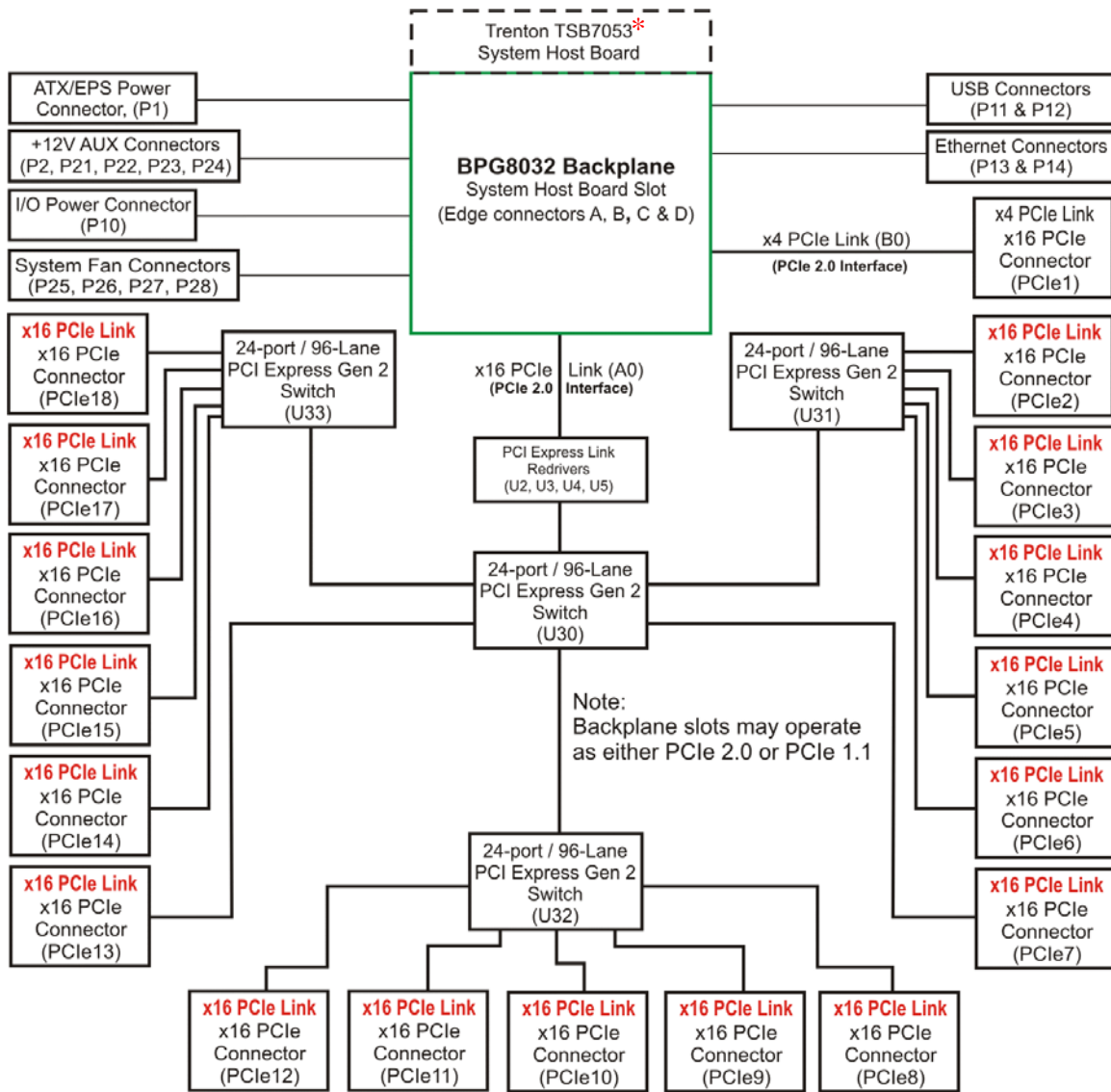## Technical Information –Jumpers and Connectors
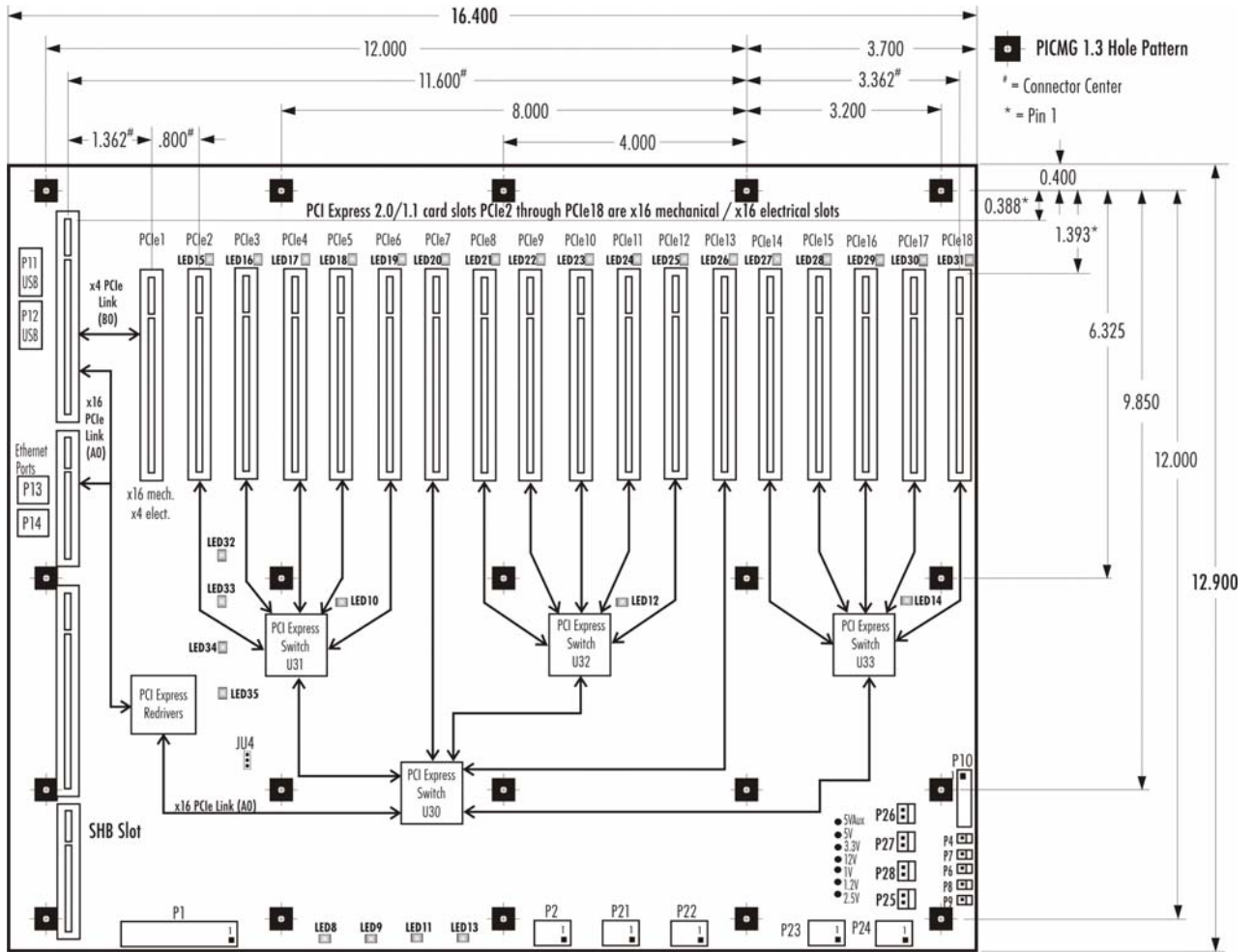## BPG8032 (8032) Graphics-Class PCI Express 2.0 Backplane

