

## Copyright Notice

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## Acknowledgments

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IPC-620,PCA-6120,PCA-6120D,PCA-6120Q,PCA-6120P4 are trademark of Advantech Co., Ltd.

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# Chapter 1 General Information

## 1.1 Introduction

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The IPC-620 is a rugged 19", 20-slot rackmount IPC chassis especially designed for applications that require a large number of expansion slots and disk drives, or for integrating multiple PC systems into one chassis. Its backplane architecture allows for easier upgrading and troubleshooting, and more efficient system packaging.

The IPC-620 is built to support up to four PC systems within the same chassis. It contains a 350-watt power supply with power On/Off switch and four sets of system controls, which include reset switches and keyboard connectors, so that the enclosed PC systems can work independently and simultaneously.

## 1.2 Specifications

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### General

- **Construction:** Heavy-duty steel chassis
- **Disk drive capacity:** Eight 3½" FDD/HDDs on the front panel
- **Cooling system:** Four 86 CFM cooling fans (flow out) inside the chassis
- **Keyboard connector:** Four pre-wired 5-pin DIN connectors
- **Controls:** Four reset buttons and one power On/Off switch
- **Indicators:** Four power LED indicators
- **Dimensions:** 19" (W) x 24" (D) x 7" (H) (482 mm x 610 mm x 177 mm)
- **Weight:** 55 lb (25 kg)

### Passive Backplane

- **PC board:** 4-layer PCB with ground and power planes for reduced noise and lower power supply impedance, board thick = 2.4mm
- **Indicators:** Two sets of LEDs for +5 V, -5 V, +12 V and -12 V
- **Power Connectors:** Besides standard P8,P9 power input, p10 is an additional power input.

Backplane	Slot Type	Segments
PCA-6120	ISA	One
PCA-6120P4	ISA/PCI	One
PCA-6120D	ISA	Two(10-10)
PCA-6120Q	ISA	Four(5-5-5-5)

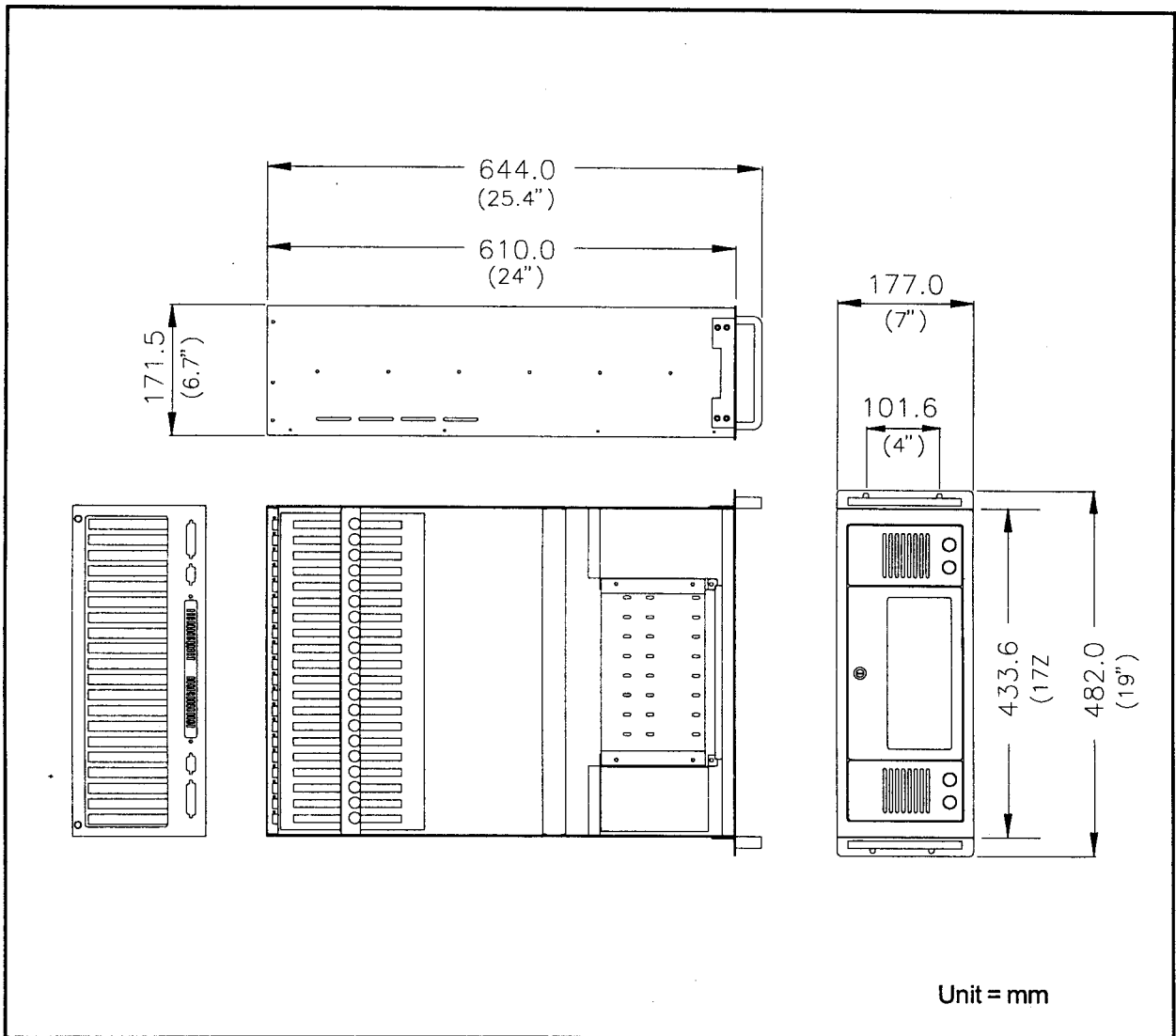
### Power Supply (PS-350)

