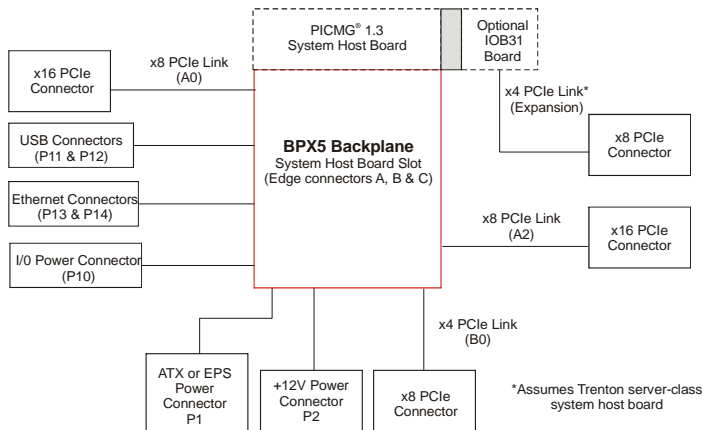




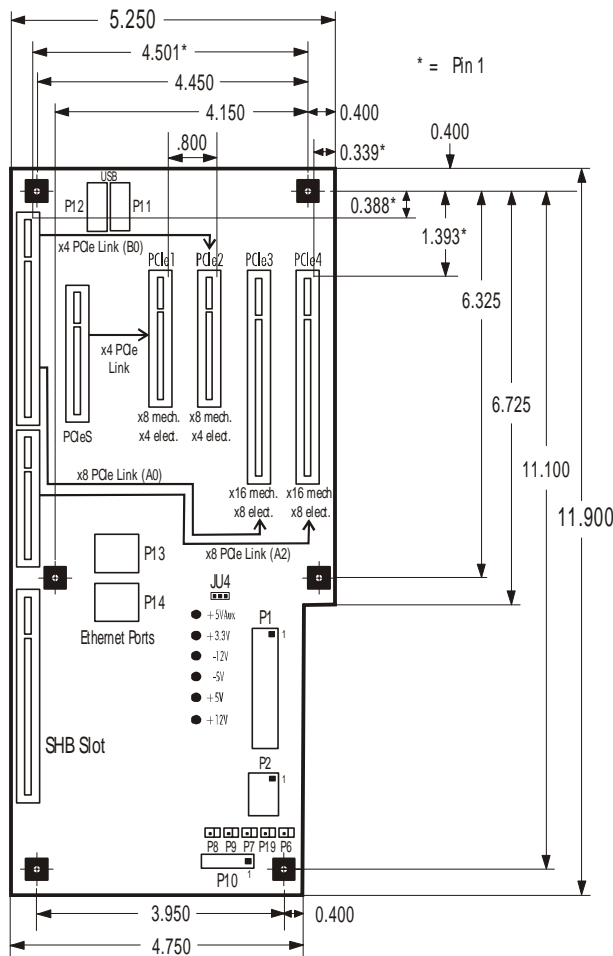
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## Technical Information – Jumpers and Connectors BPX5 (6510) Small Form Factor PCI Express Backplane

### Block Diagram



### Layout Diagram – 6510



#### Notes:

- \*IOB31 Required to provide PCI Express link to PCIE1 slot
- \*\*Optional USB and Ethernet connectivity provided by PICMG 1.3 SHB. Not all SHBs support this capability.
- Connector spacing: 0.800"
- Nominal PCB thickness: .062"
- Mounting holes: .156" diameter
- All dimensions are inches.



### **BPX5 (6510) Configuration Jumper**

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

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**NOTE:** For the two-position jumper (3-post), “RIGHT” and “LEFT” refer to positioning when the backplane is viewed with the slots at the top end of the backplane.

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<u>Jumper</u>	<u>Description</u>
<b>JU4</b>	<b>+5V Auxiliary Voltage</b>
	Install on the LEFT 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 RIGHT 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. *

### **BPX5 (6510) Connectors**

The connectors available on the BPX5 vary depending on the version of the backplane you have. Connectors for the 6510-007 (right angle connectors) and 6510-008 (straight- in/vertical connectors) are defined below.