Block Diagram

* Other system host boards such as the JXT6966, BXT7059, JXTS6966, BXTS7059, TQ9 and TML may be used with the BPG8032 backplane.

Layout Diagram – 8032-007 and 8032-008

Notes:
1. BPG8032 backplane supports the PICMG 1.3 hole pattern only
2. Connector spacing: 0.800"
3. Power connectors are populated based on model.
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 inches.
7. Optional USB and Ethernet connectivity provided by PICMG 1.3 SHB. Not all SHBs support this capability.
8. Refer to the LED section for definitions of the PCI Express link speed and state for each diagnostic LED

8032-007 and 8032-008 Configuration Jumpers

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

NOTE: For the two-position jumper (3-post), "TOP" and "BOTTOM" refer to positioning when the backplane is viewed with the slots at the top end of the backplane.

Jumper	Description
JU1	**SHB I2C Enable/Disable** (2-pin Jumper) Open to ENABLE* / Install jumper to DISABLE
JU2	**PCIe Switches I2C Enable/Disable** (2-pin Jumper) Open to ENABLE* / Install jumper to DISABLE
JU3	**Card Slots/Redrivers I2C Enable/Disable** (2-pin Jumper) Open to ENABLE* / Install jumper to DISABLE
JU4	**+5V Auxiliary Voltage** (3-pin Jumper/Two Position) Install on the TOP 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 BOTTOM 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

8032-007 and 8032-008 Connectors

NOTE: Pin 1 on the connectors is indicated by the square pad on the PCB and also by a silkscreen dot.

