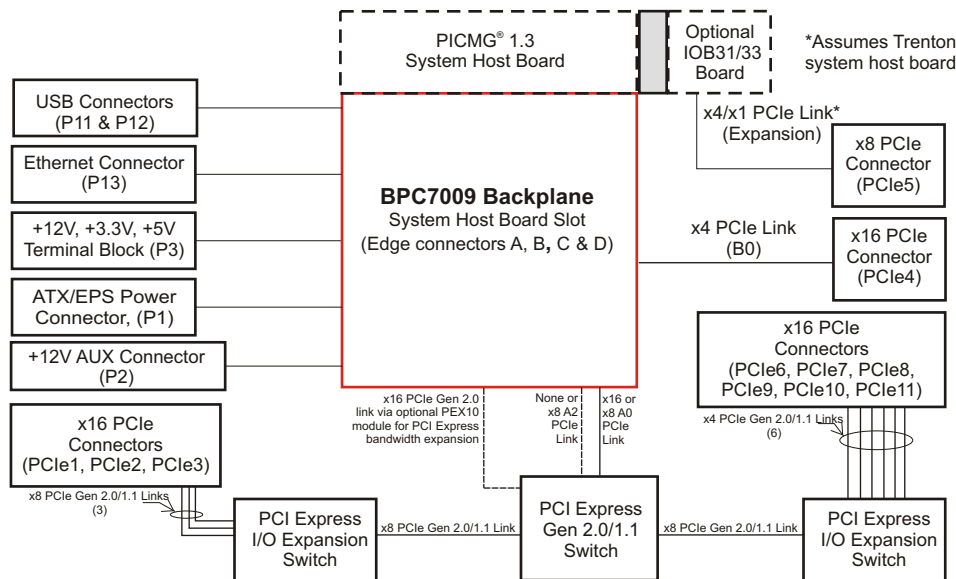# BPC7009

PCI EXPRESS GEN 2 COMBO BACKPLANE

FEATURES

- **14-slot form factor supports one PICMG® 1.3 system host board**
- **Supports JXT6966, JXTS6966 plus other Trenton server or graphics-class SHBs**
- **Supports PCI Express® Gen 2.0 and Gen 1.1 option cards**
- **Ten x16 mechanical slots and one x8 PCIe mechanical slot**
- **PCIe card slot electrical configuration: Three (3) PCIe x8, seven (7) PCIe x4 and one (1) PCIe x1/x4**
- **Automatic PCIe Gen 2 and Gen 1.1 link detection and training**
- **Offers PCI Express bandwidth expansion via an extra x16 or four x4 PCIe Gen 2 links**
- **One 10/100/1000Base-T backplane Ethernet port****
- **Four USB 2.0 backplane I/O connections****
- **ATX/EPS, +12V AUX and terminal block input power connectors**
- **Five-year factory warranty**
- **Made in U. S. A.**

TRENTON
Dependable, always.

BLOCK DIAGRAM:

ELEVEN SLOT PCI EXPRESS COMBO BACKPLANE:

The PCI Express® link design of the Trenton BPC7009 backplane supports Trenton's JXT6966 and JXTS6966 combo-class SHBs as well as other types of PICMG® 1.3 server or graphics-class SHBs. The backplane's PCI Express switches sense the SHB and option card's PCIe link type and design to automatically establish communications. This enables the Trenton BPC7009 to support PCI Express Gen 2.0 or Gen 1.1 option cards as well as different types of PICMG 1.3 SHBs. PCIe1 though PCIe3 are x16 mechanical slots driven with x8 PCI Express Gen 2.0 or 1.1 electrical links. The other x16 slots (PCIe4 and PCIe6 through PCIe11) are driven with x4 PCIe links. PCIe5 is a x8 mechanical slot driven with a x1/x4 link from an SHB's optional expansion board. See the backplane layout drawings on page two for more details. The BPC7009 backplane is available with either vertical or right angle ATX/EPS and 12V AUX power connectors plus a terminal block to meet expanded system power demands.
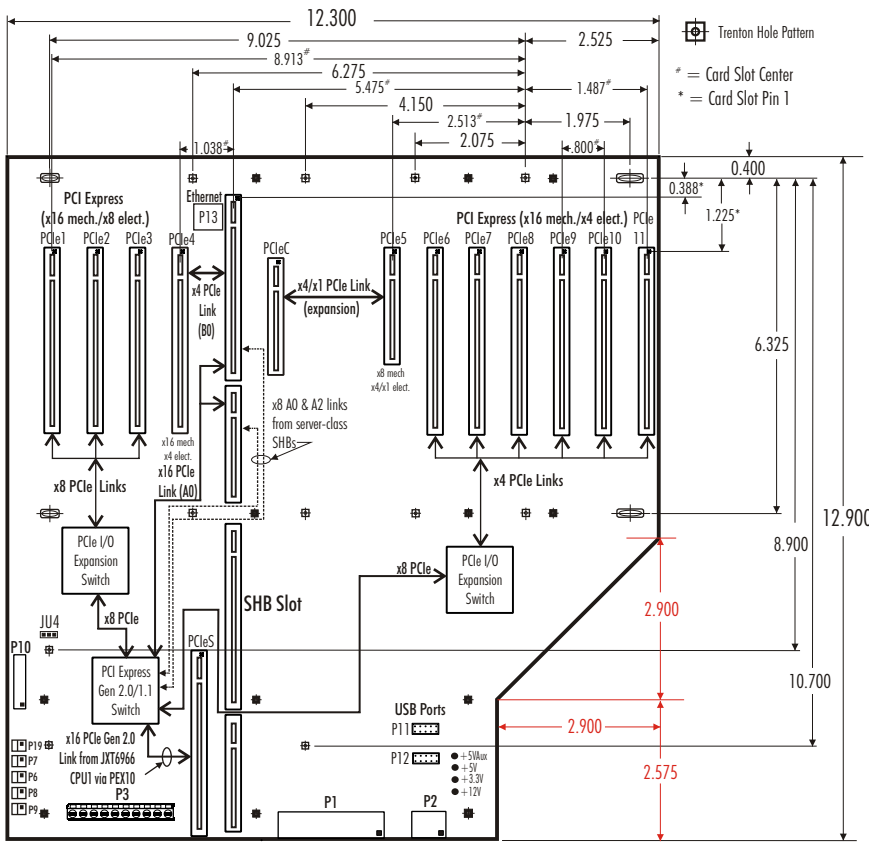
APPLICATION EXAMPLES:

