



# USER'S Manual

## **CP-150**

**6U-6-slot backplane  
portable enclosure for  
CompactPCI™**

*Advantech CompactPCI™  
Modular Industrial Computer*

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**CE Notification**

The CP-150, developed by Advantech Co., Ltd., has passed the CE test for environment specifications when shielded cables are used for external wiring. We recommend the use of shielded cables.

**Printed in Taiwan****1<sup>st</sup> Edition  
Jan. 2005**

## **Product warranty**

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for one year 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 on-screen 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 merchandise 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.

## **Important Safety Information**

### **SAFETY INSTRUCTIONS**

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.
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. Do not leave this equipment in an environment unconditioned, storage temperature above 40°C, it may damage the equipment.
8. The openings on the enclosure are for air convection hence protects the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source when connect the equipment to the power outlet.
10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings; this could cause fire or electrical shock.
14. Never open the equipment. For safety reason, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by 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 has not work well or you can not get it work according to user's manual.
  - e. The equipment has dropped and damaged.
  - f. If the equipment has obvious sign of breakage

16. Never open the equipment. For safety reason, qualified service personnel should only open the equipment.
17. 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.

## Packing List

Before installation, ensure that the following materials have been received:

- One CP-150 CompactPCI™ enclosure with backplane
- One box of accessories
- One warranty certificate
- One CD-ROM for user manual (PDF file)

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

## Technical Support and Sales Assistance

If you have any technical questions about the CP-150 or any other Advantech products, please visit our support website at:

- <http://www.advantech.com.tw/support>

For more information about Advantech's products and sales information, please visit:

- <http://www.advantech.com>.

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# 1

## General Information

## 1.1 Introduction

CP-150 is a robust, portable enclosure with 15" touch LCD monitor. With a field-tested rugged, high impact design, the CP-150 provides many flexible and powerful features. Compliant with CompactPCI specification, this all-in-one model is the most pragmatic solution for any mobile application. The CP-150 is the most compact CompactPCI computer on the market accommodating a 15" super TFT LCD screen for a truly satisfying viewing experience.

The CP-150 is equipped with a 6-slot 6U CompactPCI H.110 CT-bus backplane including one system slot and five peripheral slots. With 64-bit/66 MHz PCI bus performance, the CP-150 can achieve bottleneck-free data transfers. The 15" high brightness touch TFT LCD monitor with resolution up to 1064x768 and 108-key keyboard with touch pad provide a user-friendly operating environment. One 113 CFM fan inlet in the bottom and one 41CFM fan outlet at the rear side provide sufficient cooling. The CP-150 can accommodate up to three devices, including one slim-type FDD, one slim-type CD-ROM and one 3.5" HDD.

With optional carry bag or air cargo bag, the CP-150 is suitable for high performance computer bus analysis, telecommunication testing, and multi-protocol network analysis equipments. The Advantech MIC-3358 and MIC-3369 are recommended CPU boards to provide Intel Pentium 4 and Pentium-M performance. With simplified system cabling and high system reliability, the CP-150 is ideal for applications which need larger storage capacity and industrial grade reliability.

There is one kind of CP-150:

- **CP-150:** CP-150 portable enclosure, w/ 6-slot CompactPCI® 6U backplane (MIC-3800) supporting CT bus application.

## 1.2 Features

- Portable enclosure for 6U CompactPCI® boards
- 6-slot 6U CompactPCI® backplane
- 15" Touch LCD monitor built-in
- Supports computer telephony specification (PICMG 2.5)
- Built-in slim CD-ROM, FDD and Keyboard
- Supports one 3.5" HDD
- Supports 400 W ATX power supply
- High impact resistant plastic and high strength aluminum plate chassis
- Space for peripheral kit in any application
- Easy access for maintenance
- Vibration and shock resistant
- Build-in Mechanical type keyboard in 108 keys, with touch pad point device.

## 1.3 Specifications

### 1.3.1 General

- **Construction:** Aluminum frame and galvanized sheet steel
- 6-slot space (24 TE), including one system slot and five peripheral slots
- "Hot swappable" platform complies with PICMG 2.1 R 2.0 Hot Swap Specification

- **Dimensions** (W x H x D, mounting flanges not included):

400 x 291 x 223 mm (15.7" x 11.5" x 8.8")

- **Weight:** 11.2 kg (24.7 lb)
- **Operating temperature:** 0 ~ 45° C
- **Storage temperature:** -20° C ~ 60° C
- **Relative humidity:** 20 ~ 90% @ 40° C, non-condensing
- **Operating altitude:** 0 ~ 3,048 meters (0 ~ 10,000 feet)
- **Storage/transit altitude:** 0 ~ 12,190 meters (40,000 feet)
- **Shock:** 10 G (operating); 30 G (storage/transit)
- **Random vibration:** 1.0 Grms (operating)

### 1.3.2 Fans

- **Air flow:** One 113-CFM fan (inlet) and one 41-CFM fan (outlet)
- **Rated fan speed:** 3700 rpm (inlet), 3000 rpm (outlet)
- **Life expectancy:** 70,000 hours @ 40° C (inlet), 50,000 hours @ 25° C (outlet)

### 1.3.3 Power Supply

- **Input:** 100~240 V AC @ 50~60 Hz with auto switching capability -- PFC (Power

Factor Correction).

- **Output** (per module): 400W, +3.3V, and +5V total output power shall not exceed 180W
- **Maximum load:** +3.3V @ 28A, +5V @ 30A, +12V @ 18A, -5V @ 0.5A, -12V @ 0.8A, +5Vsb @ 2.0 A
- **Minimum load:** +3.3 V @ 0.3 A, + 5V @ 0.3 A, +12 V @ 0 A, -5V @ 0A, -12V @ 0A, +5 Vsb @ 0A
- **MTBF:** 100,000 hours @ 25° C
- **Safety:** UL/CE

## 1.4 Dimensions

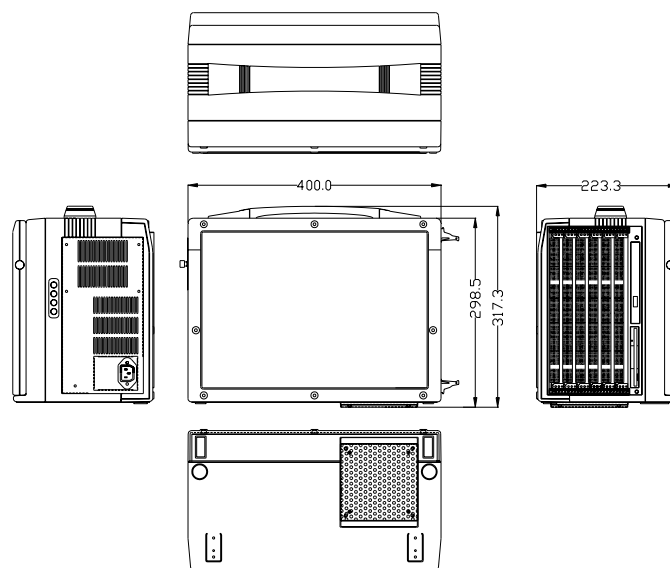


Figure 1-1: CP-150 dimensions.



Figure 1-2: Appearance of CP-150

# 2

## Installation

## 2.1 Initial Inspection

We have carefully inspected the CP-150 mechanically and electrically before shipping. It should be free of marks and scratches and in perfect working order upon receipt. As you unpack the CP-150, check it for signs of shipping damage (damaged box, scratches, dents, etc.). If it is damaged or fails to meet specifications, notify our service department or your local 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.

**Warning!** We strongly recommend that only qualified, experienced personnel install or remove components. They must exercise extreme caution when doing so.

## 2.2 The CP-150 Illustration

The CP-150 is designed to be installed and maintained easily.

Figure 2-1 and Figure 2-2 illustrate important components on the left and right side of the enclosure.



Figure 2-1: Left view of CP-150



Figure 2-2: Right view of Cp-150

## 2.3 Computer Operation

### 2.3.1 Keyboard and Touch Pad

#### **How to release**

There are two release buttons located on the top-left and top-right of the keyboard. When the buttons are pressed, the keyboard is disengaged from the portable enclosure and may be released. There are also two mounting legs located at the bottom of the keyboard that are attached to the portable enclosure for stability and which allow the keyboard to be pulled downward. Pull the keyboard down to separate it from the enclosure.

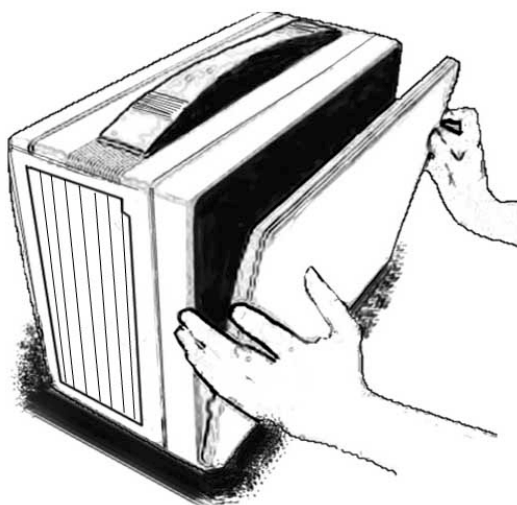


Figure 2-3



### **How to pack away the keyboard**

Follow the same procedure to pack the keyboard back into the portable enclosure in a reverse manner. Note that the keyboard cable should be put back into its proper lodging location. Make sure the two locking mechanisms are properly secured after it is put back.

### **What to look for**

The keyboard cable is located on the top portion of the keyboard. It is a coil cable with a RJ-45 connector at one end. The jack should now be removed and attached to the portable enclosure (at the lower right hand corner) to be operational.

### **Keyboard usage**

The keyboard is the principal medium for inputting data into the system. The keyboard of the ACP 661 series portables contains both a keyboard and a touch pad. The keyboard is a 108-key Windows-ready keyboard with power function and shortcut keys.

