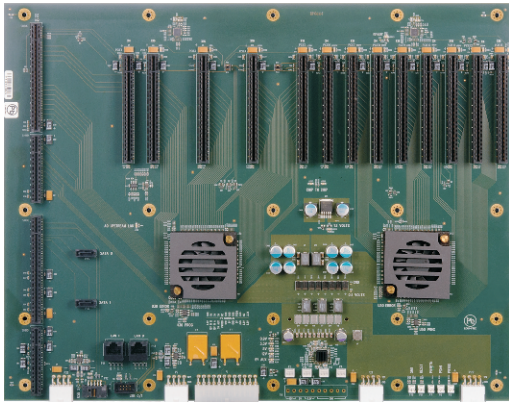


# BPG8194

## HIGH-DENSITY PCI EXPRESS 3.0 BACKPLANE

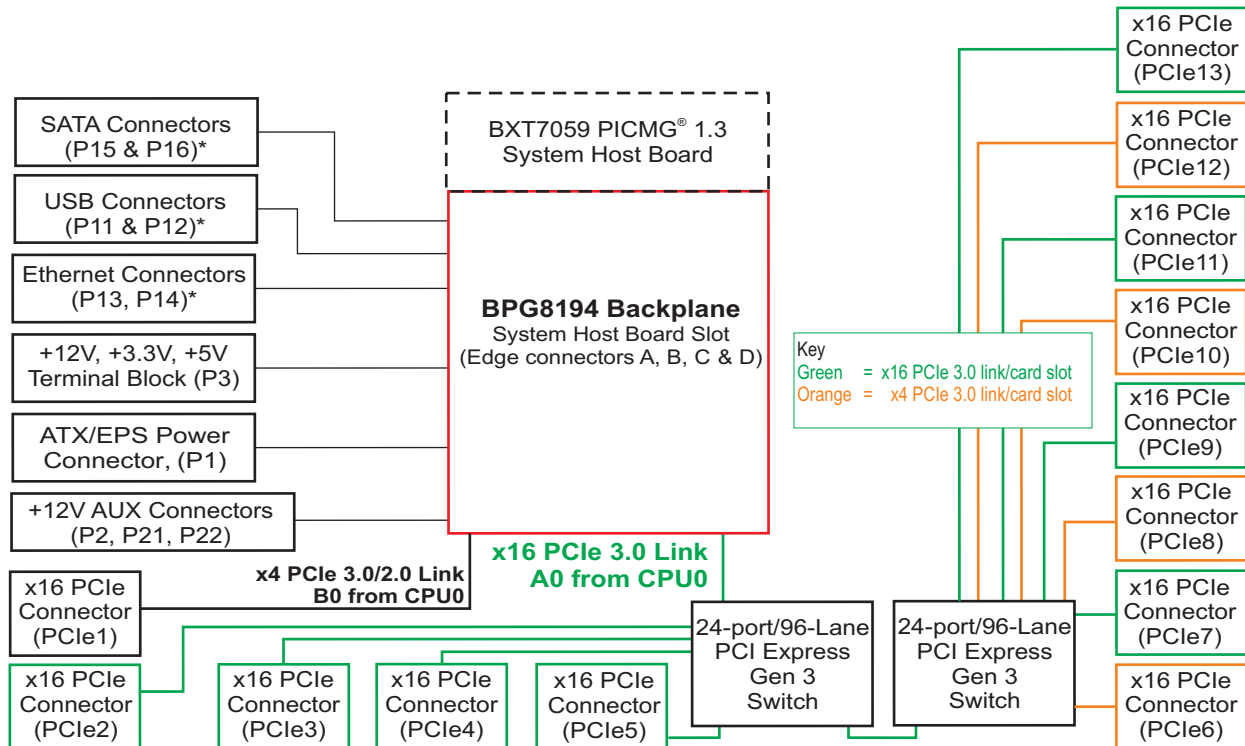


### FEATURES

- Supports up to eight high-end video and graphics processing cards with high speed x16 PCI Express® 3.0 links
- Five additional x4 PCIe supported with x16 mechanical connectors
- Enables system designs with built-in expansion capability and longevity
- Latest PCI Express 3.0 switch technology and backplane layout minimizes data latency
- PCIe Gen3 link retimers maximizes high-speed data path signal integrity
- Two 10/100/1000Base-T backplane Ethernet ports\*
- Four USB 2.0 backplane I/O connections\*
- ATX/EPS vertical and right-angle input power connector options
- Five-year factory warranty/Made in U. S. A.



