



**User Manual**

# **IPC-6025**

**5-slot Desktop/Wallmount  
Chassis with Scalability for  
Multi-system Solution**

*Trusted ePlatform Services*

**ADVANTECH**

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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. Do not leave this equipment in an environment unconditioned where the storage temperature under 0° C (32° F) or above 40° C (104° F), it may damage the equipment.
8. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
10. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. 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.
16. **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 manufacture. 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.**

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KLASSE 1 LASER PRODUKT

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, including interference 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.

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We want you to get the best performance possible from your products. 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.

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

## Initial Inspection

When you open the carton, please make sure that the following materials have been shipped:

- IPC-6025 Chassis
- User Manual
- Warranty Card
- Accessory box with a package of screws (for fastening the backplane or CPU card, disk drives, wallmount bracket, etc.), EMI figure, rubber cushions (backplane version), and a pair of wallmount brackets.

If any of these items are missing or damaged, contact your distributor or sales representative immediately. We have carefully inspected the IPC-6025 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-6025, 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, please 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.



# Contents

<b>Chapter 1</b>	<b>General Information .....</b>	<b>1</b>
1.1	Introduction .....	2
1.2	Specifications .....	2
1.3	Power Supply Options.....	2
	Table 1.1: Power supply options .....	2
1.4	Environment Specifications.....	3
	Table 1.2: Environment specifications.....	3
1.5	Dimension Diagram.....	3
	Figure 1.1 Dimension diagram.....	3
	Figure 1.2 Single System Installation .....	4
	Figure 1.3 Quad System Installation.....	4
<b>Chapter 2</b>	<b>System Setup.....</b>	<b>5</b>
2.1	Removing the Top Cover .....	6
	Figure 2.1 Removing the top cover.....	6
2.2	Installing Passive Backplane.....	7
	Figure 2.2 Installing the backplane .....	7
2.3	Installing CPU Card or Add-on Card .....	8
	Figure 2.3 Installing a CPU card.....	8
	Figure 2.4 Installing an add-in card .....	9
2.4	Hold-down Clamp.....	9
	Figure 2.5 Installing rubber cushions on top cover .....	10
	Figure 2.6 Installing rubber cushions into the hold-down clamps on top cover.....	10
2.5	Removing Side Cover .....	11
	Figure 2.7 Remove side cover.....	11
2.6	Installing Disk Drives.....	12
2.6.1	Installing Disk Drives.....	12
	Figure 2.8 Installing 3.5" FDD or HDD into dirve bracket .....	12
	Figure 2.9 Installing 3.5" FDD or HDD disk drive.....	13
2.7	Installing Wallmount Bracket.....	13
	Figure 2.10Installing Wallmount Brackets .....	13
<b>Chapter 3</b>	<b>Operation.....</b>	<b>15</b>
3.1	The Front Panel of IPC-6025 .....	16
	Figure 3.1 Closed/Open front panel.....	16
3.1.1	Switch, Button and I/O Interface .....	16
3.1.2	LED Indicators for System Status .....	17
	Table 3.1: LED indicator functions.....	17
3.2	The Rear Panel .....	18
	Figure 3.2 Rear panel.....	18
3.3	Replacing the Cooling Fan.....	19
	Figure 3.3 Replacing the cooling fan .....	19
	Figure 3.4 Replacing the cooling fan from fan bracket .....	19
3.4	Changing the Filters .....	20
	Figure 3.5 Replacing the filters .....	20
3.5	Replacing the Power Supply .....	21
3.5.1	Replacing the Single 270W Power Supply .....	21
	Figure 3.6 Replacing the single power supply .....	21

<b>Chapter</b>	<b>4</b>	<b>Alarm Board .....</b>	<b>23</b>
4.1		Alarm Board Layout .....	24
		Figure 4.1 Alarm board layout .....	24
4.2		Alarm Board Specifications .....	24
4.2.1		Connectors, Jumper and Pin Definition .....	25
		Table 4.1: PWR1, Auxiliary external power connector, standard mini 4-Pin power connector .....	25
		Table 4.2: RDUPG1, Redundant Power Connector .....	25
		Table 4.3: ALMRST, Alarm Reset Connector .....	25
		Table 4.4: FAN1, System Fan Connector .....	25
		Table 4.5: FAN2, System Fan Connector .....	25
		Table 4.6: HDD, HDD Connector .....	25
		Table 4.7: I2C1, I2C Connector .....	25
		Table 4.8: TEMP1, Temperature Connector .....	25
		Table 4.9: JSYS1 & JSYS2, System Fan & System Temperature (Jumper Selection) .....	25
		Table 4.10: JSBC1 & JSBC2, SBC Fan & SBC Temperature(Jump- er Selection) .....	25
4.3		Thermal Sensor .....	26
		Figure 4.2 Thermal sensor location .....	26
<b>Appendix A</b>		<b>Exploded Diagram and Parts List....</b>	<b>27</b>
A.1		Exploded Diagram and Parts List .....	28
		Figure A.1 Exploded diagram .....	28
		Table A.1: Parts List .....	28
<b>Appendix B</b>		<b>Backplane Options .....</b>	<b>29</b>
B.1		Backplane Options .....	30
		Table B.1: PICMG 1.3 Backplane Options .....	30
		Table B.2: PICMG 1.0 Backplane options .....	30
<b>Appendix C</b>		<b>Quad System Setup .....</b>	<b>31</b>
C.1		Assemble Rack Carrier .....	32
		Figure C.1 Assemble Rack Carrier .....	32
C.2		Install IPC-6025 on the Rack Carrier .....	33
		Figure C.2 Reverse wall-mount bracket .....	33
		Figure C.3 Fix wall-mount bracket on the bottom of IPC-6025 ..	34
		Figure C.4 Install IPC-6025 on the Rack Carrier .....	34
C.3		Uninstall IPC-6025 from Rack Carrier .....	35
		Figure C.5 Uninstall IPC-6025 from the Rack Carrier .....	35



# Chapter 1

## General Information

This chapter provides general information about the ICP-6025.

Sections include:

- Introduction
- Specifications
- Power Supply options
- Environment Specification
- Dimension Diagram

## 1.1 Introduction

IPC-6025 is a 5-slot Desktop/Wallmount Chassis with scalability for multi-system solution. It meets a variety of application needs for multi-system solution, like Automatic Optical Inspection (AOI). This powerful computing platform is suitable for multi-system applications, industrial automation, and factory management. Besides, IPC-6025 can also work as a 5-slot wallmount IPC Chassis which is ideal to be integrated for different applications.

## 1.2 Specifications

- **Construction:** Heavy-duty steel
- **Disk Drive Capacity:** Two 3.5" disk drive bays (one external and one internal)
- **LED Indicators on Front Panel:** Bi-color LEDs (blue/red) for Power, Temperature, HDD, and Fan status.
- **Switch and Buttons on Front Panel:** Power switch, System Reset button and Alarm Reset button.
- **Front I/O Interfaces:** Dual USB ports.
- **Rear I/O Interfaces:** Reserved two 9-pin D-SUB opening.
- **Cooling System:** One 9 cm (53 CFM) easy-to-maintain cooling fan.
- **Air Filters:** A easy-to-maintain filter between the system fan and the front iron net.
- **Weight:** 4.7 kg
- **Dimensions (W x H x D):** 111 x 212 x 420 mm

