cPCIS-6400U/6400XSeries

4U Height Subsystem for

6U cPCI and Components

User's Manual

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1 Introduction

The cPCIS-6400U/6400X Series subsystems are designed for 6U cPCI boards with 80mm RTMs. The chassis is 4U in height and standard 19” rack mount width.

The cPCIS-6400U provides 2+1 hot swappable 500W+250W redundant power supplies with universal AC input, while the cPCIS-6400X has a built-in 400W AC-input ATX power supply with cooling fan. Both series have PICMG 2.1 Hot Swap compliant 32/64-bit 5-slot CompactPCI backplanes and a PICMG 2.5 H.110 CT Bus.

1.1 Features

General

- 19” rackmount, 4U height for 6U cPCI cards with 80mm rear RTMs for I/O
- Standard 6U CompactPCI and optional PICMG 2.5 H.110 CT bus
- PICMG 2.1 Hot Swap compliant 32-bit/33MHz or 64-bit/66MHz 5-slot CompactPCI backplane with P3 & P5 rear I/O
- 2+1 hot swappable 500W+250W redundant power supplies with universal AC input (cPCIS-6400U)
- Built-in 400W AC-input ATX power supply (cPCIS-6400X)
- Dual removable ATA-100 or SCSI 3.5” hard drive racks (cPCIS-6400US and cPCIS-6400XS models are SCSI equipped)
- Front drive bay space for one slim type EIDE CD-ROM and one slim type floppy.
- One front-access intake fan, two (three for cPCIS-6400U) rear-access and four side exhaust fans are used for system cooling. Air-filter is replaceable on front-access fan module. (Only cPCIS-6400U fans support hot swap).

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- Guarded power switch and reset button
- Voltage LEDs allow convenient monitoring: +12V, -12V, +5V, +3.3V
- Suitable for both rackmount and benchtop applications
- Built-in alarm module to monitor chassis temperature, fan status.
- Comprehensive EMC shielding: EMC gaskets are installed on top and bottom edges of both front and rear panel apertures

Boards Space

- Board space supports standard 6U height and 6-slot width
- One 8HP system slot accommodates single or dual-slot system boards.
- Both front and rear access possible

CompactPCI Compliancy

- PICMG 2.0 R3.0 CompactPCI Core Specification
- PICMG 2.1 R2.0 CompactPCI Hot Swap
- PICMG 2.5 R1.0 CompactPCI Computer Telephony
- PICMG 2.9 R1.0 CompactPCI System Management
- PICMG 2.11 R1.0 CompactPCI Power Interface (cPCIS-6400U only)

Enclosure

- EIA RS-310C 19” 4U high rackmount enclosure
- Coated metal plate outer covering

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1.2 Specifications

CompactPCI Standards	PICMG 2.0; 2.1; 2.5; 2.9; 2.11
Form Factor	6U cPCI with 80 mm depth rear I/O
Enclosure	EIA RS-310C 19" 9U high rack-mount enclosure Coated metal plate outer covering Guarded power switch and reset button
Basic Alarm Module (model dependent)	Monitors inner chassis temperature & fan status (model dependent) Abnormal status will generate alarm and LED warning Audible alarm reset LED indicators display voltage status on 5V, 3.3V, 12V and -12V
Remote Chassis Monitoring Module (model dependent)	Basic Alarm functions plus: Monitors boards via the Intelligent Platform Management Interface (IPMI) Monitors backplane voltages and status for up to eight power supplies Remote login and management via LAN or modem Remote reset control for computing blades Web-based GUI for both remote and stand-alone applications
Cooling System	Front access fan tray for intake Rear and side access fan modules for exhaust (see Chapter 4 Cooling for details)
Drive Bay	Two 5.25” drive bays
Power Supply	Supports up to 4 in-rack 3U cPCI 8HP power modules Supports current sharing on 5V, 3.3V and 12V PICMG 2.11 47-pin power interface Available power module: cPS-H325/AC (250W N+1 redundant each)
Dimension	483.2 x 399 x 299.1 (mm, WxHxD, w/o handles)
Operating Temperature	0 to 50°C (depending on system configuration)
Storage Temperature	-20 to 80°C
Humidity	5% to 95%, non-condensing
Shock	15G peak-to-peak, 11ms duration, non-operation
Vibration	Non-operation:1.88Grms, 5-500Hz, each axis Operation: 0.5Grms, 5-500Hz, each axis
Safety, Certification, EBS	CE, FCC class A, Designed for NEBS Level 3

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1.3 Mechanical Layout

cPCIS-6400U Series (redundant PSU)

