

## PCE-5B12-00A1E Backplane: 12-slot BP for 20-slot chassis, 10 PCIe x16, and 1 PCIe x4

### Startup Manual

#### Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

- PCE-5B12-00A1E startup manual 1st ED
- M4\*6\*0.7 Round Screws P/N: 1939000410
- 2-year Quality Warranty Card P/N: 2190000902

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

#### Specifications

##### Standard Functions

- **PICMG 1.3 slots:** PCE-5B12-00A1E supports PCE-5000 and 7000 series CPU boards
- **PCIe slots:** 10 PCIe x16 and 1 PCIe x4  
\*If you have any questions about memory, I/O or IRQ resource limitations, please contact Advantech locally or FAE for further support.
- **PCIe switch:** One 5 ports/48 lanes and two 24 ports/96 lane PCIe Gen2 switch reduce data latency
- **USB (2.0) ports:** 4 Universal Serial Bus ports as pin headers

##### Mechanical and Environment

- **Dimensions:** 327.66 x 417 mm
- **Power supply voltage:** +12 V, +5 V, -12 V, -5 V, +3.3 V, 5 VSB
- **Power requirements:** Refer to CPU board, add-on card & peripheral documentation
- **Operating temperature:** 0 ~ 60° C (Depending on system thermal solution)
- **Weight:** 1.1 kg (weight of board)

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

<http://www.advantech.com/eplatform>

For technical support and service, please visit our support website at:

<http://www.advantech.com/support/>

This manual is for PCE-5B12-00A1E.

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#### Connectors and Jumpers

The backplane has a number of connectors and jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the connectors and jumpers.

##### Connectors

Part Reference	Function
SHBA1 ~ SHBD1	PICMG 1.3 CPU board slot
PPCIEX4_1	PCIe x4 with PCIe x16 slot
P1PCIEX16_1~5	PCIe x16 slot
P2PCIEX16_1~5	PCIe x16 slot
EATXPWR1	ATX 2.0 24-pin power connector
EATPWR1	AT 12-pin Power connector
ATX12V1	ATX 12 V Auxiliary 4-pin power connector
ATX12V2	ATX 12 V Auxiliary 4-pin power connector
EATX12V1	ATX 12 V 8-pin power connector
EATX12V2	ATX 12 V 8-pin power connector
PWR3V1	3.3 V Auxiliary power connector
PWR3V2	3.3 V Auxiliary power connector
PWR_4P1	ATX 5V & 12V 4-pin power connector
VOLT1	Alarm board
FAN1 ~ FAN7	Fan connectors
FANDEC1	Fan speed detect connector
SMBUS1 ~ SMBUS2	Chassis sensor board connectors
JFP1	Power and reset button connector
IPMB1	IPMB connector
USB12	USB connector
USB34	USB connector
PSON2	ATX feature Connector (5 VSB, PSON) for Advantech redundant power supply: 1757001757, 1757001760, 1757001758, 1757001761, 1757001759, 1757001677

## Connectors and Jumpers

Jumpers	
Part Reference	Function
PSON1	ATX/AT mode select connector 1-2: AT mode 2-3: ATX mode (default)
JGEN1	PCIe generation selection connector for primary switch 1-2: Gen1 2-3: Gen2 (default) * The PCIe generation setting is backwards compatible. Suggest to choose "Gen2" setting.
JGEN2	PCIe generation selection connector for Secondary switch 1-2: Gen1 2-3: Gen2 (default) * The PCIe generation setting is backwards compatible. Suggest to choose "Gen2" setting.