- **Output rating:** 350 watts
- **Input voltage:** 90 to 132 V<sub>AC</sub> or 180 to 264 V<sub>AC</sub> (switchable) @ 47~63 Hz
- **Output voltages:** +5 V @ 35 A, +12 V @ 14.2 A, -5 V @ 0.3 A, -12 V @ 0.3 A
- **MTBF:** 25,000 hours at 70% load
- **Safety:** TÜV approved; meets UL/CSA

## Environmental Specifications

- **Operating temperature:** 32 to 122°F (0 to 50°C)
- **Relative humidity:** 10 to 95% @ 40°C, non-condensing
- **Vibration (operating):** 5 to 17 Hz, 0.1" double amplitude displacement;  
17 to 500 Hz, 1.5 G acceleration peak to peak
- **Shock (operating):** 10 G acceleration peak (11 msec. duration)
- **CE Compliant**
- **EMI:** Meets FCC/VDE Class A

## 1.3 Dimensions



## Chapter 2 System Setup

Setting up your IPC-620 requires only a screwdriver and a little time. Before you begin, you should gather all the cards you plan to install, as well as the keyboard(s) you plan to use.

A lockable door is located on the chassis front cover, which provides access to the control panel. This offers protection and security against damage and unauthorized access. The control panel functions include power On/Off, four reset switches and four LED indicators (power on) to assist in monitoring system status. On the rear panel there is a Ground point (earthing point) located on the bottom right hand corner. This provides a ground for the whole system and is attached by a screw.

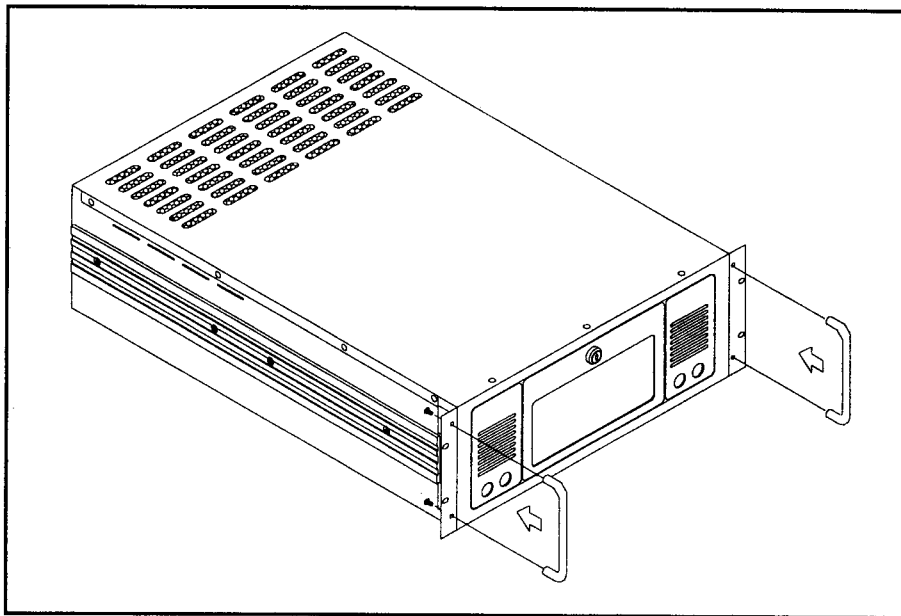
**WARNING:**



*Disconnect all power from the chassis before you install the CPU cards. Make sure that the power cord is unplugged from any electric socket. If you are not sure what to do, take the job to an experienced professional.*

