PCE-5B12(7B13)-07 Backplane: 12(13)-slot BP for 14-Slot Chassis, 1 PICMIG 1.3, 4(5) PCIe, 7 32-bit/33-MHz PCI Startup Manual

Packing List

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

- One 2 Ports USB Cable P/N: 1700002204
- PCE-5B12(7B13)-07 Startup Manual
- M4*6*0.7 Round Screws (20 pieces) 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 Slot:**
  PCE-5B12-07 supports PCE-5XXX CPU Cards
  PCE-7B13-07 supports PCE-7XXX CPU Cards
- **PCIe Slots:**
  PCE-5B12-07: 1 PCIe x16, 3 PCIe x4
  PCE-7B13-07: 2 PCIe x8, 3 PCIe x4
- **32-bit PCI Slots:**
  PCE-5B12-07: 7 32-bit/33-MHz PCI
  PCE-7B13-07: 7 32-bit/33-MHz PCI
- **USB (2.0) support:** Four Universal Serial Bus ports to Backplane

Note: Some add-on cards installed on this backplane may cause CPU card BIOS resource allocation problems, if this occurs please contact Advantech technical support staff for help in solving the problems.

Mechanical and Environment

- **Dimensions:** 327.66 x 315.45 mm
- **Power supply voltage:** +12 V, +5 V, -12 V, -5 V, +5 V SBY, +3.3 V
- **Power requirements:** Depends on the CPU board, addon card & peripherals
- **Operating temperature:** 0 ~ 60° C

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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-5B12-07A1E(PCE-7B13-07A1E) series.

Part No. 200K5B1211 2nd Edition,
Printed in China August 2012

Connectors and Jumpers

This table shows the function of each jumper and connector:

Connectors	
Label	**Function**
SHBA1~SHBD1	PICMG1.3 CPU board slot
PPCIE2	PCIe x 16 slot (Only on PCE-5B12-07)
PPCIE1, PPCIE2	PCIe x8 slots (Only on PCE-7B13-07)
P1PCIE1~P1PCIE3	PCIe x4 slots
P1PCI1~ P1PCI3	32 Bit / 33 MHz PCI Bus slots
P2PCI1~P2PCI4	32 Bit / 33 MHz PCI Bus slots
EATXPWR1	ATX2.0 24-pin Power Connector
EATX12V1	ATX 12V Auxiliary 8-pin Power Connector
ATX12V1	ATX 12V 4-pin Power Connector
PWR3V1	3.3V Auxiliary Power Connector
PWR3V2	3.3V Auxiliary Power Connector
VOLT1	Alarm board / CMM Power Connector
FAN1~6	FAN Connector (Horizontal Type)
FAN7	FAN Connector (Vertical Type)
FANDEC1	FAN speed detector Connector (Optional)
SMBUS1~SMBUS3	System Management Bus (Optional)
JFP1	Power and Reset button Connector
IPMB1	IPMB Connector (Optional)
USB12	Two USB port pin header
USB34	Two USB port pin header

Note: In this backplane's default configuration, FANDEC1, SMBUS1~SMBUS3, IPMB1 pin-headers are NOT populated, those footprints are reserved for customization.

Jumpers	
Label	**Function**
PSON1	ATX / AT Mode Selection

EATXPWER1	
Pin	**Name**
1	3.3 V
2	3.3 V
3	GND
4	5 V
5	GND
6	5 V
7	GND
8	Power OK
9	5 V SBY
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

ATX12V1	
Pin	**Name**
1	GND
2	GND
3	12 V
4	12 V

EATX12V1	
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	3.3V
2	3.3V
3	3.3V
4	GND
5	GND
6	GND

VOLT1	
Pin	**Name**
1	5 V SBY
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~SMBUS3	
Pin	**Name**
1	5 V
2	C-SMBBUS
3	C-SMBDAT
4	GND

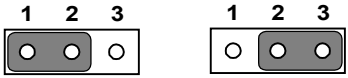
IPMB1	
Pin	**Name**
1	IPMB_CLK
2	IPMB_DAT
3	GND