P1   -   ATX/EPS Power Connector
24 pin right-angle dual row, Amp #1-794516-1 (8032-007)
-or-
24 pin vertical dual row, Molex #44206-002 (8032-008)

Pin	Signal	Pin	Signal
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, P21,   +12V Power Connectors
P22, P23, 8 pin right-angle dual row, Molex #39-30-0080 (8032-007)
P24   -   -or-
8 pin vertical dual row, Molex #44206-0005 (8032-008)

Pin	Signal	Pin	Signal
1	Gnd	8	+12V
2	Gnd	7	+12V
3	Gnd	6	+12V
4	Gnd	5	+12V

P6   -   Power-On Connector
(can be used as LED source)
2 pin vertical single row header, Amp #640456-2

Pin	Signal
1	PSON#
2	Gnd

P7   -   Power Button Connector
2 pin vertical single row header, Amp #640456-2

Pin	Signal
1	PWRBT#
2	Gnd

8032-007 and 8032-008 Connectors (continued)

P8   -   Reset Connector
2 pin vertical single row header, Amp #640456-2

Pin	Signal
1	SHB_RST#
2	Gnd

P9   -   Power Good Connector
(can be used as an LED source)
2 pin vertical single row header, Amp #640456-2

Pin	Signal
1	PWRGD
2	+5V

P10   -   I/O Power Connector
20 pin vertical dual row header, Molex #87831-2020

Pin	Signal	Pin	Signal
1	Gnd	2	+12V
3	NC	4	Gnd
5	NC	6	+5V
7	SMDAT	8	+5VAUX
9	SMCLK	10	+3.3V
11	PWRBT#	12	PSON#
13	Gnd	14	SHB_RST#
15	PWRGD	16	5VAUX
17	Gnd	18	5VAUX
19	Gnd	20	NC

P11   -   Universal Serial Bus (USB) Connector
8 pin dual row header, Molex #702-46-0801
(+5V fused with self-resetting fuses)

Pin	Signal	Pin	Signal
1	+5V-USB1	2	+5V-USB0
3	USB1-	4	USB0-
5	USB1+	6	USB0+
7	Gnd-USB1	8	Gnd-USB0

P12   -   Universal Serial Bus (USB) Connector
8 pin dual row header, Molex #702-46-0801
(+5V fused with self-resetting fuses)

Pin	Signal	Pin	Signal
1	+5V-USB3	2	+5V-USB2
3	USB3-	4	USB2-
5	USB3+	6	USB2+
7	Gnd-USB3	8	Gnd-USB2

8032-007 and 8032-008 Connectors (continued)

P13 - 10/100/1000Base-T Ethernet Connector – LAN 0
8 pin right angle shielded RJ-45 connector, Molex #43860-0025

Pin	Signal
1	TRP1+
2	TRP1-
3	TRP2+
4	TRP3+
5	TRP3-
6	TRP2-
7	TRP4+
8	TRP4-

P14 - 10/100/1000Base-T Ethernet Connector - LAN 1
(only active with an SHB that supports a LAN1 connection to a PICMG 1.3 backplane)
8 pin right angle shielded RJ-45 connector, Molex #43860-0025

Pin	Signal
1	TRP1+
2	TRP1-
3	TRP2+
4	TRP3+
5	TRP3-
6	TRP2-
7	TRP4+
8	TRP4-

P25, P26, 12V Chassis Fan Connectors
P27, P28 3 pin right-angle header, Molex # 22-05-3031

Pin	Signal
1	Gnd
2	+12V
3	NC

P3, P30, PCIe Switch Cooling Fan Connectors
P31, P33 (Only used with active cooling solution option)
3 pin right-angle header, Molex # 22-05-3031

