applications enhancing productivity in 2D Graphics, 3D Graphics and Multimedia.

The applications taking advantage of multiple monitor systems include spreadsheet analysis, desktop publishing, CAD, CAM, CAID, timeline tracking, web design, gene sequencing, presentations, gaming, game development, model design, trade show presentations, presentation systems, financial analysis, stock trading, software development, simulation, videoconferencing, schedule maintenance, illustration, animation, video /audio editing, technical research and photo editing.

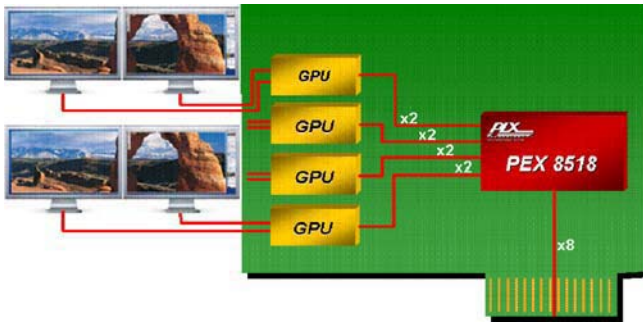
PCIe Switches to Expand the Connectivity

The PCI Express technology has been adopted by major processor (CPU) vendors, motherboard manufacturers, chip-set suppliers, GPU manufacturers and Graphics Adapter card vendors. These suppliers

provide all the necessary components of Multi-Monitor systems with scalable PCI Express architecture.

Flexible & Versatile PCIe Switches

The flexibility and versatility of the PLX switches allows designers to build to the needs of the application. The PEX 8518, a second generation PCIe switch from PLX, offers flexible ports that can be configured in any legal width up to x8 while providing high-performance cut-through architecture (150 ns latency), hot-plug capability on every port, and quality of service (QoS) through two virtual channel support. An example of the PEX 8518 switch in a Multi-Monitor adapter card is shown below.



The PEX 8518 supports use of up to four x2 downstream ports with an x8 PCI Express upstream port. This would allow use of four dual-ported GPUs to drive up to eight monitors. The fan-out to the four x2 GPUs through an x8 upstream provides a perfect match in ingress to egress bandwidth.

The PEX 8518 switch helps in providing interoperability between motherboards and adapter cards through its five flexible ports allowing any port to be upstream and dynamically adopting to the LVDS polarity (polarity reversal) and lane orientation (lane reversal) of the adapter.

Additionally, PEX 8518 can be directly connected to the host PCIe port or via the root complex. The non-transparent bridging port of the PEX 8518 allows use of a local processor on the adapter board.

Switches & Bridges Available Today!

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

Device	Lanes	Ports	Availability
PEX 8532	32	8	In Production
PEX 8524	24	6	Sampling Now
PEX 8516	16	4	In Production
PEX 8518	16	5	Sampling Now
PEX 8508	8	5	Sampling Now

More than Just Fan Out

- ◆ Cut-through architecture for increased performance
- ◆ Two Virtual Channels for QoS
- ◆ Non-transparent bridging for intelligent adapters

Design Tools & Documentation:

http://www.plxtech.com/products/pci_express/PEX8518/default.asp

Data Book, App Notes, Product Brief, Hspice Model, Simulation Model, Development Kit

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