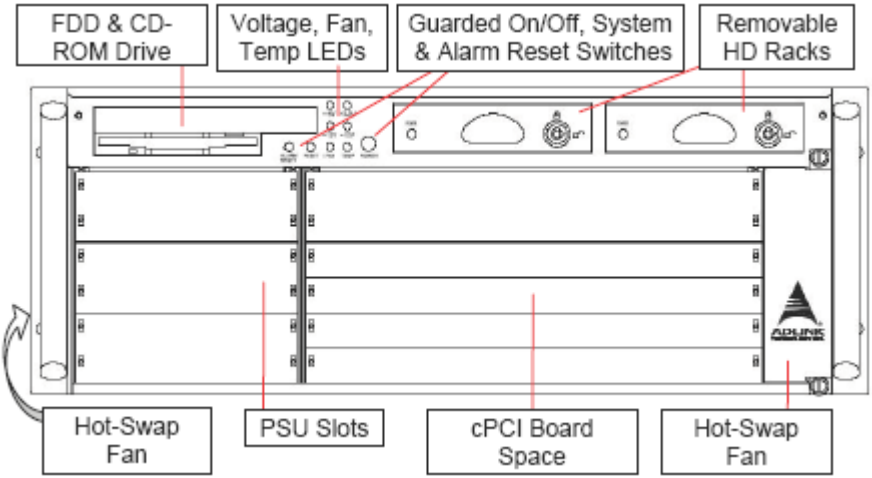


Figure 1-1: cPCIS-6400U Front View

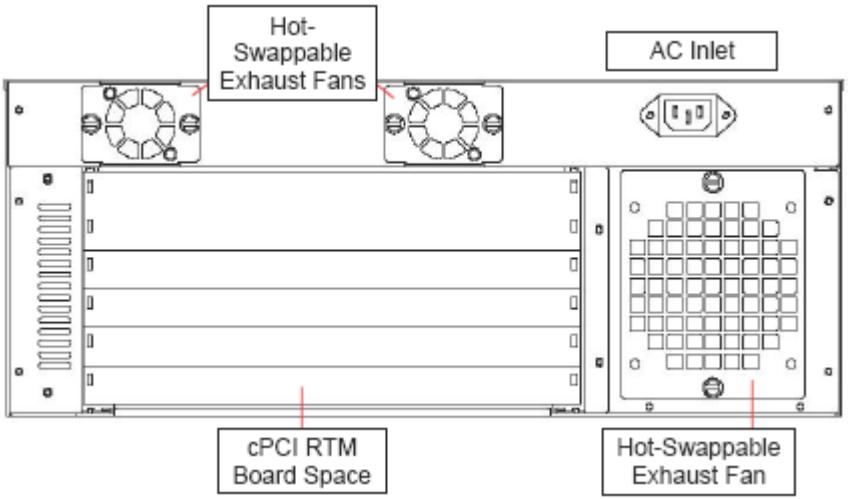


Figure 1-2: cPCIS-6400U Rear View

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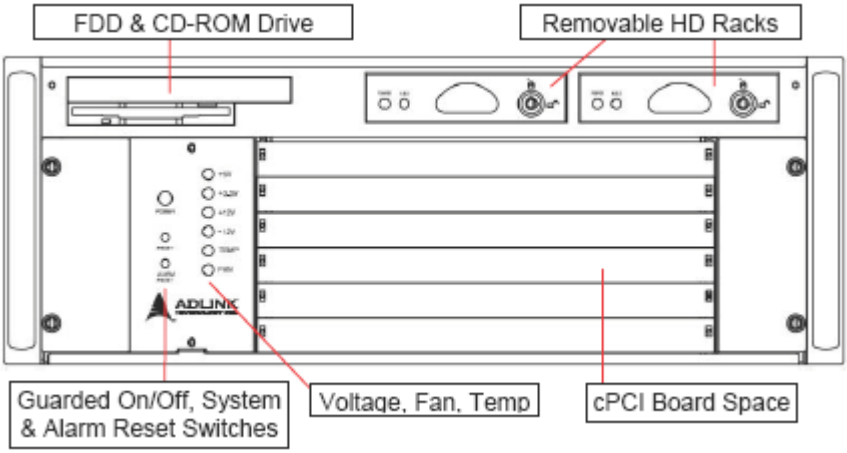


Figure 1-3: cPCIS-6400X Front View

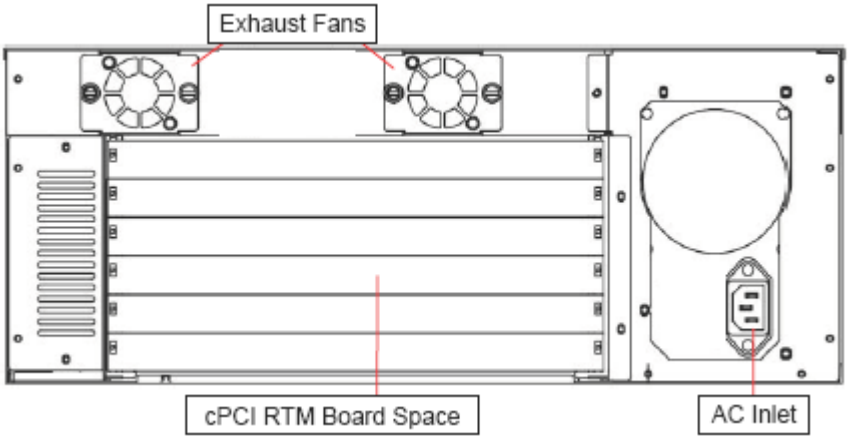


Figure 1-4: cPCIS-6400X Rear View

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cPCIS-6400 Series External Dimensions (mm)

