

## PCE-5B19-00A1E PICMG1.3 Backplane: 19-slot BP for 20-slot chassis, 17 x PCIe x16, 1 x PCIe x4 Startup Manual

### Packing List

Before card installation, please ensure that the following items have been shipped:

- PCE-5B19-00A1E startup manual first edition
- M4\*6\*0.7 round screws P/N: 1939000410
- Two-year quality warranty card P/N: 2190000902

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

### Specifications

#### Standard Functions

- **PICMG 1.3 slots:** PCE-5B19-00A1E supports PCE-5000 and 7000 series CPU boards
- **PCIe slots:** 17 PCIe x16 and 1 PCIe x4  
\*To enquire about memory, I/O, or IRQ resource limitations, please contact your local Advantech office or FAE for further support.
- **PCIe switch:** Four 24-port/96-lane PCIe Gen3.0 switch for reducing data latency.
- **USB (2.0) ports:** Four USB ports serving 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, and peripheral documentation
- **Operating temperature:** 0 ~ 60 °C (depending on the system thermal solution)
- **Weight:** 1.22 kg (weight of board)

For more information regarding this or 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-5B19-00A1E.

Part No. 20025B1900  
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### Connectors and Jumpers

The backplane features several connectors and jumpers that facilitate system configuration according to application. The function of each connector and jumper is listed below.

Connectors	
Part Reference	Function
SHBA1 ~ SHBD1	PICMG 1.3 CPU board slot
P1PCIEX1	PCIe x16 slot driven x4 PCIe link
P2PCIEX16_1~2	PCIe x16 slot driven x16 PCIe link
P3PCIEX16_1~5	PCIe x16 slot driven x16 PCIe link
P4PCIEX16_1~5	PCIe x16 slot driven x16 PCIe link
P5PCIEX16_1~5	PCIe x16 slot driven x16 PCIe link
EATXPWR1	ATX 2.0 24-pin power connector
EATX12V1~4	ATX 12 V 8-pin power connector
PWR_4P1	ATX 5 V and 12 V 4-pin power connector
PWR3V1~2	3.3 V Auxiliary power connector
SMBUS1 & SMBUS2	Chassis sensor board connectors
FAN1 ~ FAN5	Fan connectors
HSFAN1~2	Cooler FAN power connectors
VOLT1	Alarm board/CMM power connector
FANDEC1	Fan detector connector
JFP1	Power and reset button connector
IPMB1	IPMB connector
USB12	USB connector
USB34	USB connector
JP2COMP1/JP-3COMP1/JP4COMP1/JP-5COMP1	Support for non-compliant Gen-1 endpoints enabled Note: This feature should only be enabled if a non-compliant Gen-1 device does not linkup when the data rate identifier bits are set.
JP2GEN1/JP3GEN1/JP-4GEN1/JP5GEN1	PCIe data rate select

## Connectors and Jumpers (Cont.)

### 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

### PWR\_4P1

Pin	Name
1	12 V
2	GND
3	GND
4	5 V

### EATX12V1 ~ EATX12V4

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
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 ~ FAN5

Pin	Name
1	GND
2	12 V
3	FANIO1 ~ FANIO5

### HSFAN1 ~ 2

Pin	Name
1	GND
2	12 V
3	12 V

## Connectors and Jumpers (Cont.)

### 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


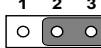
### USB12

Pin	Name
1	+5V_USBV01
2	+5V_USBV01
3	USB0-
4	USB1-
5	USB0+
6	USB1+
7	GND
8	GND
9	Null
10	GND


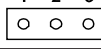

### USB34

Pin	Name
1	+5V_USBV23
2	+5V_USBV23
3	USB2-
4	USB3-
5	USB2+
6	USB3+
7	GND
8	GND
9	Null
10	GND

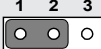
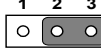
### PS0N1: ATX/AT Mode Selection

Jumper Setting	Function
1 - 2 closed pins 	AT mode
2 - 3 closed pins 	ATX mode (default)

### JP (2 ~ 5) GEN1: PCIe Data Rate Selection Jumper

Jumper Setting	Function
1 - 2 Pins Short 	Gen 3.0(Default)
Pins Open 	Gen 2.0
2 - 3 Pins Short 	Gen 1.0

### JP (2 ~ 5) COMP1: PCIe Gen 1 Card Compatibility for Non-Compliant Gen 1 Endpoints

Jumper Setting	Function
1 - 2 Pins Short 	For non-compliant PCIe Gen-1 devices
2 - 3 Pins Short 	For compliant PCIe devices (default)

## Connectors and Jumpers (Cont.)

### LED Indicator: Port Good Status LED

Name	Function	LED Behavior
FATAL_ERR#1~4	U16/U18/U20/U22 IC error warning RED LED	Good: Off Error: On
RE-DRIVER	Data rate between redriver and U16 IC	Link down: Off Gen 1.0: Blinking, 512 ms on/off (1 Hz) Gen 2.0: Blinking, 256 ms on/off (1 Hz) Gen 3.0: On
U18	Data rate between U16 and U18 IC	
U20	Data rate between U16 and U20 IC	
U22	Data rate between U16 and U22 IC	
P2PCIE1~2 P3PCIE1~5 P4PCIE1~5 P5PCIE1~5	Data rate between switch IC and slot	

