

# PCE-7B16Q-02A1E (PCE-5B16Q-02A1E) Backplane: 4 segment BP for 20-slot Chassis, 1 PICMIG 1.3, 1 PCIe, 2 32-bit PCI per segment

PCE-7B16Q-02A1E (PCE-5B16Q-02A1E) Backplane: 4 segment BP for 20-slot Chassis, 1 PICMIG 1.3, 1 PCIe, 2 32-bit PCI per segment

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

- 4 Four-port USB cables p/n: 1700002314
- PCE-7B16Q-02A1E (PCE-5B16Q-02A1E) User Manual 1st Ed. p/n: 20027B1600
- M4\*6\*0.7 Round Screws [23 pcs.] p/n: 1939000410
- 2 years quality warranty card p/n: 2190000902

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

## Standard Functions (Each Segment)

- **PICMIG 1.3 slots:**  
PCE-7B16Q-02 supports PCE-7xxx CPU boards  
PCE-5B16Q-02 supports PCE-5xxx CPU boards
- **PCIe slots:**  
PCE-7B16Q-02 Supports one PCIe x8 slot  
PCE-5B16Q-02 Supports one PCIe x16 slot
- **32-bit PCI:**  
Two 32 Bit / 33Mhz PCI slots
- **USB (2.0) support:**  
Four Universal Serial Bus ports to Backplane

## Mechanical and Environment:

- Dimensions: 327.66 x 417 mm
- Power supply voltage: +12V, +5V, -12V, -5V, +3.3V, +5VSBY
- Power requirements: Refer to the CPU Board, add-on Card & Peripherals
- Operating temperature: 0 ~ 60°C
- Weight: 1.7 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 the PCE-7B16Q-02A1E (PCE-5B16Q-02A1E) series Rev. A1.

Part No. 20027B1600  
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1st Edition  
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## 1. 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

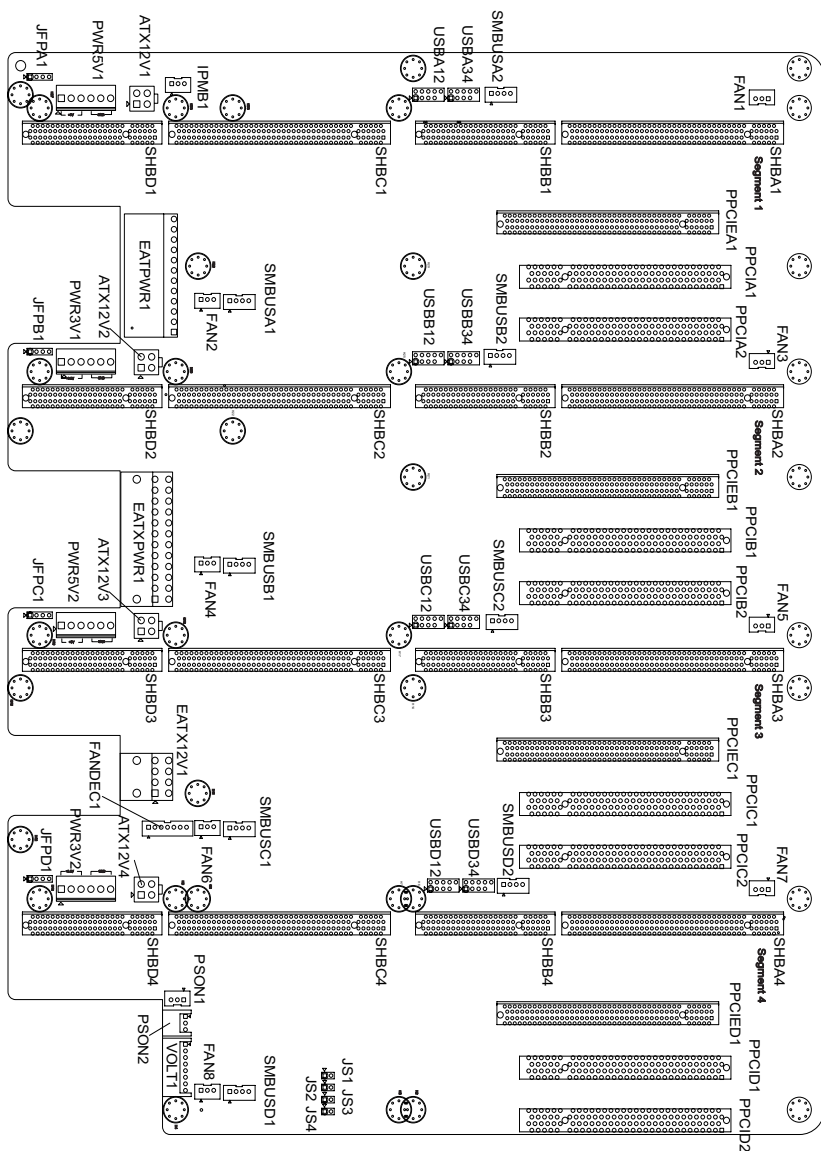
Part Reference	Function (Common for board)
EATXPWR1	ATX 2.0 24-pin Power connector
EATPWR1	AT 12-pin Power connector
ATX12V1~ ATX12V4	ATX 12V 4-pin Power connectors
EATX12V1	ATX 12V 8-pin Auxiliary Power connector
PWR3V1, PWR3V2	3.3V Auxiliary Power Connectors
PWR5V1, PWR5V2	5V Auxiliary Power Connectors
VOLT1	Alarm board/CMM Power Connector
FAN1~ FAN8	FAN Connectors
FANDEC1	Fan speed detector connector
IPMB1	IPMB Connector
PSO2	ATX Feature Connector