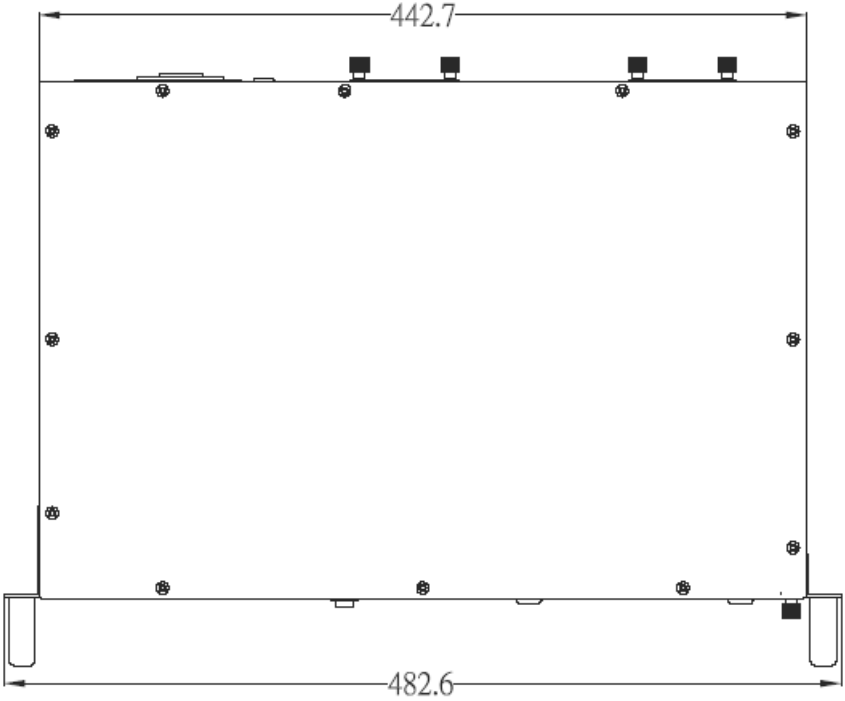


Figure 1-5: cPCIS-6400 Series Top View

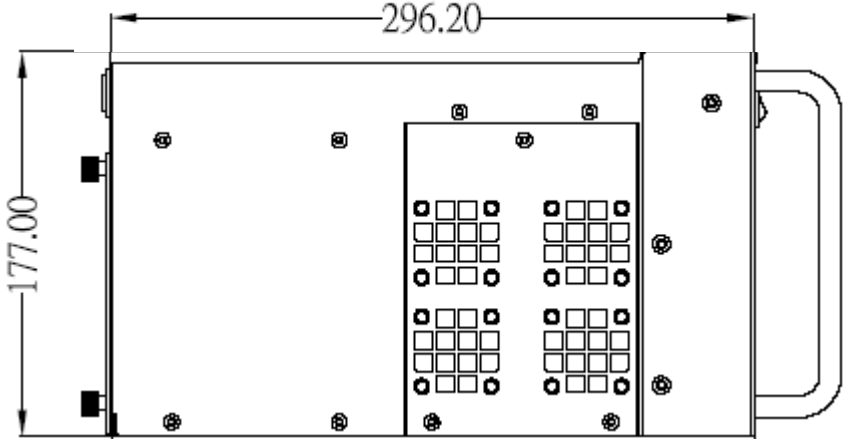


Figure 1-6: cPCIS-6400 Series Left Side View

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1.4 Compatible CPU Modules

For complete systems, users must order CPU modules in addition to the sub-system. The following table lists which ADLINK CompactPCI CPU modules are compatible with the cPCIS-6400 Series models.

CPU Module	32-bit/33MHz	64-bit/66MHz
cPCI-6860A	—	yes
cPCI-6840	—	yes
cPCI-6830	—	yes
cPCI-6820	—	yes
cPCI-6810	—	yes
cPCI-6780	yes	yes
cPCI-6765/6765A	yes	yes
cPCI-6760D	yes	—

Note: For systems requiring SCSI hard drive support, be sure that the appropriate CPU module and Rear Transition Module are ordered.

1.5 Customized Systems

Subsystems can be customized to meet the specific needs of your application. To customize a sub-system please contact an ADLINK dealer, or visit the *Where to Buy* page of our website for more information: http://www.adlinktech.com.