### BLOCK DIAGRAM:



### PCI EXPRESS 3.0 BACKPLANE:

The PCI Express® 3.0 link design of the Trenton BPG8194 backplane supports PICMG® 1.3 system host boards (SHBs) such as Trenton's single processor THD8141 (Q3, '14) or dual-processor SHBs like the BXT7059 and HGT8205 (Q1, '15). All I/O card slots are PCIe Gen3 capable and use PCIe x16 mechanical connectors. Eight of the PCIe card slots are driven with x16 PCIe Gen3 links and five are driven with a x4 links. When using a BXT7059, PCle1 is driven with a PCIe Gen2 link. PCIe link retimers, PCIe Gen3 switches and robust backplane link routing maximizes data throughput speed and communication signal integrity between the SHB and the PCI Express option cards.

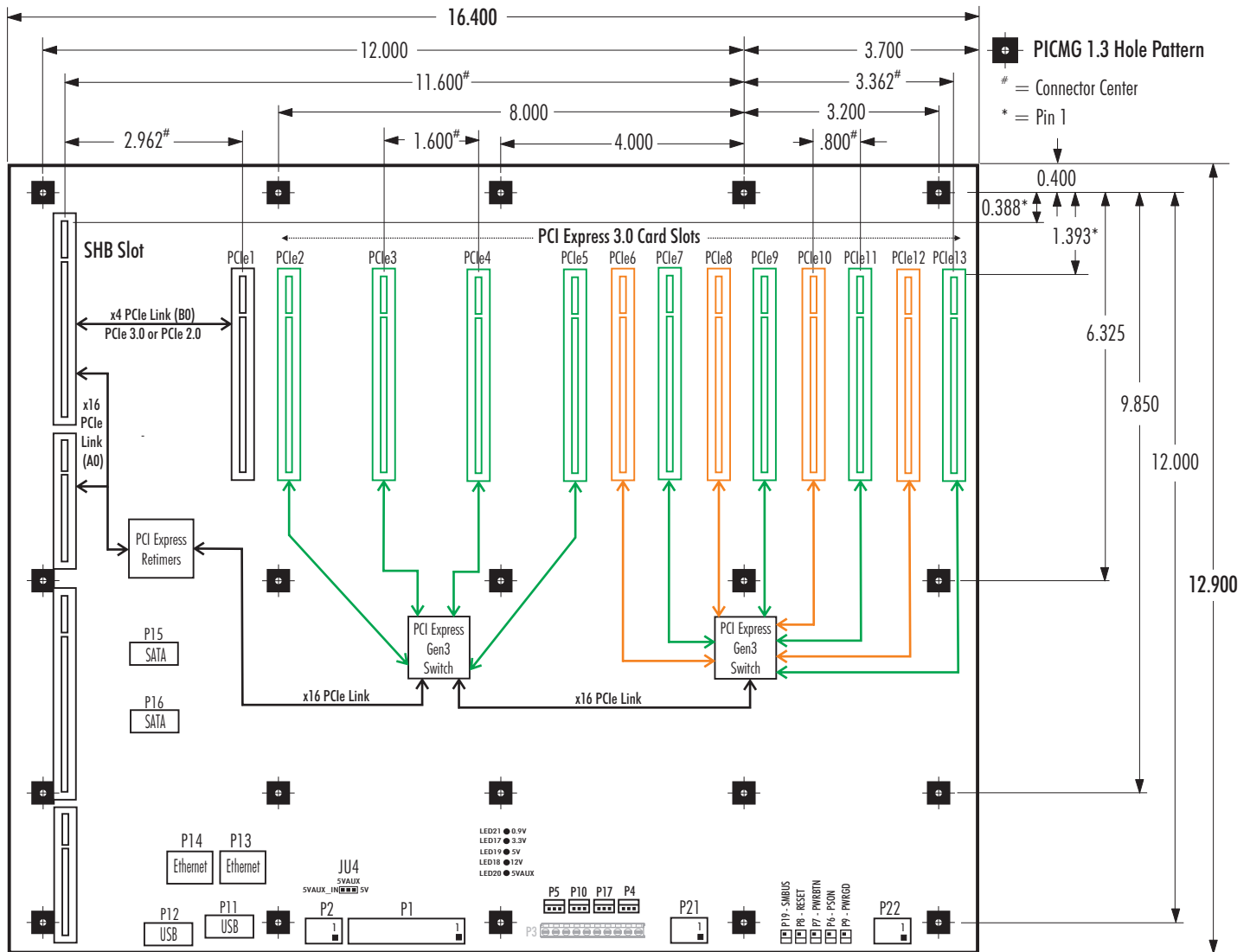
### APPLICATION EXAMPLES:

Scalable video wall controllers and graphic processing systems that support a large number of x16 PCI Express 3.0 video & graphics boards are typical applications for the Trenton BPG8194 backplane. The card support of the backplane enables video controller designs and GPGPU rackmount computers based on the latest x16 PCIe Gen3 boards that can grow and adapt to changing requirements without incurring significant system upgrade expenses. The BPG8194 backplane's x16 PCIe card support features, PCIe switches, and link routings enable system designs that deliver robust performance with expanded plug-in I/O card flexibility.

### BACKPLANE MODEL: BPG8194

MODEL#	MODEL NAME	DESCRIPTION
8194-007	BPG8194-CRA	One ATX/EPS right-angle connector, three right-angle 12V Aux power connectors, and one extended current terminal block
8194-008	BPG8194-CST	One ATX/EPS vertical connector, three vertical 12V Aux power connectors, and one extended current terminal block
8194-009	BPG8194-CSC	One ATX/EPS right-angle connector and three right-angle 12V Aux power connectors only
8194-015	BPG8194-RAA	One ATX/EPS right-angle connector and three vertical 12V Aux power connectors only
8194-016	BPG8194-VTA	One ATX/EPS vertical connector and three vertical 12V Aux power connectors only

**BPG8194 LAYOUT - PICMG 1.3 MOUNTING HOLE PATTERN DIMENSIONS:**



**SUGGESTED TRENTON PICMG 1.3 SHBs:**

**DUAL PROCESSOR SYSTEM HOST BOARDS**

BXT7059\* HGT8205 (Q2, '15)

**SINGLE PROCESSOR SYSTEM HOST BOARDS**

TSB7053\*# THD8141 (Q3, '14)

**ENGINEERING NOTES:**

SHBs like the TSB7053 that have PCIe 2.0 root links may be used on the BPG8194 backplane. The root link will operate as a Gen2 link, but the downstream links from the switches to the option cards will operate at the Gen3 link speeds for PCIe 3.0 option cards.

1. All power connectors are shown in the backplane layout drawing. The specific combination of power connectors are populated based on model number.
2. Mounting holes: 0.156" diameter
3. The nominal backplane thickness is 0.080"
4. All dimensions are inches.
5. #The optional PICMG 1.3 SATA, USB and Ethernet connectivity is supported on the backplane, but the interfaces are provided by the System Host Board. Not all SHBs support this optional connectivity.

**ENVIRONMENTAL SPECIFICATIONS:#**

Operating Temp.: 0° C to 60° C  
 Storage Temp.: -20° 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 BPG8194 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 BPG8194 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

The BPG8194 is designed for CE conformity approval to the following electromagnetic emission (EMI) test specifications: EN55022:1998, CLASS A, EN6100-4-2:1995, EN6100-4-3:1997, EN6100-4-4:1995, EN61000-4-5:1995, EN61000-4-6:1996, EN6100-4-11:1994

**PCI EXPRESS ELECTRICAL INTERFACES:**

All of the BPG8194 backplane slots are capable of supporting PCIe 3.0 electrical interfaces. This interface routing enables support for PCIe 3.0, 2.0 or 1.1 option cards. The color key for the option card slot routing is:

- Green = Slot driven with a x16 PCIe 3.0 link
- Orange = Slot driven with a x4 PCIe 3.0 link
- Black = Slot driven with a x4 PCIe 3.0 or 2.0 link\*

\*Card slot PCIe1 will have a PCIe 2.0 link when using the BXT7059 or TSB7053 SHB and a PCIe 3.0 link with the THD8141 or HGT8205 SHBs

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