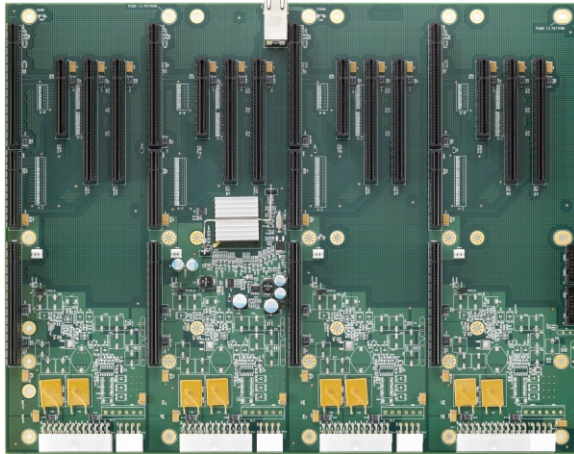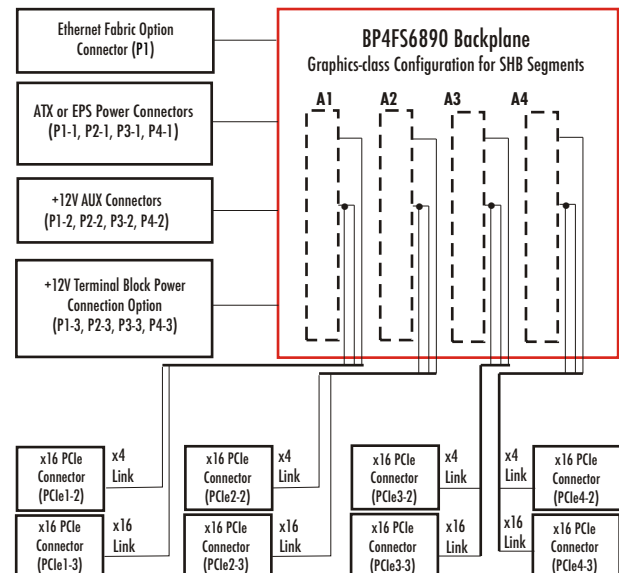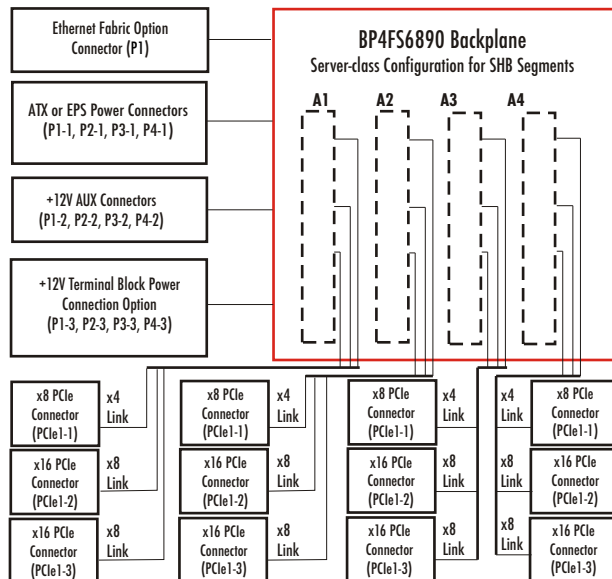# BP4FS6890

FOUR-SEGMENT PCI EXPRESS BACKPLANE

Model number 6890-025 shown

FEATURES

- **20-slot form factor supports up to four PICMG® 1.3 graphic-class or server-class system host boards (SHBs)**
- **One x8 and two x16 PCI Express® mechanical slots per segment**
- **Card slots available with x4, x8 and x16 PCI Express electrical link configurations**
- **Optimized for use with Trenton high-performance server-class or graphics-class PICMG 1.3 system host boards**
- **Ideal for cluster computing system applications where processing scalability and system longevity are key requirements**
- **Available in stand-alone or Ethernet fabric configurations**
- **Optional 10/100/1000Base-T Ethernet backplane fabric & port****
- **ATX/EPS and +12V AUX SHB segment power connector options**
- **+12V terminal block connector option enables backplane generation of SHB input voltages**
- **Five-year factory warranty**

TRENTON
Dependable, always.

