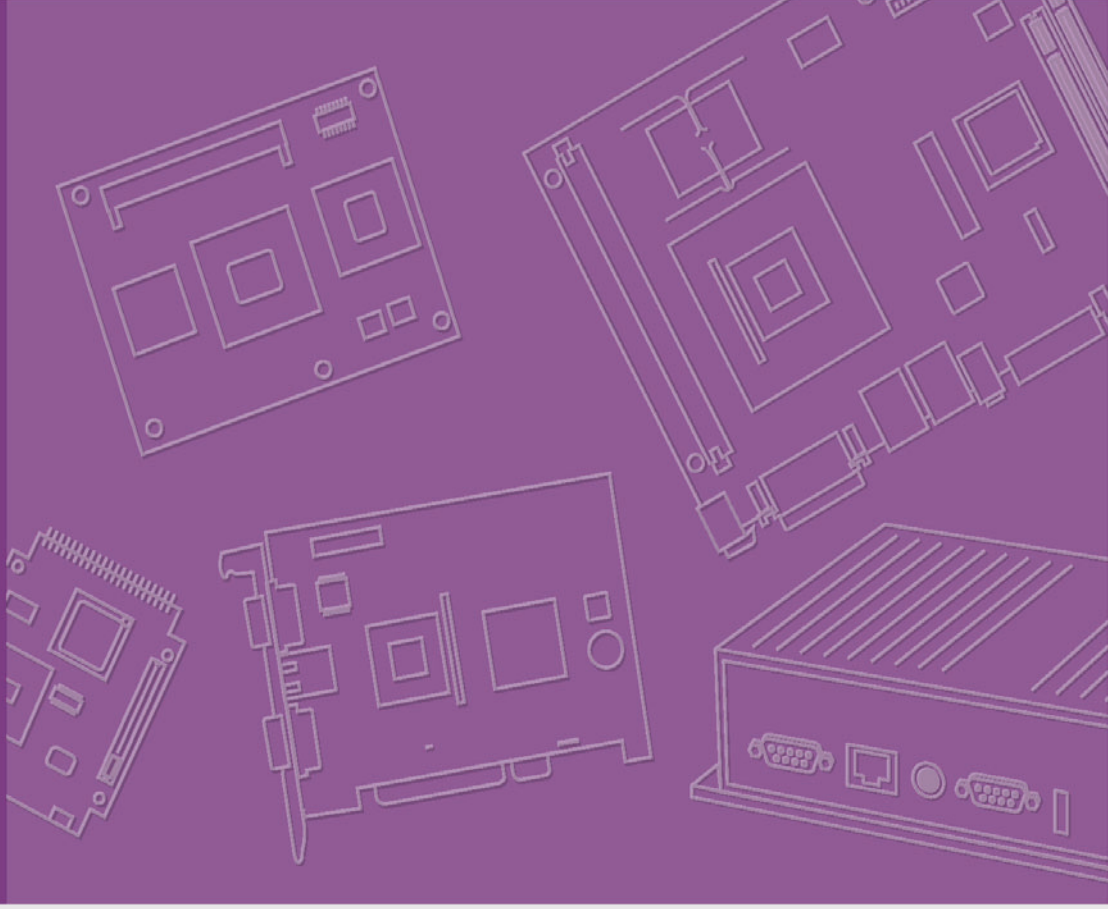


User Manual

IPC-602

2U Industrial Rackmount Chassis for SHB and SBC

Trusted ePlatform Services

ADVANTECH

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On-line Technical Support

For technical support and service, please visit our support website at:

http://www.advantech.com/support

Part No. 2002060202 Edition 4

Printed in China March 2009

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot 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 it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated into the equipment.
    - The equipment has been exposed to moisture.
    - The equipment does not work well, or you cannot get it to work according to the user's manual.
    - The equipment has been dropped and damaged.
    - The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
17. THE COMPUTER IS PROVIDED WITH CD DRIVES COMPLY WITH APPROPRIATE SAFETY STANDARDS INCLUDING IEC 60825.



18. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
    (1) this device may not cause harmful interference, and
    (2) this device must accept any interference received, includinginterference that may cause undesired operation.
19. CAUTION: Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges.
20. CAUTION: Always ground yourself to remove any static charge before touching the motherboard, backplane, or add-on cards. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.
21. CAUTION: Any unverified component could cause unexpected damage. To ensure the correct installation, please always use the components (ex. screws) provided with the accessory box.

A Message to the Customer

Advantech customer services

Each and every Advantech product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Advantech equipment is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Advantech has come to be known.Your satisfaction is our primary concern. Here is a guide to Advantech's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone.

So please consult this manual first. If you still cannot find the answer, gather all the information or questions that apply to your problem, and with the product close at hand, call your dealer. Our dealers are well trained and ready to give you the support you need to get the most from your Advantech products. In fact, most problems reported are minor and are able to be easily solved over the phone.

In addition, free technical support is available from Advantech engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Initial Inspection

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

- IPC-602 Chassis
- User's Manual
- Warranty card
- Accessory package with screws (for fastening the backplane, disk drives, ears, etc.), a pair of keys, a spare filter, and a pair of ears

If any of these items are missing or damaged, contact your distributor or sales representative immediately. We have carefully inspected the IPC-602 mechanically and electrically before shipment. It should be free of marks and scratches and in perfect working order upon receipt. As you unpack the IPC-602, check it for signs of shipping damage. (For example, damaged box, scratches, dents, etc.) If it is damaged or it fails to meet the specifications, notify our service department or your local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection, we will make arrangements to repair or replace the unit.

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Chapter 1

General Information

This chapter provides general information about the IPC-602.

Sections include:

- Introduction
- Specifications
- Power supply options
- Environment specification
- Dimension diagram

1.1 Introduction

The IPC-602 is a compact rugged 19" 2U-height rackmount chassis designed for space-limited application. With its rugged, sturdy and well-cooled steel chassis specially designed to withstand heavy shocks and thick dust, the IPC-602 can be used in the harshest of environments. It is ideal for Computer Telephony or network system configurations that require high availability within a limited space, such as computer telephony and networking systems.

1.2 Specifications

- **Construction:** Heavy-duty steel
- **Disk drive capacity:** One 5.25" and two 3.5" drive bays
- **Indicators:** LEDs for power On/Off, and HDD status
- **Controls:** Power switch and system reset button on front panel
- **Cooling fan:** Two 40 CFM fans with an air filter
- **Weight:** 11.3 kg (24.9 lbs)
- **Dimensions (W x H x D):** 482 x 88 x 452 mm (19" x 3.5" x 17.8")
- **Chassis color:** Black

