

# **PX-20S3**

## **ISA/PCI Bridge Backplane**

# **User's Manual**



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## Introduction

PX-20S3 is exactly the backplane what you want, even in the future. As you know, most of the adapters are of PCI bus, and ISA adapters are on the decrease in the market. If this problem have bothered you for a long time, then PX-20S3 is the right answer for you. In order to solve the problem, PX-20S3, includes 18 32-bit PCI slots (5V/3.3V) on board, gives the great flexibility for your system's extension. We have added P10 (+5V) and DC power outlet (including +5V, -5V, +12V, and -12V) on PX-20S3 to keep system more stable. You can acquire a power supply with great stability, even as the system work under heavy load. Besides, we also add a connector for ATX power supply to which you can connect your SBC (SBC must have the ability to use ATX power).

## Product Features

### Standard

- ◆ PCI-conforms to PICMG 2.1 specification.
- ◆ ISA-conforms to IEEE P996 specification.

### PCB

- ◆ The Printed Circuit Boards (PCB) overall dimension is 263.6mm x 415.4mm (10.4"x 16.4") and total thickness is 1.6mm (4 layers).
- ◆ Mounting holes are provided and are located to conform to the baby AT form factor. Mounting holes are connected to Signal ground internally.
- ◆ Operating Temperature; 0 to 60°C (32 to 140°F).
- ◆ Storage Temperature; -20 to 85°C (-4 to 185°F).
- ◆ Humidity; 5% to 95%, non-condensing.
- ◆ EMI/Safety; Meets FCC, CE Class A and UL, CSA and TUV.

### Connector

- ◆ Dual slots PCI/ISA for the CPU board.
- ◆ Eighteen 32-bit PCI slots for full-sized boards on the Primary bus, All slots are Master/Slave configurable by using Bus Mastering Scheme.
- ◆ Two AT standard power connector, 12 pins, 5A max, per pin for +5V, -5V, +12V, and -12V voltages and Ground.
- ◆ One ATX standard power connector; 20 pins, 5A max, per pin for +3.3V, +5V, +5VSB, -5V, +12V, and -12V voltages, Ground, and power Good signal.
- ◆ One ATX control connector to distribute signals coming from the CPU boards onto connector

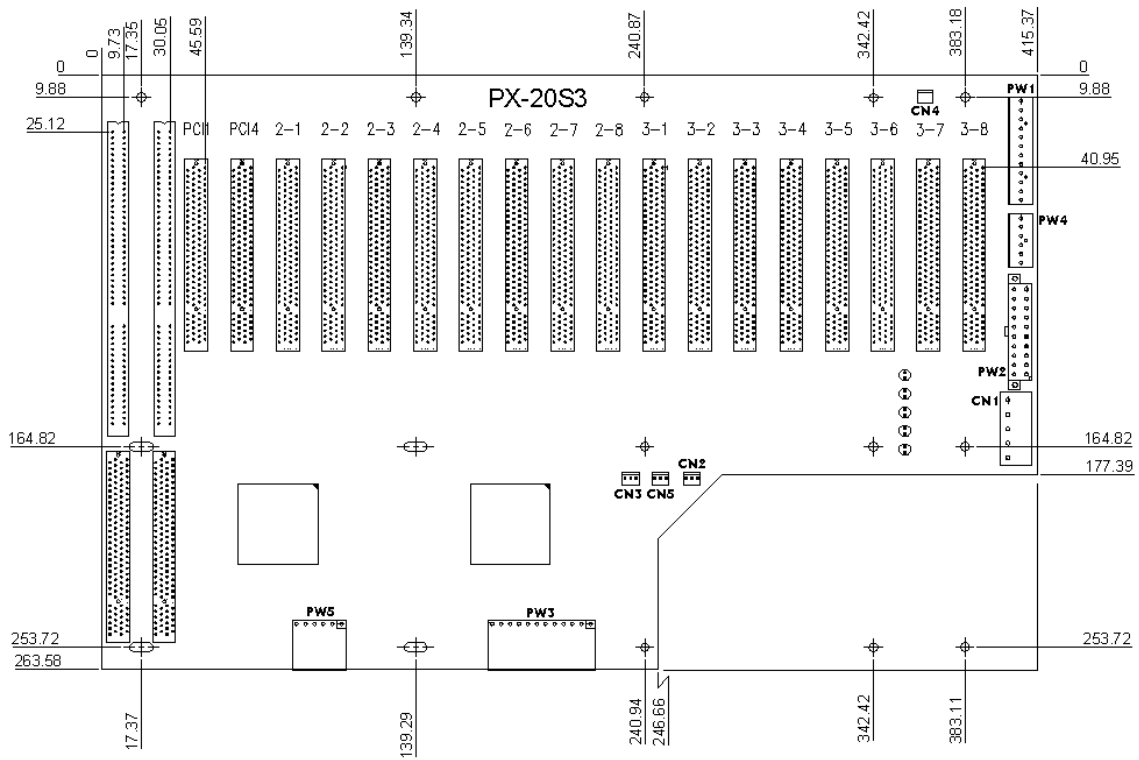
for soft on/off ATX power supply.