BLOCK DIAGRAMS:

FOUR-SEGMENT PCI EXPRESS BACKPLANE:

The four system host board (SHB) segments on the Trenton BP4FS6890 backplane are flexible enough to be ordered in either a graphics-class or server-class configuration. Each segment supports either a graphics-class or server-class SHB and two or three PCI Express option card slots. Backplane versions are available that enable the SHB segments to operate independently or as part of the backplane's 10/100/1000Base-T Ethernet fabric network. Additional backplane ordering options are available that allow the segments to have power applied using either standard ATX/EPS power connectors or terminal blocks.
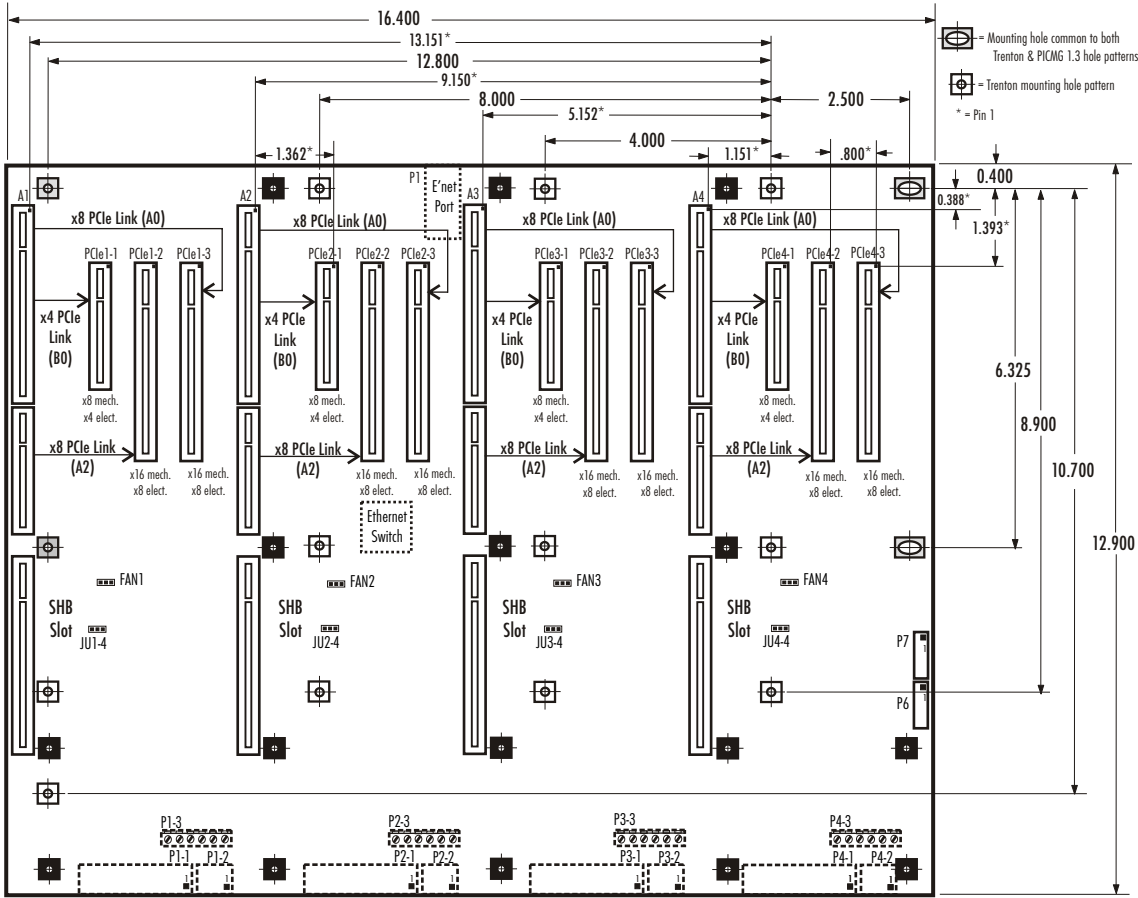
APPLICATION EXAMPLES:

Cluster computing applications that require the processing capabilities of several single or dual processor single board computers working independently or as part of the backplanes optional Ethernet fabric network and housed in a rugged 4U, 19" rackmount chassis are typical system configurations for the backplane. A few application examples for the four segment backplane include cryptography, aircraft communications and control, missile telemetry, complex fabrication machines used in silicon wafer processing, oil and mineral exploration and automatic toll-booths.