## 1.3 Power Supply Options

**Table 1.1: Power supply options**

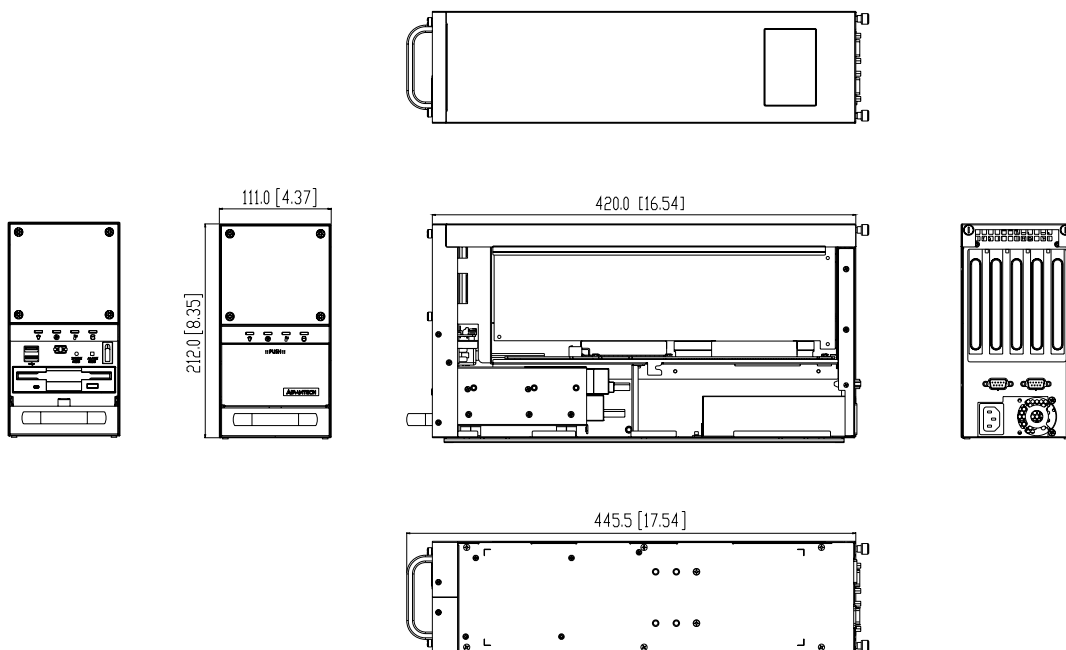
<b>Model Name</b>	1757001847
<b>Watt</b>	270 W max. (ATX, PFC) 1U power supply
<b>Input rating</b>	100 ~ 240 Vac (Full range)
<b>Output voltage</b>	+3.3 V @ 16 A, +5 V @ 18A, +12 V 1@ 16 A, +12 V 2@ 10 A , -12 V @ 0.8 A, +5 Vsb @ 2.5 A
<b>Minimum load</b>	+3.3 V @ 0.5 A, +5 V @ 0.5 A, +12 V @ 1 A
<b>MTBF</b>	100,000 hours @ 25° C
<b>Safety</b>	UL/TUV/CB/CCC

## 1.4 Environment Specifications

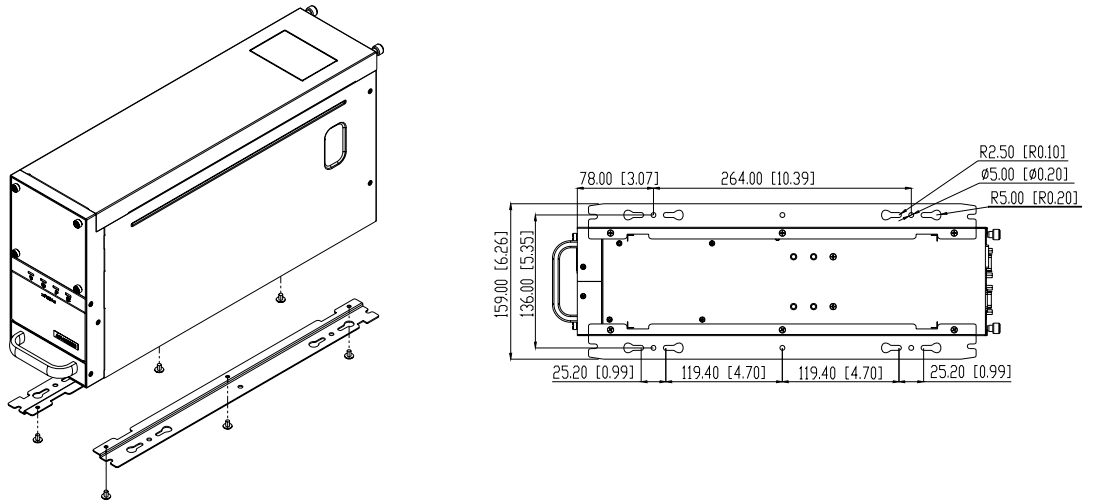
**Table 1.2: Environment specifications**

Environment	Operating	Non-operating
Temperature	0 to 40° C (32 to 104° F)	-20 to 60° C (-4 to 140° F)
Humidity	10 to 85% @ 40° C, non-condensing	10 to 95% @ 40° C, non-condensing
Vibration	1 G rms	2 G
Safety	CE compliant	

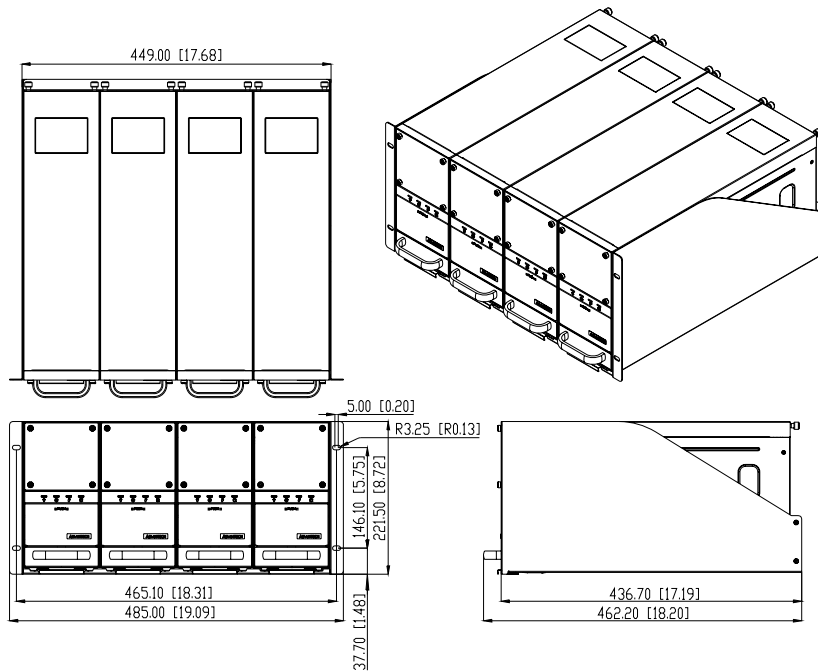
## 1.5 Dimension Diagram



**Figure 1.1 Dimension diagram**



**Figure 1.2 Single System Installation**



**Figure 1.3 Quad System Installation**

# Chapter 2

## System Setup

This chapter introduces the installation process.

Sections include:

- Remove the Top Cover
- Installing the Backplane
- Installing CPU Card or Add-on Card
- Hold-Down Clamp
- Remove the Side Cover
- Installing Disk Drives
- Installing Wallmount Bracket

The following procedures instruct users to install a backplane/SHB, add-on cards and disk drives into the IPC-6025. Please also refer to Appendix A, Exploded Diagram, for the detailed parts of IPC-6025.

**Note!** Use caution when installing or operating the components with the chassis open. Be sure to turn off the power, unplug the power cord and ground yourself by touching the metal chassis before you handle any components inside the machine.



## 2.1 Removing the Top Cover

To remove the top cover of the chassis, please proceed as below.

1. Loose two thumbscrews on the rear of the top cover.
2. Pull the chassis top cover backwards and then lift it up.

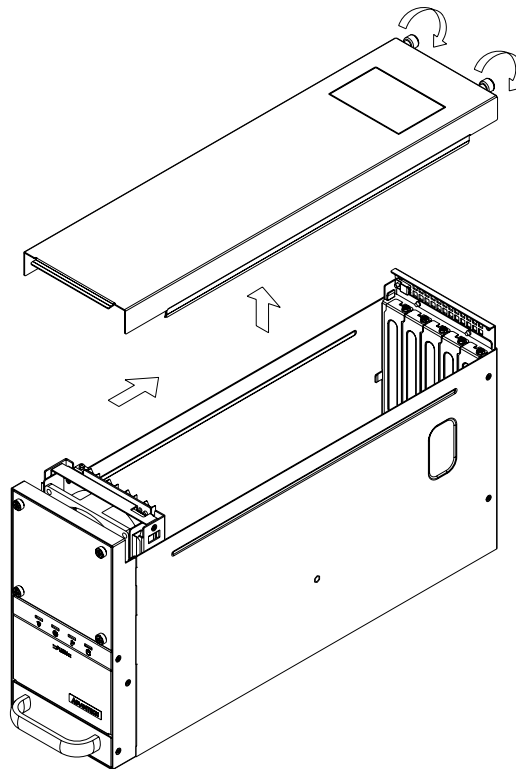


Figure 2.1 Removing the top cover

## 2.2 Installing Passive Backplane

The IPC-6025 supports up to PICMG1.3/PICMG1.0 5-slot backplane. To install the backplane, please proceed as follows:

1. After installing a BACKPLANE, install the EMI finger (included in accessory box) on the rear side of the backplane (see Figure 2.2)
2. And then fasten both backplane and EMI figure in place with the screws provided. (see Figure 2.2)
3. Connect the 20-pin (or 24-pin) ATX power connector and the 4-pin +12V power connector from the power supply to the backplane (For the PICMG 1.0 BACK-PLANE, the 4-pin +12V power connector is connected to the CPU card.).
4. Connect the 9-pin USB wire from chassis to the PICMG1.3 backplane. (For PICMG1.0 Backplane, 9-pin USB wire is connected to CPU card)

