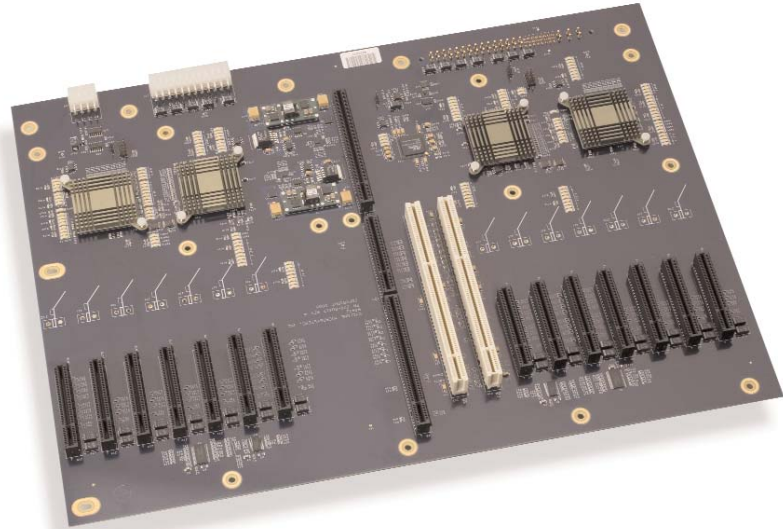


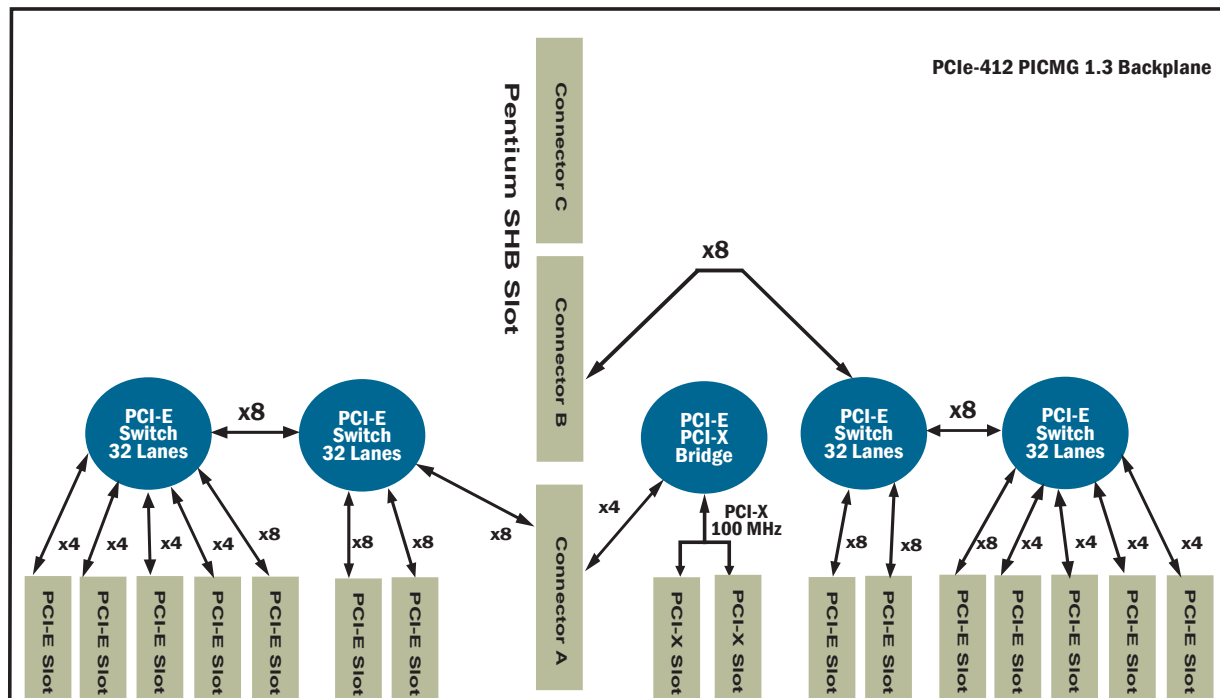
PCIe-412 Sixteen-Slot PICMG 1.3 and PCI Express Expansion Backplane