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

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

PSON1: ATX / AT Mode Selection	
Setting	**Function**
1-2	AT Mode
2-3*	ATX Mode

* Default



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

Board Layout

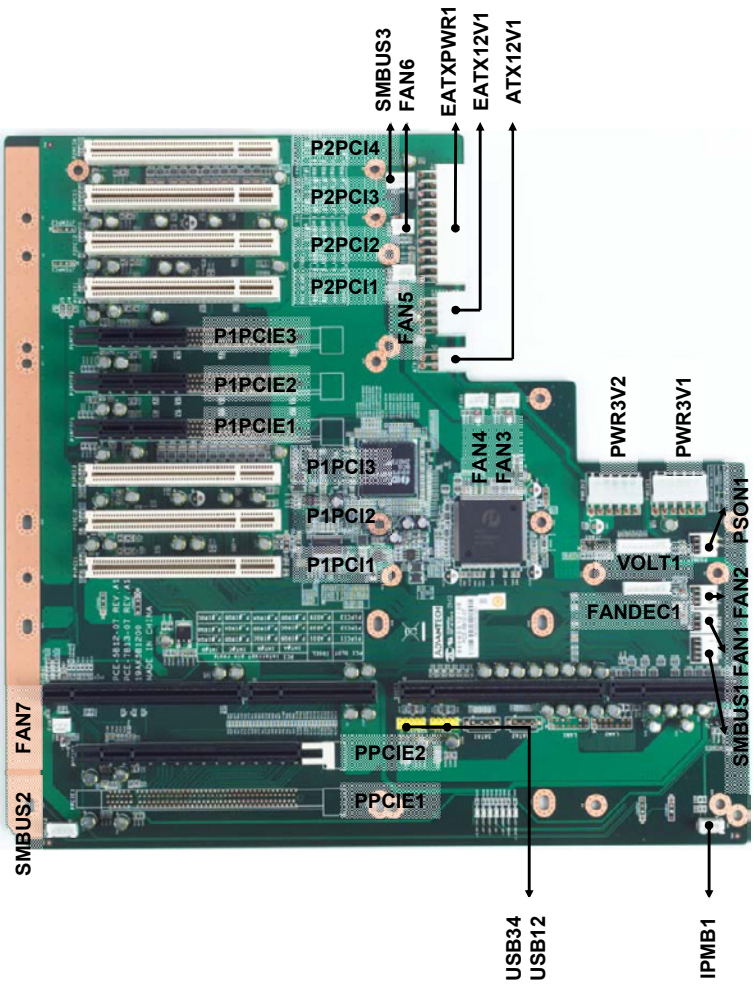


Figure 1: Board Layout

Note:

1. Some add-on cards installed on this backplane may cause CPU card BIOS resource allocation problems, if this occurs please contact Advantech technical support staff for help in solving the problems.
2. In this backplane's default configuration, FANDEC1, SMBUS1~SMBUS3, IPMB1 pin-headers are NOT populated, those footprints are reserved for customization.