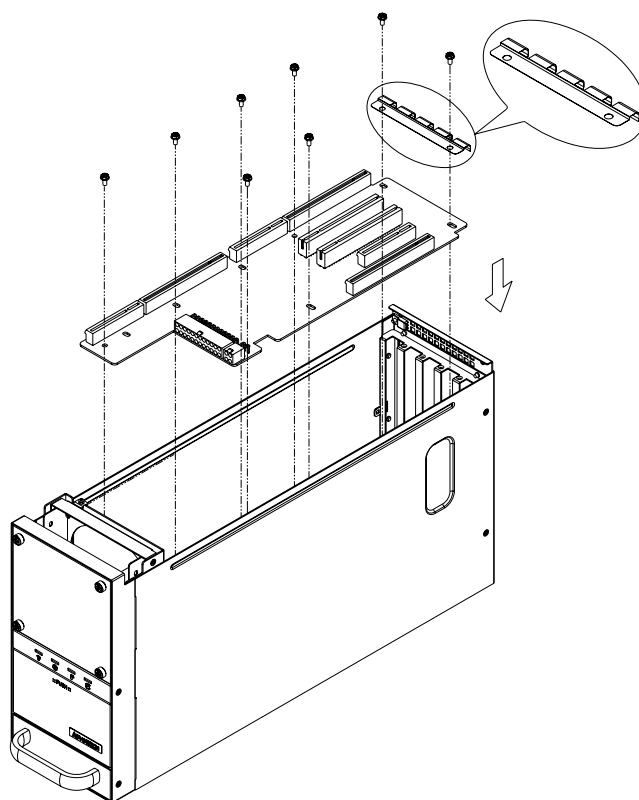


Figure 2.2 Installing the backplane

## 2.3 Installing CPU Card or Add-on Card

IPC-6025 supports up to 5 cards. To install a CPU card or add-on card, please proceed as follows:

1. Select a vacant PICMG slot for the full-length CPU card, and select a PCIe, PCI-X or PCI/ISA slot for other add-on cards. Then, remove the corresponding I/O bracket attached on the rear plate of the chassis.
2. Insert the CPU card (with CPU, CPU cooler, RAM, and necessary cables installed) and add-on cards vertically into the proper slot. For full-length CPU card, please make sure that the card bracket has been inserted properly and the other edge of the card has been inserted into the plastic guiding fillister. Fasten the screws on the top of both brackets of the card. (See Figure 2.3, Figure 2.4)
3. Repeat Step 1 and 2 if there is more than one add-on card to be installed.
4. Connect the 9-pin USB wire, power switch wire and system reset switch wire from the chassis to the CPU card. (If backplane PICMG1.3 is used, 9-pin USB wire would be connected from chassis to PICMG1.3 backplane)
5. Connect HDD LED wire from alarm board to CPU card.
6. Connect the floppy flat cable and HDD SATA cable to CPU card.

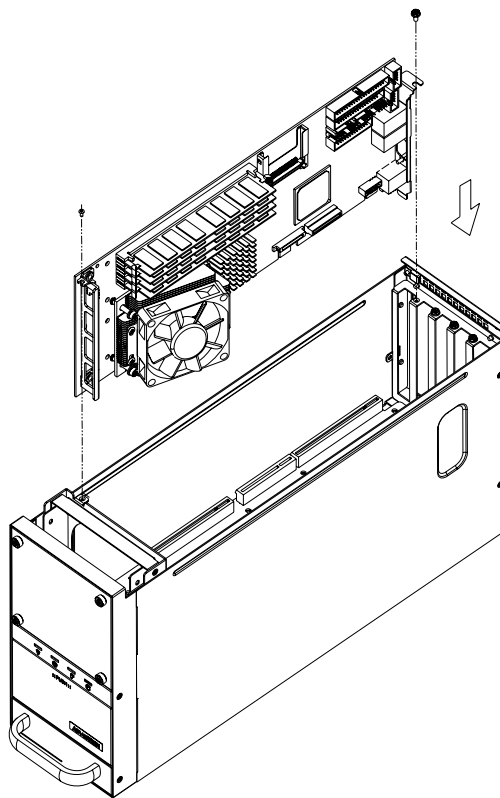


Figure 2.3 Installing a CPU card



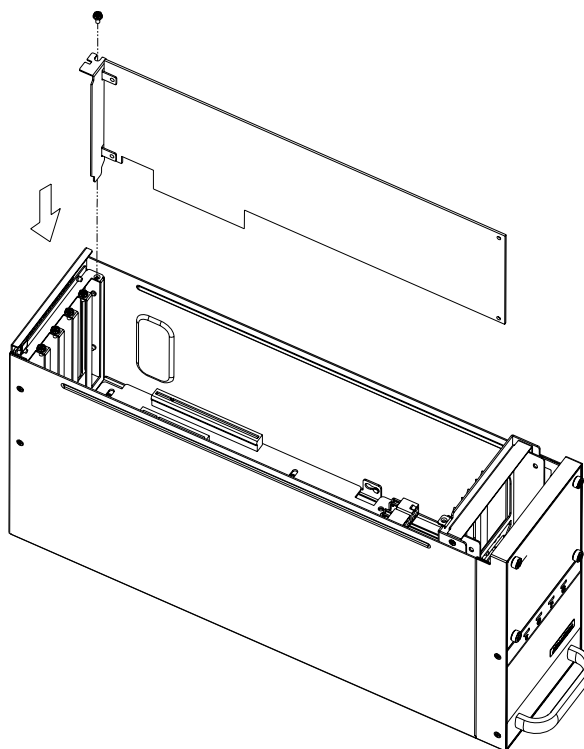
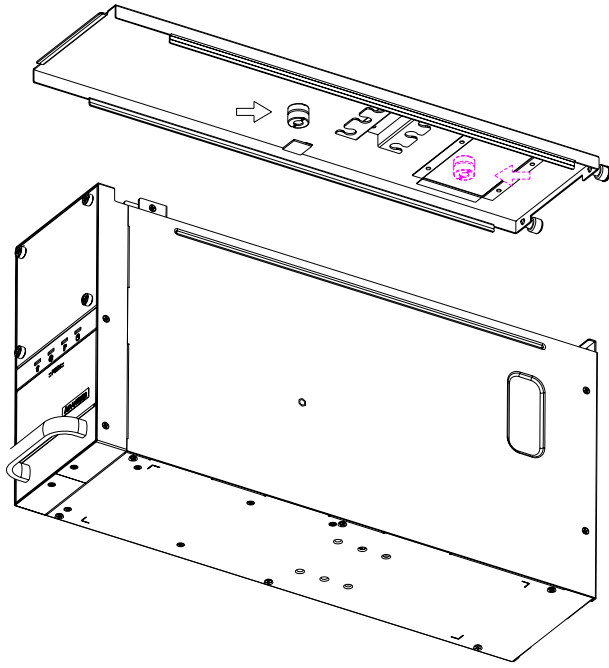


Figure 2.4 Installing an add-in card

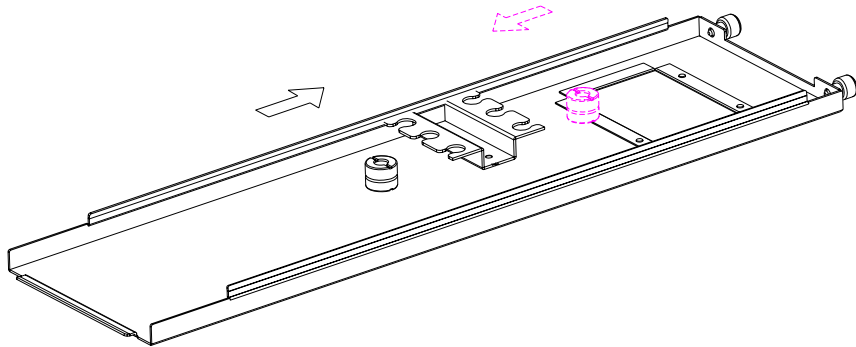
## 2.4 Hold-down Clamp

The hold-down clamp protects all the cards from vibration and shock. After installing all the cards, please refer to the following steps to install the rubber cushions and the hold-down clamp.

1. Reverse the top cover and the hold-down clamp is mounted on the back side of top cover(see Figure 2.5).
2. There are two rows of notches on both sides of the hold-down clamp for user to insert rubber cushions provided in the accessory. Please select the proper notch with rubber cushion. After the rubber cushions have been inserted into the notches, they will stabilize the add-on cards and protect them from shock and vibration. (see Figure 2.6)



**Figure 2.5 Installing rubber cushions on top cover**



**Figure 2.6 Installing rubber cushions into the hold-down clamps on top cover**

## 2.5 Removing Side Cover

To remove the side cover of the chassis, please proceed as below.

