

Product: PCI-Express Signal Switches
Part Number: PI2PCIE412-D & PI2PCIE212

Bandwidth Allocation for PCI-Express
 PCI-Express is point-to-point technology. The number of lanes to a root complex represents the bandwidth available for a given system to the memory. This bandwidth is limited by the system architecture, and is usually optimized for a given system. If more bandwidth is needed from the memory, the bus of the memory will have to be changed, and additional costs incurred. Pericom's PCI-Express Signal Switch offers a "Bandwidth allocation solution for PCI-Express" with minimum latency when compared to using a PCI-Express packet switch, and at a far lower cost.

Pericom Solution
 Pericom's PI2PCIExxx PCI-Express Signal Switches offer a way to allocate PCI-Express bandwidth by allowing the limited PCI-Express lanes from the root complex to be dynamically assigned to different slots of a system, thus enabling the allocation of bandwidth at the same time. The conventional Packet Switch does not always include bandwidth allocation features.

About PI2PCIE412-D
 The PI2PCIE412-D (4-Differential Channel, 2:1 Mux/DeMux) PCI-Express Signal switch was designed using the high-speed differential broadband switching technology that provides industry proven PCI-Express compliant physical layer signal processing. PI2PCIE412-D allows bandwidth allocation of two complete PCI-Express lanes, each representing differential pairs of Rx and Tx signals, by keeping the R_{ON} and C_{ON} at the lowest possible denominations. The switch operates at the PCI-Express bandwidth standard of 2.5Gbps signal processing speeds, with 27" trace lengths at the PCB motherboard board level, while providing 100mV of margin at the eye opening.

The PI2PCIE412-D/212
 The PI2PCIE412-D (4-Differential Channel, 2:1 Mux/DeMux) PCI-Express Signal switch was designed using the high-speed differential broadband switching technology that provides industry proven PCI-Express compliant physical layer signal processing. PI2PCIE412-D allows bandwidth allocation of two complete PCI-Express lanes, each representing differential pairs of Rx and Tx signals, by keeping the R_{ON} and C_{ON} at the lowest possible denominations. The switch operates at the PCI-Express bandwidth standard of 2.5Gbps signal processing speeds with 16" trace lengths at the PCB motherboard board level, providing 50mV of margins at the eye opening.

The PI2PCIE212 is a 2-Differential Channel, 2:1 Mux.DeMux) PCI-Express Signal switch with identical specifications as the PI2PCIE412-D as described above.

PI2PCIE212 allows bandwidth allocation of one complete PCI-Express lane, representing differential pairs of Rx and Tx signals.

Key Features & Specifications

- ❑ Single device can offer bandwidth allocation of PCI-Express signals of up to 4-Differential channels
- ❑ Provides signal transfers and receives capacity from two complete PCI-Express lanes
- ❑ Operating Voltage: 1.8V
- ❑ Maximum trace length coverage is 27"
- ❑ PCI-Express signal compliant
- ❑ TQFN package (Pb-free & Green)
- ❑ Low 9.0Ω R_{ON} for maximum signal transfer and low distortion
- ❑ Channel On-Capacitance: 6.0pF
- ❑ Bandwidth: 2.5Gbps
- ❑ Crosstalk: -60dB@10 MHz
- ❑ Isolation: -65dB@10 MHz
- ❑ ESD: 2KV HBM
- ❑ For PCI-Express signal switching applications

Applications of PCI-E Signal Switch

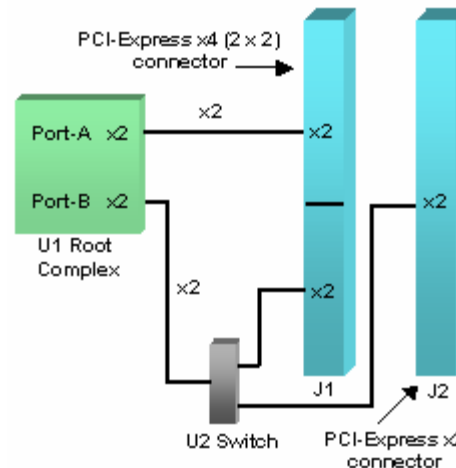


Figure 1: Server Application: Reconfiguration of two PCI-Express connectors. The two x2 ports in the root complex can be configured as one x4 port or two x2 ports.

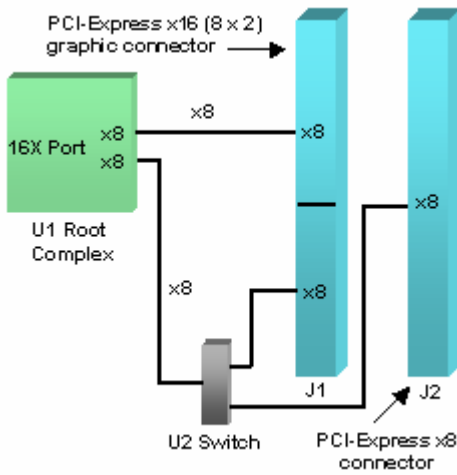


Figure 2: Gaming Desktop PCs. Reconfiguration between the two graphic cards options. The two x8 ports in the root complex can be configured as one x16 port or two x8 ports.

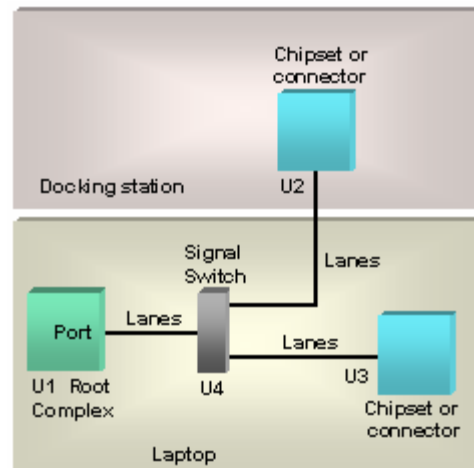


Figure 3: Laptop docking stations. Signal switch between a laptop and a docking station.

Applications environment:

- Gaming desktop PCs
- Servers
- Laptop Docking stations
- Desktop & Mobile PCs