### 2.1 Attaching the handles

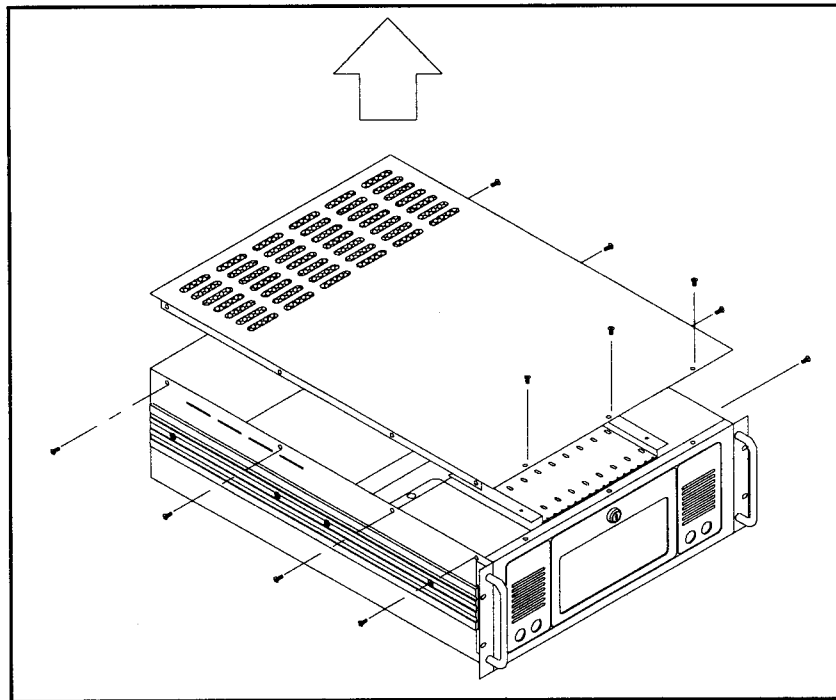
The handles for the front panel are packed in the accessory box. To install, simply secure them to the front panel with the screws provided. See Fig. 2-1.



2-1 Attaching the handles

## 2.2 Removing the cover

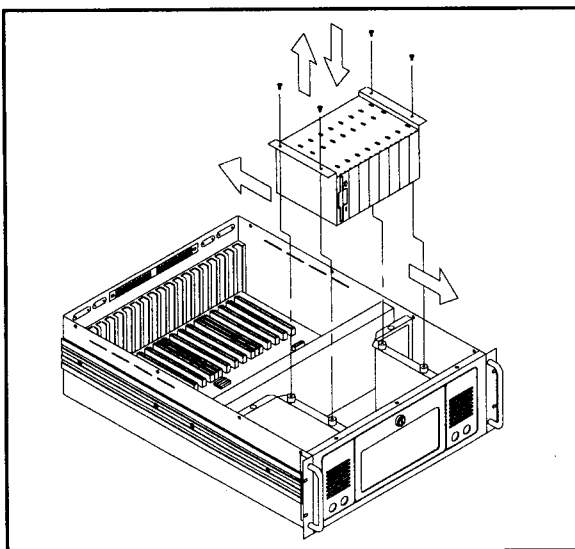
Remove the eight screws near the top along both sides of the chassis and the three screws on the top cover above the front panel. Lift the cover as shown in Fig. 2-2 below.



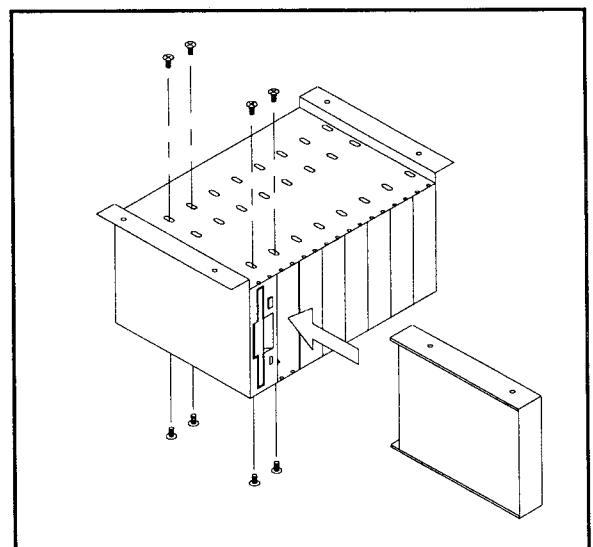
2-2 Removing the cover

## 2.3 Installing disk drives

1. After the top cover has been removed, undo the four screws on the top of the drive bay. Carefully lift the drive bay straight up and out of the chassis. See Fig. 2-3.
2. Insert the drives into their proper locations in the drive bay. Four screw holes are provided for securing each drive. See Fig. 2-4.
3. Connect the disk drive power and signal cables.