1. Loose the screws on the edge of the side cover.
2. Pull the chassis side cover backwards and then take it outward.

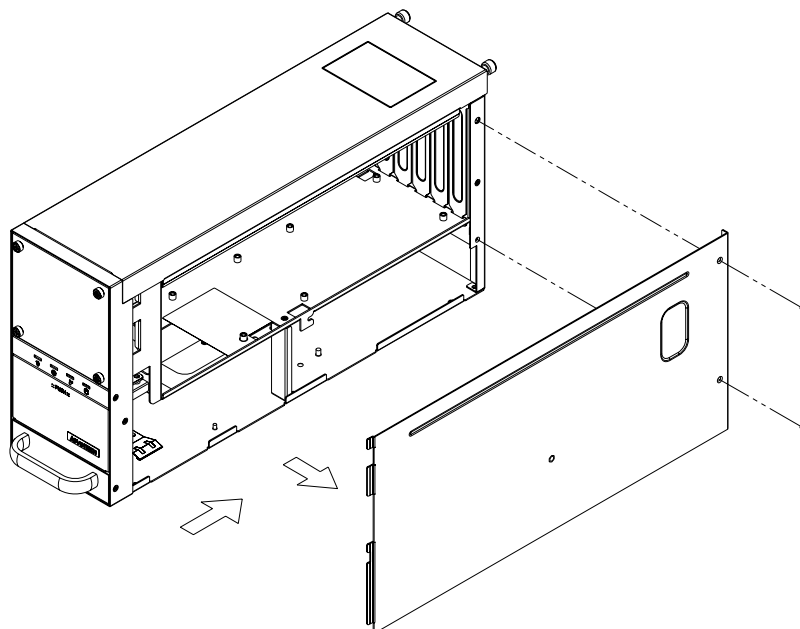


Figure 2.7 Remove side cover

## 2.6 Installing Disk Drives

The IPC-6025 supports two 3.5" disk drives (one 3.5" external and one 3.5" internal HDD) (or 2.5" floppy disk). Please refer to the following instructions to install the various disk drives.

### 2.6.1 Installing Disk Drives

To install the 3.5" HDD and FDD disk drive, please follow these steps for installation and refer to Figure 2.7.

1. Release the screws of disk drive bracket on the bottom of IPC-6025.
2. Install the 3.5" HDD or FDD into the proper location in the bracket and secure them with the screws provided (Figure 2.8).
3. Return the disk drive bracket with the disk drive in the original position and fasten it with the screws (Figure 2.9).
4. Connect the suitable cables from the CPU card or the motherboard to the 3.5" HDD, or FDD. Then plug the power connector into each disk drive.

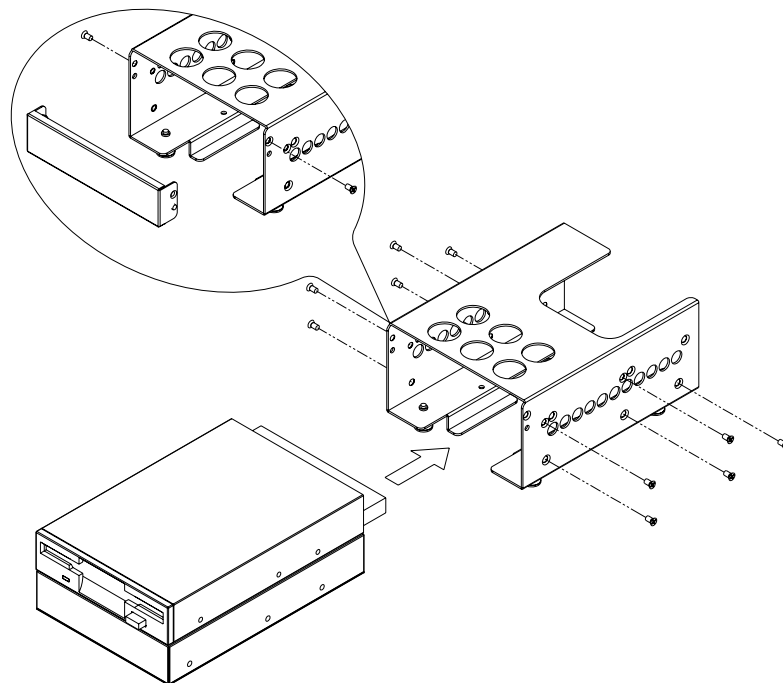


Figure 2.8 Installing 3.5" FDD or HDD into dirve bracket

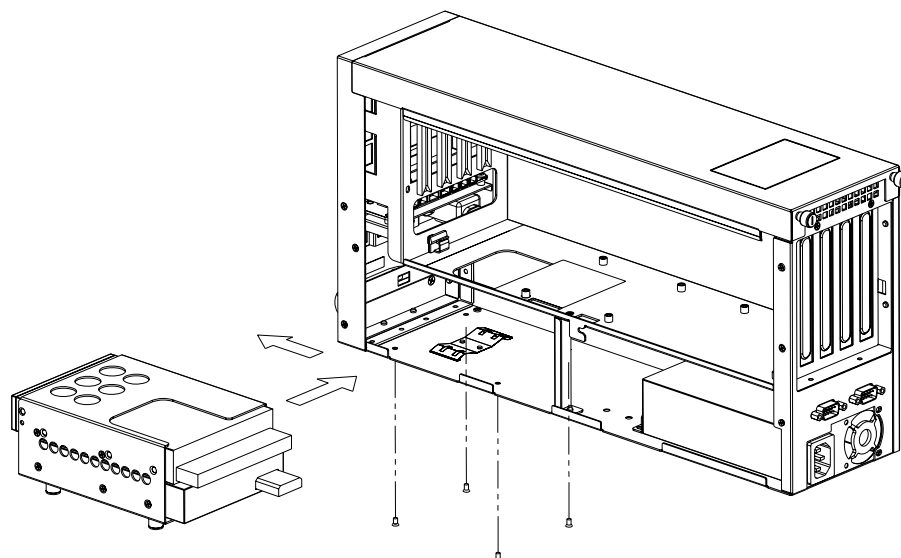


Figure 2.9 Installing 3.5" FDD or HDD disk drive

## 2.7 Installing Wallmount Bracket

There is a pair of wallmount brackets in the accessory box. If you need to install the chassis, please refer to Figure 3.0 to simply fasten wallmount brackets to the right edge and left edge of the bottom with the screws provided.

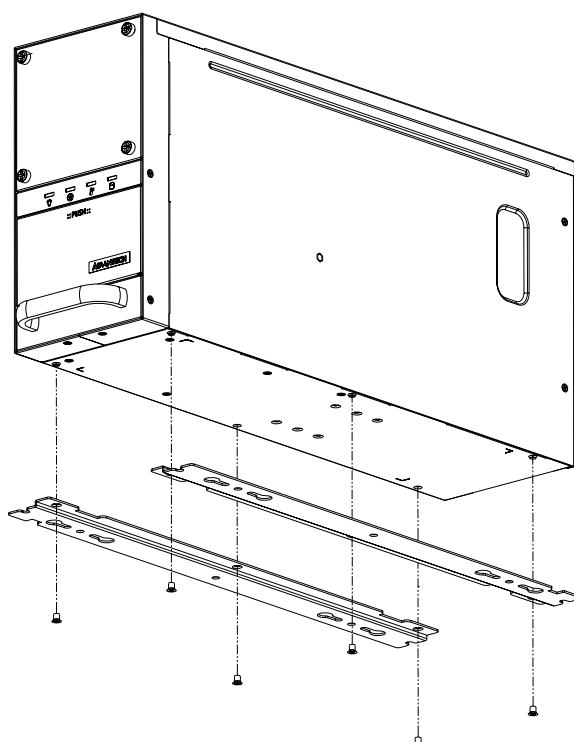


Figure 2.10 Installing Wallmount Brackets



# Chapter 3

## Operation

This chapter introduces the system operation information.

Sections include:

- The Front Panel
- The Rear Panel
- Replacing the Cooling Fan
- Cleaning the Filters
- Replacing the Power Supply

## 3.1 The Front Panel of IPC-6025

The front panel features the door and four LED indicators. The user can close the door to prevent the dust. While opening the door, there is a momentary power switch, System Reset buttons, an Alarm Reset button, and two dual USB ports. Their individual functions are described as below.

