

# BACKPLANES

**PICMG 1.3** Fabric Networks

**PICMG 1.0** PCI Express

**CUSTOM** PCI-X

PCI

ISA

TRON



**TRENTON**

Dependable, always.



**Trenton backplanes support PCI Express™, PCI-X, PCI and ISA option cards and come in a variety of form factors and slot patterns.** Our standard PICMG® 1.3 or SHB Express™ backplanes support multiple PCI Express™ serial interfaces from a PICMG 1.3 System Host Board (SHB) to the backplane's option card slots and devices. The flexibility of Trenton's PICMG 1.3 backplanes provides PCI Express, PCI-X and PCI option card support. Trenton's PICMG® 1.0 backplanes support PCI-X, PCI and ISA parallel bus architectures and option cards. All Trenton backplanes are engineered to ensure that controlled impedance conditions exist regardless of the application's option card loading requirements. Demanding system applications require backplanes that perform and we meet that challenge with reliable designs and dependable product delivery from our quality driven U. S. manufacturing plant.

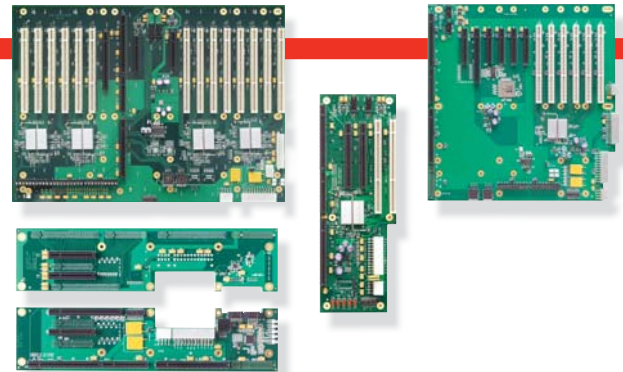
Trenton's system host board and single board computer design expertise extends to custom-engineered backplane solutions. Our latest custom backplanes support PCI Express and fabric networks such as InfiniBand and StarFabric. System architectures are constantly changing and Trenton's standard and custom products will continue to evolve to meet the needs of advanced system designs.

Shown below is a representative sampling of our backplanes. On the back cover is a chart listing our standard backplanes. **Contact us to discuss a backplane solution that best meets your system design requirements.**



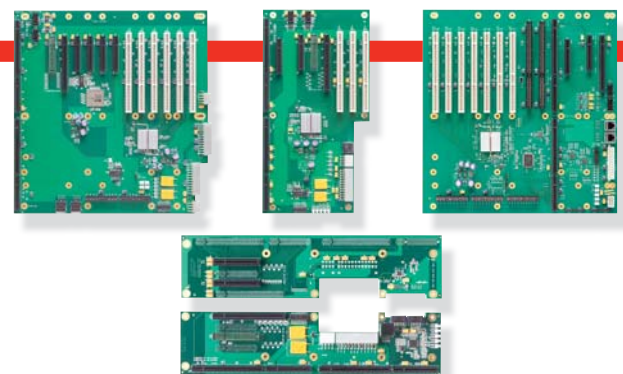
### PICMG® 1.3 - SERVER Class

- Use these backplanes with server-class System Host Boards (SHBs)
- Supports multiple x8 and x4 PCI Express electrical links from the SHB
- PCI Express expansion slot provides an additional PCIe link on selected backplanes
- Support for PCI-X, PCI and PCI Express option cards
- Soft power control lines (ACPI)
- 20-slot, 14-slot, 2U butterfly and small form factors
- Optional USB and Ethernet backplane connections



### PICMG® 1.3 - GRAPHICS Class

- Use these backplanes with graphics-class System Host Boards (SHBs)
- Supports a x16 PCI Express electrical link for high-end video and graphics applications
- Additional x4 and x1 PCIe links are provided plus an expansion slot on select models
- Support for PCI-X, PCI and PCI Express option cards
- Soft power control lines (ACPI)
- 14-slot, 2U butterfly and small form factors
- Optional USB and Ethernet backplane connections



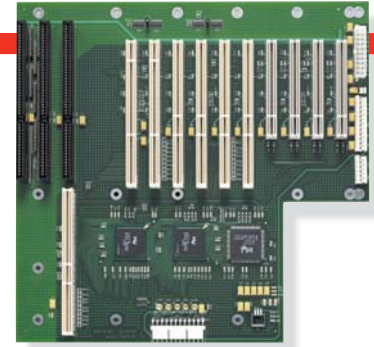
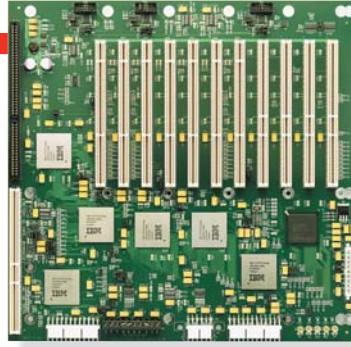
### PICMG® 1.3 - MULTIPLE SHBs

