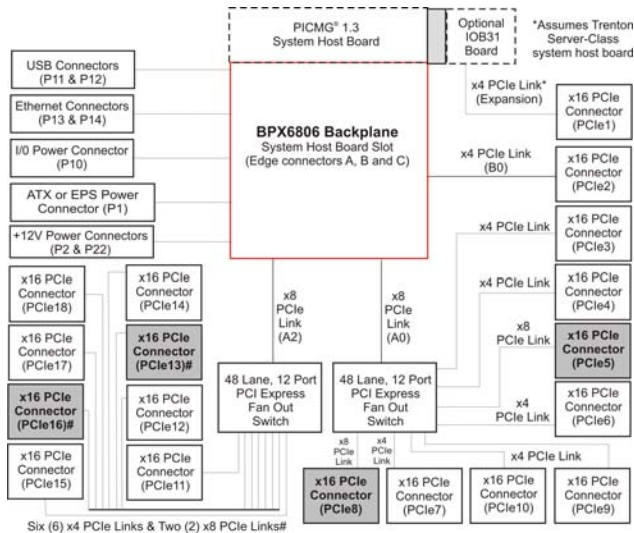




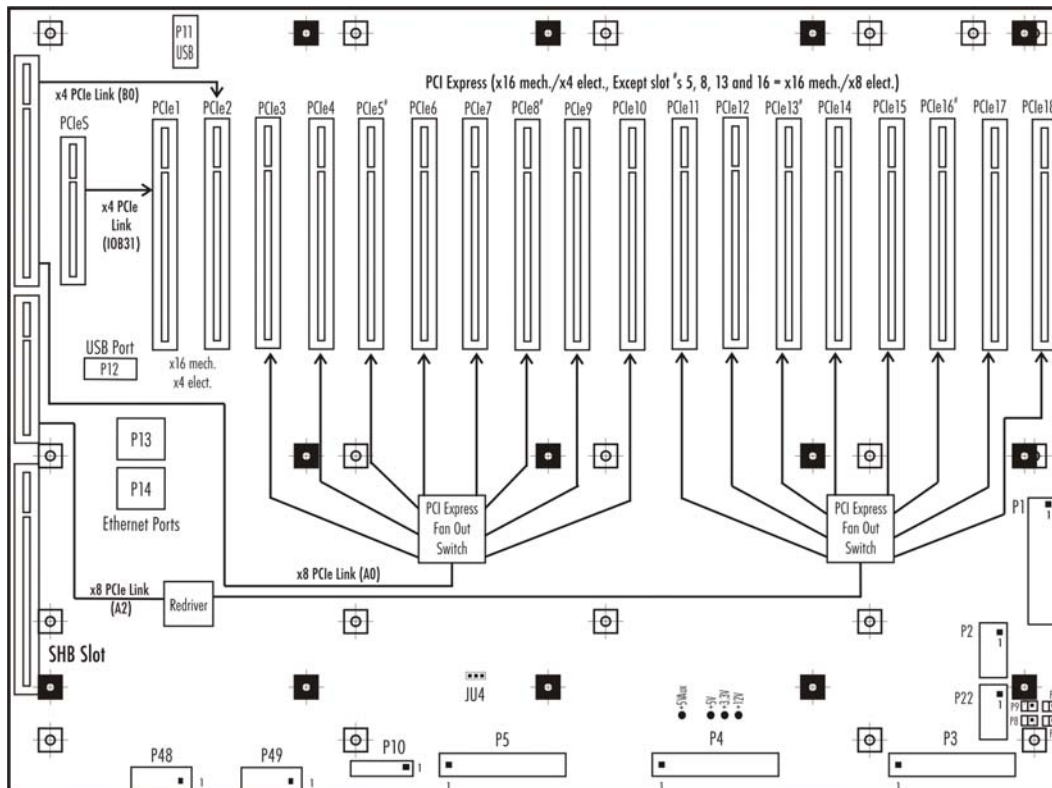
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Technical Information – Jumpers and Connectors BPX6806 (6806) Server-Class PCI Express Backplane

Block Diagram



Layout Diagram – 6806-001, 6806-002, 6806-003 and 6806-004



Trenton Hole Pattern
 PICMG 1.3 Hole Pattern

Notes:

*IOB31 required to provide PCI Express link to PCIe1 slot

Connector spacing: 0.800"

Connectors are populated based on model.

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.

Mounting holes: .156" diameter

Some holes are common to both hole patterns

All dimensions are inches.