- ◆ Two P10 standard power connector, 5A max, per pin for +5V and Ground.
- ◆ One DC power outlet.
- ◆ Pairs of header for local connection of a fan power, and power LEDs.

## Routing List

PCI SLOT	1	4	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8
IDSEL	AD31	AD28	2AD20	2AD21	2AD22	2AD23	2AD24	2AD25	2AD26	2AD27	3AD20	3AD21	3AD22	3AD23	3AD24	3AD25	3AD26	3AD27
INTA	B	A	C	D	A	B	C	D	A	B	D	A	B	C	D	A	B	C
INTB	C	B	D	A	B	C	D	A	B	C	A	B	C	D	A	B	C	D
INTC	D	C	A	B	C	D	A	B	C	D	B	C	D	A	B	C	D	A
INTD	A	D	B	C	D	A	B	C	D	A	C	D	A	B	C	D	A	B

## Board Drawing



# Connectors

CONNECTOR	DESCRIPTION
ISA1/PCI1 & ISA2/PCI2	PICMG connectors
PCI3-PCI20	32-BIT PCI BUS connectors
PW1,PW3	P8/P9 power connector
PW4,PW5	P10 power connector
PW2	ATX power connector
CN1	DC power outlet
CN2	ATX P/S control connector
CN3,CN5	Fan connector
CN4	Power good signal output

## Pin Assignment

P8/P9(PW1PW3)	
PIN	NAME
1	PWR OK
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V

P10(PW4,PW5)	
PIN	NAME
1	+5V
2	+5V
3	+5V
4	GND
5	GND
6	GND

Power Extension(CN1)	
PIN	NAME
1	+5V
2	-5V
3	-12V
4	+12V
5	GND

Power Good output(CN4)	
PIN	NAME
1	Power Good
2	GND

ATX(PW2)			
PIN	NAME	PIN	NAME
1	+3.3V	2	+3.3V
3	+3.3V	4	-12V
5	GND	6	GND
7	+5V	8	PS_ON
9	GND	10	GND
11	+5V	12	GND
13	GND	14	GND
15	PWR OK	16	-5V
17	STB5V	18	+5V
19	+12V	20	+5V

ATX control connector(CN2)	
PIN	NAME
1	STB5V
2	PS_ON
3	GND

Fan connector(CN3,CN5)	
PIN	NAME
1	NC
2	+12V
3	GND

# Installation Guide

## ➤ Chassis

Make sure the copper lifting stands are placed below all the mounting holes of your backplane.

## ➤ SBC

Apply only one full-sized SBC over PICMG slot (Image 1).

## ➤ Power Supply

- 1.If you use AT power supply, attach the P8/P9 connector to PW1 or PW3 (Image. 2).
- 2.If you use ATX power supply, attach the 20-pin ATX power connector to PW3 (Image. 3). Besides, you need to apply one 3-pin ATX power control cable between your SBC and backplane over the 3-pin header CN2. (A toggle switch is required over your SBC for this application. Image. 4).
- 3.If you use ATX power supply, you may also plug a switch into pin-2 and pin-3 of CN2. In this application, the 3-pin ATX power control cable is not required, and your ATX power supply will then act as AT power supply (Image. 5).