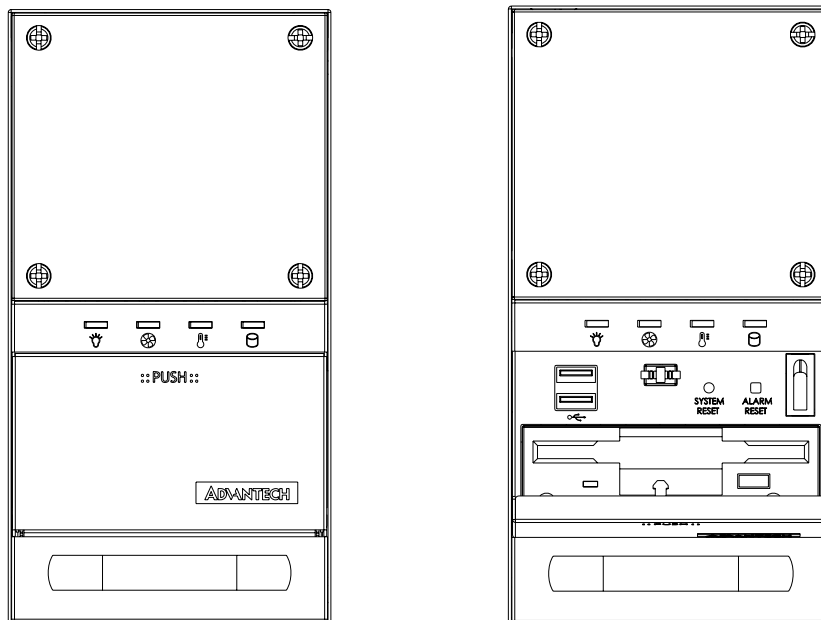


Figure 3.1 Closed/Open front panel

### 3.1.1 Switch, Button and I/O Interface

**Momentary Power switch:** Press this switch to turn the system power on or off. Please use system shutdown or press this switch for few seconds to turn off the system ATX power.

**System Reset button:** Press this button to reboot the system.

**Alarm Reset button:** Whenever a fault occurs in the system (e.g., fan failure or the chassis is overheated), the audible alarm will be activated. Pressing this button will stop the alarm from beeping.




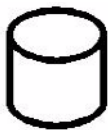
**Dual USB ports:** For connecting a wide range of USB devices for data transfer, backup or input.



### 3.1.2 LED Indicators for System Status

Four LEDs are placed on the front panel to indicate system health and activity. Please refer to Table 3.1 for the LED definition summary.

**Table 3.1: LED indicator functions**

LED	Description	Blue	Red	Pink
Power				
	System power	Normal	Abnormal	NA
Fan				
	Cooling fan status	Normal	Abnormal (system fan fail)	Abnormal (CPU fan fail)
Temperature				
	Temperature in the chassis	Normal	Abnormal (system temp fail)	Abnormal (CPU temp fail)
Hard Disk				
	Hard disk drive activity	Data access	No light	

When the system power is on, the power LED is always **Blue**.

When the power **LED** is **RED**, it indicates a failure of power supply. To stop the alarm beep, press the **Alarm Reset** button. Examine the power supply right away and replace the failed power supply with a good one.

When the fan LED is **RED**, it indicates a failed cooling fan, and the alarm is also activated. When the fan LED is **PINK**, it indicates a failed CPU cooler and the alarm is also activated. To stop the alarm beep, press the **Alarm Reset** button and then replace the failed fan with a good one immediately.

If the temperature LED is **RED**, it means that it is overheated inside of the chassis (more than 50° C). And if the temperature LED is **PINK**, it means that it is overheated on the CPU card (more than 65° C). An audible alarm will be activated. To stop the alarm beep, press the **Alarm Reset** button. Inspect the fan filter or temperature of CPU card and the upper section of the chassis immediately. Make sure the airflow inside the chassis is smooth and not blocked by dust or other particles.

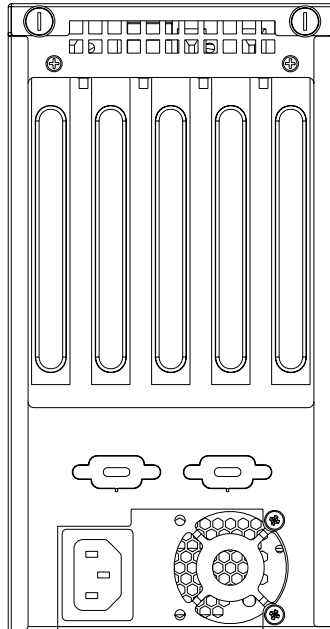
**Note!** Whether CPU cooler or CPU temperature are detectable or not depends on different design of each CPU card.



When HDD LED is **BLINKING**, it indicates the data access from HDD. And when HDD LED is **NO LIGHT**, it indicates no activity from HDD.

## 3.2 The Rear Panel

For the backplane version, the rear plate includes two reserved 9-pin D-SUB opening. (see Figure 3.2).



**Figure 3.2 Rear panel**

### 3.3 Replacing the Cooling Fan

There is one cooling fan behind the front panel. They are easily maintained. The fan provides the system with ample cooling by blowing air from the front side toward the up-rear side of chassis. Please proceed according to the instructions below to replace the cooling fan.

1. Remove the top cover.
2. Unplug the fan power connector.
3. Loose two screws on top of the fan unit and then gently pull it out (Figure 3.3).
4. Loose four screws on the fan bracket and replace it with a new fan (Figure 3.4).
5. Fix the new cooling fan on the fan bracket by screwing in the four screws.
6. Replace the fan unit into the chassis by tightening 2 screws on top of the fan unit and reconnect the fan power connector.
7. Put back the top cover and fasten it with screws.

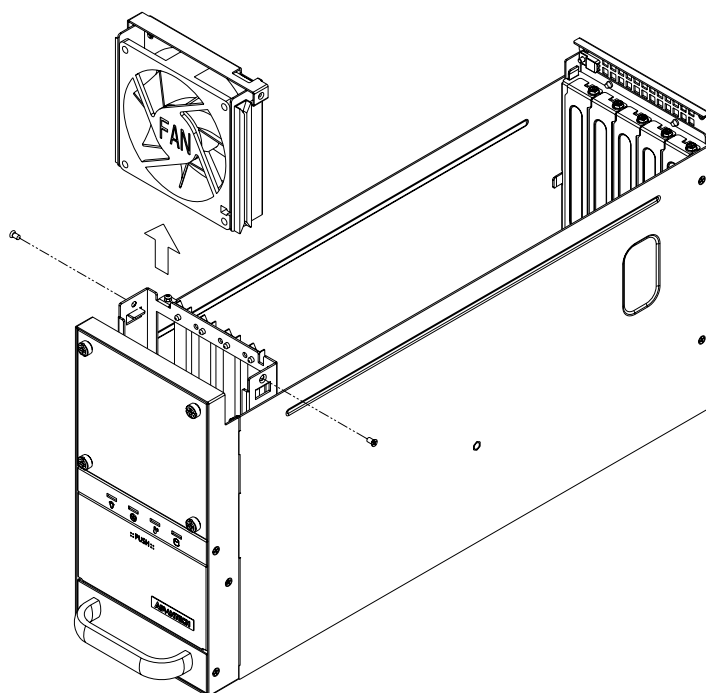


Figure 3.3 Replacing the cooling fan

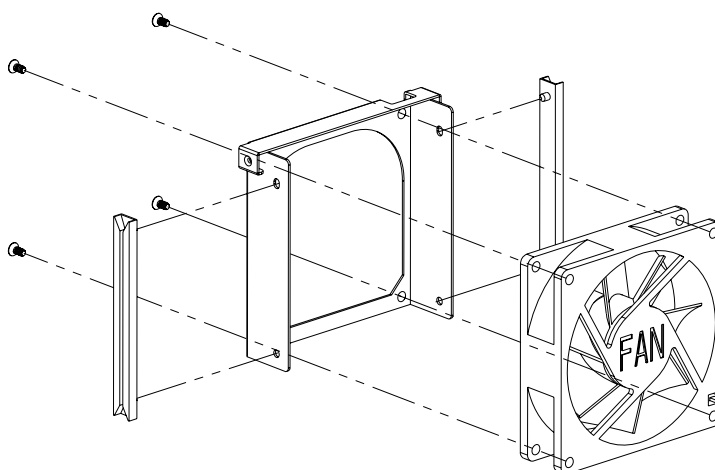


Figure 3.4 Replacing the cooling fan from fan bracket

## 3.4 Changing the Filters

The filter functions to block dust or particles from the work environment and to extend the longevity of the system. It's better to clean or change the filters periodically. There is a filter behind the iron net and in the front of the fan. To remove the filter and change a new one, proceed as follows.

1. Loosen the four thumbscrews on the iron net and take out the iron net.
2. Take out the filter which is behind the iron net.
3. Change a new filter when necessary.
4. Replace them inside the unit and fasten the thumbscrews on the iron net (see Figure 3.5).