PCIe-412 Sixteen-Slot PCI Express Backplane

- Six x8 PCIe Slots
- Eight x4 PCIe Slots
- Two PCI-X Slots (64 bits, 100 MHz)
- PICMG 1.3 SHB Slot for either:
 - PICMG 1.3 System Host Board
 - 20 Gb/s x8 PCIe Standard Cable Interface to Cyclone PCIe-408 Host Bus Cable Adapter
- PICMG 1.3 Physical Format
- Maximum PCI Express Power to Each Slot
- RoHS Compliant
- Designed to meet UL Safety, FCC, CE Regulatory Certifications

Block Diagram



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PCIe-412 Expansion System
Data Sheet July 2006

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PCIe-412 Sixteen-Slot PICMG 1.3 and PCI Express Expansion Backplane



Cyclone Microsystem's PCIe-412 is a PCI Express Backplane that offers system developers a high-performance foundation for I/O intensive embedded systems. The PCIe-412 has a total of 16 slots: six x8 PCI Express slots, eight x4 PCI Express slots, and two PCI-X slots. The backplane architecture uses four 32-lane, non-blocking PCI Express Switches for the PCI Express Slots and a PCI-X bridge for the PCI-X slots.

The PCIe-412 Backplane can be applied one of two manners. With the PCIe-403 PCI Express Cable Adapter, a PCI Express Cable, and PCIe-408 PCI Express Host Bus Adapter, the PCI Express Expansion Backplane expands the I/O capability of slot-limited host computers via a 20 Gb/s PCI Express cable link. Alternatively, the PCIe-412 can be populated in with a PICMG 1.3 System Host Board (SHB). See related products and system configurations at the end of the data sheet.

Non-Blocking Switch Fabric

The PCIe-412's four 32-lane PCI Express Switches support a non-blocking switch fabric between the fourteen PCI Express slots and the host system. The non-blocking switch fabric supports complex peer-to-peer and host-to-peer data flows.

Quality of Service

QoS features allow different applications to route packets through the fabric with differentiated priorities and bandwidths, and with deterministic latencies. Two Virtual Channels per lane and eight traffic classes allows for different traffic priorities. Virtual Channel arbitration algorithms are user's selectable and allow the QoS to be optimized for different traffic requirements.

End-to-End Packet Integrity

PCI Express Expansion Series provides end-to-end CRC protection and Poison bit support to guarantee error free data transmission. Corrupted packets are automatically re-transmitted by the hardware with no software intervention or overhead.

Maximum Power to Each Slot

The PCIe-412 was designed to provide the maximum PCI Express power consumption per slot to enable its deployment as a foundation for high-end embedded systems. BTX and 8 Pin +12V PC power supply connectors can supply a maximum of 25 W per slot for each of the fourteen PCI Express Slots.

Environmental

Physical Dimensions	16.4" x 11.9"	Power Requirements (Watts)	
		+3.3V Typical	1.17 A
		Maximum	1.42 A
Operating Temperatures	0 to 55 Degrees Celsius	+5V Typical	5.44 A
		Maximum	6.94 A
Relative Humidity	0 - 95%	+12V Typical	0 A
		Maximum	-
Storage Temperatures	-55 to 125 Degrees Celsius	-12V Typical	-
		Maximum	-

Ordering Information

PCIe-412 Sixteen-Slot PCI Express Backplane

Related Products and Product Configurations

PCIe-412/403 16 Slot PCI Express Expansion Backplane:
 PCIe-412 Sixteen-Slot PCI Express Backplane
 PCIe-403 PICMG 1.3 SHB Slot to PCI Express Cable Adapter

2602 PCIe-412 Mounted in PICMG 1.3 Chassis:
 PCIe-412 Sixteen-Slot PCI Express Backplane

2603 PCIe-412 Sixteen-Slot PCI Express Expansion Kit:
 PCIe-412 Sixteen-Slot PCI Express Backplane
 PCIe-403 PICMG 1.3 SHB Slot to PCI Express Cable Adapter
 PICMG 1.3 Rack Mount Chassis

2703 PCIe-412 Sixteen Slot PCI Express Expansion System:
 PCIe-412 Sixteen-Slot PCI Express Backplane
 PCIe-403 PICMG 1.3 SHB Slot to PCI Express Cable Adapter
 PICMG 1.3 Rack Mount Chassis
 PCI Express Expansion Cable (1 or 3 Meters)
 PCIe-408 Host Bus to Cable Adapter