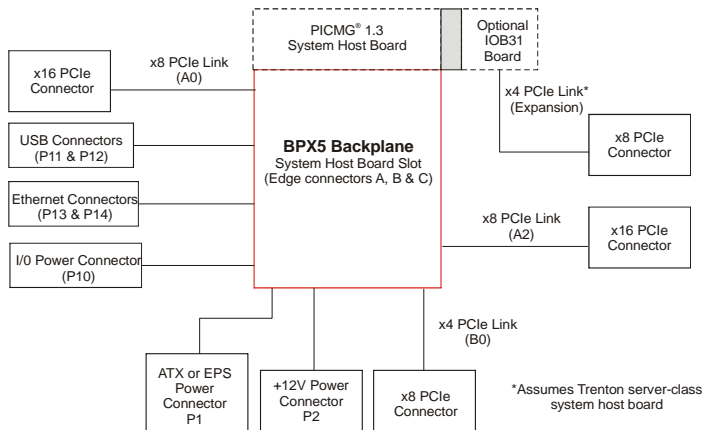




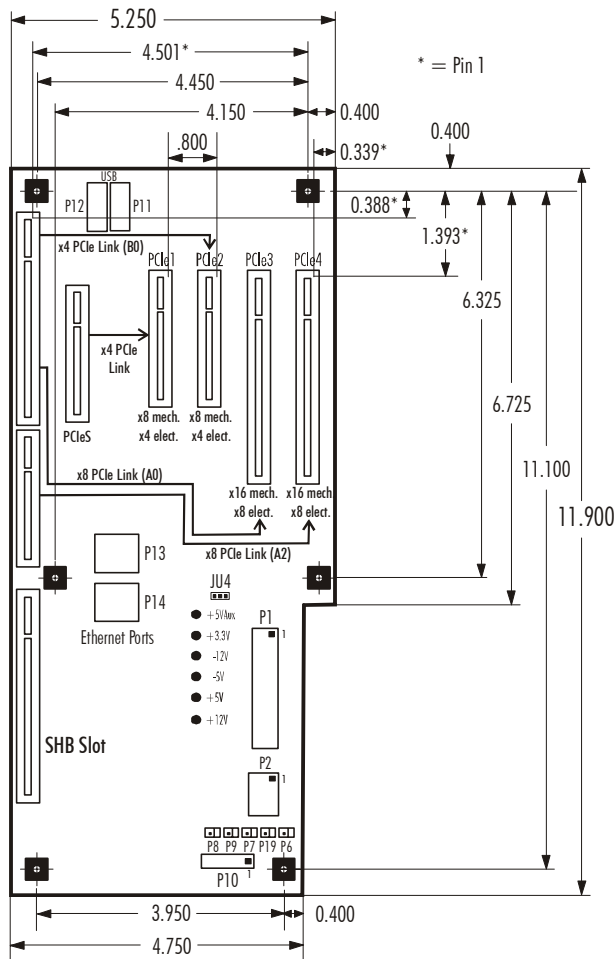
TRENTON Technology Inc.
 2350 Centennial Drive • Gainesville, Georgia 30504
 Sales (800) 875-6031 • Phone (770) 287-3100 • Fax (770) 287-3150

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.

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.

| <u>Jumper</u> | <u>Description</u> |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JU4 | +5V Auxiliary Voltage |
| | 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

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 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 | PSO# |
| 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 |

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 | PSO# |
| 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 | PSO# |
| 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 | PSO# |
| 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

| <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 |

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 ¹ | - | - | n/a | - | - | X | X | n/a | n/a | n/a | n/a |
| SLT/SLI ¹ | - | - | n/a | - | - | X | X | n/a | n/a | n/a | n/a |
| MCX-series ² | - | - | X | - | - | - | - | X | X | X | X |

¹ Requires factory build option

² 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

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