### **Keyboard position**

You may want to adjust the keyboard angle by tilting the feet of the keyboard located at the bottom

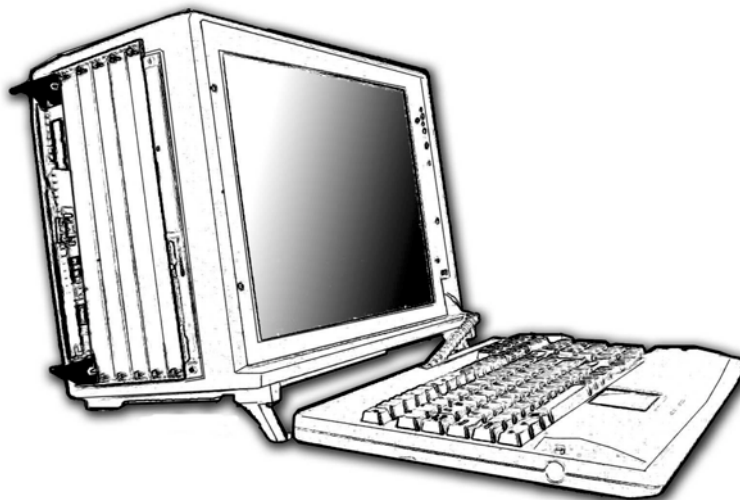


Figure 2-4

### **TOUCHPAD operation**

You can use the TOUCHPAD to move the cursor in the GUI environment by placing your finger on the surface and moving your finger as you would move the cursor. The two buttons located below the touch pad function like

the left/right buttons on a mouse. You may also tap on the touch pad to indicate a left click.

### 2.3.2 Side Panel

Depending on the system board and your add-on cards, you may also have other ports such as the Ethernet and Audio ports. You may replace the cover even though the other slots aren't being used.

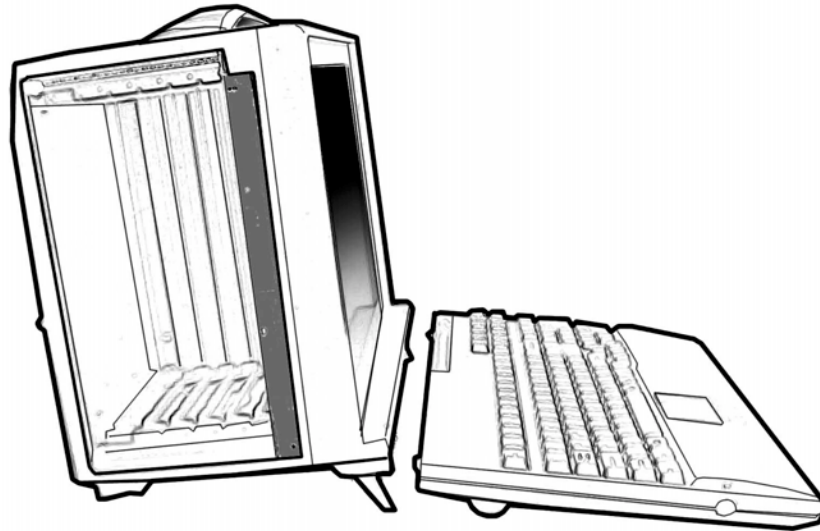


Figure 2-5

### 2.3.3 Power Switch and Plug

The power receptacle is located on the right side of the machine near the bottom. The three-prong power plug is supplied. Depending on your Power supply type, you may find the main power switch located next to the power receptacle. The switch positions are: 0=Off, 1=On. To power up the system, you are still required to turn on the power from the front of the portable, using the button labeled Power. If your power supply does not have a main switch, you control the power using the switch at the front of the portable.

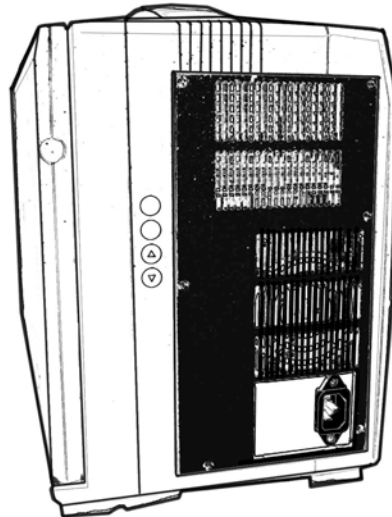


Figure 2-6

#### 2.3.4 Power Supply

The CP-150 comes with a PS/2 power supply with full-range auto-sensing Active PFC, and 400W output.

#### 2.3.5 Hooking up external monitor

The external CRT monitor / Projector can be hooked up via the side panel VGA (15pin) port while the system is off. The cable from the CRT/Projector should be inserted into this port. If this cable is connected, the display should come on whenever the machine is turned on. The internal display monitor uses a standard viewing resolution. The default setting results in an image display on both the portable's LCD and CRT. To change the output mode (from simultaneous LCD/CRT), please refer to your VGA setting.

### 2.3.6 Additional Bottom Cooling Fan

An additional cooling fan can be found on the bottom of the case. This bottom fan is used to create airflow inside the slots. This increases the efficiency of the controller and the other cards.

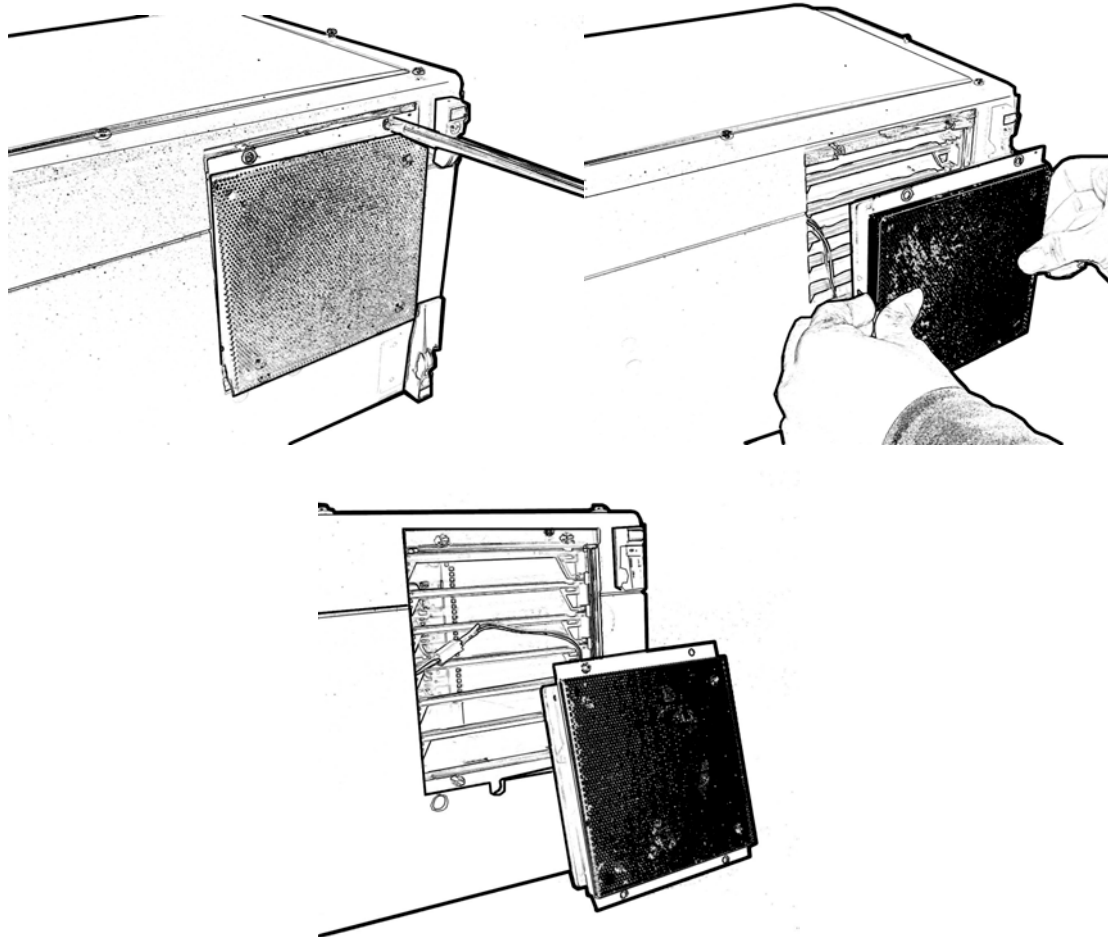


Figure 2-7

### 2.3.7 Slim CD-ROM

CD-ROM drives are important because many of the applications available today are stored CD due to their larger storage capacity. The CD is a read-only medium (CDR and CDRW are media that are for user creation of data on CD) and is pre-loaded with data. You may open the CD-ROM drive door by pushing the eject button located on the door of the drive. When the door opens, you can pull the tray out completely and clip in the CD onto the tray face up; then push the door in completely. The light on the CD door will light up while the CD-ROM is being accessed.

### 2.3.8 Slim FDD Drive

A floppy disk drive is essential as the floppy disk is still an important medium for transferring data between systems. Floppy disks are available in all

computer stores and are usually ready for use if pre-formatted. You may insert the disk into the drive with the disk face up. During access to the floppy, the lights on the floppy disk drive will light up, indicating that the disk is currently being read from or written to. At this time you should not remove your floppy disk from the drive as doing so may cause damage resulting in data loss. Remove your floppy disk only when the drive light is off.