- Supports up to six SHBs in stand alone or cluster computing applications
- One x16 PCI Express (mechanical) option card slot per SHB segment
- Three SHB segments have an additional x8 PCIe mechanical slot
- Supports server- or graphics-class SHBs and backplane configurations
- 20-slot form-factor with optional Ethernet fabric for clustering SHBs
- Optimized for use with low-profile SHBs such as Trenton's TML, SLT or SLI



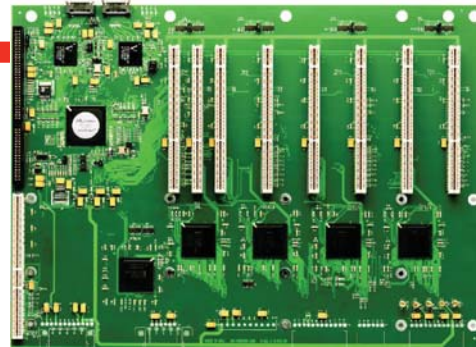
## PICMG® 1.0 - PCI-X/PCI/ISA

- Wide variety of slot configurations
- Supports 32-bit/33MHz and 64-bit/33MHz PCI cards
- Full-speed PCI-X support on selected backplanes
- Legacy ISA support
- Segmented models support two single board computers



## CUSTOM BACKPLANES

- Same robust designs as Trenton's standard backplanes
- Optimized for use with Trenton SHBs and SBCs
- Advanced bus architectures and fabric network support
- InfiniBand & StarFabric are examples of Trenton custom backplanes



### SBC OR SHB (SYSTEM HOST BOARD) SLOT:

Accepts a PCI Industrial Computer Manufacturers Group (PICMG®) 1.0 or 1.3 compliant processor.

### PCI EXPRESS™ SLOTS:

Provides mechanical support for x16, x8, x4 and x1 PCIe option cards. See PICMG 1.3 - Server-Class and PICMG 1.3 - Graphics-Class sections for electrical link descriptions.

### PCI EXPRESS EXPANSION SLOT (PCIeS):

Some Trenton PICMG 1.3 backplanes have a PCI Express Expansion Slot (PCIeS) to provide an additional PCIe link to the backplane. An optional I/O expansion module such as a Trenton IOB31 is attached to the SHB and typically delivers a x1 or x4 PCIe link to the PCIeS. This extra PCIe link is used to drive a specific option card slot.

### PCI-X BUS SLOTS:

Supports 64-bit PCI-X option cards at bus frequencies of 133MHz, 100MHz or 66MHz.

### PCI LOCAL BUS SLOTS:

The PCI backplanes support 32-bit/33MHz, 64-bit/33MHz or 64-bit/66MHz option card slots.

### ISA SLOTS:

Supports standard ISA bus option cards.

### POWER CONNECTORS:

Various connector options are available to bring power to the Trenton backplanes:

- Standard ATX and EPS connectors
- Terminal Blocks
- 156 MTA connectors
- Extended-current connectors

### EXTENDED-CURRENT CONNECTORS:

These optional connectors provide a typical maximum current capacity of 30 Amps per power connection. The total current carrying capacity of a particular supply voltage depends on the number of power connections on a specific backplane and the backplane's trace layout design. Contact Trenton for additional information.

### +12V AUXILIARY CONNECTORS:

Trenton's PICMG 1.3 backplanes provide the +12V AUX power connection as defined in the SHB Express™ (PICMG 1.3) specification. Trenton provides these standard 4-pin or 8-pin power supply connections on the PICMG 1.3 backplanes in order to eliminate having to plug the +12V AUX power lines into the SHB. This strategy simplifies system power connectivity while improving Mean Time To Repair (MTTR).

### PICMG® 1.0 - PCI-X/PCI/ISA BACKPLANES:

64-bit PCI-X Local Bus slots are available on selected PICMG 1.0 and PICMG 1.3 backplanes to support 133MHz, 100MHz or 66MHz PCI-X option card slots. Check the backplane chart on page 4 because PCI-X bus frequency support varies by backplane model. Some PICMG 1.3 and all PICMG 1.0 backplanes also support 32-bit and/or 64-bit PCI Local Bus slots that enable either 33MHz or 66MHz option cards. The 64-bit/66MHz PCI Local Bus requires +3.3V power for proper operation. ISA bus support is also available.

### PICMG® 1.3 - SERVER-CLASS BACKPLANES:

Server-class backplanes are designed to maximize the number of high-bandwidth PCI Express links between the server-class System Host Board (SHB) and the PICMG 1.3 or SHB Express backplane. Typically, server-class backplanes use these high-bandwidth links to electrically support a combination of x8 and x4 PCI Express option card slots or devices. PCI Express link training is supported on Trenton backplanes and SHBs to enhance option card support flexibility. The letter "X" in the Trenton model number indicates a server-class backplane, e.g. BPX6610.

### PICMG® 1.3 - GRAPHICS-CLASS BACKPLANES:

Using a graphics-class SHB with a graphics-class backplane provides a x16 PCIe electrical link to a PCI Express option card slot. This x16 card slot can support a high-end PCI Express video or graphics card typically used in imaging, diagnostics and other types of video-based applications. Most graphics-class backplanes also provide x4 and x1 PCIe electrical links to support additional PCI Express option card slots or devices. For example, Trenton's BPG6544 backplane has PCI Express, PCI-X, PCI and ISA option card slots. The letter "G" in the Trenton model number indicates a graphics-class backplane, e.g. BPG6544.