Board Dimensions

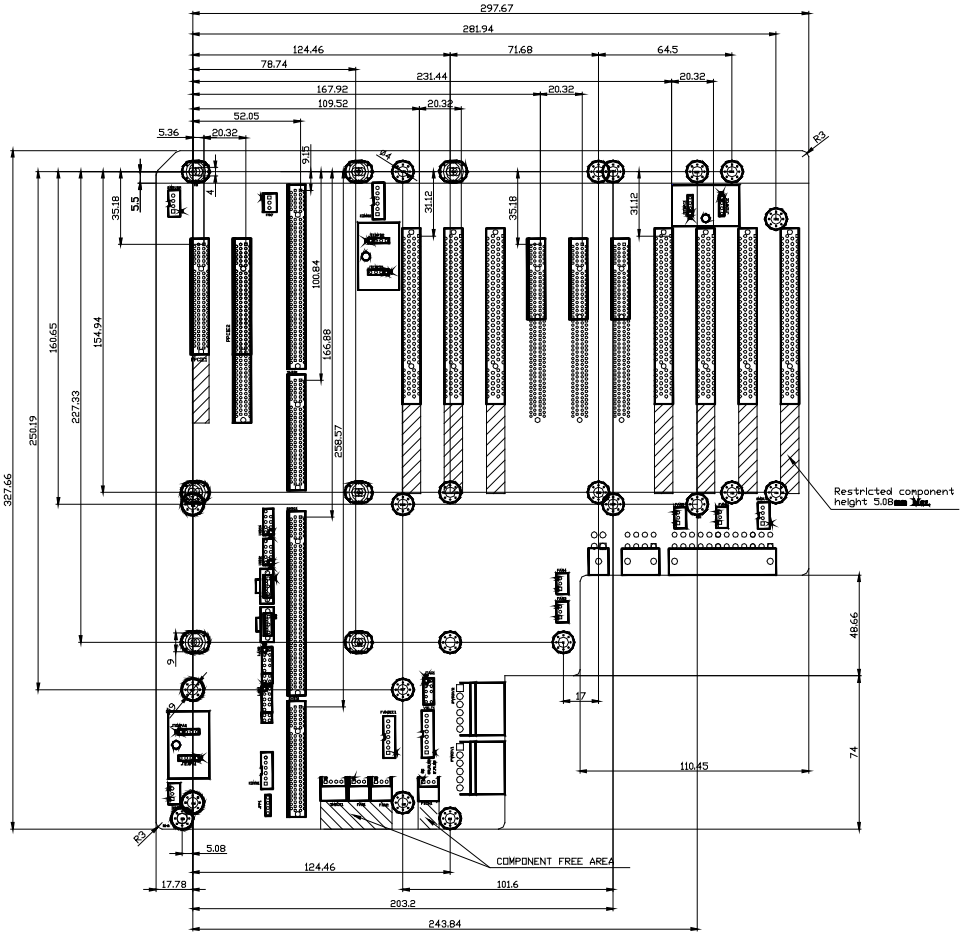


Figure 2: Board Dimensions

Board Diagram

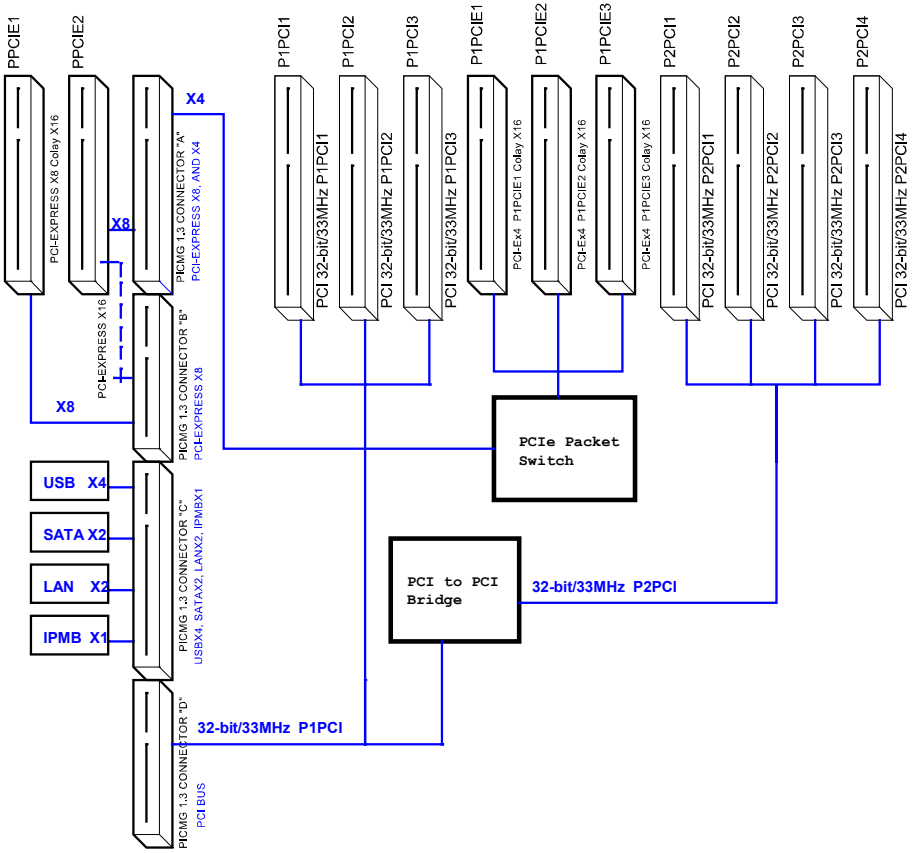


Figure 3: Board Diagram

PCI Routing Table

PCI 32-bit from ICH				
PCI Interrupt Pin Route	**PCI Slot**	**PPCI1**	**PPCI2**	**PPCI3**
	IDSEL	AD31	AD30	AD29
	INTA	INTB	INTC	INTD
	INTB	INTC	INTD	INTA
	INTC	INTD	INTA	INTB
	INTD	INTA	INTB	INTC