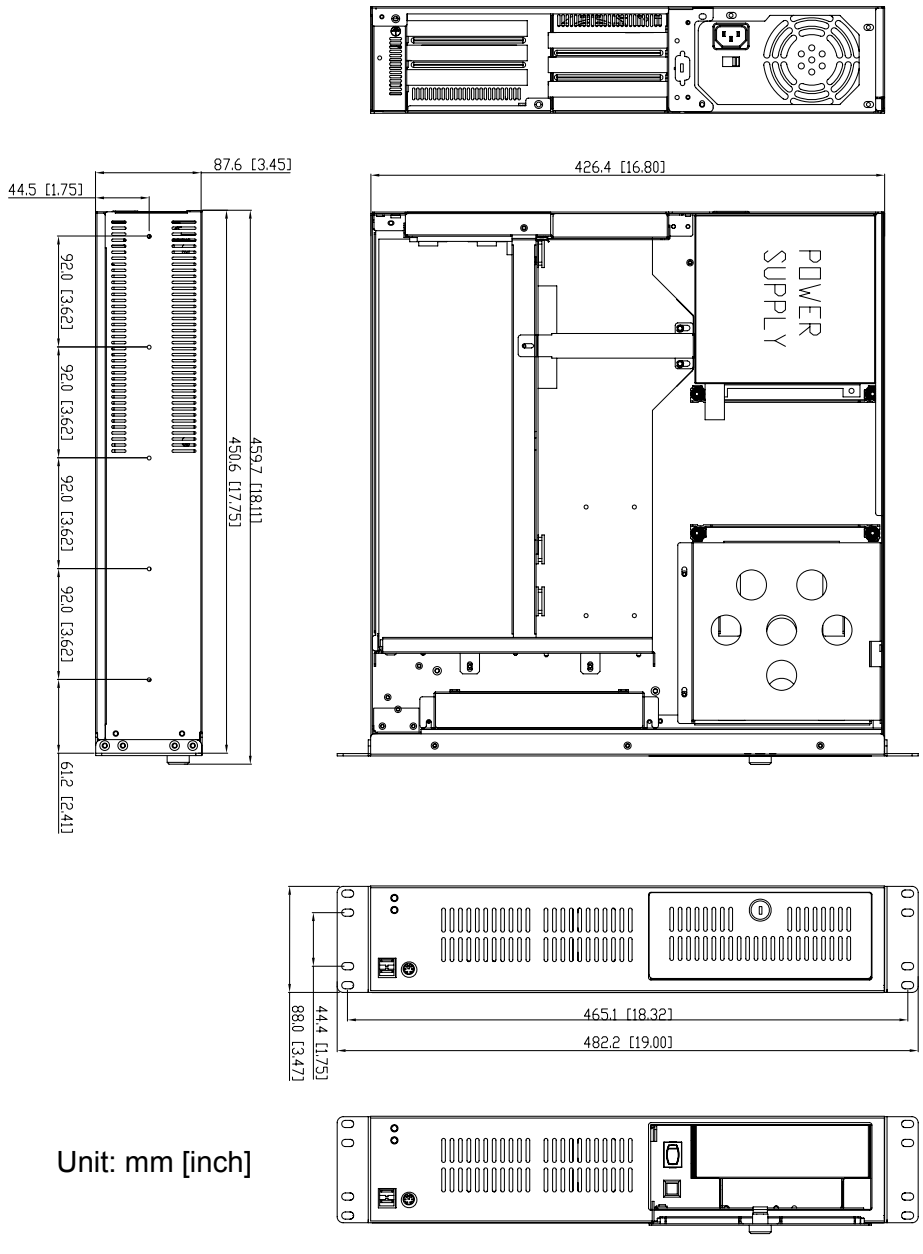
1.3 Power Supply Options

Part Number	Watt	Input	Output	Mini-load	Safety	MTBF
PS-300ATX-DC48E (ATX)	300 W	DC -48 V	+5 V @ 30 A, +3.3 V @ 28 A, +12 V @ 15 A, -12 V @ 0.8 A, -5 A @ 0.3 A, +5 Vsb @ 2 A	+5 V @ 0.3 A, +3.3 V @ 0.3, +12 V @ 0.2 A	UL/ TUV/ CB/ CCC	100000 hours @ 25° C
PS-250ATX-ZE (ATX, PFC)	250 W	AC 115/ 230 V (full range)	+5 V @ 27 A, +3.3 V @ 20 A, +12 V @ 13 A, -12 V @ 0.8 A, -5 V @ 0.3 A, +5 Vsb @ 2 A	+5 V @ 1.5 A, +12 V @ 0.3 A	UL/ TUV/ CB/ CCC	100000 hours @ 25° C
PS-400ATX-ZBE (ATX, PFC)	400 W	AC 100 ~ 240 V (full range)	+5 V @ 35 A, +3.3 V @ 28 A, +12 V @ 30 A, -12 V @ 0.8 A, -5 V @ 0.5 A, +5 Vsb @ 2 A	+5 V @ 3 A, +12 V @ 1 A, +5 Vsb @ 0.1 A	UL/ TUV/ CB/ CCC	91000 hours @ 25° C
PS-300ATX-ZBE (ATX, PFC)	300 W	AC 100 ~ 240 V (full range)	+5 V @ 30 A, +3.3 V @ 28 A, +12 V @ 15 A, -12 V @ 0.8 A, -5 A @ 0.3 A, +5 Vsb @ 2 A	+5 V @ 0.5 A, +12 V @ 0.5 A	UL/ TUV/ CB/ CCC	100000 hours @ 25° C

1.4 Environmental Specifications

- **Operating temperature:** 0 ~ 40° C (32 ~ 104° F)
- **Relative humidity:** 10 ~ 95% @ 40° C, non-condensing
- **Safety:** CE compliant

1.5 Dimension Diagram



Unit: mm [inch]

Figure 1.1 Dimension Diagram

1.6 Safety Precautions

Caution! *The computer is provided with a battery-powered Real-time Clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer°Øs instructions.*



Caution! *There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.*



Chapter 2

System Setup

This chapter introduces the installation process.