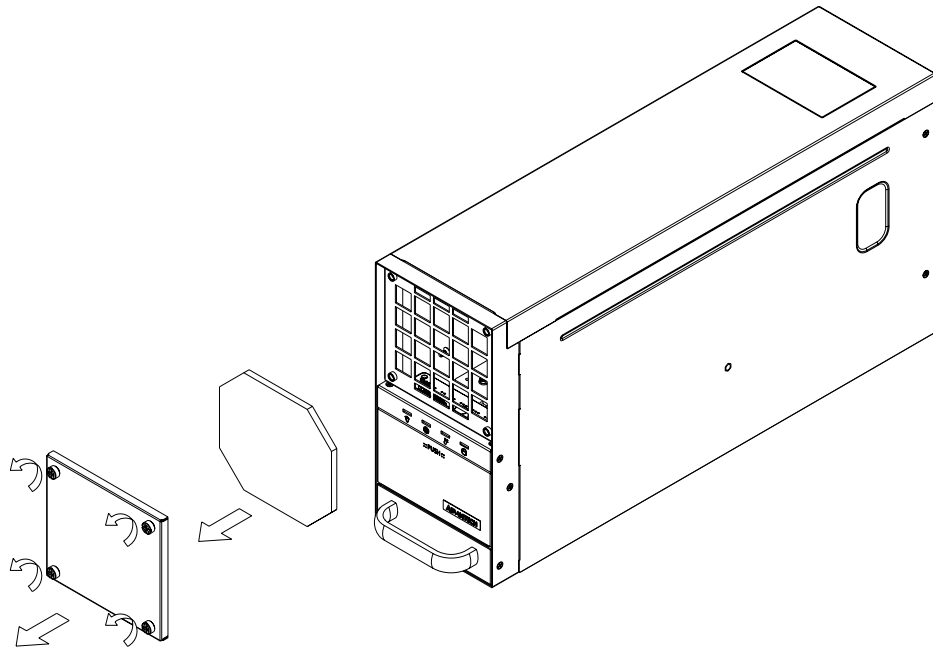


Figure 3.5 Replacing the filters

## 3.5 Replacing the Power Supply

The IPC-6025 supports a single 270W power supply. To replace the power supply, please proceed as below.

### 3.5.1 Replacing the Single 270W Power Supply

1. Unplug the power cord from the power supply and remove the side cover.
2. Unplug the 20-pin (or 24-pin) ATX power connector and 4-pin +12 V power connector from the backplane, as well as the power connectors from all disk drives.
3. Loosen the screws of power supply bracket from the rear panel and on the bottom of IPC-6025 and then gently pull out the power supply (see Figure 3.6).
4. Replace the power supply with a new one and then put it back into the chassis.
5. Plug the 20-pin (or 24-pin) ATX power connector and 4-pin +12 V power connector to the backplane. And plug other power connectors to the disk drives and peripherals.
6. Return side cover and then plug in the power cord.

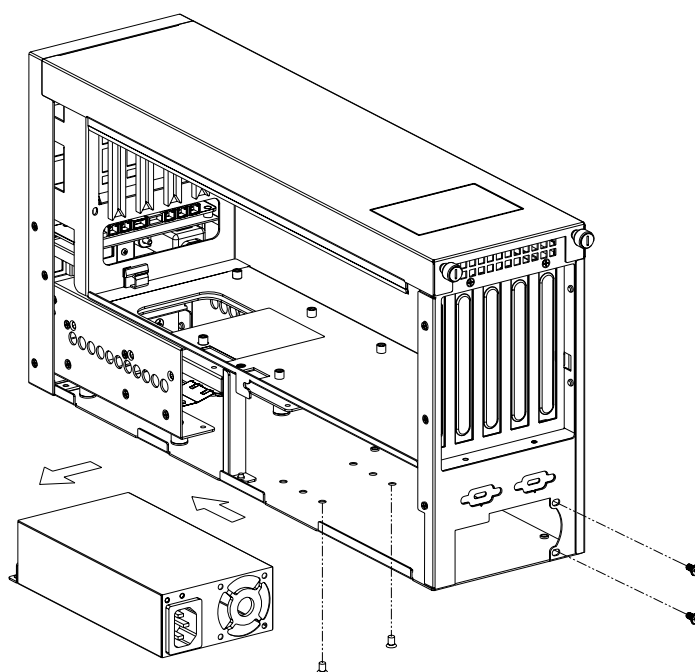


Figure 3.6 Replacing the single power supply



# Chapter 4

## Alarm Board

This chapter introduces the alarm board and thermal sensor specifications.

Sections include:

- Alarm Board Layout
- Alarm Board Specifications
- Thermal Sensor
- Sensor I.D. Number Setting

The alarm board is located below the cooling fan near the middle section of front panel. The alarm board makes an audible alarm when:

- a. The ATX power supply fails
- b. One of the cooling fans fails
- c. Internal temperature of the chassis is too high
- d. One of hard drive disks fails

To stop the alarm beep, simply press the Alarm Reset button on the front panel behind the front door and then take the necessary action to fix it.

## 4.1 Alarm Board Layout

The layout and detailed specification of the alarm board are given below:

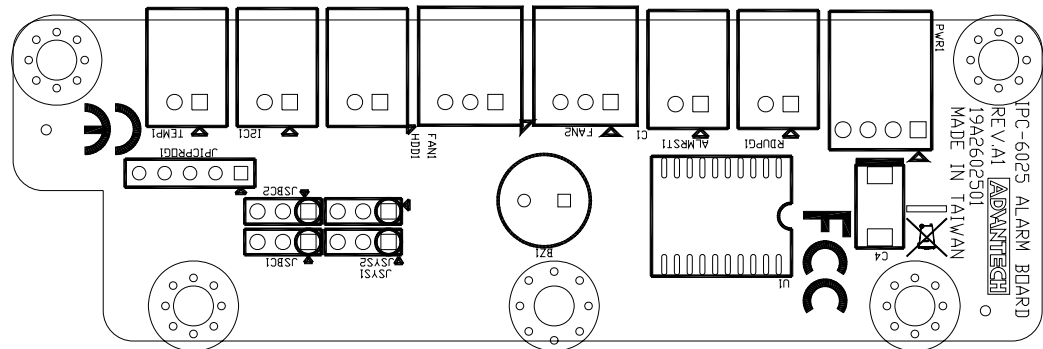


Figure 4.1 Alarm board layout

## 4.2 Alarm Board Specifications

**Input Power:** +5V, +12V

**Input Signals:**

- 2 fan connectors
- One 'thermal sensor' connector
- One 'power good' (redundant power) input
- One 'alarm reset' input
- One 'Hard Disk LED' connector (connect from the CPU card / motherboard)
- One I2C connector

**Output Signals:**

- Four LEDs
- One 'buzzer' output



## 4.2.1 Connectors, Jumper and Pin Definition

**Table 4.1: PWR1, Auxiliary external power connector, standard mini 4-Pin power connector**

Pin 1	+12 V	Pin 3	GND
Pin 2	GND	Pin 4	+5 V

**Table 4.2: RDUPG1, Redundant Power Connector**

Pin 1	GND	Pin 2	PWR FAIL
-------	-----	-------	----------

**Table 4.3: ALMRST, Alarm Reset Connector**

Pin 1	GND	Pin 2	ALARM_RST
-------	-----	-------	-----------

**Table 4.4: FAN1, System Fan Connector**

Pin 1	GND	Pin 2	+12 V
Pin3	FAN_DEC1		

**Table 4.5: FAN2, System Fan Connector**

Pin 1	GND	Pin 2	+12 V
Pin3	FAN_DEC2		

**Table 4.6: HDD, HDD Connector**

Pin 1	NA	Pin 2	HLED_ACT
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**Table 4.7: I<sup>2</sup>C1, I<sup>2</sup>C Connector**

Pin 1	SCL	Pin 2	SDA
-------	-----	-------	-----

**Table 4.8: TEMP1, Temperature Connector**

Pin 1	GND	Pin2	TEMP_DEC (thermal sensor)
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**Table 4.9: JSYS1 & JSYS2, System Fan & System Temperature (Jumper Selection)**