PCI 32-bit from Switch					
PCI Interrupt Pin Route	**PCI Slot**	**P2PCI1**	**P2PCI2**	**P2PCI3**	**P2PCI4**
	IDSEL	AD20	AD21	AD22	AD23
	INTA	INTA	INTB	INTC	INTD
	INTB	INTB	INTC	INTD	INTA
	INTC	INTC	INTD	INTA	INTB
	INTD	INTD	INTA	INTB	INTC

PCE-7B13-64C1E(PCE-5B12-64C1E) PICMG 1.3 Backplane 13(12)-slot BP for 14 slots Chassis, 2(1) PCIe, 6 64-bit PCI-X, 4 32-bit PCI Startup Manual

Packing list

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

- One 2 Ports USB Cable p/n: 1700002204
- PCE-7B13-64C1E(PCE-5B12-64C1E) Startup Manual
- M4*6*0.7 Round Screws [15 pcs.] p/n: 1939000410
- 2 years quality warranty card p/n: 2190000902

If any PCE-7B13-64C1E(PCE-5B12-64C1E) of these items are missing or damaged, contact your distributor or sales representative immediately.

Standard Functions

- **PICMIG 1.3 slots:**
  PCE-7B13-64 supports PCE-7xxx CPU boards
  PCE-5B12-64 supports PCE-7XXX/5XXX CPU boards
- **PCIe slots:**
  PCE-7B13-64 Supports two PCIe x8 slot
  PCE-5B12-64 Supports one PCIe x16 slot
- **64-bit PCI-X slots:**
  Four 64 Bit / 66Mhz PCI-X slot
  Two 64 Bit / 100Mhz PCI-X slot
- **32-bit PCI:**
  Four 32 Bit / 33 Mhz PCI slot
- **USB (2.0) support:** Four Universal Serial Bus ports to Backplane

Mechanical and Environment:

- **Dimensions:** 327.66 x 297.67 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:** 0.6kg (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-7B13(5B12)-64B1E series Rev. C1.

Part No. 20027B1303 4th Edition
Printed in China Aug. 2014

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

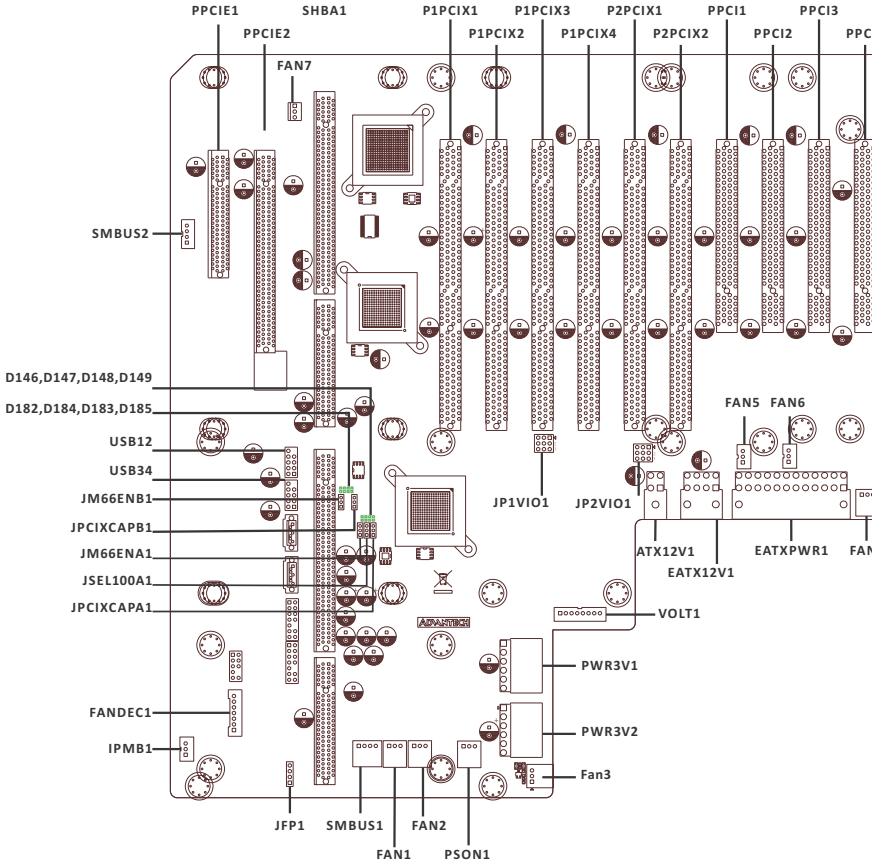
Part Reference	Function
SHBA1~SHBD1	PICMG 1.3 CPU board slot
PPCIE1	PCE-7B13-64: PCIe x8 slot PCE-5B12-64: Not Available
PPCIE2	PCE-7B13-64: PCIe x8 slot PCE-5B12-64: PCIe x16 slot
P1PCIX1~ P1PCIX4	64 Bit / 66MHz PCI-X Bus Slot (Primary 1)
P2PCIX1, P2PCIX2	64 Bit / 100MHz PCI-X Bus Slot (Primary 2)
PPCI1~PPCI4	32 Bit / 33MHz PCI Bus Slot (Primary 3)
EATXPWR1	ATX2.0 24-Pin Power connector
EATX12V1	ATX 12V Auxiliary 8-pin power connector
ATX12V1	ATX 12V 4-pin power connector
PWR3V1	3.3V Auxiliary power connector
PWR3V2	3.3V Auxiliary power connector
VOLT1	Alarm board/CMM Power connector.
FAN1	FAN Connector
FAN2	FAN Connector
FAN3	FAN Connector
FAN4	FAN Connector
FAN5	FAN Connector
FAN6	FAN Connector
FAN7	FAN Connector
FANDEC1	Fan speed detector connector
SMBUS1	SMBus connector for chassis monitor
SMBUS2	SMBus connector for chassis monitor
JFP1	Power and Reset Button connector
IPMB1	IPMB Connector
USB12	Two USB port pin header
USB34	Two USB port pin header