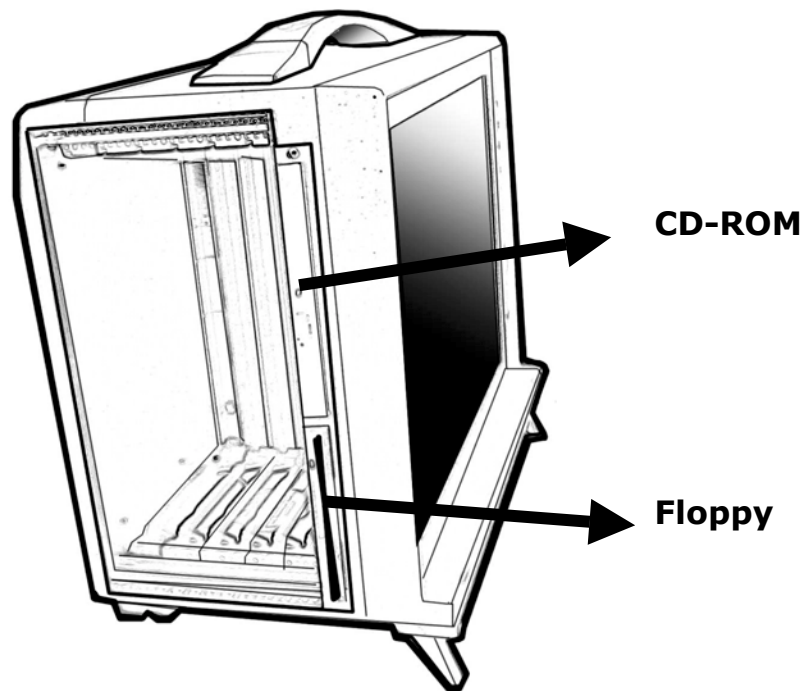


Figure 2-8

### 2.3.9 LCD Display

The LCD display has a self-locking mechanism. Pressing the lower right part of the LCD display toward the main chassis will release the display. You may adjust your portable to a comfortable viewing position by tilting the LCD display. To relock the LCD display, simply push the display back into its original position.

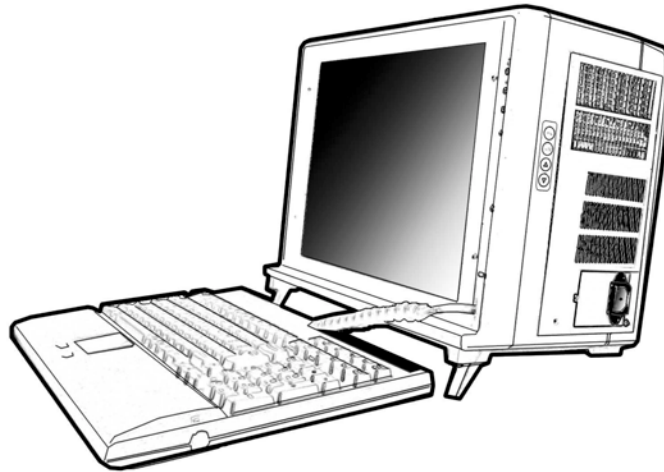


Figure 2-9

### 2.3.10 Removable Cooling Fan

The cooling fan on the right side can be easily removed. You don't need to take off the back cover to replace the fan. Please see Chapter 5 for details.

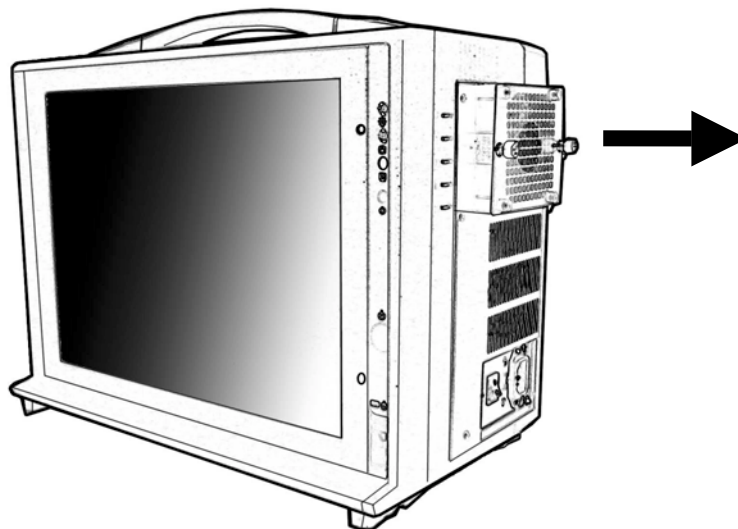


Figure 2-10

## 2.4 Installation Procedures

### 2.4.1 Card Installation and Removal

The CompactPCI™ connectors are firm and rigid, and you need to handle with care when plugging and unplugging. Improper installation of a card can easily damage the backplane of the chassis.

The system card can be installed only in the system slot. Do not insert the system card into any other slot, or insert a peripheral card into the system slot. The system

slot is marked by a triangle around the slot number (1). Please refer to the backplane user's manual.

The insert/eject handles on CompactPCI™ cards help users to install and remove the cards easily and safely. Follow the procedures below to install a card into a chassis:

### **To install a card**

1. Hold the card vertically. Be sure that the card is oriented correctly.

The components of the card should be pointing to the right side.

2. Be sure that the handles of the card are not latched. Release the handles if they are latched. Handles from different vendors may have different latch designs.

**Caution: Keep your fingers away from the latch hinges to prevent your fingers from getting pinched.**

3. Insert the card into the chassis by sliding the edges of the card into the card guides.

4. Push the card into the slot gently by sliding the card along the card guide until the handles meet the rectangular holes of the cross rails. 1 2

**Note: If the card is correctly positioned and has been slid all the way into the chassis, the handles should match the rectangular holes. If not, remove the card from the card guide and repeat step 3 again. Do not try to install a card by forcing it into the chassis.**

5. Flip the handles out, and then push the card into position. The handles will click back into a horizontal position when the card is secure in the enclosure.

6. Secure the card by locking the handles into place.

### **To remove a card**

1. Unscrew the screws on the front panel of the card. Release the locking latches on the handles.

2. Push the red buttons on the up and down handles to release the card from the backplane.

3. Slide the card out.

#### 2.4.2 Before Operating the System

Before operating your system, check your power supply source.

Adjust the switch on the power supply to the correct voltage.

### 2.4.3 Installing a 3.5" Hard Disk Drive

Follow this procedure to install 3.5" hard disk drives in the CP-150:

1. Loosen the screws and remove the mobile rack.
2. Mount the HDD on the mobile rack, and fasten with screws.
3. Slide the HDD with mobile rack back into the tray and screw them.
4. Power on and check the HDD can be found when the SCSI is initialized.

### 2.4.4 Remove the Slot Unit

#### **Open back cover**

Unscrew the screws on the back cover. The screws are well-designed so they can't easily be removed from the back cover.

#### **Prepare to remove the slot unit**

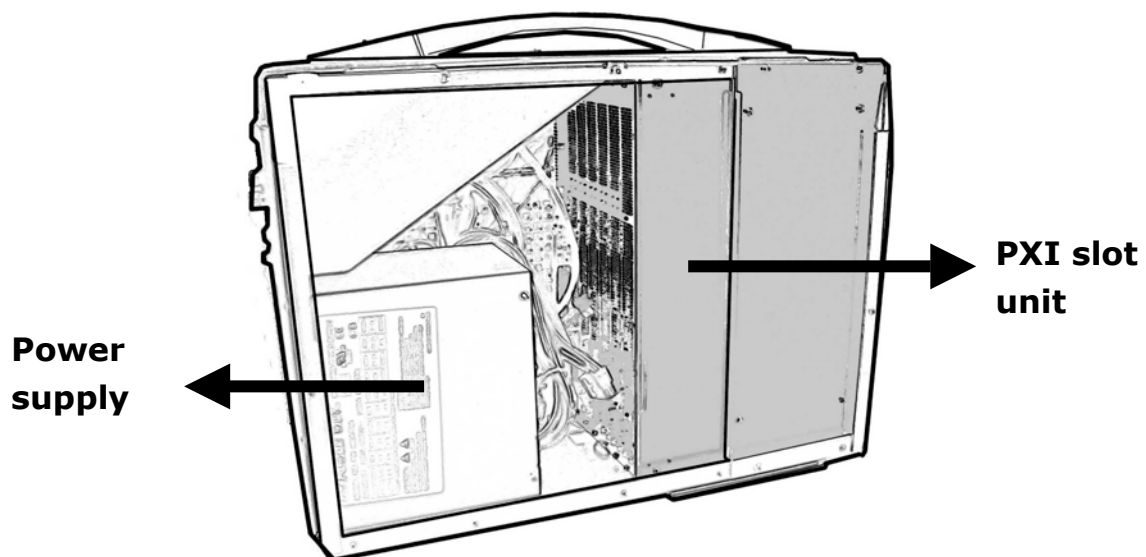
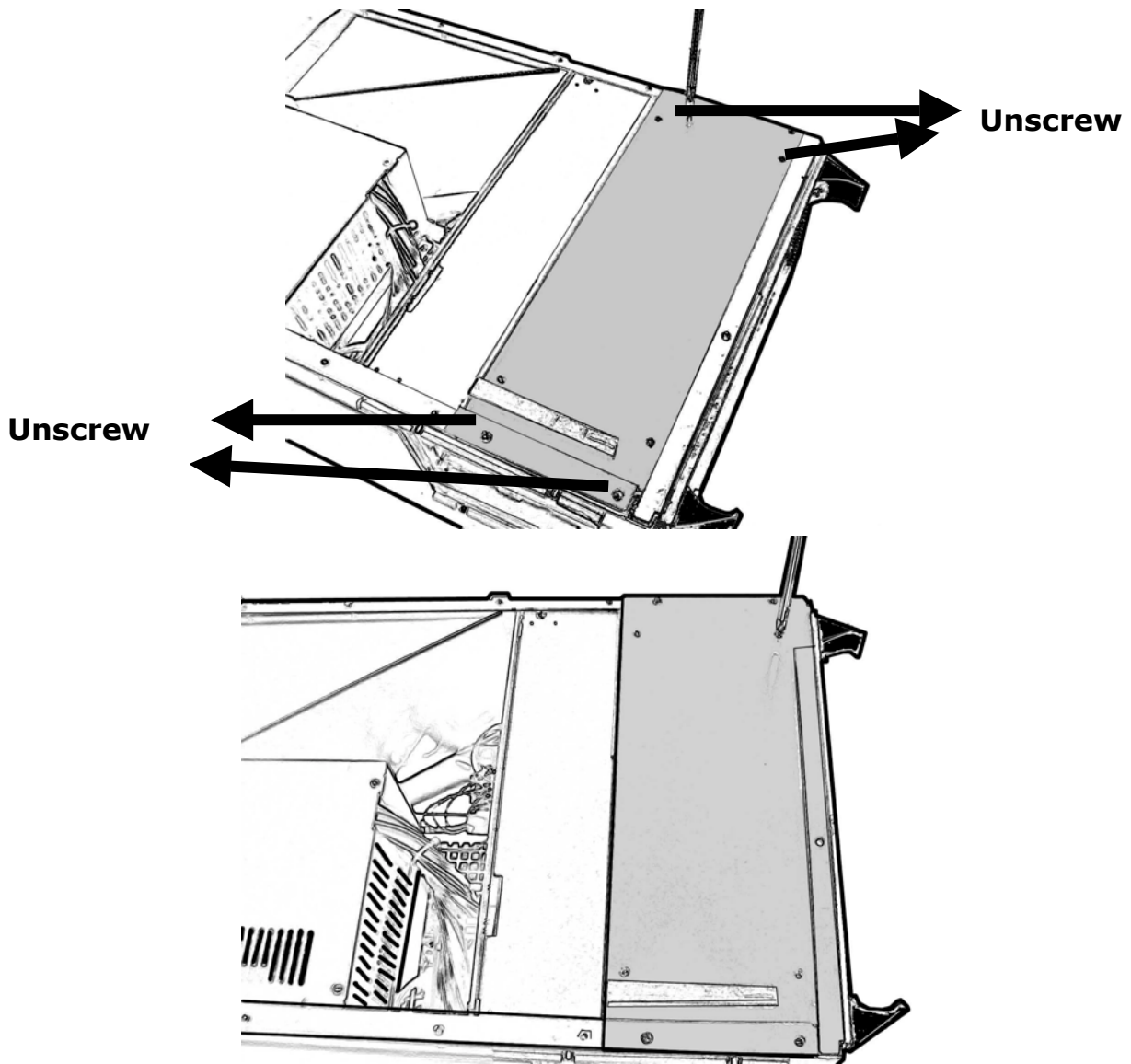


