

PEX 8618 Key Features

- ◆ 16-lane PCIe Gen 2 switch
- ◆ Up to 16 configurable ports (x1, x4, x8)
- ◆ Non-Transparent Port
- ◆ Cut-through architecture with 140ns latency
- ◆ Two virtual channels per port for differentiated Quality of Service
- ◆ Eight traffic classes per port
- ◆ Dual-cast to save CPU cycles
- ◆ Read-pacing for performance
- ◆ Dynamic buffer allocation
- ◆ Hot-plug on 16 ports thru I²C
- ◆ Spread-Spectrum Clock isolation
- ◆ Lane and polarity reversal
- ◆ Typical Power: 1.9W
- ◆ 19x19 mm² PBGA package

PEX 8618 Other Features

- ◆ PCIe Base Specification r2.0, 1.1 & 1.0a compliant
- ◆ PCI power management interface specification r1.2 compliant
- ◆ Transaction layer end-to-end CRC
- ◆ Poison bit support
- ◆ Basic and Advanced Error Reporting support
- ◆ Link power management states: L0, L0s, L1, L2/L3 Ready & L3
- ◆ Device states: D0 and D3hot
- ◆ 2KB Max Payload Size
- ◆ Fatal error (FATAL_ERR#) signal (legacy SERR equivalent)
- ◆ INTA# signal
- ◆ 16 GPIO signals
- ◆ Configuration through strapping pins, I²C, EEPROM, or host
- ◆ AC/DC JTAG Boundary Scan

Application:

Control Planes in Telecom Applications

PLX Product:

PEX 8618 – 16-Lane 16-Port PCIe Switch

Key Benefit:

PCIe Connectivity & Fan-Out

Telecom Systems Migrating to PCI Express

PCI Express, in addition to storage, server & graphics markets, is now being used in the telecom market. With processors from companies such as Freescale, AMCC, Cavium and others integrating PCIe ports (in some cases more than one PCIe port), telecom applications are beginning to use PCIe on both control & data planes. Also, customers prefer PCIe to replace legacy PCI due to the ease-of-design & layout, higher throughput with lower latency and lower costs. A typical application, as shown in Figure 1, with a control plane on the board would involve a large number of ASICs and FPGAs all needing to connect to the control processor. With a large number of x1 ports, PEX 8618 would provide the connectivity to these ASICs and FPGAs.

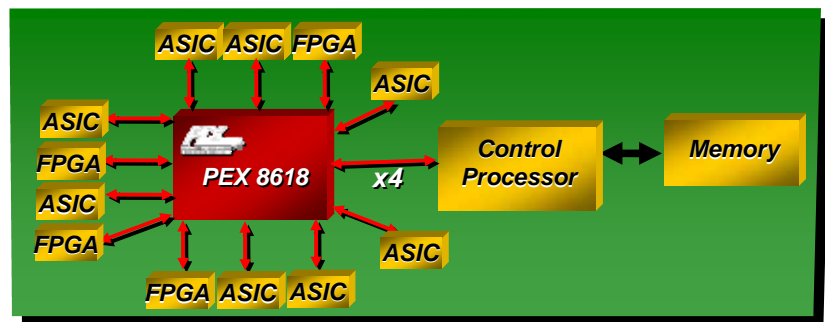


Figure 1: On-board control plane

Another typical application, as shown in Figure 2, would involve a PCIe switch on the line card aggregating traffic from a Network Processor, Traffic Manager, Security Processor, Co-Processor, ASICs etc... over the PCI Express interface. Several such line cards can then be connected, via PCI Express, to the controller card which also has a PCIe switch. The PEX 8618 can be used on the line cards to aggregate traffic and its NT port isolates the local processor from the control processor. The PEX 8618 on the controller card can connect up to 15 different line cards.

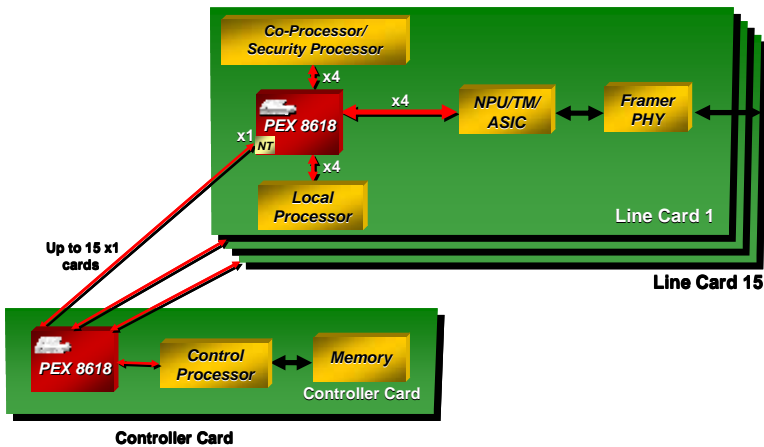


Figure 2: Control plane across backplane

The applications that need redundancy on the controller card can use the same line cards and controller card shown in Figure 2 and use crosslink feature (the dotted link in Figure 3) to establish redundancy on the controller cards.

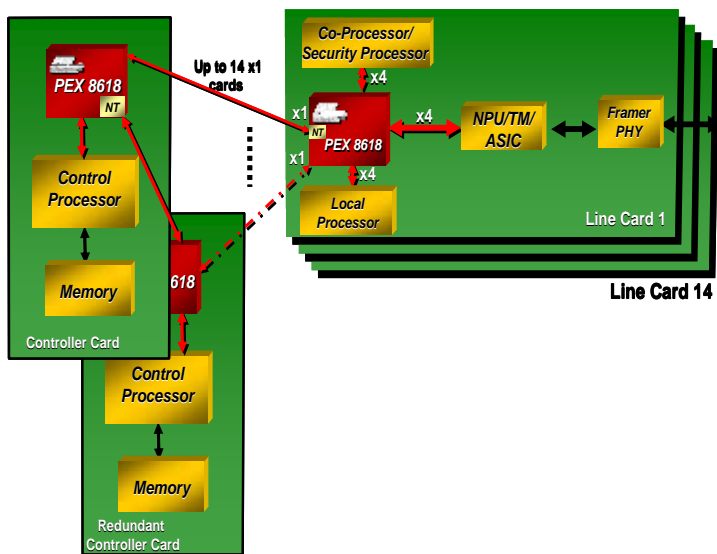


Figure 3: Redundant Control Planes

Flexible & Versatile PCIe Switches

The PEX 8618 offers flexible port configurations - 16 x1 ports, 4 x4 ports, 2 x8 ports and a large number of other combinations in x1, x2, x4 & x8 ports. Along with these flexible configurations, PEX 8618 provides high-performance via the cut-

through architecture (140ns latency), and Quality of Service (QoS) via the two virtual channels. These two virtual channels provide traffic differentiation - high and low priority traffic. The PEX 8618 supports SSC isolation which enables the device to operate in two different clock domains – a very useful feature when operating across backplane and/or using PCIe cable.

Switches & Bridges Available Today!

PLX is shipping 17 PCI Express Gen 1 (2.5 GT/s) switches and bridges. PLX is also shipping five PCI Express Gen 2 (5 GT/s) switches. More information can be found at <http://www.plxtech.com>. Below is a list of Gen 2 control plane PCI Express switches PLX will be sampling in Q2 2008.

Device	Lanes	Ports	Availability
PEX 8618	16	16	Q2 2008
PEX 8614	12	12	Q2 2008
PEX 8608	8	8	Q2 2008

Design Tools & Documentation:

<http://www.plxtech.com/8618>
Data Book, App Notes, Product Brief

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