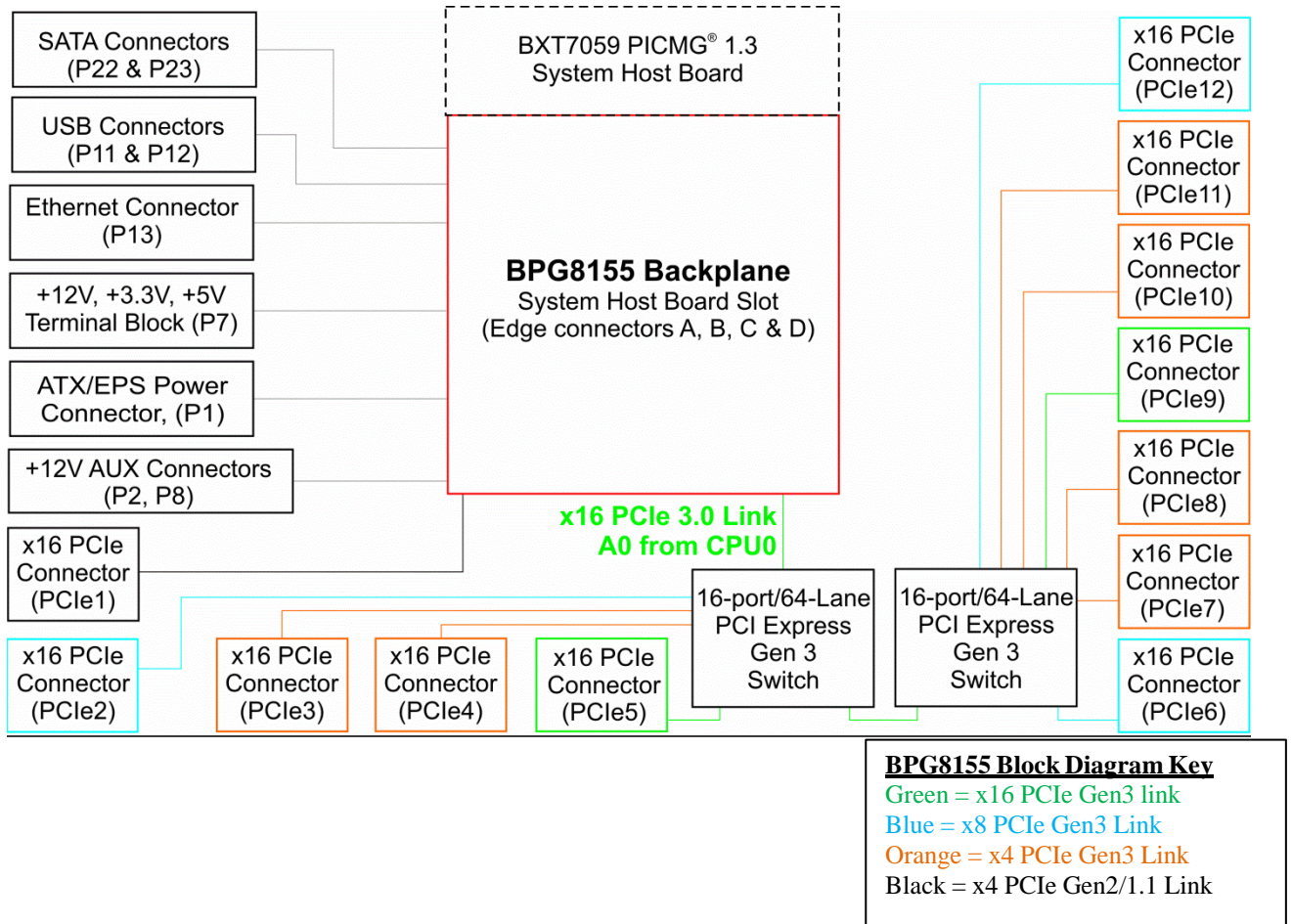


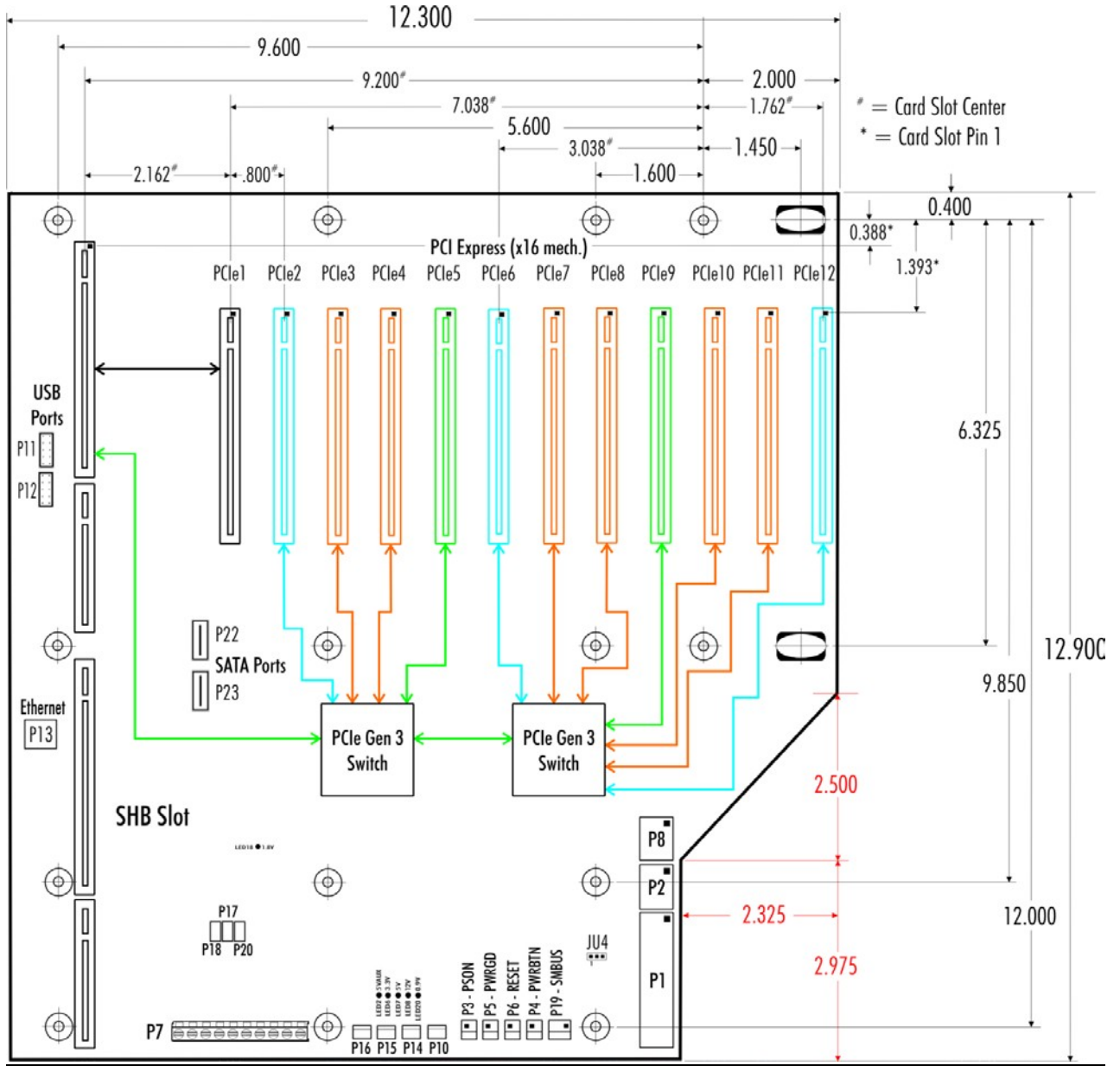
Technical Information – Jumpers, Connectors and Status LEDs
BPG8155 (8155) Server-Class PCI Express 3.0 Backplane – Rev. F-02 and later