Jumpers

Part Reference	Function
JP1VIO1	Primary 1 PCI-X Bus VIO voltage selection
JP2VIO1	Primary 2 PCI-X Bus VIO voltage selection
JM66ENA1	Primary 1 PCI(-X) Bus capability selection
JPCIXCAPA1	Primary 1 PCI Bus freq. selection
JM66ENB1	Primary 2 PCI Bus freq. selection
JPCIXCAPB1	Primary 2 PCI(-X) Bus capability selection
PSON1	ATX/AT mode selection

PCE-7B13-64C1E(PCE-5B12-64C1E) Backplane: 13(12)-slot BP for 14 slots Chassis, 1 PICMIG 1.3, 2(1) PCIe, 6 64-bit PCI-X, 4 32-bit PCI

Board Layout



Board Layout: Jumper and Connector Locations

Connector Pin Definitions

EATXPWER1

Pin	Name
1	3.3V
2	3.3V
3	GND
4	5V
5	GND
6	5V
7	GND
8	Power OK
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

ATX12V1

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

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

PWR3V2

Pin	Name
1	3.3V
2	3.3V
3	3.3V
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 - FAN7

Pin	Name
1	GND
2	12V
3	FANIO1~FANIO7

FANDEC1

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

3. Connector Pin Definitions (cont.)

SMBUS1 ~ SMBUS3

Pin	Name
1	5V
2	C-SMBBUS
3	C-SMBDAT
4	GND

KBMS1 ~ KBMS2

Pin	Name
1	KBCLK
2	KBDAT
3	MSDAT
4	GND
5	5V
6	MS_CLK

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	GND

USB34

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

JP1VIO1

Pin	Name
1	5V
2	5V
3	5V
4	PB_VIO
5	PB_VIO
6	PB_VIO
7	3.3V
8	3.3V
9	3.3V

JP2VIO1

Pin	Name
1	5V
2	5V
3	5V
4	PA_VIO
5	PA_VIO
6	PA_VIO
7	3.3V
8	3.3V
9	3.3V

4. PCI Routing Tables

Primary 1 PCI-X 64-bit

	PCI Slot	P1PCIX1	P1PCIX2	P1PCIX3	P1PCIX4
	IDSEL	AD28	AD29	AD30	AD31
PCI-X Interrupt Pin Route	INTA	PB_INTA	PB_INTB	PB_INTC	PB_INTD
	INTB	PB_INTB	PB_INTC	PB_INTD	PB_INTA
	INTC	PB_INTC	PB_INTD	PB_INTA	PB_INTB
	INTD	PB_INTD	PB_INTA	PB_INTB	PB_INTC