Part Reference	Function (Per Segment)
SHBA1~SHBD1	PICMIG 1.3 CPU board slots
SHBA2~SHBD2	
SHBA3~SHBD3	
SHBA4~SHBD4	
PPCIEA1~ PPCIED1	PCE-7B16Q-02: PCIe x8 slot PCE-5B16Q-02: PCIe x16 slot
PPCIA1, PPCIA2	32 Bit / 33 Mhz PCI Bus Slots
PPCIB1, PPCIB2	
PPCIC1, PPCIC2	
PPCID1, PPCID2	
SMBUSA1, SMBUSA2	Chassis sensor board Connectors
SMBUSB1, SMBUSB2	
SMBUSC1, SMBUSC2	
SMBUSD1, SMBUSD2	
JFPA1~ JFPD1	Power and Reset Button connectors
USBA12, USBA34	USB Connectors
USBB12, USBB34	
USBC12, USBC34	
USBD12, USBD34	

### Jumpers

Part Reference	Function
PSO2	ATX/AT mode select connector
	1-2: AT mode (default)
	2-3: ATX mode
JS1~JS4	Power Control Segment Selection in ATX power mode
	JS1: Segment 1(Default)
	JS2: Segment 2
	JS3: Segment 3
	JS4: Segment 4

## 2. Board Layout



*Board Layout: Jumper and Connector Locations*

### 3. Connector Pin Definitions

#### EATXPWR1

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

#### EATPWR1

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

#### ATX12V1~ ATX12V4

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

#### EATX12V1

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

#### PWR3V1~ PWR3V2

Pin	Name
1	3.3V
2	3.3V
3	3.3V
4	GND
5	GND
6	GND

#### PWR5V1 ~ PWR5V2

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

#### VOLT1

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

#### FAN1~ FAN8

Pin	Name
1	GND
2	12V
3	FANIO1~FANIO8

**FANDEC1**

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

**IPMB1**

Pin	Name
1	IPMB_CLK
2	IPMB_DAT
3	GND

**PERSON2**

Pin	Name
1	5VSBY
2	Null
3	PERSON#

**SMBUSA1, SMBUSA2**

Pin	Name
1	5V
2	S1_C-SMBCLK
3	S1_C-SMBDAT
4	GND

**SMBUSB1, SMBUSB2**

Pin	Name
1	5V
2	S2_C-SMBCLK
3	S2_C-SMBDAT