Figure 2-11



**Unscrew the upper cover of slot unit**



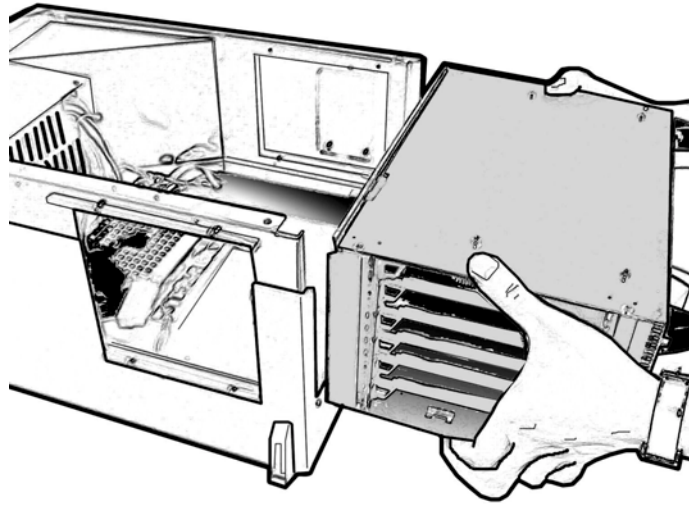
**Pull the slot unit away**

Figure 2-12

## 2.4.5 Remove Drive Bay

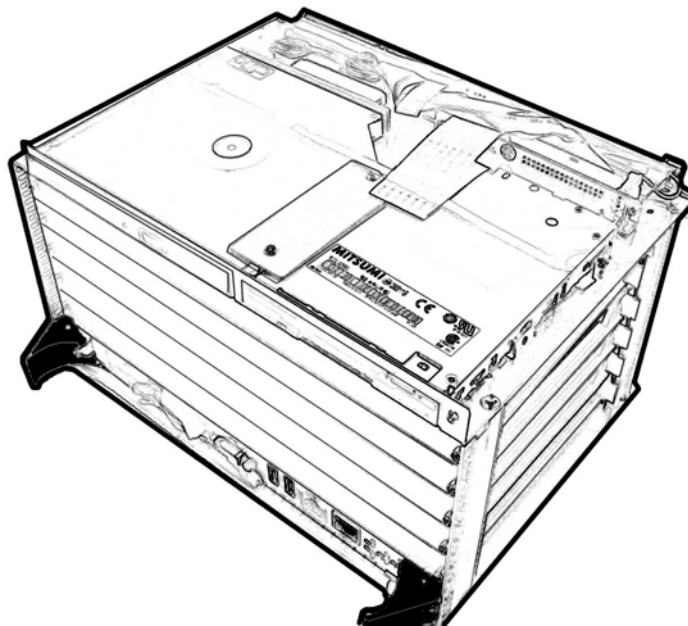
**The whole 6U PXI slot unit**

Figure 2-13

**Unscrew the fixed cover**

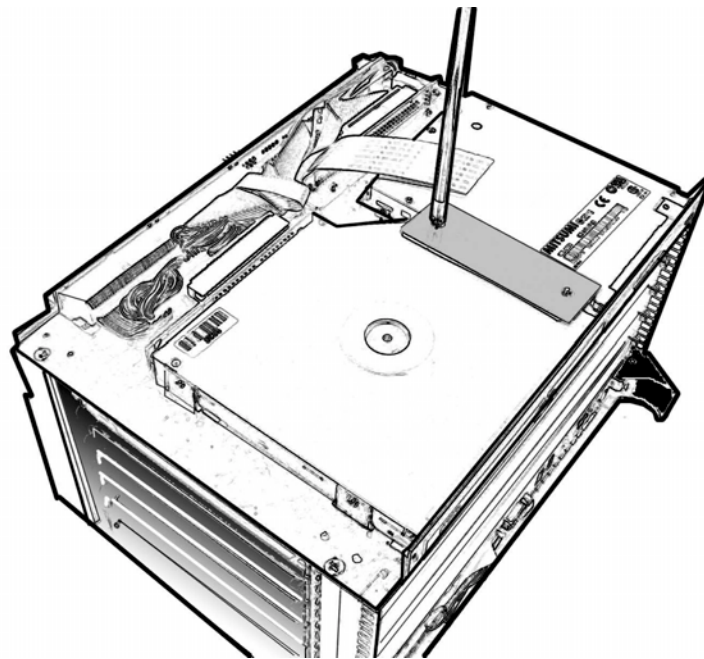


Figure 2-14

**Unscrew the CD-ROM**

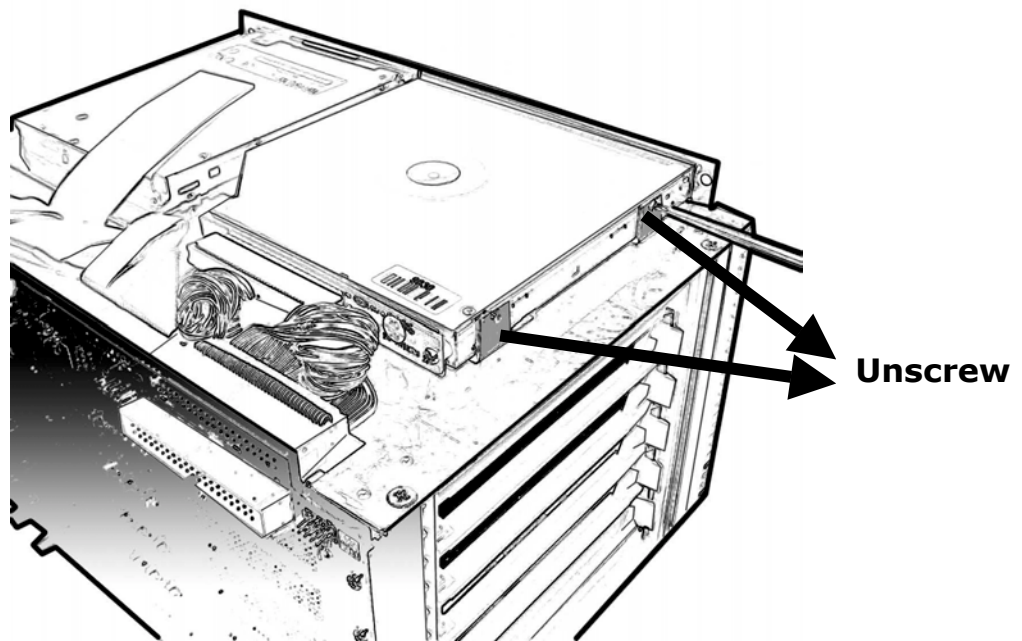


Figure 2-15

**Remove the CD-ROM**

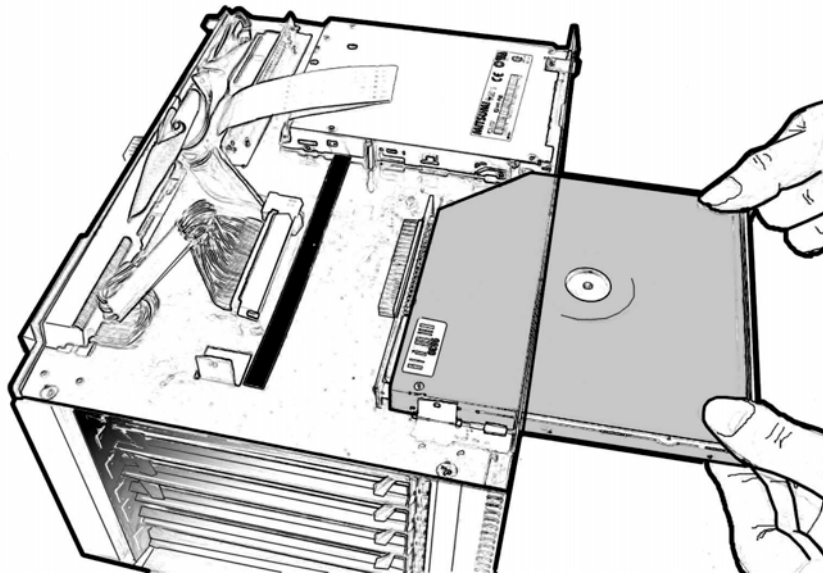


Figure 2-16

**Unscrew the FDD**

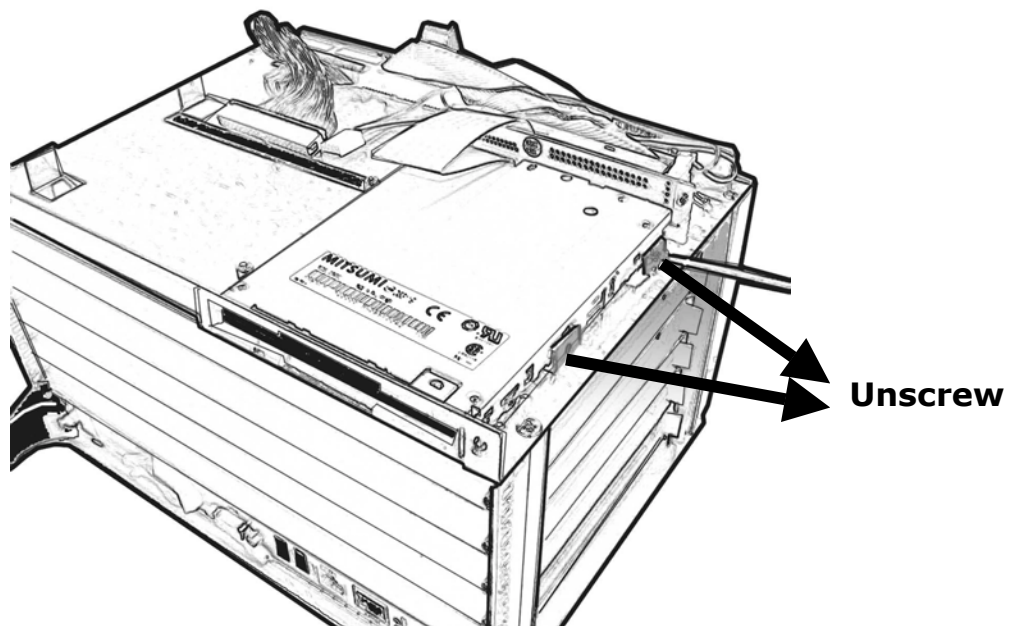


Figure 2-17

**Remove the FDD**

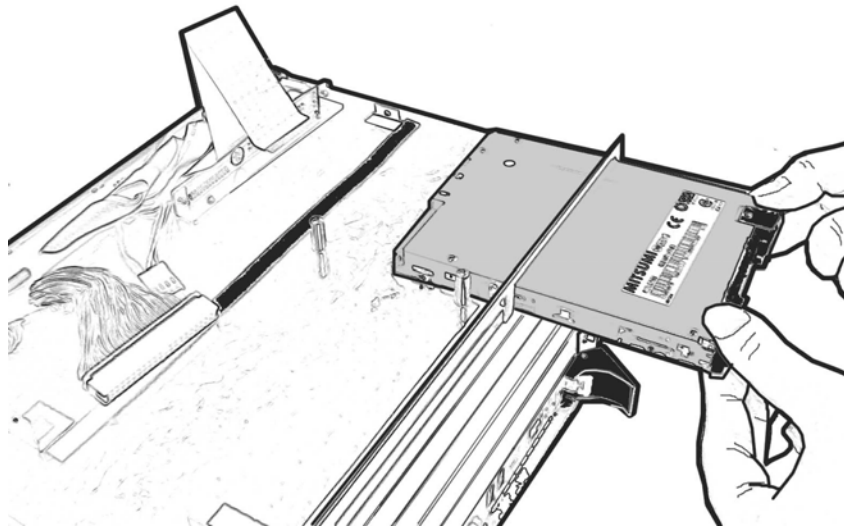


Figure 2-18

2.4.6 Remove the side-cooling fan

**Unscrew the cooling fan**

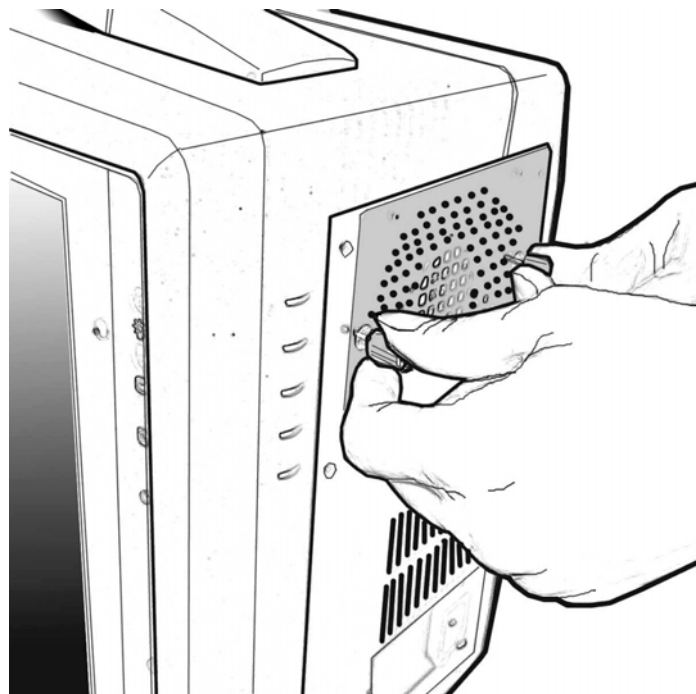


Figure 2-19

**Remove the cooling fan**

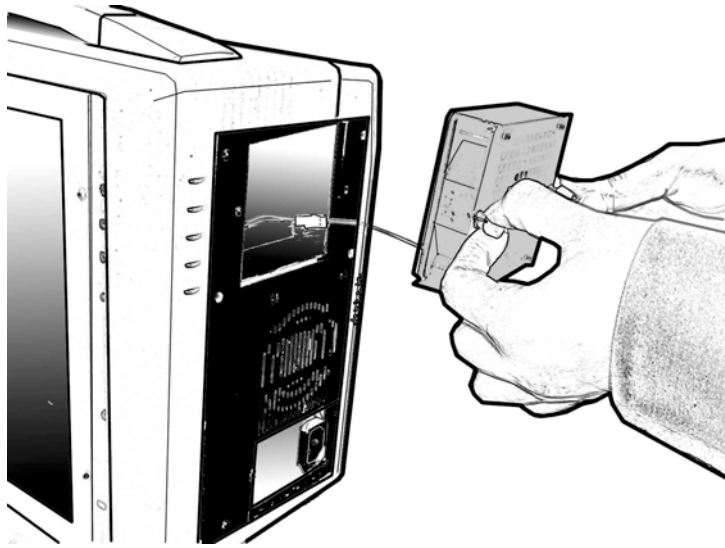


Figure 2-20

2.4.7 Remove the Power Supply