EATXPWR1	
Pin	Name
1	3.3 V
2	3.3 V
3	GND
4	5 V
5	GND
6	5 V
7	GND
8	PWROK
9	5VSB
10	12 V
11	12 V
12	3.3 V
13	3.3 V
14	-12 V
15	GND
16	PSON#
17	GND
18	GND
19	GND
20	-5 V
21	5 V
22	5 V
23	5 V

24	GND
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EATPWR1	
Pin	Name
1	PWROK
2	5 V
3	12 V
4	-12 V
5	GND
6	GND
7	GND
8	GND
9	-5 V
10	5 V
11	5 V
12	5 V

ATX12V1 ~ ATX12V2	
Pin	Name
1	GND
2	GND
3	12 V
4	12 V

EATX12V1 ~ EATX12V2	
Pin	Name
1	GND
2	GND
3	GND
4	GND
5	12 V
6	12 V
7	12 V
8	12 V

PWR3V1~ PWR3V2	
Pin	Name
1	3.3 V
2	3.3 V

## Connectors and Jumpers

3	3.3 V
4	GND
5	GND
6	GND

VOLT1	
Pin	Name
1	5VSB
2	GND
3	GND
4	-5 V
5	5 V
6	3.3 V
7	-12 V
8	12 V

FAN1 ~ FAN7	
Pin	Name
1	GND
2	12 V
3	FANIO1 ~ FANIO7

FANDEC1	
Pin	Name
1	FANIO1
2	FANIO2
3	FANIO3
4	FANIO4
5	FANIO5
6	FANIO6
7	FANIO7

SMBUS1~ SMBUS2	
Pin	Name
1	5 V
2	C-SMBCLK
3	C-SMBDAT
4	GND

JFP1	
Pin	Name
1	PWRBTN#
2	GND
3	RESET#
4	GND



IPMB1	
Pin	Name
1	IPMB_CLK
2	IPMB_DAT
3	GND

USB12	
Pin	Name
1	USBV0
2	USBV0
3	USBD0-
4	USBD1-
5	USBD0+
6	USBD1+
7	GND
8	GND
9	Null
10	NC



USB34	
Pin	Name
1	USBV2
2	USBV2
3	USBD2-
4	USBD3-
5	USBD2+
6	USBD3+
7	GND
8	GND
9	Null
10	NC

## Connectors and Jumpers

PSON2	
Pin	Name
1	PSON#
2	NC
3	+5 VSB

PSON1: ATX/AT Mode Selection	
Jumper Setting	Function
1 - 2 closed pins 	AT mode
2 - 3 closed pins 	ATX mode (default)

### JGEN1 & JGEN2: PCIe Generation Selection Connector

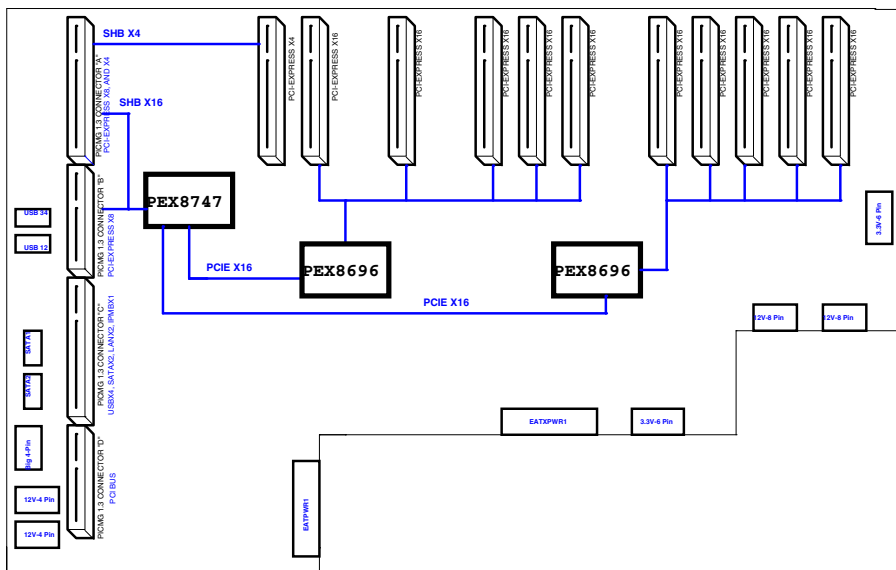
Jumper Setting	Function
2 - 3 closed pins 	Gen2 (Default)
1 - 2 closed pins 	Gen1

## SW1: PCIe Gen1 card Compatibility for Non-Compliant Gen1 endpoints

SW1	Pin	Function
	1	U13 Disable (Default)
	2	U14 Disable(Default)
	3	U14 Enable
	4	U13 Enable