Sections include:

- Installing the disk drives
- Installing the backplane, CPU card or add-on card
- Attaching the ears

The following procedures instruct users to install the backplane, CPU card, add-on cards, and disk drives into the IPC-602 chassis. Please refer to the Appendix A, Exploded Diagram, for all the detailed parts.

2.1 Removing the Top Cover

Unscrew the six screws on the sides and rear of the top cover, then slide the top cover toward the rear chassis and open it. See Figure 2.1 below:

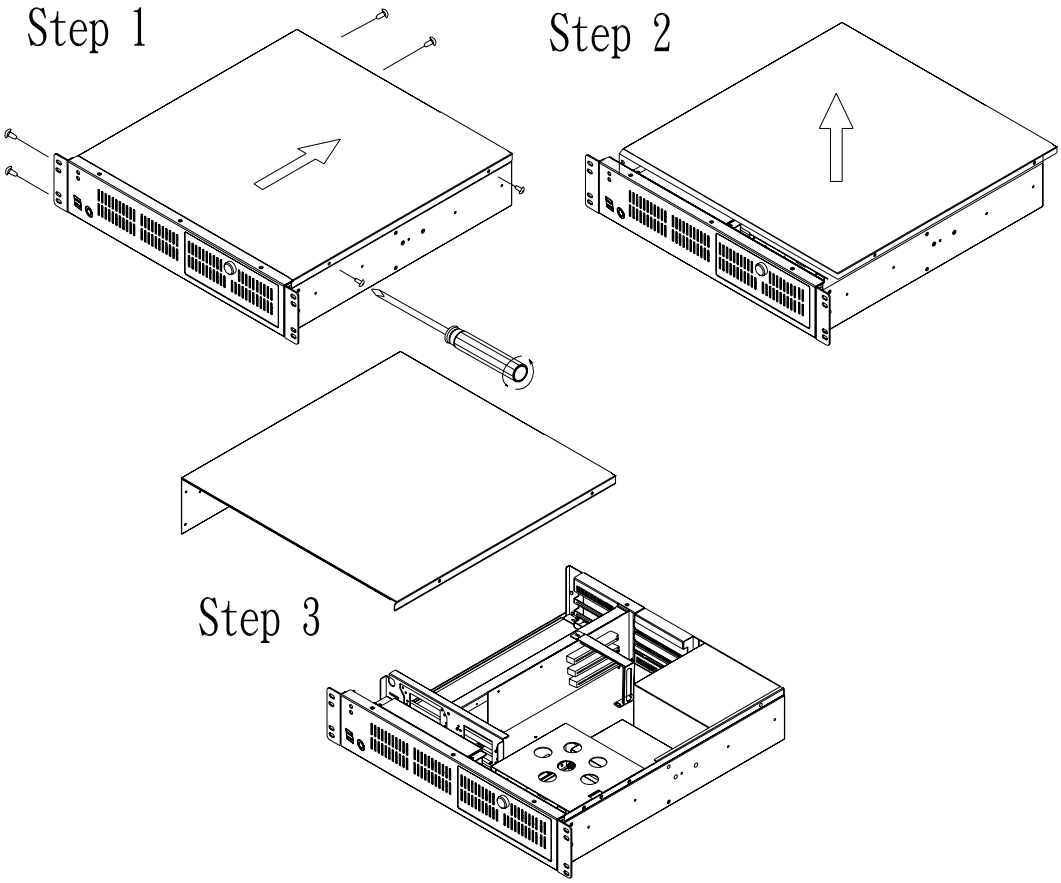


Figure 2.1 Removing the cover

2.2 Installing Disk Drives

After removing the top cover, you can easily install disk drives. Please refer to Figure 2.2 below and do the following:

1. Remove the four outer screws which mount the drive bay to the chassis.
2. Slide the drive bay backwards to a location where it is not obstructed by the top rim. Lift it free from the chassis.
3. Remove the front cover of the drive bay, and insert the disk drives into the proper locations in the drive bay.
4. Put back the drive bay properly and fasten the screws.