Pin	Signal
1	Gnd
2	+12V
3	NC

8032-007 and 8032-008 Diagnostic LED Functions

LED Reference Designation	Backplane Silkscreen Wording	Function
LED1	+5AUX	Indicates presence of 5V AUX source voltage
LED2	+5V	Indicates presence of 5V source voltage
LED3	+3.3V	Indicates presence of 3.3V source voltage
LED4	+12V	Indicates presence of 12V source voltage
LED5	2.5V	Indicates that the 2.5V regulator is receiving power
LED6	1.2V	Indicates that the 1.2V regulator is receiving power
LED7	1V	Indicates that the 1V regulator is receiving power
LED8	U30 (7/13) LINK GD	Indicates the status on the PCIe link between U30 and cards slots 7 and 13
LED9	U31 Link GD	Indicates the status of the PCIe link between U30 and U31
LED10	PCIE 2-6 LINK GD	Indicates the status on the PCIe link between U31 and cards slots 2 through 6
LED11	U32 Link GD	Indicates the status of the PCIe link between U30 and U32
LED12	PCIE 8-12 LINK GD	Indicates the status on the PCIe link between U32 and cards slots 8 through 12
LED13	U33 Link GD	Indicates the status of the PCIe link between U30 and U33
LED14	PCIE 14-18 LINK GD	Indicates the status on the PCIe link between U33 and cards slots 14 through 18
LED15	PCIE2 GD	Indicates the status of the link between the PCIE2 card slot and the endpoint card
LED16	PCIE3 GD	Indicates the status of the link between the PCIE3card slot and the endpoint card
LED17	PCIE4 GD	Indicates the status of the link between the PCIE4 card slot and the endpoint card
LED18	PCIE5 GD	Indicates the status of the link between the PCIE5 card slot and the endpoint card
LED19	PCIE6 GD	Indicates the status of the link between the PCIE6 card slot and the endpoint card
LED20	PCIE7 GD	Indicates the status of the link between the PCIE7 card slot and the endpoint card
LED21	PCIE8 GD	Indicates the status of the link between the PCIE8 card slot and the endpoint card
LED22	PCIE9 GD	Indicates the status of the link between the PCIE9 card slot and the endpoint card
LED23	PCIE10 GD	Indicates the status of the link between the PCIE10 card slot and the endpoint card
LED24	PCIE11 GD	Indicates the status of the link between the PCIE11 card slot and the endpoint card
LED25	PCIE12 GD	Indicates the status of the link between the PCIE12 card slot and the endpoint card
LED26	PCIE13 GD	Indicates the status of the link between the PCIE13 card slot and the endpoint card
LED27	PCIE14 GD	Indicates the status of the link between the PCIE14 card slot and the endpoint card
LED28	PCIE15 GD	Indicates the status of the link between the PCIE15 card slot and the endpoint card
LED29	PCIE16 GD	Indicates the status of the link between the PCIE16 card slot and the endpoint card
LED30	PCIE17 GD	Indicates the status of the link between the PCIE17 card slot and the endpoint card
LED31	PCIE18 GD	Indicates the status of the link between the PCIE18 card slot and the endpoint card
LED32	A0 LINK 0-3 GD	Indicates that the PCIe A0 link redriver (0-3) is receiving power
LED33	A0 LINK 4-7 GD	Indicates that the PCIe A0 link redriver (4-7) is receiving power
LED34	A0 LINK 8-11 GD	Indicates that the PCIe A0 link redriver (8-11) is receiving power
LED35	A0 LINK 12-15 GD	Indicates that the PCIe A0 link redriver (12-15) is receiving power

8032-007 and 8032-008 Diagnostic LED Status – Power Indicators

LED Reference Designation	Backplane Silkscreen Wording	LED On	LED Off
LED1	+5AUX	Voltage Detected	Voltage Not Detected
LED2	+5V	Voltage Detected	Voltage Not Detected
LED3	+3.3V	Voltage Detected	Voltage Not Detected
LED4	+12V	Voltage Detected	Voltage Not Detected
LED5	2.5V	Voltage Detected	Voltage Not Detected
LED6	1.2V	Voltage Detected	Voltage Not Detected
LED7	1V	Voltage Detected	Voltage Not Detected

8032-007 and 8032-008 Diagnostic LED8 though LED31 – PCI Express Link Status for the PCIe Switches and the PCI Express Card Slots

LED Pattern	PCI Express Link State
ON	Link is up an running at PCIe Gen 2 speed (5.0GT/s), all lanes are up
OFF	Link down
Blinking, 0.5 sec. ON, 0.5 sec. OFF	Link is up an running at PCIe Gen 2 speed (5.0GT/s), reduced lanes are up
Blinking, 1.5 sec. ON, 0.5 sec. OFF	Link is up an running at PCIe Gen 1.1 speed (2.5GT/s), all lanes are up
Blinking, 0.5 sec. ON, 1.5 sec. OFF	Link is up an running at PCIe Gen1.1 speed (2.5GT/s), reduced lanes are up

8032-007 and 8032-008 Diagnostic LED32 through LED35 – A0 Link Redriver Status

LED Pattern	PCI Express Link State
ON	Link redriver is on
OFF	Link redriver is off