## Block Diagram

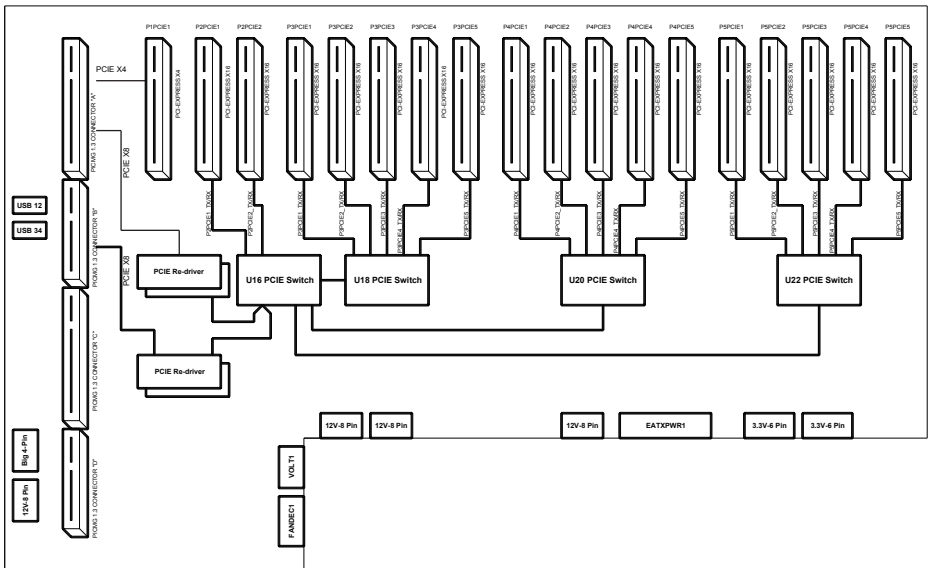


Figure 1. Block Diagram

# Jumper and Connector Locations

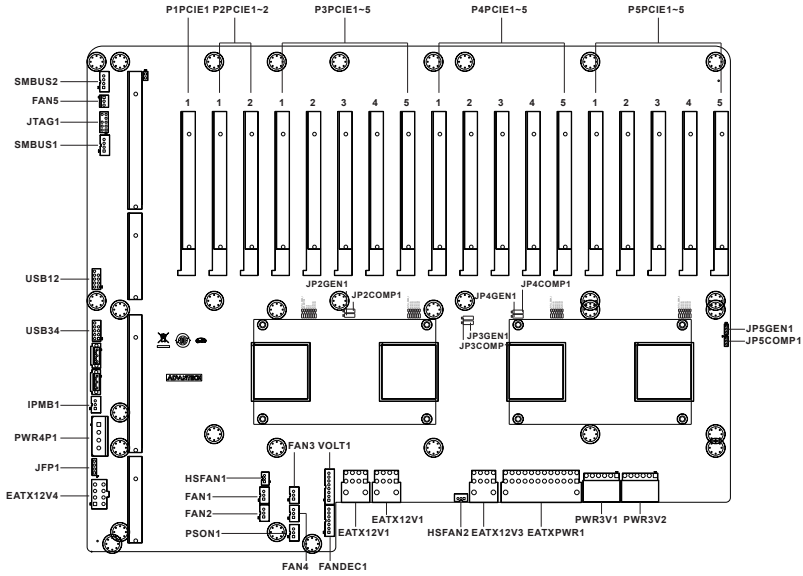


Figure 2. Jumper and Connector Locations

# Board Dimensions

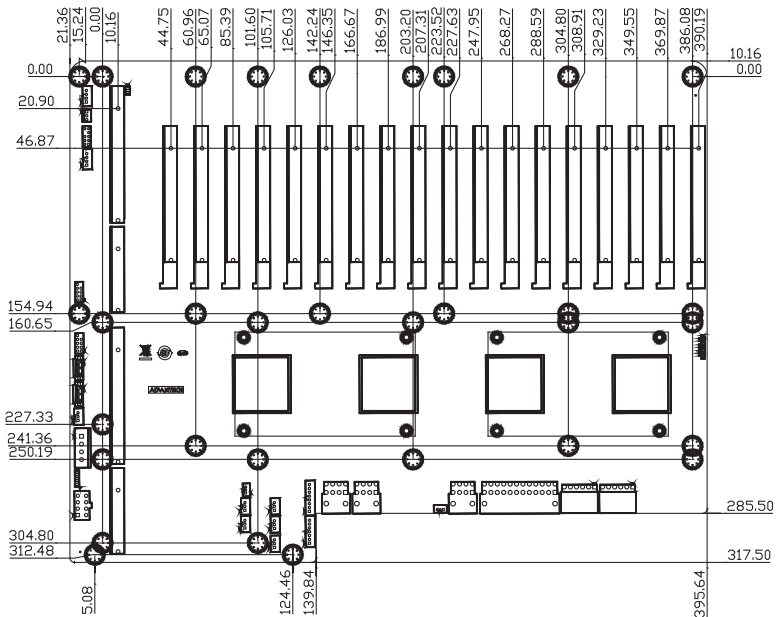


Figure 3. Board Dimensions