**Unscrew & remove the side panel**

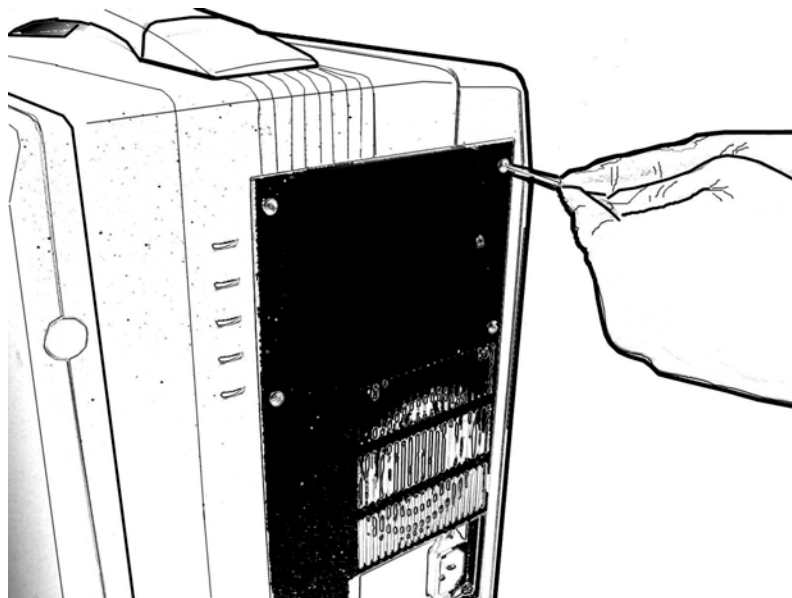


Figure 2-21

**Remove the power supply with cover**

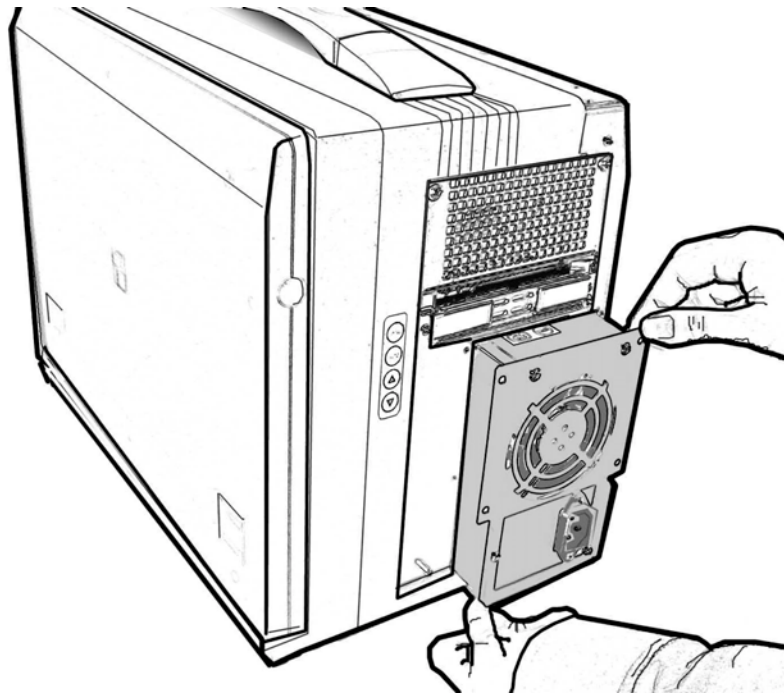


Figure 2-22

# 3

## Backplane



### 3.1 General Information

The backplane designed for the CP-150 is the MIC-3800. MIC-3800 has an H.110 CT bus and six CompactPCI™ slots. One slot is assigned to the CPU board and the other slots are for five peripheral boards. The CP-150 supports onboard IDE and floppy connectors, providing a cost effective solution. In order to provide users with a flexible system configuration, the CP-150 includes one standard ATX power connector that fits one ATX power supply. The CP-150 complies with PICMG 2.1 Hot-Swap Specification, providing full hot-swapping capability. Users can build a hot-swap system using hot-swap plug-in boards and software.