Primary 2 PCI-X 64-bit

	PCI Slot	P2PCIX1	P2PCIX2
	IDSEL	AD 28	AD 29
PCI-X Interrupt Pin Route	INTA	PA_INTA	PA_INTB
	INTB	PA_INTB	PA_INTC
	INTC	PA_INTC	PA_INTD
	INTD	PA_INTD	PA_INTA

Primary 3 PCI 32-bit

	PCI Slot	PPCI1	PPCI2	PPCI3	PPCI4
	IDSEL	AD 31	AD 30	AD 29	AD28
PCI Interrupt Pin Route	INTA	#PIRQB	#PIRQC	#PIRQD	#PIRQA
	INTB	#PIRQC	#PIRQD	#PIRQA	#PIRQB
	INTC	#PIRQD	#PIRQA	#PIRQB	#PIRQC
	INTD	#PIRQA	#PIRQB	#PIRQC	#PIRQD

5. Jumper Settings

PCI-X Primary 1		
Bus Rate & Mode	JPCIXCAPB1	JM66ENB1
PCI 33MHz	1-2	2-3
PCI 66MHz	1-2	1-2
PCIX 66MHz	2-3	X

PCI-X Primary 2			
Bus Rate & Mode	JPCIXCAPA1	JSEL100A1	JM66ENA1
PCI 33MHz	1-2	2-3	2-3
PCI 66MHz	1-2	2-3	1-2
PCIX 66MHz	2-3	2-3	X
PCIX 100MHz	Open	1-2	X
PCIX 133MHz	Open	2-3	X

PSON1: ATX/AT Mode Selection

Jumper Setting	Function
1 - 2 closed pins	AT mode

2 - 3 closed pins	ATX mode (default)

JP1VIO1: Primary 1 PCI-X Bus VIO voltage selection

Jumper Setting	VIO
	3.3V (default)

	5V

JP2VIO1: Primary 2 PCI-X Bus VIO voltage selection

Jumper Setting	VIO
	3.3V (default)