2-3 Removing the drive bay

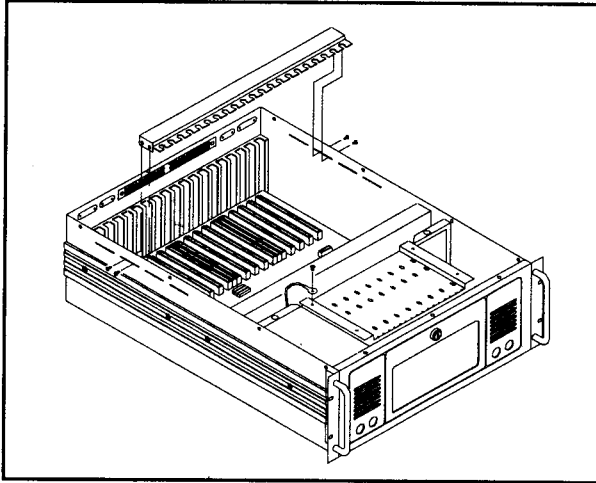


2-4 Inserting the drives into the drive bay

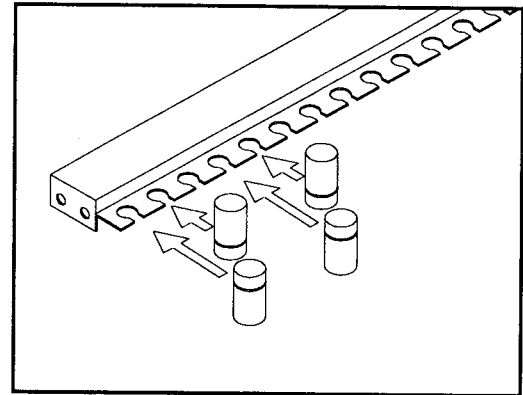
## 2.4 The hold-down clamp

The IPC-620 uses a hold-down clamp to secure the plug-in cards. It also ensures protection against shock and vibration. To install your cards into the passive backplane, proceed as follows:

1. Detach the hold-down clamp by removing the four screws located at each end and lifting it up off the chassis. See Fig. 2-5 below.
2. After plugging in the add-on cards, insert the provided rubber buffers into the hold-down clamp so that their positions correspond to the location of the cards. See Fig. 2-6 below. These buffers offer the plug-in cards two levels of protection against vibration.
3. When finished, place the hold-down clamp back to its original position and resecure it with screws.



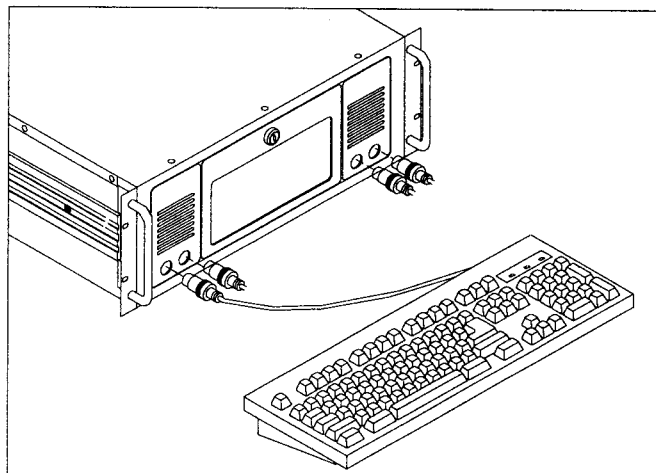
2-5 Detaching the hold-down clamp



2-6 Inserting the rubber buffers

## 2.5 Connecting the keyboard

Four 5-pin DIN connectors, wired in parallel, are provided on the front panel near the fan intake. Connect the keyboard(s) as shown in Fig. 2-7. Note that each connector has a notch on it for proper keyboard orientation.

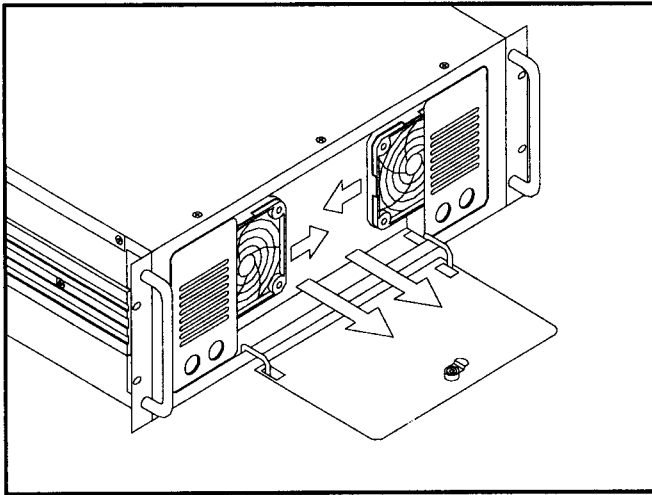


2-7 Connecting the keyboard

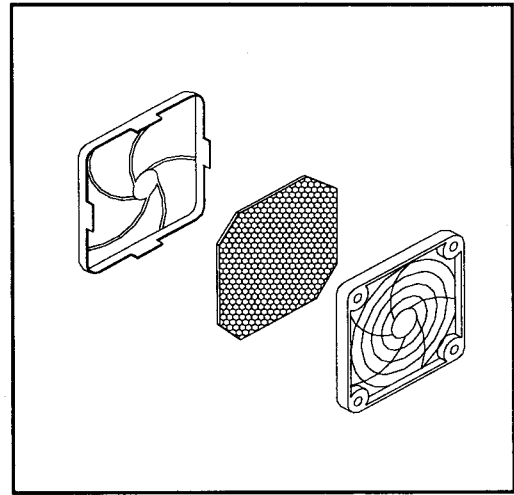
## 2.6 Replacing the filter

The filters are located behind the lockable door. To replace a filter, refer to Fig. 2-8 and Fig. 2-9 and follow the procedure below:

1. Open the lockable door.
2. Slide the filter cage to the center and take it out.
3. Open the filter cage by gently pulling the two halves apart, as shown in Fig. 2-9.
4. Remove the filter. Either rinse it clean with water or dispose of it properly.
5. Put the clean or new filter into the cage (make sure it's dry), and snap the cage shut.
6. Slide the filter cage back into place.
7. Repeat the steps above for the other filter, if necessary.
8. Close and lock the lockable door.



**2-8 Replacing the filter**

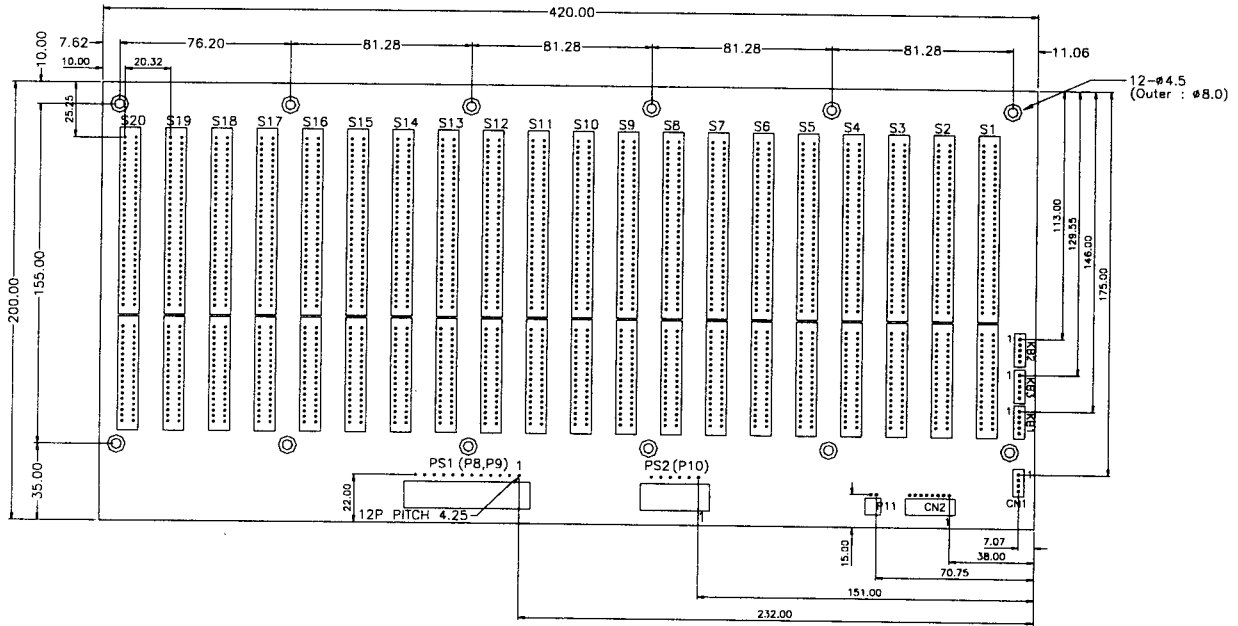


**2-9 Opening the filter case**

# Appendix A Passive Backplane

## PCA-6120: 20-slot ISA Bus Backplane

Dimension: (420 x 200 mm)