### 3.2 Features

- Six CompactPCI™ slots (one system slot and five peripheral slots)
- 64-bit PCI bus compliant
- Complies with PICMG 2.1 Hot-Swap Specification

### 3.3 Specifications

- Six CompactPCI™ slots (one system slot and five peripheral slots)
- Bus width: 64-bit
- 8-layer PCB, 3.0 mm thick
- Power connector: One ATX power connector for connecting a standard ATX power supply
- Complies with CompactPCI™ Specification PICMG 2.0, R.3.0
- Complies with CompactPCI™ Hot Swap Specification PICMG 2.1, R2.0.
- Complies with CompactPCI™ Computer Telephony PICMG2.5, R1.0
- Logic ground and Chassis ground share an earthed conductor
- Dimensions: 144 x 262 mm
- Operating temperature: -5 ° C ~ 80° C

### 3.4 Slot Assignments

The CompactPCI™ specification defines slot numbering separation for physical and logical slots. Each slot has a physical number and a logical number (refer to the CompactPCI™ specification version 2.0 R3.0 for further information on slot assignments). The physical numbers are printed on the backplane, enclosed in circles or triangles. Slot 1 of the MIC-3800 is the system slot. It is marked by a triangle, and can only be used by a CPU board. The other slots are peripheral slots. The logical number of each slot is defined according to the IDSEL signal and the associated address used to select the slot. Table 3-1 shows the system-peripheral slots relationships on the backplane. The system slot has a logical number of 1, and

the peripheral slots have logical numbers 2~5. The connectors in logical slot 1 are designated as 1-P1, 1-P2, and 1-P3 from the bottom up.

Nomenclature for connectors in the other slots is similar, such as 2-P1 and 2-P2. Connector P1 on the system slot is a keyed connector providing a 32-bit CompactPCI™ bus between the system slot and the peripheral slot. Connector P2 on the system slot is an un-keyed connector providing a 64-bit CompactPCI™ bus between the system slot and the peripheral slots. Connector P3 on the system slot is open for user definition.

Please check appendix A for the pin assignment for all the connectors on the backplane.

Table 3-1 : MIC-3800 System to peripheral slot signal assignment.

<b>System Slot (Logical Slot 1)</b>		<b>Peripheral Slot (Logical Slot 2)</b>	
CLK0	P1:D6	CLK	P1:D6
AD31	P1:E6	IDSEL	P1:B9
REQ0#	P1:A6	REQ#	P1:A6
GNT0#	P1:E5	GNT#	P1:E5
<b>System Slot (Logical Slot 1)</b>		<b>Peripheral Slot (Logical Slot 3)</b>	
CLK1	P2:A1	CLK	P1:D6
AD30	P1:A7	IDSEL	P1:B9
REQ1#	P2:C1	REQ#	P1:A6
GNT1#	P2:D1	GNT#	P1:E5
<b>System Slot (Logical Slot 1)</b>		<b>Peripheral Slot (Logical Slot 4)</b>	
CLK2	P2:A2	CLK	P1:D6
AD29	P1:B7	IDSEL	P1:B9
REQ2#	P2:E2	REQ#	P1:A6
GNT2#	P2:D2	GNT#	P1:E5
<b>System Slot (Logical Slot 1)</b>		<b>Peripheral Slot (Logical Slot 5)</b>	
CLK3	P2:B2	CLK	P1:D6
AD28	P1:C7	IDSEL	P1:B9
REQ3#	P2:E2	REQ#	P1:A6
GNT3#	P2:C3	GNT#	P1:E5
<b>System Slot (Logical Slot 1)</b>		<b>Peripheral Slot (Logical Slot 6)</b>	
CLK4	P2:A3	CLK	P1:D6
AD27	P1:E7	IDSEL	P1:B9
REQ4#	P2:D3	REQ#	P1:A6
GNT4#	P2:E3	GNT#	P1:E5

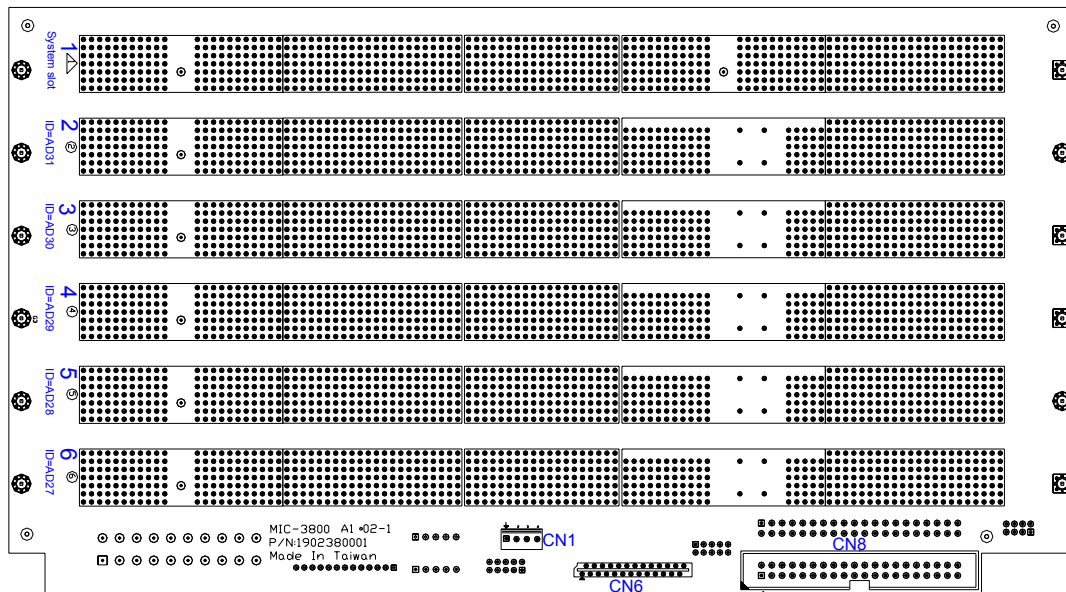


Figure 3-1: MIC-3800 Backplane slot numbering

### 3.5 Connector and Jumper Locations

The backplane provides connectors and jumpers for users to configure for specific application. Table 3-2 gives a brief description of each connector on the backplane, and Figure 3-3 illustrates the connector locations on the backplane.

Table 3-2: Backplane connector and jumper description

Function	MIC-3800
ATX power connector 1	ATX1
FDD Interface connector	CN6
USB Interface connector	CN7
IDE Interface connector	CN8,CN12
MOUSE Interface connector	CN9
VGA Interface connector	CN10
KEYBOARD Interface connector	CN11
COM2 Interface connector	CN13
64-/32-bit selection jumper (Default : Short, 64-bit)	JP1 ~ JP6
66/33 MHz selection jumper (Default : Short, 33 MHz)	JP9 ~ JP10

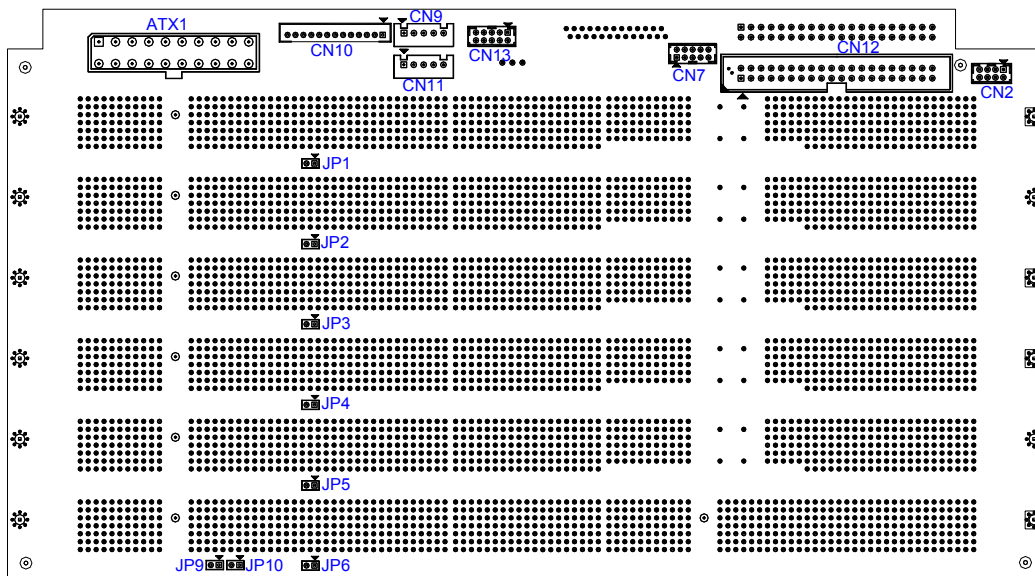


Figure 3-2: The connector and jumper locations on the rear side. (MIC-3800)

### 3.5.1 ATX Power Connector (ATX1)

This connector accepts one standard ATX power supply.

**Note: Do not use the ATX power supply and the plug-in power module at the same time.**

### 3.5.2 Power Switch

This connector provides power control of the ATX power supply or the plug-in power module. If the CompactPCI™ chassis provides a 2-pin power switch cord, connect this cord to the JP1 connector to turn the power on or off by the power switch. Or, you can directly bypass this connector by using a jumper and 2-pin connector to control the power through the ATX power supply cord.