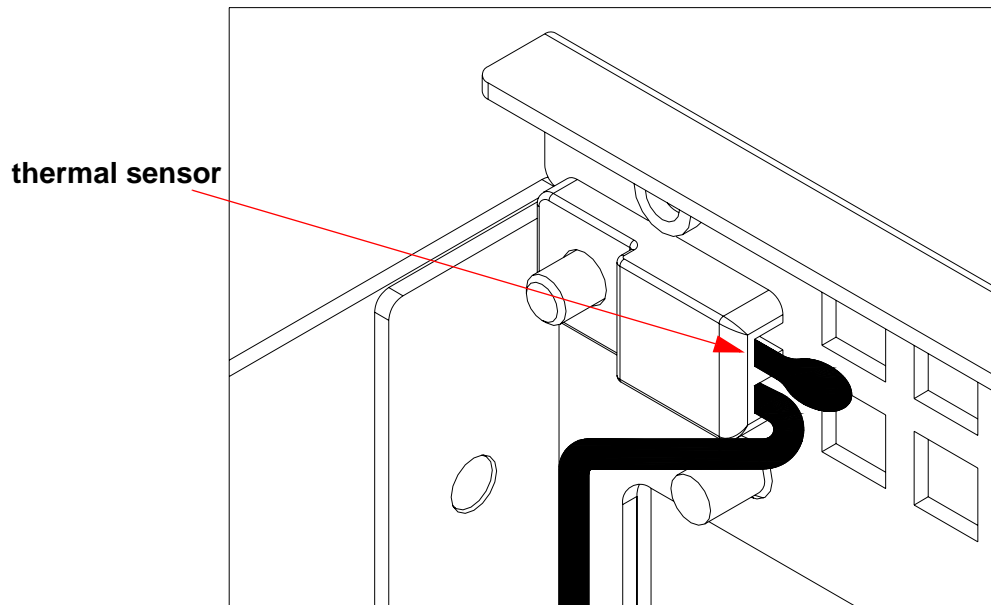
JSYS1	JSYS2	System Fan	System Temp
2-3	1-2	Disabled	1
1-2	2-3	1	1
1-2	1-2	2	1

**Table 4.10: JSBC1 & JSBC2, SBC Fan & SBC Temperature (Jumper Selection)**

JSBC1	JSBC2	CPU Fan	CPU Temp
2-3	2-3	Disabled	1
2-3	1-2	1	1
1-2	1-2	2	2

## 4.3 Thermal Sensor

The IPC-6025 is assembled with a thermal sensor located at the front plate of the chassis. (see Figure 4.2)



**Figure 4.2 Thermal sensor location**

# Appendix **A**

Exploded Diagram and  
Parts List

## A.1 Exploded Diagram and Parts List

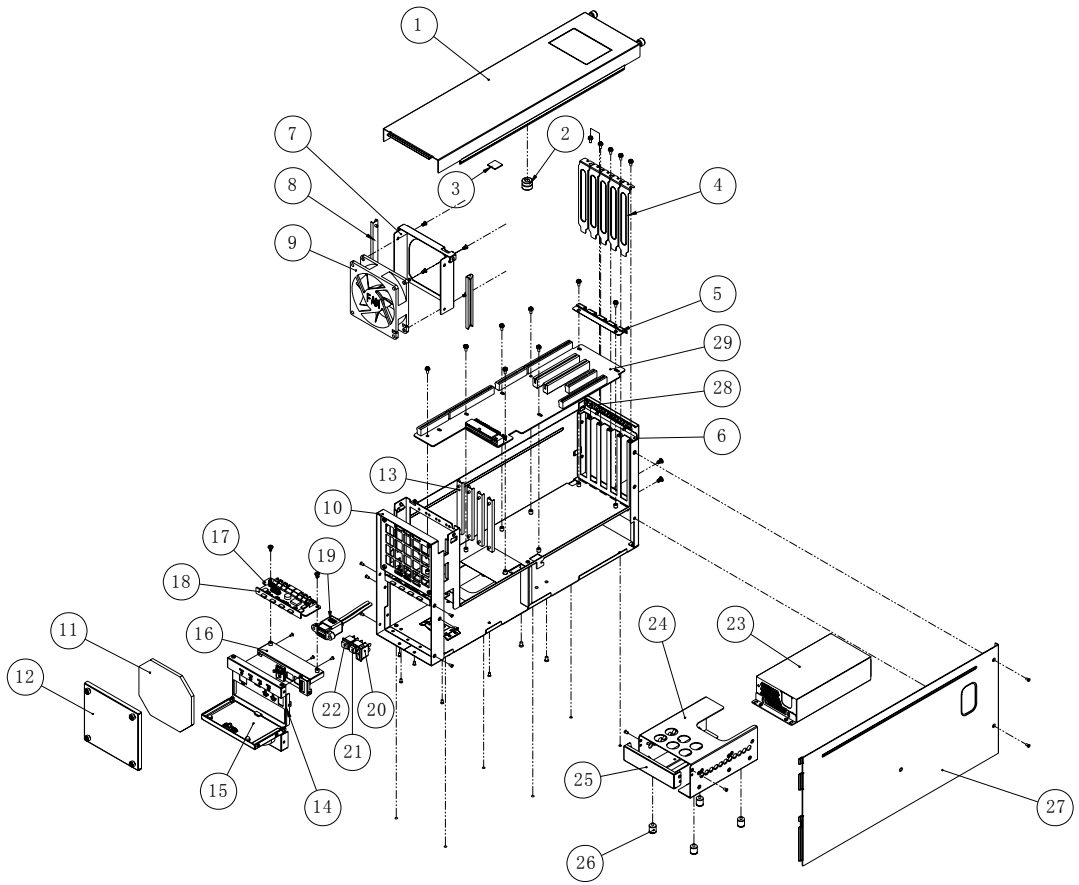


Figure A.1 Exploded diagram

Table A.1: Parts List

1	Top cover	11	Filter	21	Alarm reset switch
2	PCI card rubber	12	Filter cover	22	System reset switch
3	CPU card rubber	13	Card guide	23	Power supply
4	Adapter bracket	14	Front support bracket	24	Drive bay
5	Rear IO spring	15	Front door	25	FDD cover
6	Rear I/O bracket	16	Alarm bracket	26	Cushion rubber
7	Fan bracket	17	Alarm board	27	Side cover
8	Fan guide	18	LED lens	28	Thermal sensor
9	9cm Fan	19	USB port	29	Backplane
10	Chassis body	20	Power switch		

# Appendix **B**

## Backplane Options

## B.1 Backplane Options

IPC-6025 supports a variety of PICMG 1.3 / 1.0 backplanes. Users can contact a local sales representative for detailed specification and information.

**Table B.1: PICMG 1.3 Backplane Options**

Model Name	Slots Per Segment					
	PICMG 1.3	PCIe X16	PCIe x 8	PCIe x 4	PCI-X	PCI
PCE-5B04-20A1E	1	1	-	-	2	-
PCE-5B05-02A1E	1	1	-	1	-	2
PCE-7B05-20A1E	1	-	2	-	2	-

**Table B.2: PICMG 1.0 Backplane options**

Model Name	Slots Per Segment			
	PICMG	PCI	ISA	PCI/ISA
PCA-6105P3-5A1E	1	2	1	1

# Appendix **C**

## Quad System Setup

IPC-6025 can also work as a Quad System to meet some multi-system application in the industry, like Automatic Optical Inspection (AOI). To install IPC-6025 as a quad system, you have to install with special rack carrier which is specially designed for IPC-6025.

## C.1 Assemble Rack Carrier

In the package, there are 4 pieces of materials included. To install assemble rack carrier for IPC-6025, please take out materials and assemble these 4 pieces of materials with related screws. (Figure C.1)

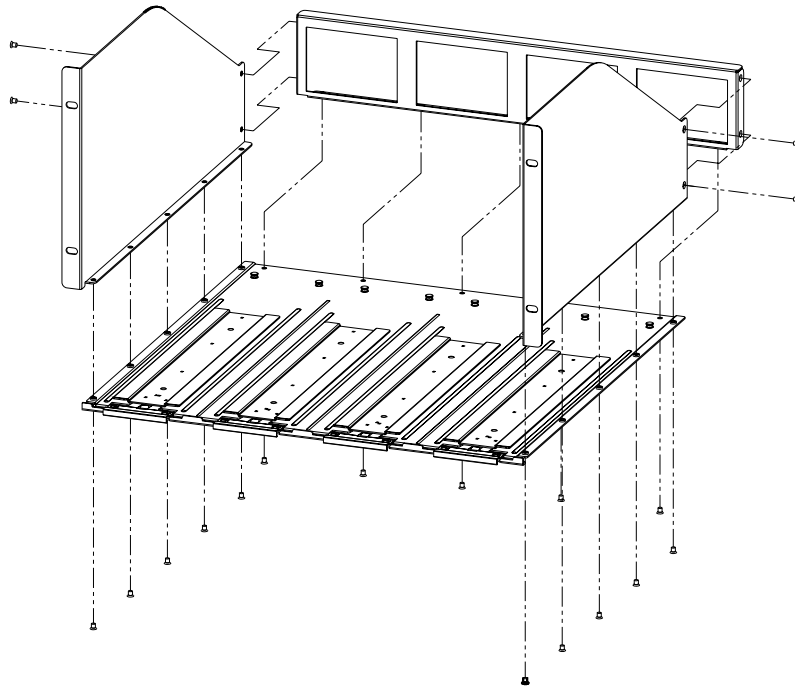


Figure C.1 Assemble Rack Carrier



## C.2 Install IPC-6025 on the Rack Carrier

After assembling the rack carrier, please follow below steps to install the IPC-6025 on the rack carrier.