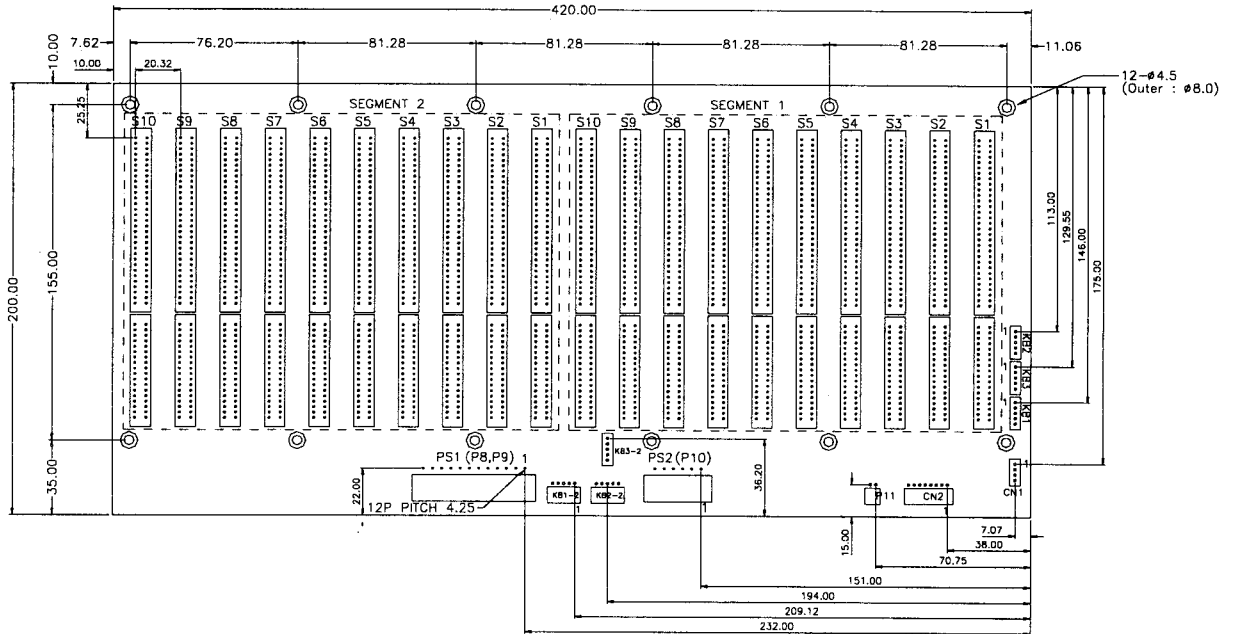
### Bus Termination

Reserve sockets of NETR 10P and termination resistors are provided.

Resistor	Signals	Resistor	Signals
RN3/RN9	SA7-SA0	RP1/RP2	SMEMW,SMEMR,IOW,IOR
RN4/RN10	SA15-SA8	RN6/RN12	SBHE,LA23-LA17
RN1/RN7	SD7-SD0	RN5/RN11	SA19-SA16
RN2/RN8	SD8-SD15		

# PCA-6120D: 10-10 slot ISA Bus Backplane

Dimension: (420 x 200 mm)



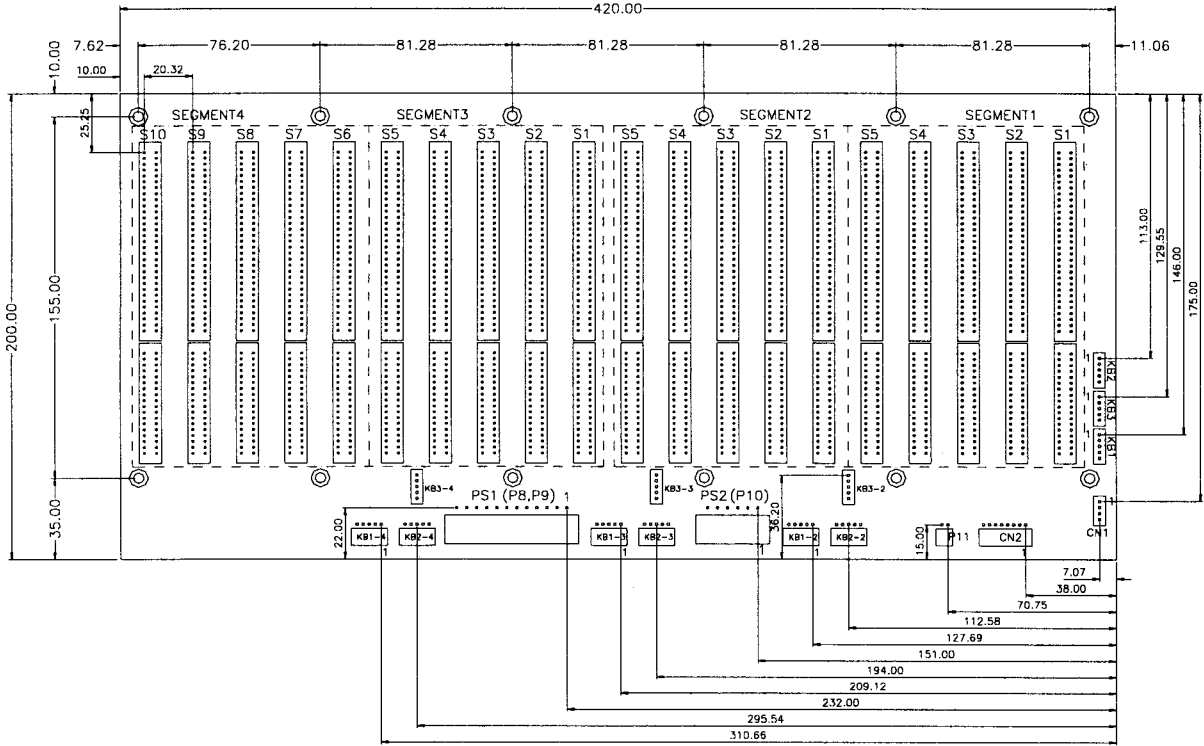
## Bus Termination

Reserve sockets of NETR 10P and termination resistors are provided.