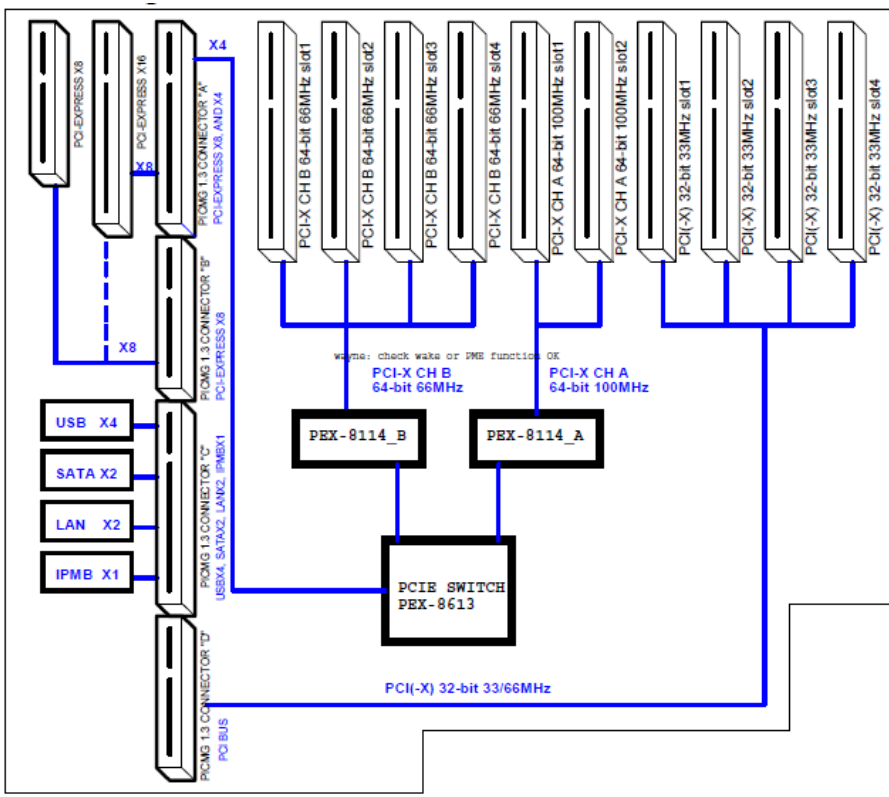
	5V

P1PCIX1~4 PCI Bus rate indicator				
PCI Bus rate / LED location	D183	D185	D182	D184
PCI 25MHz	Off	Off	On	Off
PCI 33MHz	Off	Off	On	On
PCI 50MHz	Off	Off	Off	Off
PCI 66MHz	Off	Off	Off	On
PCI 50MHz	Off	On	X	Off
PCI 66MHz	Off	On	X	On
PCI 100MHz	On	On	X	Off
PCI 133MHz	On	On	X	On

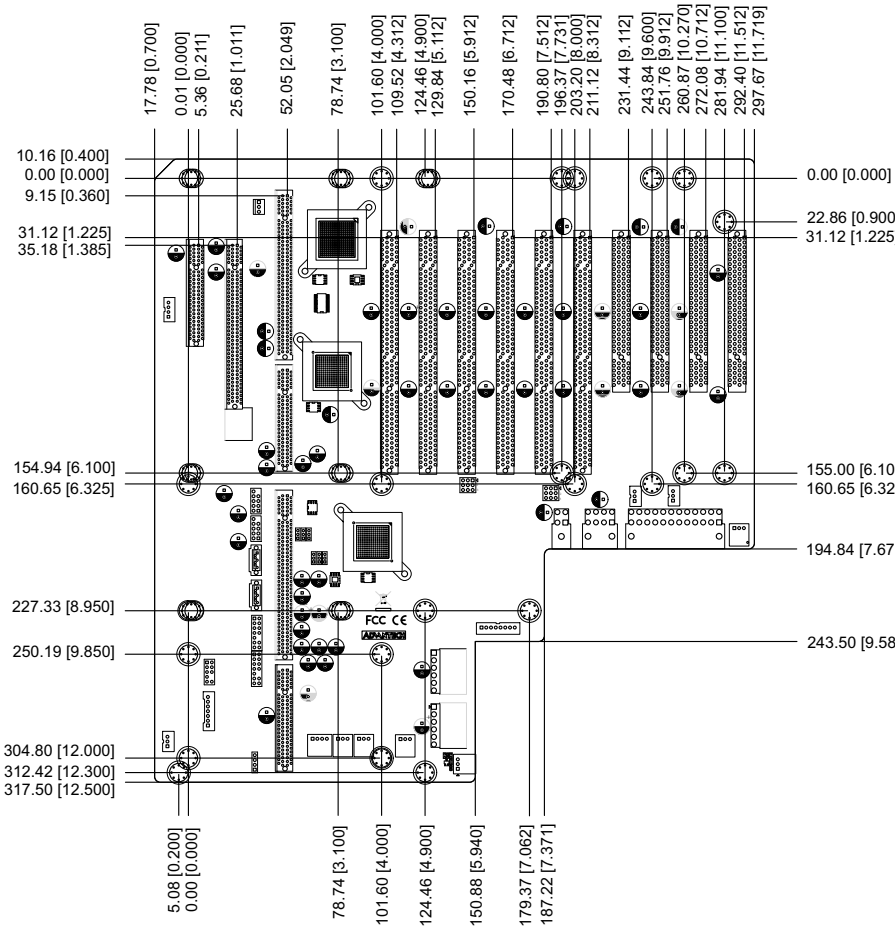
P2PCIX1~2 PCI Bus rate indicator				
PCI Bus rate / LED location	D148	D149	D146	D147
PCI 25MHz	Off	Off	On	Off
PCI 33MHz	Off	Off	On	On
PCI 50MHz	Off	Off	Off	Off
PCI 66MHz	Off	Off	Off	On
PCI 50MHz	Off	On	X	Off
PCI 66MHz	Off	On	X	On
PCI 100MHz	On	On	X	Off
PCI 133MHz	On	On	X	On

Note: "X" means no care. You can ignore this LED status in this specify PCI BUS rate configuration.

6. Board Diagram



7. Board Dimensions



Board Dimensions (mm)