BACKPLANE MODEL: BP4FS6890

MODEL#	MODEL NAME	DESCRIPTION – SERVER-CLASS CONFIGURATIONS
6890-005	BP4FS6890-SCSR	Server-class, Standalone Communications, Right-angle EPS/ATX and +12V AUX connectors
6890-016	BP4FS6890-SCST	Server-class, Standalone Communications, +12V Terminal Block connectors
6890-025	BP4FS6890-SCER	Server-class, Ethernet Fabric Communications, Right-angle EPS/ATX and +12V AUX connectors
6890-036	BP4FS6890-SCET	Server-class, Ethernet Fabric Communications, +12V Terminal Block connectors
MODEL#	**MODEL NAME**	**DESCRIPTION – GRAPHICS-CLASS CONFIGURATIONS**
6890-105	BP4FS6890-GC1SR	Graphics-class, Standalone Communications, Right-angle EPS/ATX and +12V AUX connectors
6890-116	BP4FS6890-GC1ST	Graphics-class, Standalone Communications, +12V Terminal Block connectors
6890-125	BP4FS6890-GC1ER	Graphics-class, Ethernet Fabric Communications, Right-angle EPS/ATX and +12V AUX connectors
6890-136	BP4FS6890-GC1ET	Graphics-class, Ethernet Fabric Communications, +12V Terminal Block connectors

BP4FS6890 LAYOUT - SERVER-CLASS CONFIGURATION

Key:
- = Mounting hole common to both Trenton & PICMG 1.3 hole patterns
- = Trenton mounting hole pattern
- * = Pin 1

Dimensions: 16.400, 13.151*, 12.800, 9.150*, 8.000, 5.152*, 4.000, 2.500, 1.362*, 1.151*, .800*, 0.400, 0.388*, 1.393*, 6.325, 8.900, 10.700, 12.900

Labels: A1, A2, A3, A4
x8 PCIe Link (A0)
PCIe1-1 PCIe1-2 PCIe1-3
PCIe2-1 PCIe2-2 PCIe2-3
PCIe3-1 PCIe3-2 PCIe3-3
PCIe4-1 PCIe4-2 PCIe4-3
x4 PCIe Link (B0)
x8 PCIe Link (A2)
x8 mech. x4 elect.
x16 mech. x8 elect.
P1 E'net Port
Ethernet Switch
FAN1 FAN2 FAN3 FAN4
SHB Slot
JU1-4 JU2-4 JU3-4 JU4-4
P7 P6
P1-3 P2-3 P3-3 P4-3
P1-1 P1-2 P2-1 P2-2 P3-1 P3-2 P4-1 P4-2

SUGGESTED SERVER-CLASS TRENTON PICMG 1.3 SHBs:

DUAL PROCESSOR SYSTEM HOST BOARDS
JXT6966   MCXT-E   MCXT   SLT

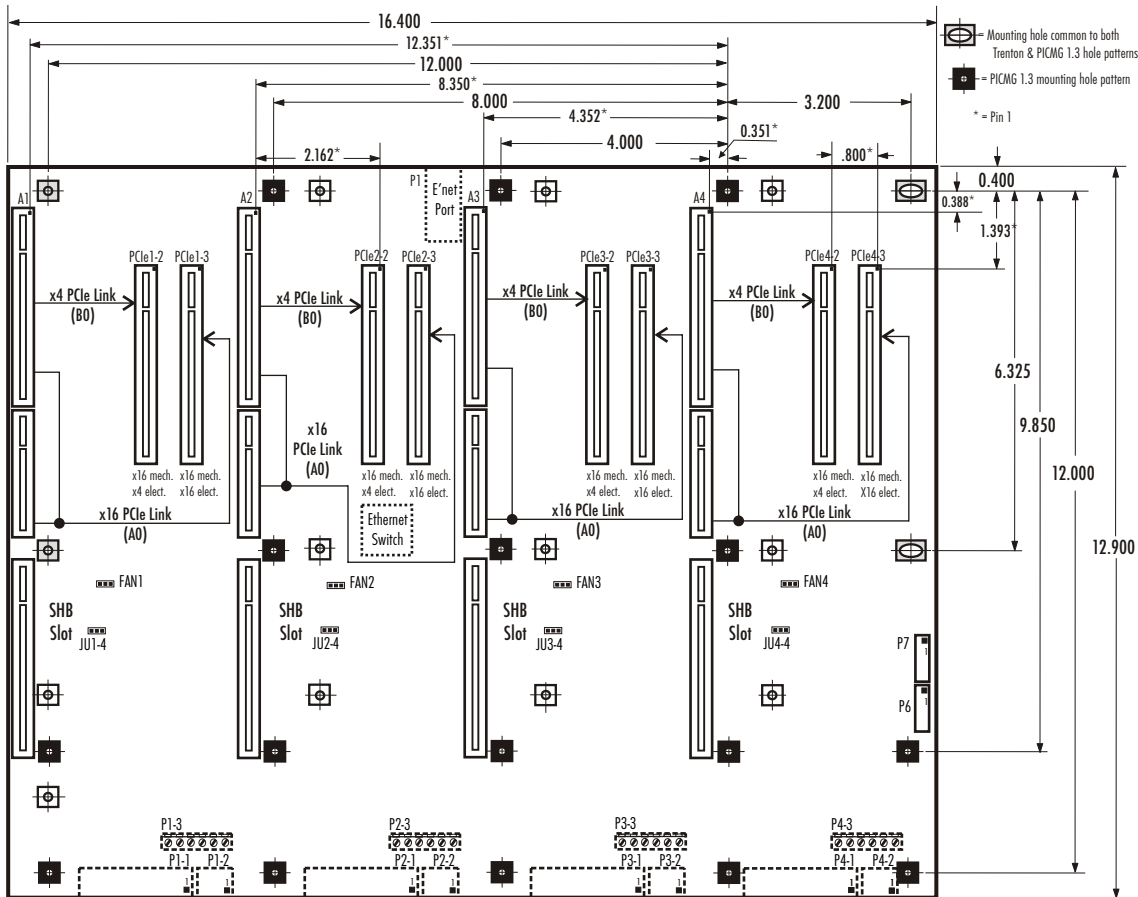**SINGLE PROCESSOR SYSTEM HOST BOARDS**
TSB7073   JXTS6966   MCXI   SLI

Note: JXT6966, JXTS6966 and TSB7053 function as either server or graphics-class SHBs

Notes: Dotted lines indicate connectors and other components that are populated based on model name and number.
Typical PCIe connector centers are 0.049" from pin 1
Mounting holes: 0.156" diameter
Nominal PCB thickness: 0.080"
** Optional Ethernet connectivity provided by the PICMG 1.3 System Host Board. Not all SHBs support this capability.
All dimensions are inches.

*NOTE: The photo of the 6890 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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BP4FS6890 LAYOUT - GRAPHICS-CLASS CONFIGURATION:

Key:
- = Mounting hole common to both Trenton & PICMG 1.3 hole patterns
- = PICMG 1.3 mounting hole pattern
- * = Pin 1

Dimensions: 16.400, 12.351*, 12.000, 8.350*, 8.000, 4.352*, 4.000, 3.200, 2.162*, 0.351*, .800*, 0.400, 0.388*, 1.393*, 6.325, 9.850, 12.000, 12.900

Labels: A1, A2, A3, A4
x4 PCIe Link (B0)
PCIe1-2 PCIe1-3
PCIe2-2 PCIe2-3
PCIe3-2 PCIe3-3
PCIe4-2 PCIe4-3
x16 PCIe Link (A0)
x16 mech. x4 elect.
x16 mech. x16 elect.
P1 E'net Port
Ethernet Switch
FAN1 FAN2 FAN3 FAN4
SHB Slot
JU1-4 JU2-4 JU3-4 JU4-4
P7 P6
P1-3 P2-3 P3-3 P4-3
P1-1 P1-2 P2-1 P2-2 P3-1 P3-2 P4-1 P4-2

SUGGESTED GRAPHICS-CLASS TRENTON PICMG 1.3 SHBs:

DUAL SHBs	SINGLE SHBs
JXT6966	TSB7053, TQ9, JXTS6966, TML

ENVIRONMENTAL SPECS.:

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

The Trenton BP4FS6890 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 BP4FS6890 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.