4	GND

**SMBUSC1, SMBUSC2**

Pin	Name
1	5V
2	S3_C-SMBCLK
3	S3_C-SMBDAT
4	GND

**SMBUSD1, SMBUSD2**

Pin	Name
1	5V
2	S4_C-SMBCLKS
3	S4_C-SMBDAT
4	GND

**JFPA1**

Pin	Name
1	S1_PWRBTN#
2	GND
3	S1_RESET#
4	GND

**JFPB1**

Pin	Name
1	S2_PWRBTN#
2	GND
3	S2_RESET#
4	GND

**JFPC1**

Pin	Name
1	S3_PWRBTN#
2	GND
3	S3_RESET#
4	GND

**JFPD1**

Pin	Name
1	S4_PWRBTN#
2	GND
3	S4_RESET#
4	GND

**USBA12**

Pin	Name
1	S1_USBV0
2	S1_USBV0
3	S1_USBD0-
4	S1_USBD1-
5	S1_USBD0+
6	S1_USBD1+
7	GND
8	GND
9	Null
10	GND

**USBA34**

Pin	Name
1	S1_USBV2
2	S1_USBV2
3	S1_USBD2-
4	S1_USBD3-
5	S1_USBD2+
6	S1_USBD3+
7	GND
8	GND
9	Null
10	GND

**USBB12**

Pin	Name
1	S2_USBV0
2	S2_USBV0
3	S2_USBD0-
4	S2_USBD1-
5	S2_USBD0+
6	S2_USBD1+
7	GND
8	GND
9	Null
10	GND

**USBB34**

Pin	Name
1	S2_USBV2
2	S2_USBV2
3	S2_USBD2-
4	S2_USBD3-
5	S2_USBD2+
6	S2_USBD3+
7	GND
8	GND
9	Null
10	GND

**USBC12**

Pin	Name
1	S3_USBV0
2	S3_USBV0
3	S3_USBD0-
4	S3_USBD1-
5	S3_USBD0+
6	S3_USBD1+
7	GND
8	GND
9	Null
10	GND

**USBC34**

Pin	Name
1	S3_USBV2
2	S3_USBV2
3	S3_USBD2-
4	S3_USBD3-
5	S3_USBD2+
6	S3_USBD3+
7	GND
8	GND
9	Null
10	GND

**USBD12**

Pin	Name
1	S4_USBV0
2	S4_USBV0
3	S4_USBD0-
4	S4_USBD1-
5	S4_USBD0+
6	S4_USBD1+
7	GND
8	GND
9	Null
10	GND

**USBD34**

Pin	Name
1	S4_USBV2
2	S4_USBV2
3	S4_USBD2-
4	S4_USBD3-
5	S4_USBD2+
6	S4_USBD3+
7	GND
8	GND
9	Null
10	GND

**JS1**

Pin	Name
1	S1_PSON#
2	GF_PSON#

**JS2**

Pin	Name
1	S2_PSON#
2	GF_PSON#

**JS3**

Pin	Name
1	S3_PSON#
2	GF_PSON#

**JS4**

Pin	Name
1	S4_PSON#
2	GF_PSON#



## 4. PCI Routing Tables

### PCI 32-bit


	PCI Slot	PPCIA1~PPCID1	PPCIA2~PPCID2
<b>PCI</b>	IDSEL	AD 31	AD 30
<b>Interrupt</b>	INTA	INT B	INT C
<b>Pin</b>	INTB	INT C	INT D
<b>Route</b>	INTC	INT D	INT A
	INTD	INT A	INT B