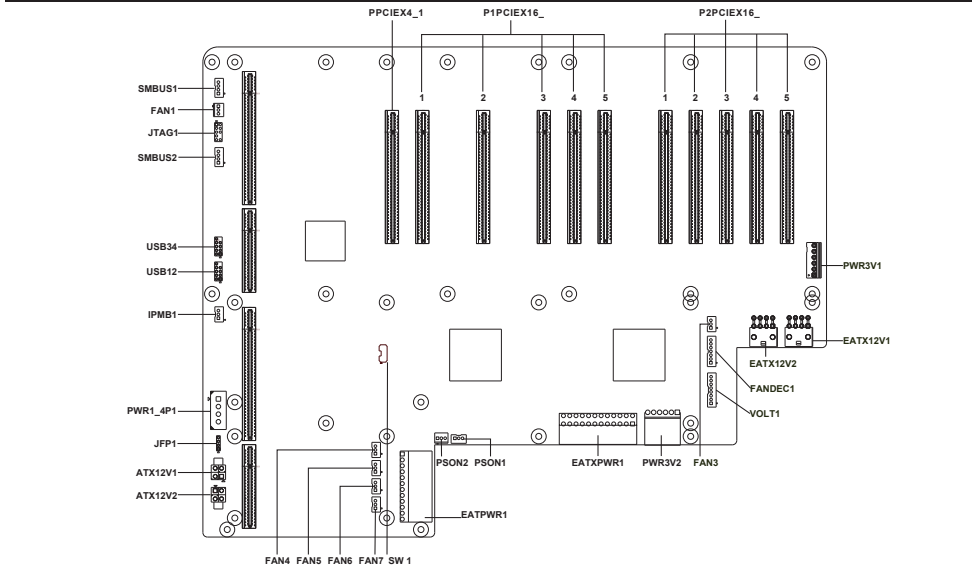
## Block Diagram

PICMG V1.3 BACKPLANE



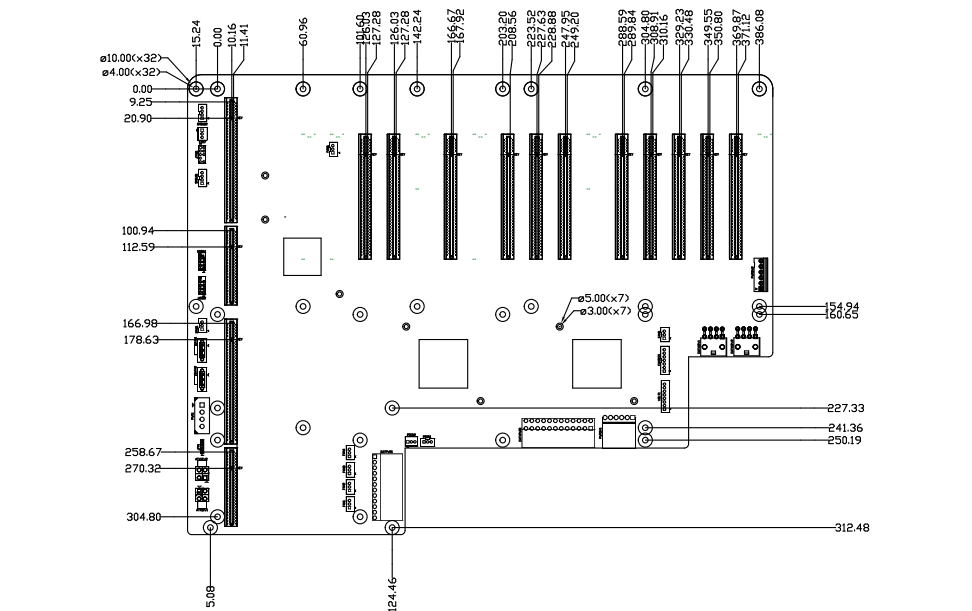
**Figure 1: Block Diagram**

## Locating Jumpers & Connectors



*Figure 2: Locating Jumpers & Connectors*

## Board Dimensions



*Figure 3: Board Dimensions*