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2 Getting Started

This chapter describes the unpacking procedure of the sub-system and installation procedures for CompactPCI boards and power supply units (PSUs), and hard drive rack operation procedures.

2.1 Shipping Contents

Check the shipping carton for any damage. If the shipping carton and contents are damaged, please notify the dealer for a replacement. Retain the shipping carton and packing material for inspection by the dealer. Obtain authorization before returning any product to ADLINK.

Check that the following items are included in the package. If there are any missing items, please contact your dealer:

- One cPCIS-6400U or cPCIS-6400X sub-system
- Accessory Package: includes power cords for 110V and 220V wall sockets, replacement air filter, ergonomic rack-mount handles, and pouch containing screws, zip ties, etc.
- This User's Manual

2.2 CompactPCI Card Installation

CompactPCI connectors are rigid, and therefore require careful handling when inserted and removed. Improper manipulation of the cards will result in damage to the backplane.

System slots usually have some obvious indicators, something like red card guide rail, triangle mark enclosing the slot number on the backplane. The system card only can be installed in the system slot, and do not insert system card into any other slot, or insert any peripheral card into system slot.

The handles on CompactPCI card helps users to install or remove easily and safety. Please follow the procedures below to install a CompactPCI module into a chassis:

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The handles on CompactPCI cards and PSUs ensure simple and safe installation and removal. Please follow the procedures below to install a CompactPCI module into a chassis:

1. Place the sub-system on a level surface or rackmount it. Remove the blanking plates where required by undoing the retaining screws at each end. Retain the blanking plates for possible future use. The system should not be put into use without blanking plates for all empty slots, otherwise the EMC and cooling performance will be compromised.
2. Hold the SBC module or peripheral card horizontally. Make sure that the handles are unlatched (i.e. that they are spread outwards). If necessary, unlatch the handle by pressing on the release button with your thumb.

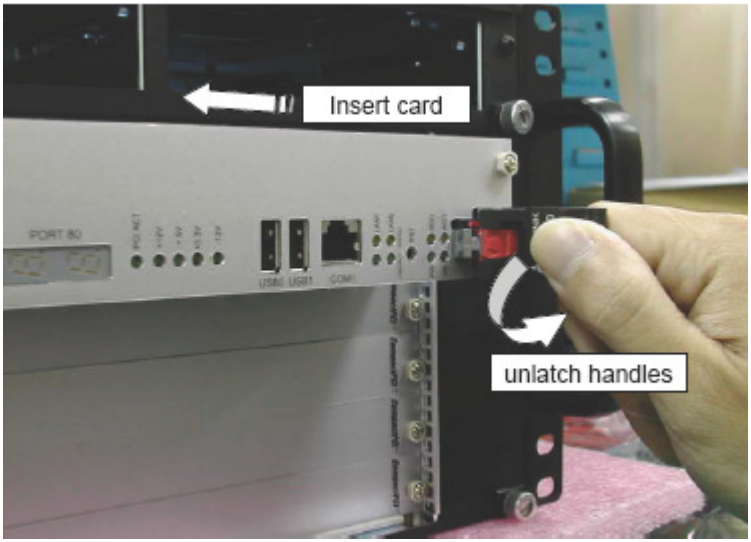


Figure 2-1: Installing a 6U SBC module

3. Carefully insert the module into the desired slot by sliding the edges of the board into the appropriate card guide rail. Take care to ensure correct alignment of the card with the chassis during insertion to prevent damage to the card and/or backplane.

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4. Continue inserting the card until the handles engage with the chassis.
5. Pull inwards on the handles for final insertion. Ensure that the red buttons on the handles fully latch into position as unless this is done the card is not correctly inserted. Fasten the retaining screws at each end of the card (2 for single slot cards, 4 for double slot cards)

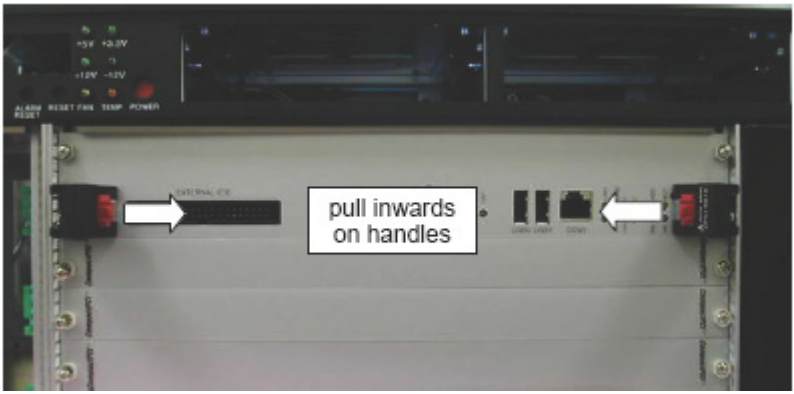


Figure 2-2: Latching the cPCI module handles securely.