## 5. Jumper Settings

### PS0N1: ATX/AT mode selection

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

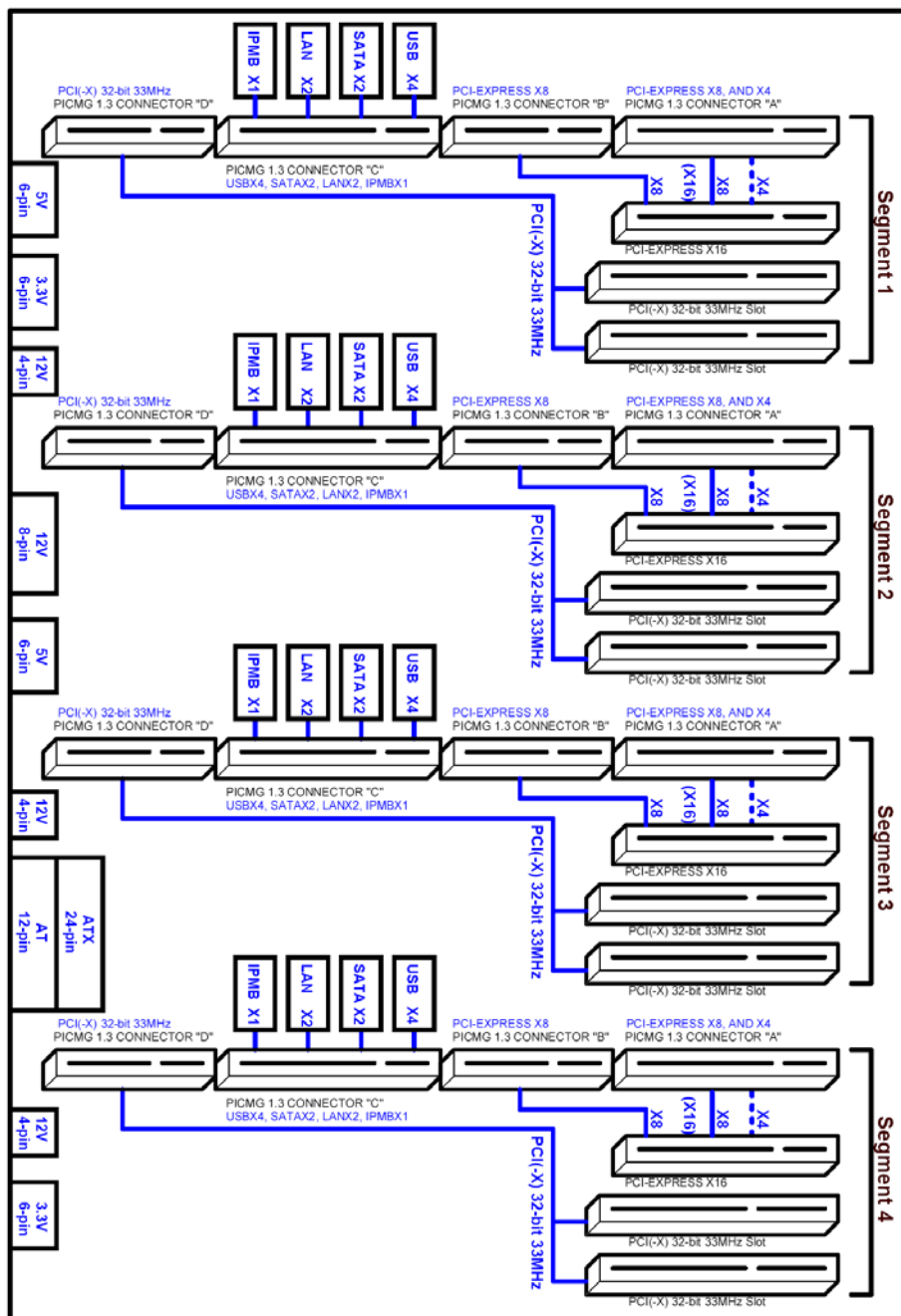
### JS1~JS4: Power Control Segment Selection in ATX power mode