Note:

**Optional USB and Ethernet connectivity provided by PICMG 1.3 SHB. Not all SHBs support this capability.



BPX6806 (6806-001, 6806-002, 6806-003 and 6806-004) 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. *

BPX6806 (6806-001) Connectors

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

P1 - ATX/EPS Power Connector
 24 pin vertical dual row, Molex #44206-002

<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 vertical dual row, Molex #44206-0005

<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



BPX6806 (6806-001) Connectors (Continued)

P6 - Power-On Connector

2 pin vertical single row header, Amp #640456-2

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

P7 - Power Button Connector

2 pin vertical single row header, Amp #640456-2

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

P8 - Reset Connector

2 pin vertical single row header, Amp #640456-2

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

P9 - Power Good Connector

2 pin vertical single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	+5V

P10 - I/O Power Connector

20 pin vertical dual row header, Molex #87831-2020

<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

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



BPX6806 (6806-001) Connectors (Continued)

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 right angle shielded RJ-45 connector, Molex #43860-0025

<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 right angle shielded RJ-45 connector, Molex #43860-0025

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

P22 - +12V Power Connector

8 pin vertical dual row, Molex #44206-0005

<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



BPX6806 (6806-002) Connectors

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

P6 - Power-On Connector

2 pin vertical single row header, Amp #640456-2

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

P7 - Power Button Connector

2 pin vertical single row header, Amp #640456-2

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

P8 - Reset Connector

2 pin vertical single row header, Amp #640456-2

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

P9 - Power Good Connector

2 pin vertical single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	+5V

P10 - I/O Power Connector

20 pin vertical dual row header, Molex #87831-2020

<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

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



BPX6806 (6806-002) Connectors (Continued)

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 right angle shielded RJ-45 connector, Molex #43860-0025

<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 right angle shielded RJ-45 connector, Molex #43860-0025

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

P48 - DC Return Extended-Current Connector

5 pin right angle, Amp# 193839-4

<u>Pin</u>	<u>Signal</u>
1	Gnd
2	Gnd
3	Gnd
4	Gnd
5	Gnd

P49 - DC Extended-Current Connector

5 pin right angle, Amp# 193839-4

<u>Pin</u>	<u>Signal</u>
1	+3.3V
2	+3.3V
3	+3.3V
4	+3.3V
5	+12V



BPX6806 (6806-003) Connectors

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

P1 - ATX/EPS Power Connector

24 pin vertical dual row, Molex #44206-002

<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 vertical dual row, Molex #44206-0005

<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

P6 - Power-On Connector

2 pin vertical single row header, Amp #640456-2

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

P7 - Power Button Connector

2 pin vertical single row header, Amp #640456-2

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

P8 - Reset Connector

2 pin vertical single row header, Amp #640456-2

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

P9 - Power Good Connector

2 pin vertical single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	+5V



BPX6806 (6806-003) Connectors (continued)

P10 - I/O Power Connector

20 pin vertical dual row header, Molex #87831-2020

<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

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 right angle shielded RJ-45 connector, Molex #43860-0025

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



BPX6806 (6806-003) Connectors (continued)

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

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-

P22 - +12V Power Connector

8 pin vertical dual row, Molex #44206-0005

Pin Signal Pin Signal

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

P48 - DC Return Extended-Current Connector

5 pin right angle, Amp# 193839-4

Pin Signal

1	Gnd
2	Gnd
3	Gnd
4	Gnd
5	Gnd

P49 - DC Extended-Current Connector

5 pin right angle, Amp# 193839-4

Pin Signal

1	+3.3V
2	+3.3V
3	+3.3V
4	+3.3V
5	+12V



BPX6806 (6806-004) Connectors

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

P1 - ATX/EPS Power Connector

24 pin vertical dual row, Molex #44206-002

<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 vertical dual row, Molex #44206-0005

<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

P3 - Terminal Block Connector

10 position terminal block, Amp #1-796949-0

20 Amps per circuit

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



BPX6806 (6804-004) Connectors (continued)

P4 - Terminal Block Connector

10 position terminal block, Amp #1-796949-0
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

P5 - Terminal Block Connector

10 position terminal block, Amp #1-796949-0
20 Amps per circuit

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

P6 - Power-On Connector

2 pin vertical single row header, Amp #640456-2

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

P7 - Power Button Connector

2 pin vertical single row header, Amp #640456-2

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

P8 - Reset Connector

2 pin vertical single row header, Amp #640456-2

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



BPX6806 (6804-004) Connectors (continued)

P9 - Power Good Connector

2 pin vertical single row header, Amp #640456-2

<u>Pin</u>	<u>Signal</u>
1	PWRGD
2	+5V

P10 - I/O Power Connector

20 pin vertical dual row header, Molex #87831-2020

<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 right angle shielded RJ-45 connector, Molex #43860-0025

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



BPX6806 (6804-004) Connectors (continued)

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

8 pin right angle shielded RJ-45 connector, Molex #43860-0025

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

P22 - +12V Power Connector

8 pin vertical dual row, Molex #44206-0005

<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

Trenton Server-Class SHB Optional Backplane I/O Support

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

BPX6806 Maximum Power Delivery For Power Connector Configurations

The following table illustrates the maximum current delivery possible with each available BPX6806 power connector configuration.

Connector Configuration	3.3V Total Current Delivery (A)	5V Total Current Delivery (A)	GND Total Current Delivery (A)	12V Total Current Delivery (A)
-001 (P1, P2, P22)	24	30	96	60
-002 (P48, P49)	120	0	150	30
-003 (P1, P2, P22, P48, P49)	144	30	246	90
-004 (P1, P2, P22, P3, P4, P5)	136	50	396	200