6. To remove the module, undo the retaining screws, press the red release buttons, and reverse steps 1 through 5 above.

2.3 Rear Transition Module Installation/Removal

The installation and removal procedures for a Rear Transition Module (RTM) are the same as those for CompactPCI boards. Because they are shorter than front boards, pay careful attention when inserting or removing RTMs. Only models with an “R” at the end of the model number support RTMs.

Note: We strongly recommended the use of RTMs with AB type connectors to prevent the damage to the backplane during RTM installation.

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2.4 Power Supply Unit Replacement (cPCIS-6400U only)

The cPCIS-6400U series subsystems come with cPS-H325 PSUs pre-installed. The removal and installation procedures for PSUs are the same as for CompactPCI cards, except there is only one handle. To replace a PSU module, refer to the figures and instructions below.

1. To remove the PSU module, undo the retaining screws and unlatch the handle by pressing on the release button with your thumb.



Figure 2-3: Unlatch the PSU module handle

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2. Pull outwards to remove the PSU.

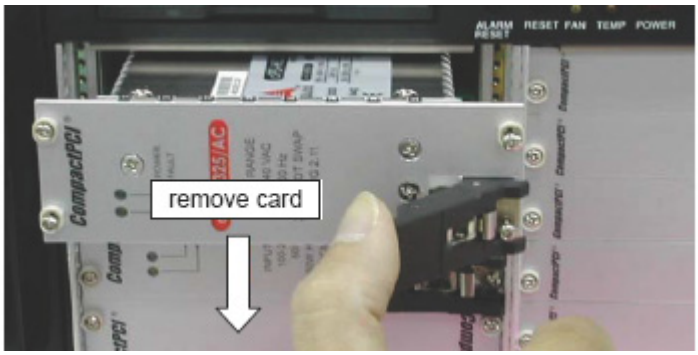


Figure 2-4: Pull outwards to remove the PSU

3. Insert the new PSU module, push on the handle until it latches into position, and replace the retaining screws.

2.5 Hard Drive Racks

The cPCI-6400U and cPCIS-6400X subsystems have two hard drive racks for 3.5” hard drives. The racks are protected by key-locks to prevent accidental or unauthorized removal. The following sections describe initial hard drive installation and rack insertion and removal.

Hard Drive Installation Procedure

1. To unlock the rack., insert the key into to the keylock and rotate it clockwise so that the key is in the 3 o’clock position.

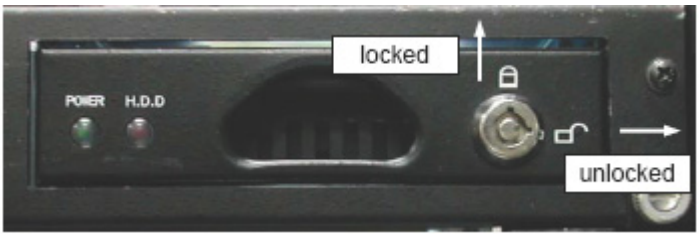


Figure 2-5: Hard drive rack keylock positions

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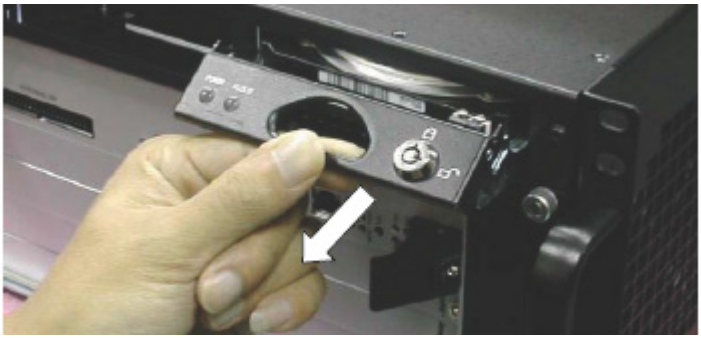
2. Lift the rack handle outwards and pull the hard drive rack out of the drive bay.

Note: When sliding out the SCSI HDD tray, use one hand to gently pull out while using the other hand to stabilize the bottom of the tray.

Caution: The bottom of the SCSI HDD tray may scrap the bottom of the HDD. Please insert the HDD tray carefully.

---

3. Remove the hard drive rack from the drive bay



4. Insert the hard drive into the rack and secure with screws as per standard hard drive installation procedure.
5. For IDE hard drives, attach the ribbon cable and power cord to the back of the drive (skip for SCSI drives).
6. Insert the hard drive rack into the drive bay and push down on the handle until the rack is firmly secured in place.
7. To lock the rack, insert the key into to the keylock and rotate it counter-clockwise so that the key is in the 12 o'clock position.