Jumper Closed


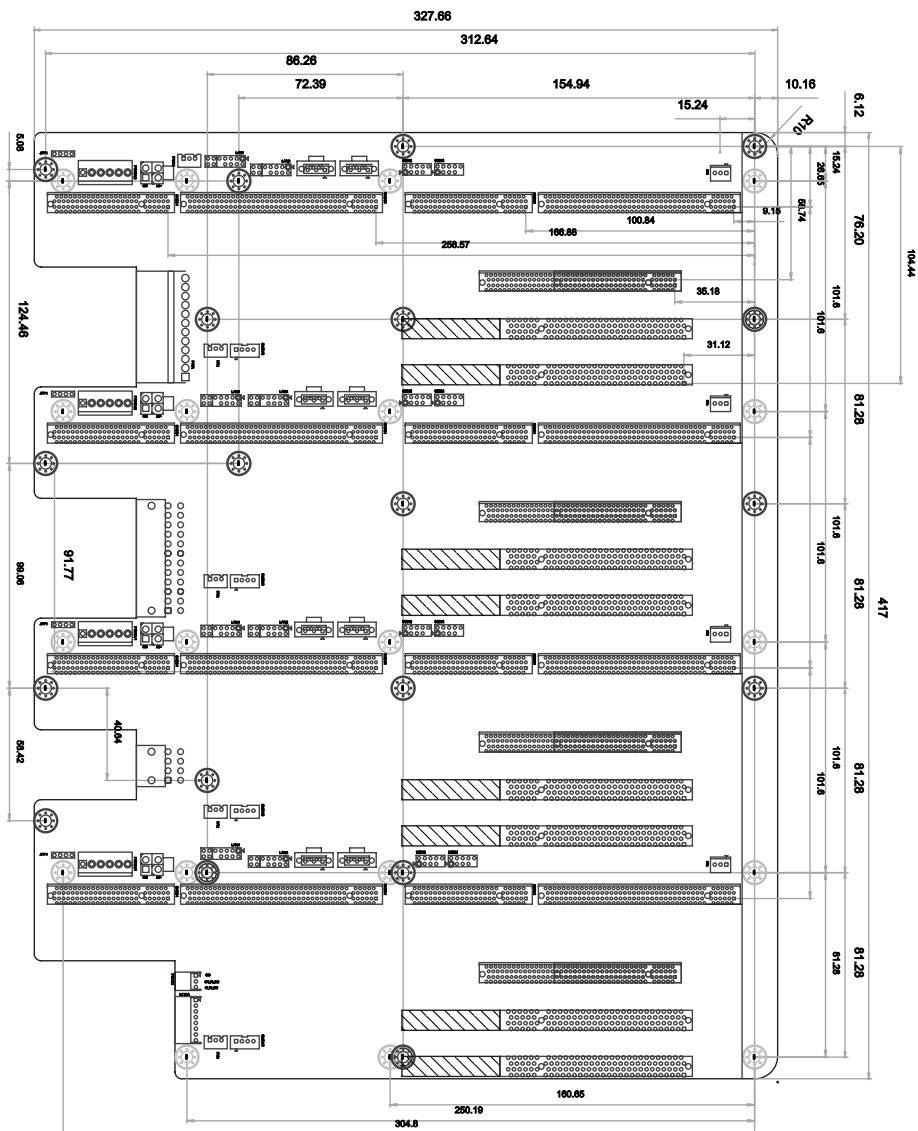
If you want to use the ATX power mode, you have to choose one segment as the main power controller. For example, to choose segment 1, close JS1 and link the Power/Reset Button cable to JFPA1.

**Warning** Ensure the non-main segments are shut down before the main segment.

## 6. Block Diagram



## 7. Board Dimensions



*Board Dimensions (mm)*