Any system design that only deploys PCI Express option cards is a good candidate for the BPC7009 backplane. The ability of the backplane to automatically support either PCI Express Gen 2.0 or 1.1 cards builds an element of scalability into any COTS rackmount computer design. The backplane brings the added value of flexibility to the system by supporting many different types of PICMG 1.3 system host boards. The backplane's smaller 14-slot form factor lends itself well to medical diagnostics, military/aerospace, and communication system designs. The slot support of the backplane enables system designs that can grow and adapt to changing requirements without incurring significant system upgrade expense. The BPC7009's ability to support up to eleven PCI Express COTS cards, coupled with the backplane's advanced PCI Express features enable system designs that offer robust data communications with maximum PCI Express option card flexibility.

BACKPLANE MODEL: BPC7009

MODEL#	MODEL NAME	DESCRIPTION
7009-007	BPC7009-CRA	ATX/EPS and 12V AUX right-angle power connectors, one terminal block and supports two x16 PCIe links from SHB (A0 & PEX10)
7009-107	BPC7009G-CRA	ATX/EPS and 12V AUX right-angle power connectors, one terminal block and supports one x16 PCIe link from SHB (A0)
7009-207	BPC7009S-CRA	ATX/EPS and 12V AUX right-angle power connectors, one terminal block and supports two x8 PCIe links from SHB (A0 & A2)

BPC7009 LAYOUT - TRENTON MOUNTING HOLE PATTERN DIMENSIONS:

12.300
9.025
8.913#
6.275
5.475#
4.150
2.513#
2.075
1.038#
2.525
1.487#
1.975
.800#

⊞ Trenton Hole Pattern

\# = Card Slot Center
* = Card Slot Pin 1

PCI Express (x16 mech./x8 elect.)
PCIe1 PCIe2 PCIe3 PCIe4
Ethernet P13
PCIeC
x4 PCIe Link (B0)
x4/x1 PCIe Link (expansion)
PCI Express (x16 mech./x4 elect.) PCIe11
PCIe5 PCIe6 PCIe7 PCIe8 PCIe9 PCIe10

x8 mech x4/x1 elect.

x8 A0 & A2 links from server-class SHBs

x16 mech x4 elect.
x16 PCIe Link (A0)

x8 PCIe Links

PCIe I/O Expansion Switch

JU4
P10

x8 PCIe

PCI Express Gen 2.0/1.1 Switch
PCIeS

x16 PCIe Gen 2.0 Link from JXT6966 CPU1 via PEX10
P19
P7
P6
P8
P9
P3

SHB Slot

x8 PCIe
PCIe I/O Expansion Switch
x4 PCIe Links

USB Ports
P11
P12 + 5VAux + 5V + 3.3V + 12V
P1 P2

0.400
0.388*
1.225*
6.325
12.900
8.900
2.900
10.700
2.900
2.575

SUGGESTED TRENTON PICMG 1.3 SYSTEM HOST BOARDS:

DUAL PROCESSOR COMBO CLASS SHBs
JXT6966
SINGLE PROCESSOR COMBO CLASS SHBs
JXTS6966
DUAL PROCESSOR SEVER CLASS SHBs
MCXT   MCXT-E   NLT   SLT
SINGLE PROCESSOR SERVER CLASS SHBs
MCXI   NLI   SLI
DUAL PROCESSOR GRAPHICS CLASS SHBs
MCGT   MCGT-E
SINGLE PROCESSOR GRAPHICS CLASS SHBs
TQ9   TML
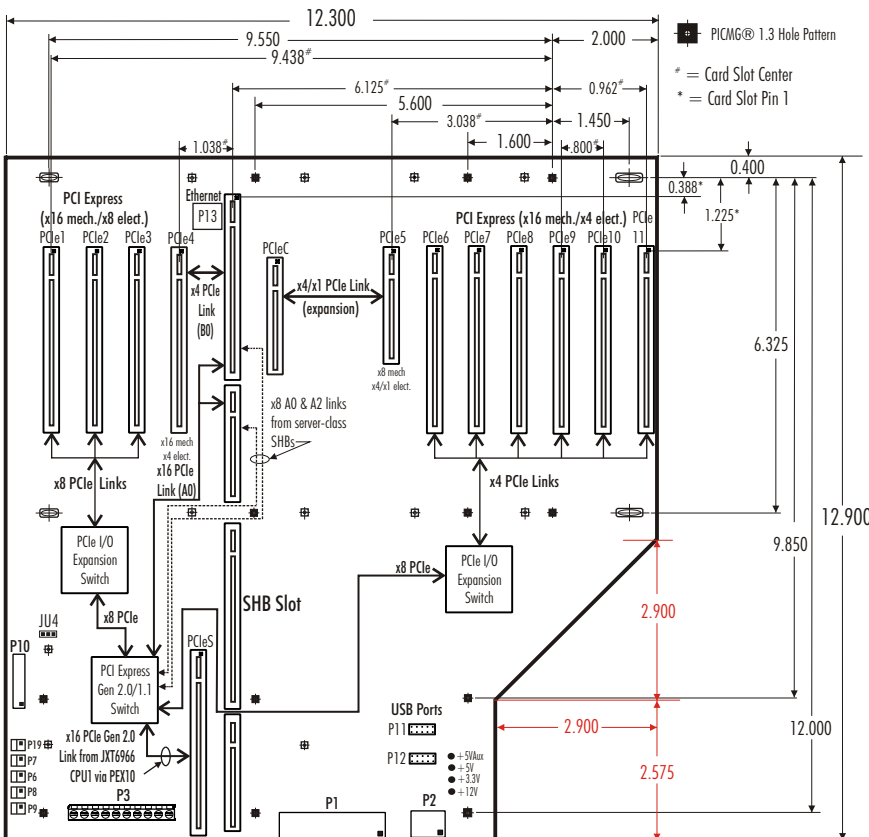
ENVIRONMENTAL SPECS.:#

Operating Temp.: 0° C. to 60° C
Storage Temp.: -40° C. to 70° C
Humidity: 5% to 90%, non-condensing

#Environmental specifications for system host boards / single board computers are usually lower than those of the backplane. Check with your SHB/SBC vendor.

The Trenton BPC7009 is a lead-free, RoHS compliant backplane.

This backplane is designed to meet worldwide EMI emissions requirements, CE conformity and immunity standards. Contact Trenton for the specific standard numbers this product.

The Trenton BPC7009 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

BPC7009 LAYOUT - PICMG 1.3 MOUNTING HOLE PATTERN DIMENSIONS:

12.300
9.550
9.438#
6.125#
5.600
3.038#
1.600
1.038#
2.000
0.962#
1.450
.800#

⊞ PICMG® 1.3 Hole Pattern

\# = Card Slot Center
* = Card Slot Pin 1

PCI Express (x16 mech./x8 elect.)
PCIe1 PCIe2 PCIe3 PCIe4
Ethernet P13
PCIeC
x4 PCIe Link (B0)
x4/x1 PCIe Link (expansion)
PCI Express (x16 mech./x4 elect.) PCIe11
PCIe5 PCIe6 PCIe7 PCIe8 PCIe9 PCIe10

x8 mech x4/x1 elect.

x8 A0 & A2 links from server-class SHBs

x16 mech x4 elect.
x16 PCIe Link (A0)

x8 PCIe Links

PCIe I/O Expansion Switch

JU4
P10

x8 PCIe

PCI Express Gen 2.0/1.1 Switch
PCIeS

x16 PCIe Gen 2.0 Link from JXT6966 CPU1 via PEX10
P19
P7
P6
P8
P9
P3

SHB Slot

x8 PCIe
PCIe I/O Expansion Switch
x4 PCIe Links

USB Ports
P11
P12 + 5VAux + 5V + 3.3V + 12V
P1 P2

0.400
0.388*
1.225*
6.325
12.900
9.850
2.900
12.000
2.900
2.575

Engineering Notes:

All power connectors are shown in the layout drawings. The connectors are populated based on model.
Mounting holes: 0.156" diameter
Nominal PCB thickness: 0.080"
All dimensions are inches.

Application Note:

A system's off-board video card must be placed in the PCIe1, PCIe2 or PCIe3 backplane card slot.

** Optional USB and Ethernet connectivity provided by the PICMG 1.3 System Host Board. Not all SHBs support this capability.

Product Photo Note: The photo of the 7009 backplane shown on page one is a provided for illustrative purposes only. Actual connector locations are illustrated in the backplane layout drawings and on the Trenton website.

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TRENTON®
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Dependable, always.