Block Diagram



NOTE: The BPG8155 backplane is optimized for use with PCI Express 3.0 system host boards such as the Trenton BXT7059. Non-Gen3 single and dual-processor PICMG 1.3 SHBs; such as the TSB7053 and the JXT6966, may be used with the BPG8155 backplane, but the PCIe root link to the first Gen3 switch will be operating at the PCIe 2.0 link speed for these two particular SHBs. In this usage case, all downstream links from the Gen3 switches will deliver PCIe 3.1 link speeds when a Gen3 PCIe card (i.e. endpoint) is installed in any of the eleven, PCI Express 3.0 capable option card slots on the backplane regardless of the SHB's root link interface.

Layout Diagram – 8155-007 – PICMG 1.3 Mounting Hole Pattern



Notes:

1. BPG8155 supports the standard PICMG 1.3 mounting hole pattern for 14-slot backplanes
2. Connector spacing: 0.800"
3. Power connectors shown represents backplane model number 8155-007
4. The nominal backplane thickness is 0.080"; however, the backplane mounting holes are recessed 0.018" on the bottom to provide an effective PCB thickness of 0.062" for use in the chassis design process.
5. Mounting holes: .156" diameter
6. All dimensions are in inches.
7. Optional USB, SATA and Ethernet connectivity provided by BXT7059 SHB. Not all SHBs support these capabilities.
8. Refer to the status LED section for definitions on the PCI Express link speed and state for each diagnostic LED



8155-007 Configuration Jumpers

The setup of the configuration jumpers on the backplane is described below. An * indicates the jumper default value.

NOTE: For the JU9 and JU10 3-pin / two-position jumpers, “TOP” and “BOTTOM” refers to positioning when the backplane is viewed with the slots at the top end of the backplane.

<u>Jumper</u>	<u>Description</u>
P17	SHB I2C Enable (2-pin Jumper) Open to ENABLE I2C communication between the SHB and the 8155 I2C Bus* - Do not populate jumper
P18	PCIe Switch I2C Enable (2-pin Jumper) Open to ENABLE I2C communication between the PCIe switch and the 8155 I2C Bus* - Do not populate jumper
P20	Slot Clock I2C Enable (2-pin Jumper) Open to ENABLE I2C communication between the PCIe Slots, Clock Buffers, PCIe Retimers and the 8155 I2C Bus* - Do not populate jumper
JU4	+5V Auxiliary Voltage (3-pin Jumper/Two Position) Install on the RIGHT (pins 1-2) if +5V auxiliary voltage is provided by the standard +5V supply. This option is used for systems which do not have either an ATX or EPS standard power input. This mode provides the necessary +5V for the SHB's +5VAUX signal lines. Sleep mode recovery is not supported using non- ATX/EPS power supplies. Install on the LEFT (pins 2-3) if +5V auxiliary voltage is provided by a separate +5VAUX signal input pin. This enables the necessary SHB power signaling and allows recovery from sleep mode. This option is used for ATX or EPS standard power supplies. *

*Default position



8155-007 Connectors

NOTE: Pin 1 on the connectors is indicated by the square pad on the PCB.

P1 - ATX/EPS Power Connector

24 pin right angle dual row, Molex #39-30-1240

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	+3.3V	13	+3.3V
2	+3.3V	14	NC
3	Gnd	15	Gnd
4	+5V	16	PSON#
5	Gnd	17	Gnd
6	+5V	18	Gnd
7	Gnd	19	Gnd
8	PWRGD	20	NC
9	+5VAUX	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Gnd

P2, P8 - +12V Power Connector

8 pin right angle dual row, Molex #39-30-0080

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	Gnd	8	+12V
2	Gnd	7	+12V
3	Gnd	6	+12V
4	Gnd	5	+12V