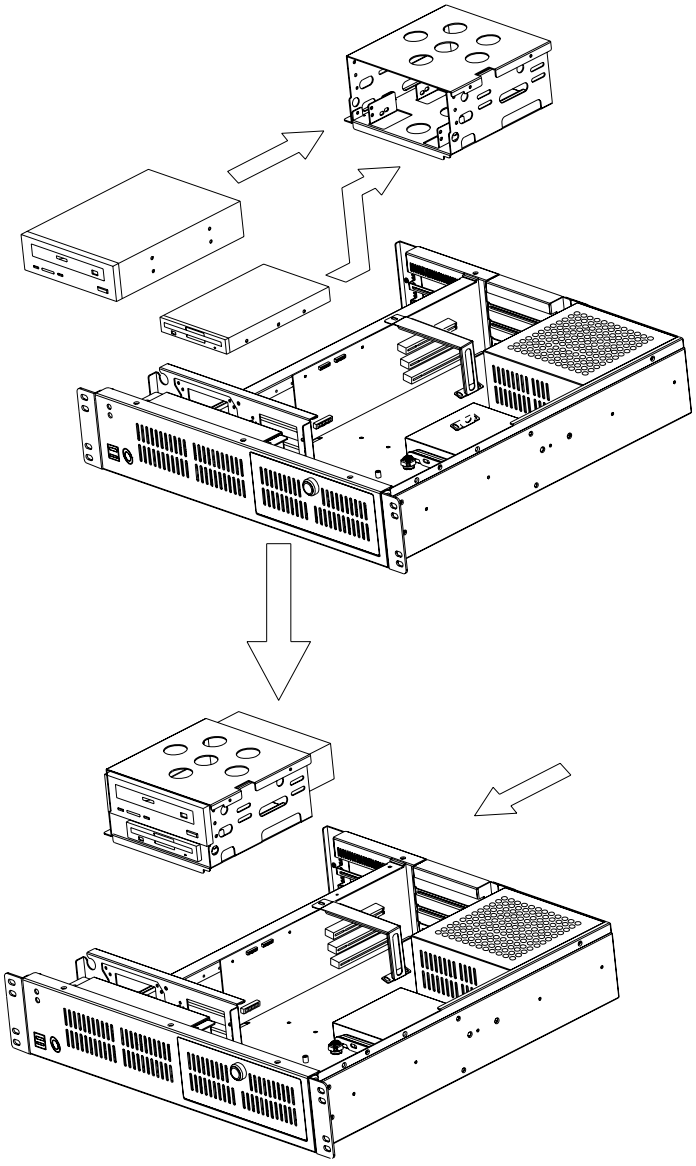


Figure 2.2 Installing disk drives

2.3 Installing the CPU Card and Add-on Cards

After removing the top cover, you can easily install the backplane, CPU card and add-on cards by following the steps. Please refer to Figure 2.3 below:

1. Unscrew the screws on the card cage.
2. Fasten the backplane to the bracket in position.
3. Insert the CPU card (with CPU and RAM installed) carefully into the PICMG slot and then fix it by screwing it into the rear plate. You can also fix the other edge of the CPU card using the supplied small L-form holder.
4. If users need to insert the add-on cards on the other side of the backplane, please loosen the L-form support and its corresponding I/O bracket. After installing the cards, also fix them to the rear window by the screw. Then replace the L-form support with the provided rubber cushion and fasten it.
5. After all cards are installed completely, put card cage back into the correct location in the chassis and screw it carefully.