1. Reverse the wallmount bracket with the wallmount hole inside. (FigureC.2)
2. Fix wallmount bracket on the bottom of chassis with screws. (Figure C.3)
3. Install IPC-6025 on one of the guide rail of rack carrier.
4. Start from the front end of guide rail and pull IPC-6025 along the guide rail.
5. Push IPC-6025 into the end until it is installed firmly. (Figure C.4)

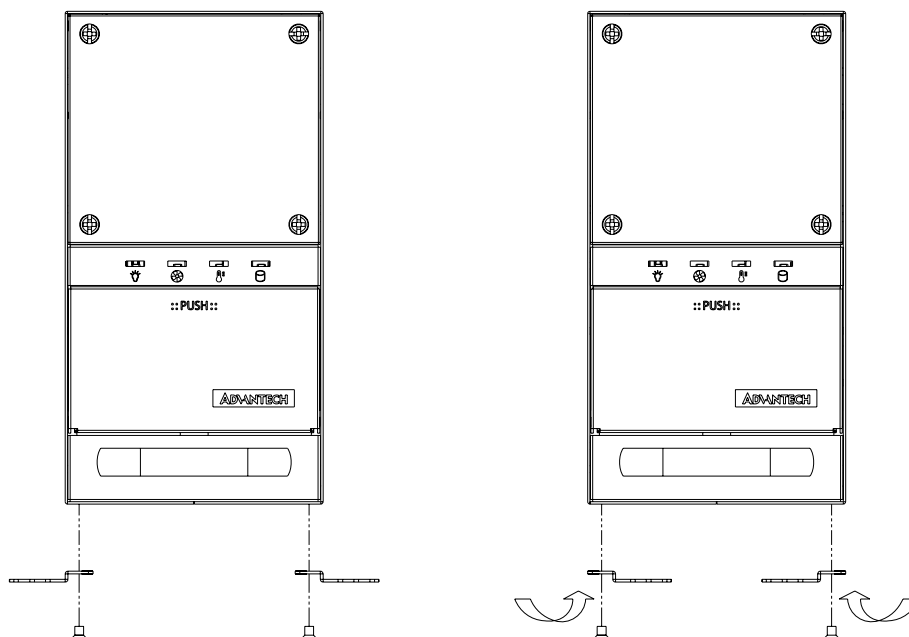
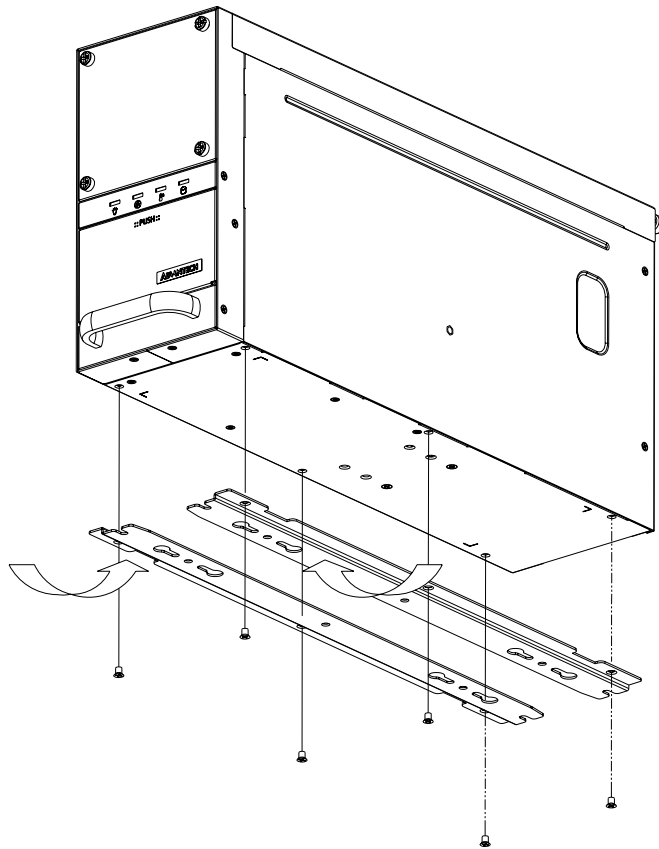
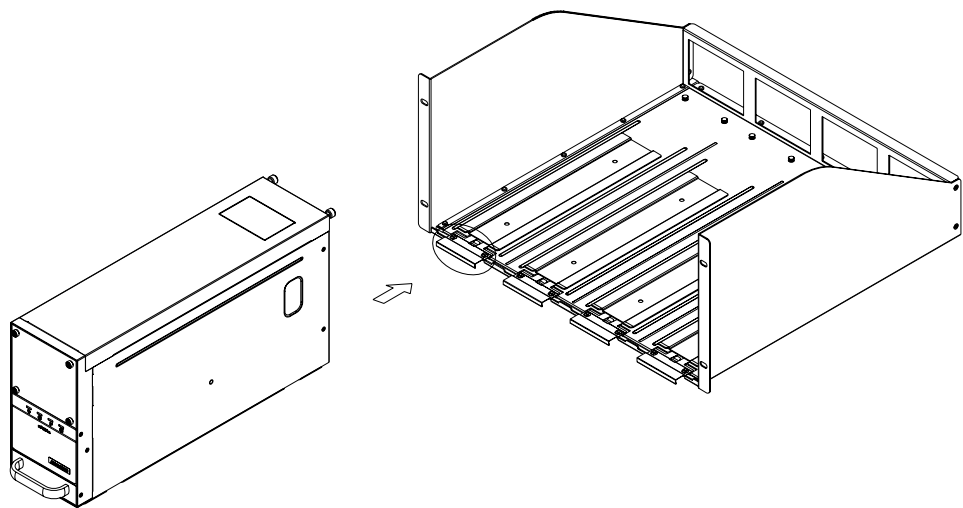


Figure C.2 Reverse wall-mount bracket



**Figure C.3 Fix wall-mount bracket on the bottom of IPC-6025**



**Figure C.4 Install IPC-6025 on the Rack Carrier**

### C.3 Uninstall IPC-6025 from Rack Carrier

To uninstall the IPC-6025 from the rack carrier, please follow below steps.

1. Push the spring on the rack carrier.(Figure C.5)
2. And then draw out the IPC-6025 along guide rail from the rack carrier.

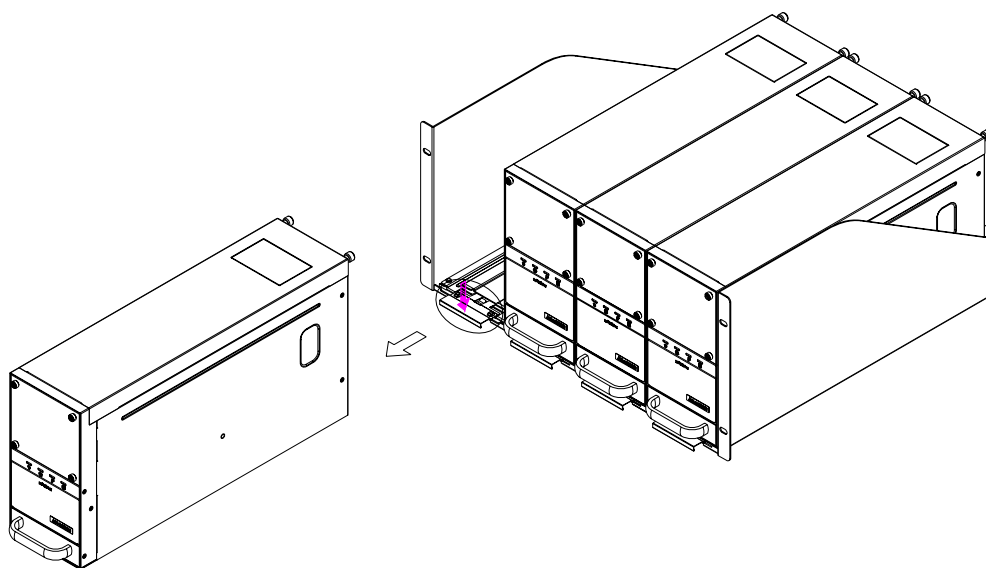


Figure C.5 Uninstall IPC-6025 from the Rack Carrier

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