### 3.5.3 Fan Module Connector

The FAN connectors provide +12 V power for fan operation and relay the tachometer output from the fans.



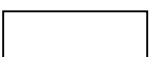
# Appendix A

## Pin Assignments

## A.1 MIC-3800 System Slot P1 Connector

Table A-1: MIC-3800 system slot P1 connector

Pin	Z	A	B	C	D	E	F
25	GND	+5V	REQ64#	ENUM#	+3.3V	+5V	GND
24	GND	AD[1]	+5V	V(I/O)	AD[0]	ACK64#	GND
23	GND	+3.3V	AD[4]	AD[3]	+5V	AD[2]	GND
22	GND	AD[7]	GND	+3.3V	AD[6]	AD[5]	GND
21	GND	+3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND
19	GND	+3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	+3.3V	PAR	C/BE[1]#	GND
17	GND	+3.3V	IPMBSCl	IPMBSDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	GND	TRDY#	GND
12-14	Key Area						
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	+3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	GND	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ0#	GND	+3.3V	CLK	AD[31]	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT0#	GND
4	GND	IPMBPWR	Healthy#	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	+5V	INTD#	GND
2	GND	TCK	+5V	TMS	TDO	TDI	GND
1	GND	+5V	-12V	TRST#	+12V	+5V	GND

 = long pins
  = short pins
  = medium length pins

#: Low active

## A.2 MIC-3800 System Slot P2 Connector

Table A-2: MIC-3800 system slot P2 connector

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	NC	GND	RSV	RSV	RSV	GND
20	GND	NC	GND	RSV	GND	RSV	GND
19	GND	GND	GND	RSV	RSV	RSV	GND
18	GND	BRSVP2A18	BRSVP2B18	BRSVP2C18	BRSVP2D18	BRSVP2E18	GND
17	GND	BRSVP2A17	GND	PRST#	NC	NC	GND
16	GND	BRSVP2A16	BRSVP2B16	DEG#	GND	BRSVP2E16	GND
15	GND	BRSVP2A15	GND	FAL#	NC	NC	GND
14	GND	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND
13	GND	AD[38]	GND	V(I/O)	AD[37]	AD[36]	GND
12	GND	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND
11	GND	AD[45]	GND	V(I/O)	AD[44]	AD[43]	GND
10	GND	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND
9	GND	AD[52]	GND	V(I/O)	AD[51]	AD[50]	GND
8	GND	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND
7	GND	AD[59]	GND	V(I/O)	AD[58]	AD[57]	GND
6	GND	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND
5	GND	C/BE[5]#	GND	V(I/O)	C/BE[4]#	PAR64	GND
4	GND	V(I/O)	BRSVP2B4	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	CLK4	GND	GNT3#	REQ4#	GNT4#	GND
2	GND	CLK2	CLK3	SYSEN#	GNT2#	REQ3#	GND
1	GND	CLK1	GND	REQ1#	GNT1#	REQ2#	GND

#: Low active

Note: GA [4...0] shall be used for geographic addressing on the backplane

## A.3 MIC-3800 System Slots P3 Connector

Table A-3: MIC-3800 system slot P3 connector

Pin	Z	A	B	C	D	E	F
19	GND	N/C	N/C	N/C	N/C	N/C	GND
18	GND	N/C	N/C	N/C	N/C	N/C	GND
17	GND	N/C	N/C	N/C	N/C	N/C	GND
16	GND	N/C	N/C	N/C	N/C	N/C	GND
15	GND	N/C	N/C	N/C	N/C	N/C	GND
14	GND	N/C	N/C	N/C	N/C	N/C	GND
13	GND	HDD_D0	HDD_D2	N/C	HDD_D4	N/C	GND
12	GND	HDD_D1	HDD_D3	HDD_D12	HDD_D6	HDD_D7	GND
11	GND	HDD_D5	HDD_D9	HDD_D13	HDD_D10	HDD_D8	GND
10	GND	HDD_D15	HDD_D14	HDD_IOR#	HDD_DMREQ	HDD_D11	GND
9	GND	HDD_LED	N/C	HDD_IOW#	HDD_DA0	HDD_CS3#	GND
8	GND	HDD_DRQ	HDD_CBDET	HDD_DA0	HDD_DA1	HDD_DA2	GND
7	GND	FDD_DIR#	HDD_DMACK#	HDD_RST#	HDD_IORDY	HDD_CS1#	GND
6	GND	N/C	N/C	FDD_WGATE#	FDD_HDSEL#	FDD_DS0#	GND
5	GND	N/C	N/C	FDD_STEP#	FDD_MTR0#	FDD_WDATA#	GND
4	GND	N/C	N/C	FDD_RDATA#	FDD_WRTPRT#	FDD_TRK0#	GND
3	GND	N/C	N/C	FDD_DRVEN0#	FDD_INDEX#	FDD_DSKCHG#	GND
2	GND	N/C	N/C	N/C	N/C	FDD_DRVEN1	GND
1	GND	N/C	N/C	N/C	N/C	N/C	GND

#: Low active



## A.4 MIC-3800 System Slot P4 Connector

Table A-4: MIC-3800 system slot P4 connector

Pin	Z	A	B	C	D	E	F
25	GND	N/C	N/C	N/C	N/C	N/C	GND
24	GND	N/C	N/C	N/C	N/C	N/C	GND
23	GND	N/C	N/C	N/C	N/C	N/C	GND
22	GND	N/C	N/C	N/C	N/C	N/C	GND
21	GND	N/C	N/C	N/C	N/C	N/C	GND
20	GND	N/C	N/C	N/C	N/C	N/C	GND
19	GND	N/C	N/C	N/C	N/C	N/C	GND
18	GND	N/C	N/C	N/C	N/C	N/C	GND
17	GND	N/C	N/C	N/C	N/C	N/C	GND
16	GND	N/C	N/C	N/C	N/C	N/C	GND
15	GND	N/C	N/C	N/C	N/C	N/C	GND
12-14	Key Area						
11	GND	N/C	N/C	N/C	N/C	N/C	GND
10	GND	N/C	N/C	N/C	N/C	N/C	GND
9	GND	N/C	N/C	N/C	N/C	N/C	GND
8	GND	N/C	N/C	N/C	N/C	N/C	GND
7	GND	N/C	N/C	N/C	N/C	N/C	GND
6	GND	N/C	N/C	N/C	N/C	N/C	GND
5	GND	N/C	N/C	N/C	N/C	N/C	GND
4	GND	N/C	N/C	N/C	N/C	N/C	GND
3	GND	N/C	N/C	N/C	N/C	N/C	GND
2	GND	N/C	N/C	N/C	N/C	N/C	GND
1	GND	N/C	N/C	N/C	N/C	N/C	GND

## A.5 MIC-3800 System Slot P5 Connector



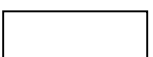
Table A-5: MIC-3800 system slot P5 connector

Pin	Z	A	B	C	D	E	F
22	GND	N/C	N/C	N/C	N/C	N/C	GND
21	GND	N/C	N/C	N/C	N/C	N/C	GND
20	GND	N/C	N/C	USBD1-	N/C	N/C	GND
19	GND	USBD0-	N/C	USBD1+	N/C	VGA-RED	GND
18	GND	USBD0+	N/C	N/C	N/C	N/C	GND
17	GND	N/C	N/C	N/C	VGA-HSYNC	VGA-GREEN	GND
16	GND	USB_OC0#	N/C	N/C	VGA-VSYNC	N/C	GND
15	GND	USB_OC1#	N/C	N/C	N/C	VGA-BLUE	GND
14	GND	N/C	N/C	N/C	N/C	N/C	GND
13	GND	N/C	N/C	N/C	N/C	VGA-SCL	GND
12	GND	N/C	N/C	N/C	N/C	VGA-SDA	GND
11	GND	N/C	N/C	N/C	N/C	MS-CLK	GND
10	GND	COM2-DCD	N/C	COM2-RI	COM2-DSR	MS-DAT	GND
9	GND	N/C	N/C	COM2-DTR	COM2-CTS	KB-CLK	GND
8	GND	COM2-RX	N/C	COM2-TX	COM2-RTS	KB-DAT	GND
7	GND	N/C	N/C	N/C	N/C	N/C	GND
6	GND	N/C	N/C	N/C	N/C	N/C	GND
5	GND	N/C	N/C	N/C	N/C	N/C	GND
4	GND	N/C	N/C	N/C	N/C	N/C	GND
3	GND	N/C	N/C	N/C	N/C	N/C	GND
2	GND	N/C	N/C	N/C	N/C	N/C	GND
1	GND	N/C	N/C	N/C	N/C	N/C	GND

## A.6 MIC-3800 Peripheral Slot P1 Connector

Table A-6: MIC-3800 peripheral slot P1 connector

Pin	Z	A	B	C	D	E	F
25	GND	+5V	REQ64#	ENUM#	+3.3V	+5V	GND
24	GND	AD[1]	+5V	V(I/O)	AD[0]	ACK64#	GND
23	GND	+3.3V	AD[4]	AD[3]	+5V	AD[2]	GND
22	GND	AD[7]	GND	+3.3V	AD[6]	AD[5]	GND
21	GND	+3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND
19	GND	+3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	+3.3V	PAR	C/BE[1]#	GND
17	GND	+3.3V	IPMBSCl	IPMBSDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	GND	TRDY#	GND
12-14	Key Area						
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	+3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	IDSEL	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ#	GND	+3.3V	CLK	AD[31]	GND
5	GND	BRSVP1A5	RRSVP1B5	RST#	GND	GNT#	GND
4	GND	IPMBPWR	Healthy#	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	+5V	INTD#	GND
2	GND	TCK	+5V	TMS	TDO	TDI	GND
1	GND	+5V	-12V	TRST#	+12V	+5V	GND