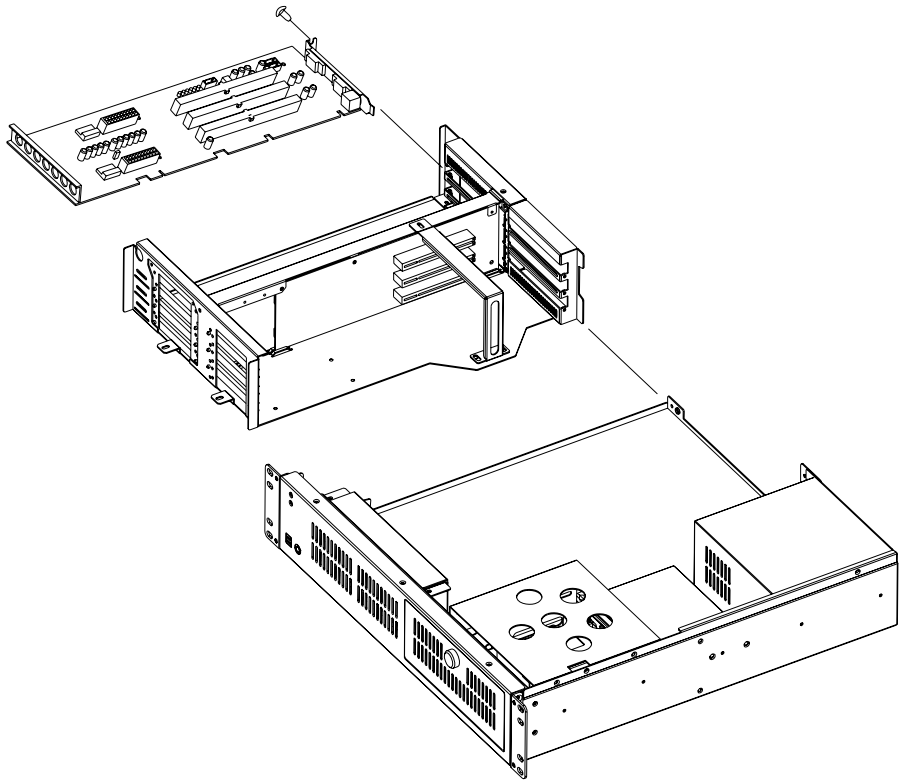


Figure 2.3 Installing a CPU card

2.4 Attaching the Ears

Before users mounting IPC-602 Chassis to the rack, please install the ears on both sides of the chassis. Please refer to Figure 2.4 and proceed as following steps.

1. Find the ears and the screws from the accessory package.
2. Put the ears in the correct locations and fasten the screws to the chassis.

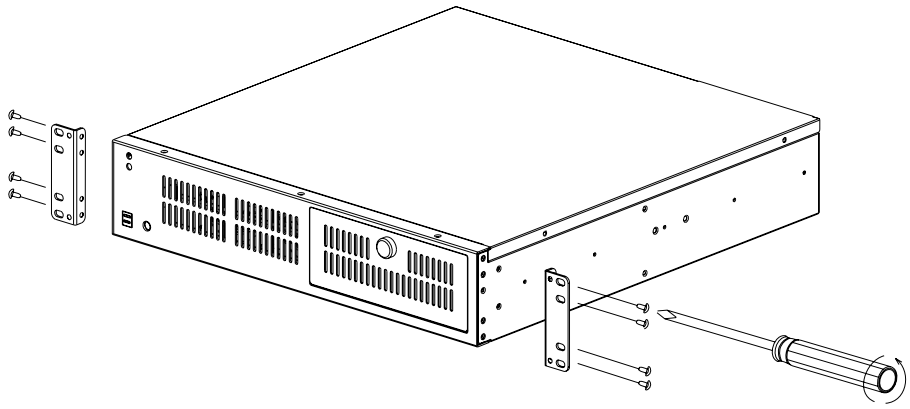


Figure 2.4 Installing the ears

Chapter 3

Operation

This chapter introduces the system operation information.

Sections include:

- Replacing the cooling fan
- Replacing the filters

3.1 Replacing the Fan

1. Unscrew the two screws on the fan bracket, and slide the bracket backwards. See Figure 3.1 below:
2. Replace the new fan and fix it to the bracket.
3. Put back the fan bracket and fasten the screws.