Resistor	Signals	Resistor	Signals
RN3/RN9	SA7-SA0	RP1/RP2	SMEMW,SMEMR,IOW,IOR
RN4/RN10	SA15-SA8	RN6/RN12	SBHE,LA23-LA17
RN1/RN7	SD7-SD0	RN5/RN11	SA19-SA16
RN2/RN8	SD8-SD15		

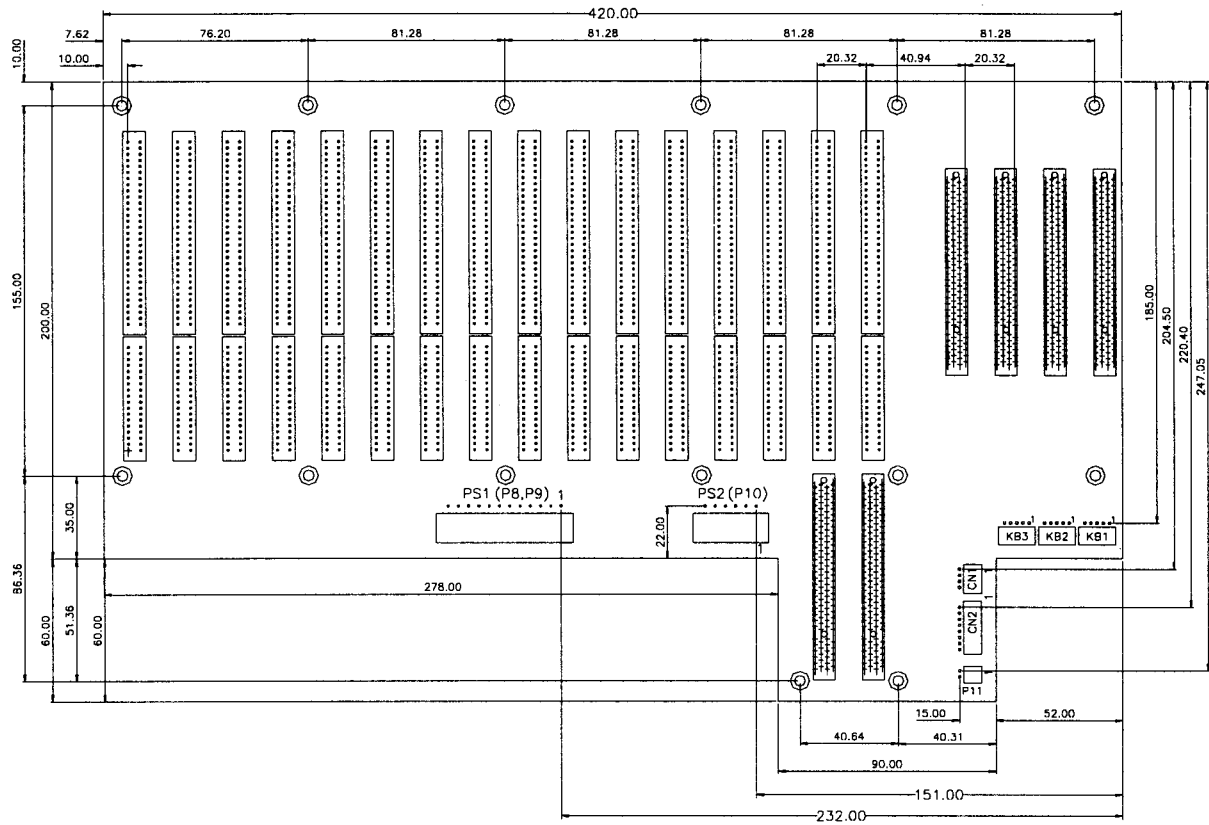
# PCA-6120Q: 5-5-5-5 slot ISA Bus Backplane

Dimension: (420 x 200 mm)



## PCA-6120P4: 15ISA/4PCI/1PICMG slot Backplane

Dimension: (420 x 260 mm)