### **BPX5 (6510-007) Connectors**

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

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**P1 - ATX/EPS Power Connector**  
 24 pin right angle dual row header, Amp #794516-1

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



### **BPX5 (6510-007) Connectors (continued)**

**P2 - +12V Power Connector**

8 pin right angle mini fit JR, Molex #39-30-0080

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

**P6 - Power-On Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PSON#
2	Gnd

**P7 - Power Button Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRBT#
2	Gnd

**P8 - Reset Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	SHB_RST#
2	Gnd

**P9 - Power Good Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	+3.3V

**P10 - I/O Power Connector**

20 pin right angle dual row header, Molex #87833-2020

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	Gnd	2	+12V
3	IPMB_DA	4	Gnd
5	IPMB_CL	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	-12V



### **BPX5 (6510-007) Connectors (continued)**

**P11 - Universal Serial Bus (USB) Connector**

8 pin dual row header, Molex #702-46-0801  
(+5V fused with self-resetting fuses)

<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

**P12 - Universal Serial Bus (USB) Connector**

8 pin dual row header, Molex #702-46-0801  
(+5V fused with self-resetting fuses)

<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

**P13 - 10/100/1000Base-T Ethernet Connector - LAN 0**

8 pin shielded RA RJ-45 connector, Molex #43202-8919

<u>Pin</u>	<u>Signal</u>
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**

8 pin shielded RA RJ-45 connector, Molex #43202-8919

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

**P19 - System Management Bus Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	SMB Clock
2	SMB Data



## **BPX5 (6510-008) Connectors**

### **P1 - ATX/EPS Power Connector**

24 pin dual row mini fit JR, Molex #39-29-6248

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

### **P2 - +12V Power Connector**

8 pin mini fit JR, Molex #39-29-3086

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

### **P6 - Power-On Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PSON#
2	Gnd

### **P7 - Power Button Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRBT#
2	Gnd

### **P8 - Reset Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	SHB_RST#
2	Gnd

### **P9 - Power Good Connector**

2 pin single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	Gnd



### **BPX5 (6510-008) Connectors (continued)**

#### **P10 - I/O Power Connector**

20 pin right angle dual row header, Molex #87833-2020

<u>Pin</u>	<u>Signal</u>	<u>Pin</u>	<u>Signal</u>
1	Gnd	2	+12V
3	IPMB_DA	4	Gnd
5	IPMB_CL	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	-12V

#### **P11 - Universal Serial Bus (USB) Connector**

8 pin dual row header, Molex #702-46-0801  
(+5V fused with self-resetting fuses)

<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

#### **P12 - Universal Serial Bus (USB) Connector**

8 pin dual row header, Molex #702-46-0801  
(+5V fused with self-resetting fuses)

<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

#### **P13 - 10/100/1000Base-T Ethernet Connector - LAN 0**

8 pin shielded RA RJ-45 connector, Molex #43202-8919

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



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**BPX5 (6510-008) Connectors (continued)**

**P14 - 10/100/1000Base-T Ethernet Connector - LAN 1**

8 pin shielded RA RJ-45 connector, Molex #43202-8919

Pin    Signal

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

**P19 - System Management Bus Connector**

2 pin single row header, Amp #640456-2

Pin    Signal

- 1    SMB Clock
- 2    SMB Data

**Trenton SHB Optional Backplane I/O Support For the BPX5**

TRENTON SHB	ETHERNET			USB							
	LAN0	LAN1	LAN2	USB0	USB1	USB2	USB3	USB4	USB5	USB6	USB7
NLT/NLI <sup>1</sup>	-	-	n/a	-	-	X	X	n/a	n/a	n/a	n/a
SLT/SLI <sup>1</sup>	-	-	n/a	-	-	X	X	n/a	n/a	n/a	n/a
MCX-series <sup>2</sup>	-	-	X	-	-	-	-	X	X	X	X

<sup>1</sup> Requires factory build option

<sup>2</sup> LAN2 is a 10/100/1000BASE-T Ethernet interface when using a MCX-series SHB

Note: The letter X indicates an interface connection routed to SHB edge connector C for use on the backplane

**Connector Configuration Illustrated For The BPX5**

MODEL#	MODEL NAME	DESCRIPTION
6510-007	BPX5-CRA	ATX/EPS right-angle connectors
6510-008	BPX5-CST	ATX/EPS vertical connectors