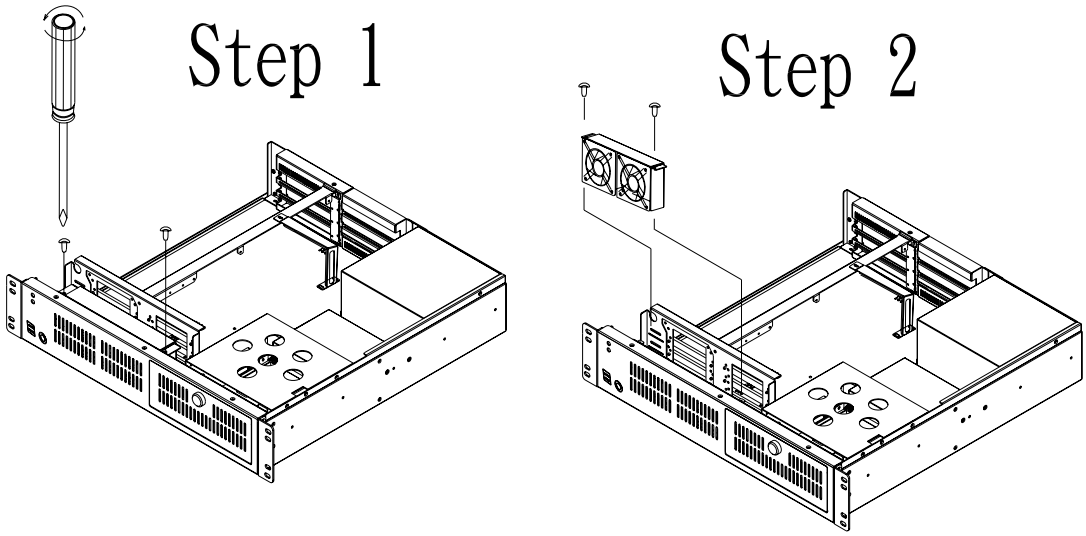


Figure 3.1 Replacing the fan

3.2 Replacing the Filters

The filters are in front the system fan and behind the front door. If IPC-602 is under use constantly, the filters should be changed about once a month. To replace the filters, refer to Figure 3.2 below and do the following:

1. Open the front door.
2. Remove the fan filter by gently pulling the tab and sliding the filter rightwards. Remove the door filter by loosening the filter cover.
3. Put new filters in place and fasten the filter cover.
4. Close and lock the front door.