Rack Insertion And Removal

Follow the instructions for Hard Drive Installation above, skipping steps 3 and 4.

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2.6 Powering Up the System

Connect the supplied power cord to the socket on the back of the chassis. All supplied PSUs are full range 90-240VAC and do not require input voltage setting. Insert the desired boards into the appropriate card slots as described in Sections 2.2 and 2.3.

The cPCIS-6400U/X subsystems feature a guarded power switch and reset button that provide ATX power control capability. Use the tool provided in the Accessory Packet or a suitably shaped object (such as a pen) to actuate the power switch and reset button. Voltage LEDs allow convenient monitoring of the power supply.

Refer to the diagrams below for LED and switch locations.

cPCIS-6400U Series (redundant PSU)

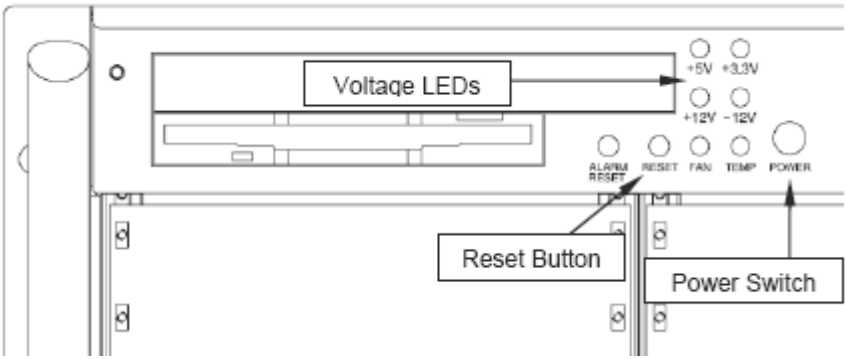


Figure 2-6: cPCIS-6400U Series switches and LEDs

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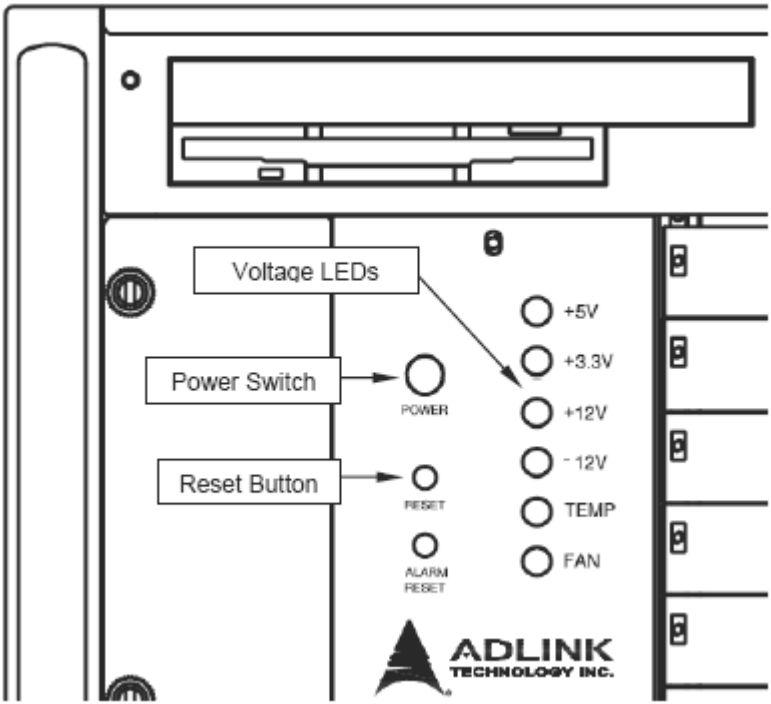


Figure 2-7: cPCIS-6400X Series switches and LEDs

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3 Backplanes

In this chapter, we will describe the backplanes for the cPCIS-6400U/6400X Series. The following table outlines the backplanes that correspond to each model.

Model	Type	Backplane
cPCIS-6400U/32 cPCIS-6400X/32	32-bit/33MHz	cBP-6105R
cPCIS-6400U/64 cPCIS-6400X/64	64-bit/66MHz	cBP-6405R

The cPCIS-6400U Series models use the cBP-3063 CompactPCI Power Backplane.

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3.1 cBP-6105R (32-bit/33MHz)

The backplane for the cPCIS-6400 Series 6U 32-bit, 5-slot chassis is the cBP-6105R, a 6U 5-slot H.110 32-bit CompactPCI backplane with rear I/O.