 = long pins
  = short pins
  = medium length pins

#: Low active

## A.7 MIC-3800 Peripheral Slot P2 Connector

Table A-7: MIC-3800 peripheral slot P2 connector

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	RSV	RSV	RSV	RSV	RSV	GND
20	GND	RSV	RSV	RSV	GND	RSV	GND
19	GND	RSV	RSV	RSV	RSV	RSV	GND
18	GND	BRSVP2A18	BRSVP2B18	BRSVP2C18	BRSVP2D18	BRSVP2E18	GND
17	GND	BRSVP2A17	GND	RSV	RSV	RSV	GND
16	GND	BRSVP2A16	BRSVP2B16	RSV	GND	BRSVP2E16	GND
15	GND	BRSVP2A15	GND	RSV	RSV	RSV	GND
14	GND	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND
13	GND	AD[38]	GND	V(I/O)	AD[37]	AD[36]	GND
12	GND	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND
11	GND	AD[45]	GND	V(I/O)	AD[44]	AD[43]	GND
10	GND	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND
9	GND	AD[52]	GND	V(I/O)	AD[51]	AD[50]	GND
8	GND	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND
7	GND	AD[59]	GND	V(I/O)	AD[58]	AD[57]	GND
6	GND	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND
5	GND	C/BE[5]#	GND	V(I/O)	C/BE[4]#	PAR64	GND
4	GND	V(I/O)	BRSVP2B4	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	RSV	GND	RSV	RSV	RSV	GND
2	GND	RSV	RSV	UNC	RSV	RSV	GND
1	GND	RSV	GND	RSV	RSV	RSV	GND

#: Low active

Note: GA [4...0] shall be used for geographic addressing on the backplane

## A.8 MIC-3800 Peripheral Slot P3 Connector

Table A-8: MIC-3800 peripheral slot P3 connector


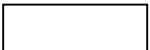
Pin	Z	A	B	C	D	E	F
19	GND	N/C	N/C	N/C	N/C	N/C	GND
18	GND	N/C	N/C	N/C	N/C	N/C	GND
17	GND	N/C	N/C	N/C	N/C	N/C	GND
16	GND	N/C	N/C	N/C	N/C	N/C	GND
15	GND	N/C	N/C	N/C	N/C	N/C	GND
14	GND	N/C	N/C	N/C	N/C	N/C	GND
13	GND	N/C	N/C	N/C	N/C	N/C	GND
12	GND	N/C	N/C	N/C	N/C	N/C	GND
11	GND	N/C	N/C	N/C	N/C	N/C	GND
10	GND	N/C	N/C	N/C	N/C	N/C	GND
9	GND	N/C	N/C	N/C	N/C	N/C	GND
8	GND	N/C	N/C	N/C	N/C	N/C	GND
7	GND	N/C	N/C	N/C	N/C	N/C	GND
6	GND	N/C	N/C	N/C	N/C	N/C	GND
5	GND	N/C	N/C	N/C	N/C	N/C	GND
4	GND	N/C	N/C	N/C	N/C	N/C	GND
3	GND	N/C	N/C	N/C	N/C	N/C	GND
2	GND	N/C	N/C	N/C	N/C	N/C	GND
1	GND	N/C	N/C	N/C	N/C	N/C	GND

#: Low active

## A.9 MIC-3800 Peripheral Slot P4 Connector

Table A-9: MIC-3800 peripheral slot P4 connector

Pin	Z	A	B	C	D	E	F
25	N/C	SGA4	SGA3	SGA2	SGA1	SGA0	FGND
24	N/C	GA4	GA3	GA2	GA1	GA0	FGND
23	N/C	+12V	#CT_RT	#CT_EN	-12V	CT_MC	FGND
22	N/C	#PF_S0	RSV	RSV	RSV	RSV	FGND
21	N/C	-SEL_Vbat	#PF_S1	RSV	RSV	SELVbatRtn	FGND
20	N/C	N/C	N/C	N/C	N/C	N/C	GND
19	N/C	N/C	N/C	N/C	N/C	N/C	GND
18	N/C	VRG	N/C	N/C	N/C	VRGRtn	GND
17	N/C	N/C	N/C	N/C	N/C	N/C	GND
16	N/C	N/C	N/C	N/C	N/C	N/C	GND
15	N/C	-Vbat	N/C	N/C	N/C	VbatRtn	GND
12-14	Key Area						
11	N/C	CT_D29	CT_D30	CT_D31	VIO	#CT_FA	GND
10	N/C	CT_D27	+3.3V	CT_D28	+5V	#CT_FB	GND
9	N/C	CT_D24	CT_D25	CT_D26	GND	#FR_CP	GND
8	N/C	CT_D21	CT_D22	CT_D23	+5V	CT_C8A	GND
7	N/C	CT_D19	+5V	CT_D20	GND	CT_C8B	GND
6	N/C	CT_D16	CT_D17	CT_D18	GND	CT_N1	GND
5	N/C	CT_D13	CT_D14	CT_D15	+3.3V	CT_N2	GND
4	N/C	CT_D11	+5V	CT_D12	+3.3V	SCLK	GND
3	N/C	CT_D8	CT_D9	CT_D10	GND	SCLK	GND
2	N/C	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	N/C	CT_D0	+3.3V	CT_D1	CT_D2	CT_D3	GND

 = long pins  
 = short pins  
 = medium length pins

#: Low active

## A.10 MIC-3800 Peripheral Slot P5 Connector

Table A-10: MIC-3800 peripheral slot P5 connector

Pin	Z	A	B	C	D	E	F
19	GND	N/C	N/C	N/C	N/C	N/C	GND
18	GND	N/C	N/C	N/C	N/C	N/C	GND
17	GND	N/C	N/C	N/C	N/C	N/C	GND
16	GND	N/C	N/C	N/C	N/C	N/C	GND
15	GND	N/C	N/C	N/C	N/C	N/C	GND
14	GND	N/C	N/C	N/C	N/C	N/C	GND
13	GND	N/C	N/C	N/C	N/C	N/C	GND
12	GND	N/C	N/C	N/C	N/C	N/C	GND
11	GND	N/C	N/C	N/C	N/C	N/C	GND
10	GND	N/C	N/C	N/C	N/C	N/C	GND
9	GND	N/C	N/C	N/C	N/C	N/C	GND
8	GND	N/C	N/C	N/C	N/C	N/C	GND
7	GND	N/C	N/C	N/C	N/C	N/C	GND
6	GND	N/C	N/C	N/C	N/C	N/C	GND
5	GND	N/C	N/C	N/C	N/C	N/C	GND
4	GND	N/C	N/C	N/C	N/C	N/C	GND
3	GND	N/C	N/C	N/C	N/C	N/C	GND
2	GND	N/C	N/C	N/C	N/C	N/C	GND
1	GND	N/C	N/C	N/C	N/C	N/C	GND

## A.11 ATX Power Connector (ATX1)

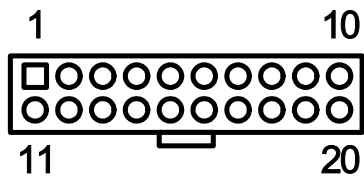


Table A-11: ATX Power Connector

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PSON#
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	FAL#	18	N/C
9	IPMBPWR	19	+5V
10	+12V	20	+5V



## A.12 IDE Interface Connectors (CN8,CN12)

Table A-12: IDE Interface Connectors

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	RESET#	21	DMREQ
2	GND	22	GND
3	DD7	23	DIOW#
4	DD8	24	GND
5	DD6	25	DIOR#
6	DD9	26	GND
7	DD5	27	IORDY#
8	DD10	28	GND
9	DD4	29	DMACK#
10	DD11	30	GND
11	DD3	31	IRQ
12	DD12	32	N/C
13	DD2	33	DA1
14	DD13	34	CBLDET
15	DD1	35	DA0
16	DD14	36	DA2
17	DD0	37	CS1#
18	DD15	38	CS3#
19	GND	39	DASP#
20	KEY	40	GND

## A.13 FDD Interface connector (CN6)

Table A-13: FDD Interface Connector

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	+5V	14	STEP#
2	INDEX#	15	GND
3	+5V	16	WDATA#
4	DS0#	17	GND
5	+5V	18	WGATE#
6	DSKCHG#	19	GND
7	N/C	20	TRK0#
8	N/C	21	GND
9	N/C	22	WRTPRT
10	MTR0#	23	GND
11	N/C	24	RDATA#
12	DIR#	25	GND
13	DRVEN0	26	HDSEL#

## A.14 VGA Interface connector (CN10)

Table A-14: VGA Interface Connector

<b>Pin</b>	<b>Signal</b>
1	BLUE
2	GND
3	GREEN
4	GND
5	RED
6	GND
7	HSYNC
8	VSYNC
9	GND
10	GND
11	DDCSDA
12	DDCCLK
13	GND

## A.15 KEYBOARD Interface Connector (CN11)

Table A-15: KEYBOARD Interface Connector

<b>Pin</b>	<b>Signal</b>
1	KBCLK
2	KBDATA
3	N/C
4	GND
5	VCC

## A.16 MOUSE Interface Connector (CN9)

Table A-16: MOUSE Interface Connector

<b>Pin</b>	<b>Signal</b>
1	MSCLK
2	MSDATA
3	N/C
4	GND
5	VCC

## A.17 COM2 Interface Connector (CN13)

Table A-17: COM2 Interface Connector

<b>Pin</b>	<b>Signal</b>
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	N/C

## A.18 USB Interface connector (CN7)

Table A-18: USB Interface Connector

<b>Pin</b>	<b>Signal</b>
1	USBVCC
2	D0-
3	D0+
4	GND
5	N/C
6	N/C
7	N/C
8	N/C
9	N/C
10	N/C

# Appendix B

## Ordering Information

- **CP-150:** CompactPCI™ portable enclosure with 6-slot H.110 CT backplane (MIC-3800), cooling fan modules, and 400W ATX power supply.

Recommend 6U CompactPCI™ SBC: User can refer to the table below for a compatible SBC.

Chassis	CPU Board
CP-150	MIC-3369A-Mx
	MIC-3358A-Mx
	MIC-3358L
	MIC-3359

\* CP-150 does not support rear I/O.

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