### MECHANICAL DIMENSIONS:

Dimension drawings are available on the Trenton website to aid in your system design and documentation tasks. Visit the Trenton web site at [www.TrentonTechnology.com](http://www.TrentonTechnology.com) to download dimensional and card slot layout drawings for standard Trenton backplanes.

## STANDARD BACKPLANES

Model Name	Model Number (50# indicates RoHS)	Total Slots	CPU Slots	PCI Express™ Slots* (electrical)					PCI-X Slots			PCI Slots			ISA Slots
				x16	x8	x4	x1	PCIeS	64-Bit/133MHz	64/100	64/66	64/66	64/33	32/33	
<b>PCI Express™</b>															
<b>2U Butterfly</b>															
BPG6741	506741-007	4	1	1	-	-	2*	-	-	-	-	-	-	-	-
BPX6736	506736-007	5	1	-	2	-	2*	-	-	-	-	-	-	-	-
*These two slots are PCIe1 and PCIe3 on side B of the backplanes and are x8 mechanical slots driven with x1 PCIe links from the SHB.															
<b>Multiple SHB Segments</b>															
BP6FS6605	506605-105	15	6	6*	-	3	-	-	-	-	-	-	-	-	-
*These slots operate with x16 electrical links in graphics-class configurations and with x8 links in server-class backplane configurations.															
<b>Server Class</b>															
BPX6719	506719-004	8	1	-	2	1	-	1	1	2	-	-	-	-	-
BPX6620	506620-004	14	1	-	1	1	-	1	2	8	-	-	-	-	-
BPX6610	506610-010	13	1	-	2	4	-	-	-	2	4	-	-	-	-
BPX6571	506571-007	19	1	-	1	1	-	-	-	-	16	-	-	-	-
BPX3/2	506526-007	5	1	-	2	-	-	-	2	-	-	-	-	-	-
BPX5	506510-007	6	1	-	2	2	-	1	-	-	-	-	-	-	-
BPX3/14	506467-004	18	1	-	-	2	-	1	2	12	-	-	-	-	-
BPX3/8	506377-004	11	1	-	2	-	-	-	-	-	4	-	4	-	-
<b>Graphics Class</b>															
BPG6714	506714-004	7	1	1	-	1#	-	1	1	2	-	-	-	-	-
BPG6615	506615-010	12	1	1	-	4	-	-	-	2	4	-	-	-	-
BPG6600	506600-004	14	1	1	-	1#	-	1	-	2	4	-	-	4	-
BPG6544	506544-004	14	1	1	-	1#	-	1	1	-	4	-	-	2	2
BPG4	506537-007	5	1	1	-	2#	-	1	-	-	-	-	-	-	-
BPG2/2	506532-007	4	1	1	-	-	-	-	2	-	-	-	-	-	-
#Depending on the SHB used, option card slots connected to the PCI Express expansion slot (PCIeS) may operate with a x1 PCI Express electrical link.															
<b>PCI-X</b>															
BP1/1/2/4/4	506120-001	12	1	-	-	-	-	-	1	2	4	-	4	-	-
<b>64-Bit PCI/ISA</b>															
BP3/16-64	505696-001	19	1	-	-	-	-	-	-	-	-	-	16	-	2
BP1/2	005971-001	3	1	-	-	-	-	-	-	-	-	-	2	-	-
BP3/2/4/4	505951-001	13	1	-	-	-	-	-	-	-	-	2	4	4	2
<b>32-Bit PCI/ISA</b>															
BP3/10	505937-001	13	1	-	-	-	-	-	-	-	-	-	-	10	2
BP8/12	505635-001	20	1	-	-	-	-	-	-	-	-	-	-	12	7
BP11/3	005501-001	14	1	-	-	-	-	-	-	-	-	-	-	3	10
BP17/3	005498-001	20	1	-	-	-	-	-	-	-	-	-	-	3	16
BP13/6	005495-001	19	1	-	-	-	-	-	-	-	-	-	-	6	12
BP7/6	005491-001	13	1	-	-	-	-	-	-	-	-	-	-	6	6
BP3/16	005457-001	19	1	-	-	-	-	-	-	-	-	-	-	16	2
<b>Segmented</b>															
BP2S19	005577-001	19	2	-	-	-	-	-	-	-	-	-	-	6	11
BP2S13	005574-001	13	2	-	-	-	-	-	-	-	-	-	-	6	5

\*NOTE: PCI Express card slots driven with x16 or x8 links use x16 mechanical connectors and slots driven with x4 or x1 links use x8 mechanical connectors.

**ALL PRODUCTS  
MADE IN USA**

Don't see a backplane that meets your requirements?  
Contact us for a custom backplane consultation.

For pricing and availability call (800) 875-6031 or e-mail us  
at Sales@TrentonTechnology.com

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