Features

- Standard CompactPCI 3U height for 6U cPCI cards
- Supports 80mm rear I/O for each slot
- Suitable for one single/dual-slot system module and four expansion cards
- Supports PICMG 2.5 H.110 CT Bus
- PICMG 2.1 Hot Swap compliant 32-bit 5-slot CompactPCI backplane with P3 & P5 rear I/O

Specifications

- CompactPCI Compliancy
  - PICMG 2.0 CompactPCI core specification R3.0
  - PICMG 2.1 CompactPCI hot swap R2.0
  - PICMG 2.5 CompactPCI Computer Telephony R1.0
- Dimension: 262.05 x 120.9 (mm, W x H)
- PCI bus clock: 32-bit/33MHz
- System slot rear I/O: P3, P4 and P5 rear I/O with AB type shroud
- Peripheral slots: four
- H.110 bus: Compliant with PICMG 2.5, for all peripheral slots
- V (I/O): 3.3V or 5V selectable, default 5V
- Power Connectors: ATX connector x1, DC screw terminals
- System slot legacy I/O: FDD, IDE1, and IDE2 (pin compatible with cPCI-6760Dand cPCI-6780 only)
- Other connectors: INH#, Reset, PWR_FAL#, Voltage LEDs, H.110 Power Pairs (VRG, Vbat)

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Mechanical Drawing

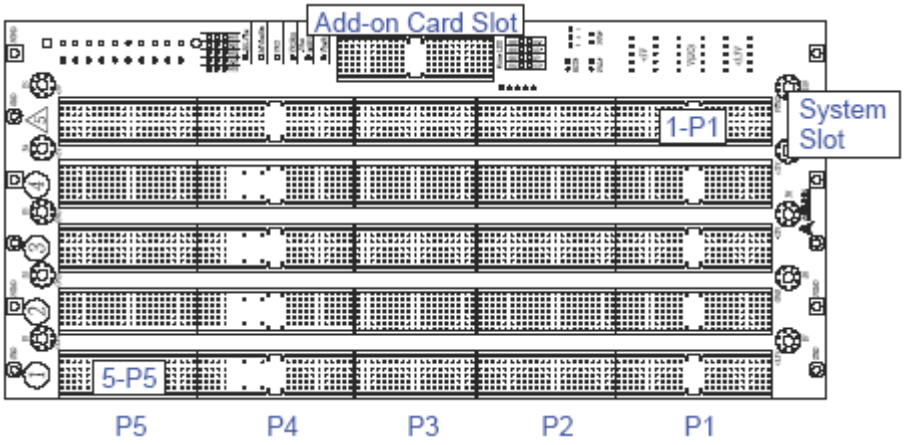


Figure 3-1: cBP-6105R Backplane Front View

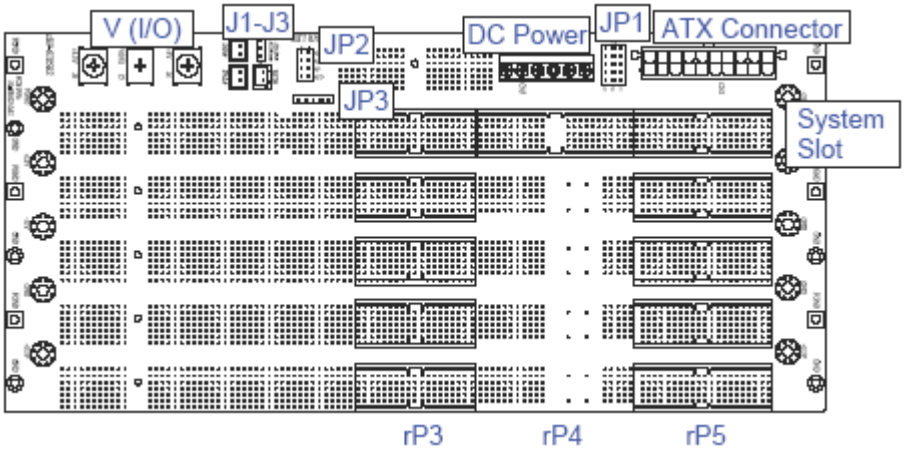
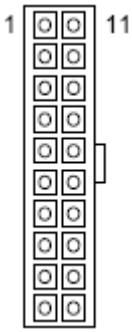


Figure 3-2: cBP-6105R Backplane Rear View

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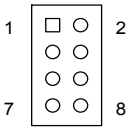
Connector Pin Assignments

ATX Power Connector [CN1]



Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON_L
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWRGOOD	18	-5V
9	STB5V	19	+5V
10	+12V	20	+5V

Power LED Connector [JP2]



Pin	Signal	Pin	Signal
1	+12V	2	GND
3	-12V	4	GND
5	+3.3V	6	GND
7	+5V	8	GND

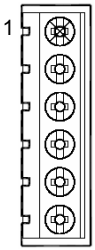
SM Bus Connector [JP3]



Pin	Signal
1	CLK
2	GND
3	DATA
4	V(I/O)
5	ALERT#

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H.110 DC Power Connector [CN6]



Pin	Signal
1	-SEL Vbat
2	SEL VbatRtn
3	VRG
4	VRGRtn
5	-Vbat
6	VbatRtn

RST# Connector [J1]