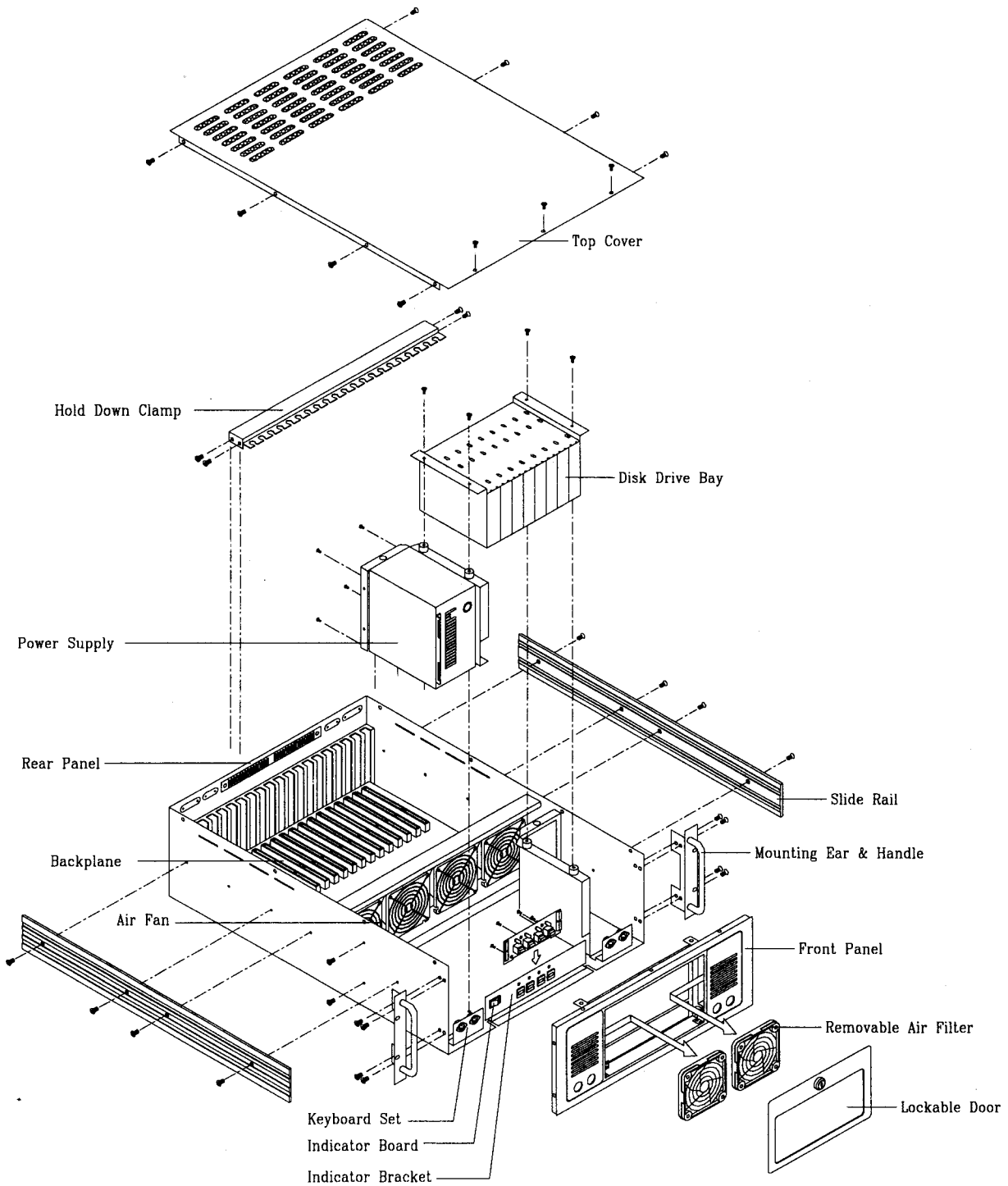


### Bus Termination

Reserve sockets of NETR 10P and termination resistors are provided.

Resistor	Signals	Resistor	Signals
RN3	SA7-SA0	RP1	SMEMW,SMEMR,IOW,IOR
RN4	SA15-SA8	RN6	SBHE,LA23-LA17
RN1	SD7-SD0	RN5	LA19-LA16
RN2	SD8-SD15		

# Appendix B Exploded Diagram



- 
1. Please read these safety instructions carefully.
  2. Please keep this User's Manual for later reference.
  3. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
  4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
  5. Please keep this equipment from humidity.
  6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
  7. The openings on the enclosure are for air convection hence protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
  8. Make sure the voltage of the power source when connect the equipment to the power outlet.
  9. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
  10. All cautions and warnings on the equipment should be noted.
  11. If the equipment is not used for a long time, disconnect the equipment from mains to avoid being damaged by transient overvoltage.
  12. Never pour any liquid into opening, this could cause fire or electrical shock.
  13. Never open the equipment. For safety reason, the equipment should only be opened by qualified service personnel.
  14. If one of the following situations arises, get the equipment checked by a service personnel:
    - a. The power cord or plug is damaged.
    - b. Liquid has penetrated into the equipment.
    - c. The equipment has been exposed to moisture.
    - d. The equipment does not work well or you cannot get it to work according to user's manual.
    - e. The equipment has dropped and damaged.
    - f. The equipment has obvious sign of breakage.
  15. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONDITIONED ENVIRONMENT, WITH STORAGE TEMPERATURES BELOW -20°C (-4°F) OR ABOVE 60°C (140°F), AS IT MAY DAMAGE THE EQUIPMENT.**

The sound pressure level at the operator's position according to IEC 704-1:1982 is equal to or less than 70dB(A).

## Wichtige Sicherheitshinweise

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1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlußsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
  - a. Netzkabel oder Netzstecker sind beschädigt.
  - b. Flüssigkeit ist in das Gerät eingedrungen.
  - c. Das Gerät war Feuchtigkeit ausgesetzt.
  - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.