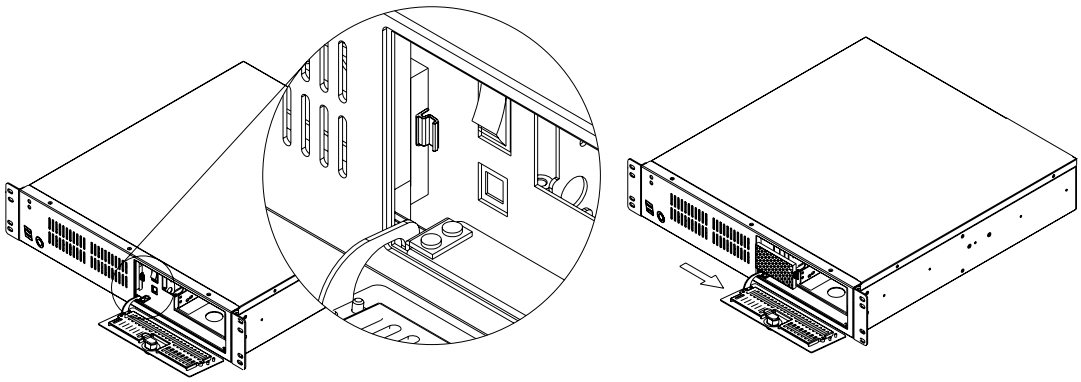


Figure 3.2 Replacing the filters

Appendix A

Exploded Diagram and Parts List

A.1 Exploded Diagram and Parts List

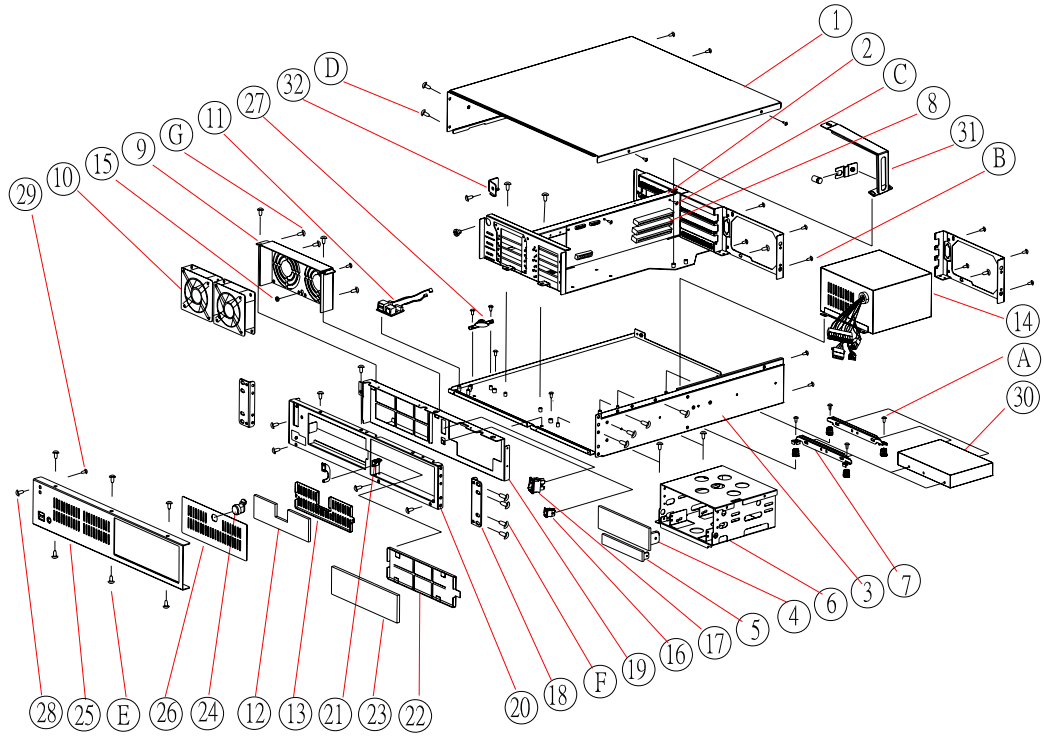


Figure A.1 Exploded Diagram

Table A.1: Parts List			
1	TOP COVER	17	ROCK SWITCH
2	CARD SUPPORT BEAM	18	RACK MOUNTING EARS
3	CHASSIS	19	FRONT WINDOW
4	5.25” DISK COVER	20	FRONT COVER
5	3.5” DISK COVER	21	HINGE LEFT HINGE RIGHT
6	DRIVER BAY BRACKET	22	FAN FILTER HOUSING
7	HDD BRACKET	23	FAN FILTER
8	BACKPLANE	24	KEY SETS
9	FAN BRACKET	25	FRONT PLATE
10	FAN	26	DOOR
11	KB/USB BOARD	27	LED HOUSING
12	DOOR FILTER	28	LED CAP
13	DOOR FILTER COVER	29	LED WIRE
14	ATX POWER SUPPLY	30	HDD
15	WIRE MOUNT	31	L TYPE HOLDER
16	RESET SWITCH	32	THERMAL SENSOR

Appendix B

Backplane Options

B.1 Backplane Options

IPC-602 supports a variety of backplanes. User can contact a local sales representative for detailed specification and information.

Table B.1: PICMG 1.3 Backplane options

Model Name	Slot				
	SHB*	PCIe x 16	PCIe x 1	PCE-X	PCI
PCE-5B06V-04	1	1	-	-	4
PCE-5B05V-30	1	1	-	3	-
PCE-5B06V-00	1	1	4	-	-

*SHB: System Host Board

Table B.2: PCIMG 1.0 Backplane options

Model Name	Slot		
	ISA	PCI	PICMG
PCA-6106P3V	1	3	2
PCA-6105P4V	-	4	1

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