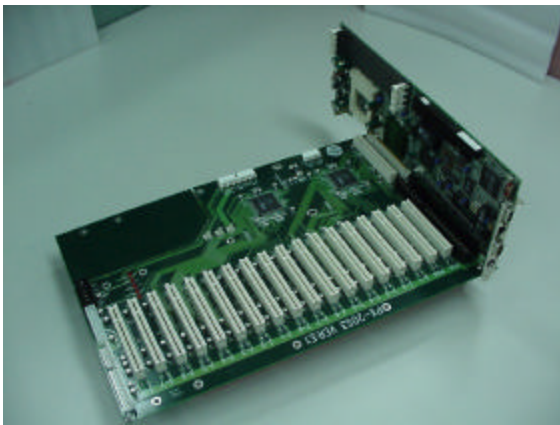


Image 1

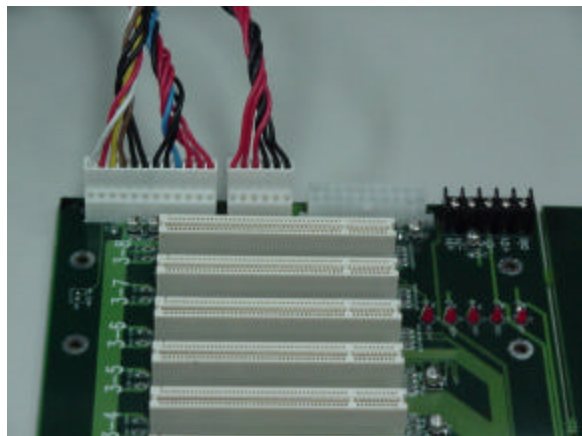


Image 2

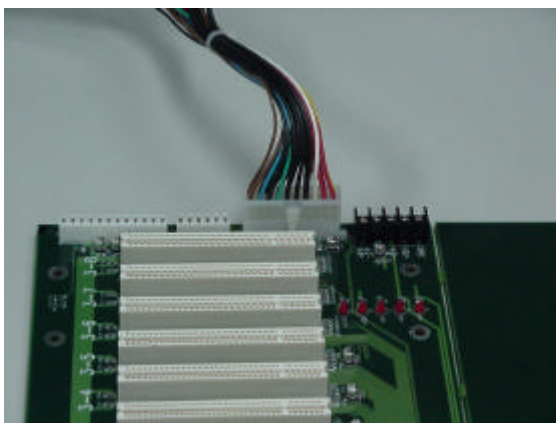


Image 3

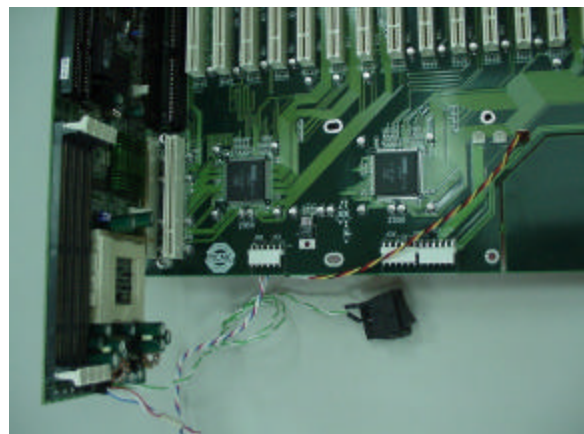


Image 4

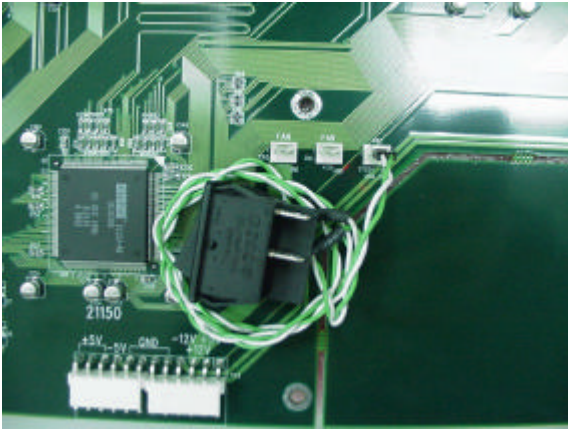


Image 5

➤ **Fan**

CN3 and CN5 are fan connectors. Please refer to the pin assignment table for proper connection.

➤ **Additional Power Connectors**

PW4 (PW5) are additional power connectors used to draw more power and balanced the power distribution for full loading system. Users need to make a P8-like power connector with three +5V (P10) pins and three ground pins. For pin assignment, please refer to pin assignment section (Image 2)