P7 - Terminal Block Connector

10 position terminal block, Phoenix Contact #19 35 24 2

20 amps per circuit

<u>Pin</u>	<u>Signal</u>
1	+12V
2	+12V
3	+5V
4	+3.3V
5	+3.3V
6	Gnd
7	Gnd
8	Gnd
9	Gnd
10	Gnd

P19 - SMBUS Connector

3 pin vertical single row header, Molex #22-23-2031

<u>Pin</u>	<u>Signal</u>
1	SMDAT
2	SMCLK
3	GND

8155-007 Connectors (continued)

- P3 - Power-On Connector**
 2 pin vertical single row header, Amp #5-146280-2
- | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|
| 1 | PSO# |
| 2 | Gnd |
-
- P4 - Power Button Connector**
 2 pin vertical single row header, Amp #5-146280-2
- | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|
| 1 | PWRBT# |
| 2 | Gnd |
-
- P6 - Reset Connector**
 2 pin vertical single row header, Amp #5-146280-2
- | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|
| 1 | SHB_RST# |
| 2 | Gnd |
-
- P5 - Power Good Connector**
 2 pin vertical single row header, Amp #5-146280-2
- | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|
| 1 | PWRGD |
| 2 | +5V |
-
- P11 - Universal Serial Bus (USB) Connector[#]**
 10 pin dual row header, Amp #1761610-3
- | <u>Pin</u> | <u>Signal</u> | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|------------|---------------|
| 1 | +5V-USB0 | 2 | +5V-USB1 |
| 3 | USB0- | 4 | USB1- |
| 5 | USB0+ | 6 | USB1+ |
| 7 | Gnd-USB0 | 8 | Gnd-USB1 |
| 9 | Shield Gnd | 10 | Shield Gnd |
-
- P12 - Universal Serial Bus (USB) Connector[#]**
 10 pin dual row header, Amp #1761610-3
- | <u>Pin</u> | <u>Signal</u> | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|------------|---------------|
| 1 | +5V-USB2 | 2 | +5V-USB3 |
| 3 | USB2- | 4 | USB3- |
| 5 | USB2+ | 6 | USB3+ |
| 7 | Gnd-USB2 | 8 | Gnd-USB3 |
| 9 | Shield Gnd | 10 | Shield Gnd |
-
- P13 - 10/100/1000Base-T Ethernet Connector – LAN 0[#]**
 8 pin vertical RJ-45 connector, Molex #42878-8410
- | <u>Pin</u> | <u>Signal</u> |
|------------|---------------|
| 1 | TRP1+ |
| 2 | TRP1- |
| 3 | TRP2+ |
| 4 | TRP3+ |
| 5 | TRP3- |
| 6 | TRP2- |
| 7 | TRP4+ |
| 8 | TRP4- |

8155-007 Connectors (continued)

P22 - SATA Primary Connector[#]

7 pin vertical connector, Molex #67491-1031

<u>Pin</u>	<u>Signal</u>
1	Gnd
2	TX0_p
3	TX0_n
4	Gnd
5	RX0_p
6	RX0_n
7	Gnd

P23 - SATA Connector[#]

7 pin vertical connector, Molex #67491-1031

<u>Pin</u>	<u>Signal</u>
1	Gnd
2	TX0_p
3	TX0_n
4	Gnd
5	RX0_p
6	RX0_n
7	Gnd

[#]Backplane functionality provided by the system host board

P10, 12V Chassis Fan Connectors (4)

P14, 3 pin right-angle header, Amp #5-146280-3

P15, Pin Signal

P16

1	Gnd
2	+12V
3	NC

8155-007 Diagnostic LED Status – Power Indicators

LED Reference Designation	Backplane Silkscreen Wording	LED On	LED Off
LED2	+5AUX	Voltage Detected	Voltage Not Detected
LED6	+3.3V	Voltage Detected	Voltage Not Detected
LED7	+5V	Voltage Detected	Voltage Not Detected
LED8	+12V	Voltage Detected	Voltage Not Detected
LED18	1.8V	Voltage Detected	Voltage Not Detected
LED20	0.9V	Voltage Detected	Voltage Not Detected