Pin	Signal
1	PRSTA#
2	GND

FAL# Connector [J2]



Pin	Signal
1	FAL#
2	GND

INH# Connector [J3]



Pin	Signal
1	INH#
2	GND

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System Slot: [1–P1]

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	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	BDSEL	TRDY#	GND
12-14	Keying 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	REQ#	GND	+3.3V	CLK	AD[31]	GND
5	GND	Reserved	Reserved	PCIRST#	GND	GNT#	GND
4	GND	IPMB_PWR	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

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System Slot: [1–P2]

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	CLK6	GND	Reserved	Reserved	Reserved	GND
20	GND	CLK5	GND	Reserved	GND	Reserved	GND
19	GND	GND	GND	SMDATA	SMCLK	ALERT#	GND
18	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
17	GND	Reserved	GND	PRST#	REQ6#	GNT6#	GND
16	GND	Reserved	Reserved	DEG#	GND	Reserved	GND
15	GND	Reserved	GND	FAL#	REQ5#	GNT5#	GND
14	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
13	GND	Reserved	GND	V(I/O)	Reserved	Reserved	GND
12	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
11	GND	Reserved	GND	V(I/O)	Reserved	Reserved	GND
10	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
9	GND	Reserved	GND	V(I/O)	Reserved	Reserved	GND
8	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
7	GND	Reserved	GND	V(I/O)	Reserved	Reserved	GND
6	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
5	GND	Reserved	GND	V(I/O)	Reserved	Reserved	GND
4	GND	V(I/O)	Reserved	Reserved	GND	Reserved	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

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System Slot: [1–P3]

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

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System Slot: [1–P4]

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

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System Slot: [1–P5]

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

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Peripheral Slot: [2–P1] - [5–P1]

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	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	BDSEL	TRDY#	GND
12-14	Keying 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	Reserved	Reserved	PCIRST#	GND	GNT#	GND
4	GND	IPMB_PWR	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

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Peripheral Slot: [2–P2] - [5–P2]

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
20	GND	Reserved	GND	Reserved	GND	Reserved	GND
19	GND	GND	GND	Reserved	Reserved	Reserved	GND
18	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
17	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
16	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
15	GND	Reserved	GND	Reserved	Reserved	Reserved	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)	Reserved	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
2	GND	Reserved	Reserved	SYSEN#	Reserved	Reserved	GND
1	GND	Reserved	GND	Reserved	Reserved	Reserved	GND

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Peripheral Slot: [2–P3] - [5–P3]

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

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Peripheral Slot: [2–P4] - [5–P4]

Pin	Z	A	B	C	D	E	F
25	GND	SGA4	SGA3	SGA2	SGA1	SGA0	GND
24	GND	GA4	GA3	GA2	GA1	GA0	GND
23	GND	+12V	Reserved	CT_EN#	-12V	CT_MC	GND
22	GND	PFS0#	CT_RESET	Reserved	Reserved	Reserved	GND
21	GND	-SELVbat	PFS1#	Reserved	Reserved	-SELVbat Rtn	GND
20	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
19	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
18	GND	VRG	No Pin	No Pin	No Pin	VRG Rtn	GND
17	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
16	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
15	GND	-Vbat	No Pin	No Pin	No Pin	-Vbat Rtn	GND
12-14	Keying Area						
11	GND	CT_D29	CT_D30	CT_D31	V(I/O)	CT_FRAME_A	GND
10	GND	CT_D27	+3.3V	CT_D28	+5V	CT_FRAME_B	GND
9	GND	CT_D24	CT_D25	CT_D26	GND	RF_COMP	GND
8	GND	CT_D21	CT_D22	CT_D23	+5V	CT_C8_A	GND
7	GND	CT_D19	+5V	CT_D20	GND	CT_C8_B	GND
6	GND	CT_D16	CT_D17	CT_D18	GND	CT_NETREF_1	GND
5	GND	CT_D13	CT_D14	CT_D16	+3.3V	CT_NETREF_2	GND
4	GND	CT_D11	+5V	CT_D12	+3.3V	SCLK	GND
3	GND	CT_D8	CT_D9	CT_D10	GND	SCLK-D	GND
2	GND	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	GND	CT_D0	+3.3V	CT_D1	CT_D2	CT_D3	GND

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Peripheral Slot: [2–P5] - [5–P5]

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

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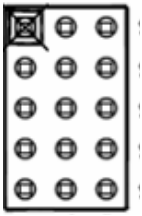
IDE Add-on Card: [0–P3]

Pin	Z	A	B	C	D	E	F
25	GND	+12V	GND	+5V	NC	GND	GND
24	GND	+12V	GND	+5V	NC	GND	GND
23	GND	+12V	GND	+5V	NC	GND	GND
22	GND	PPWRGD	PDCS16#	PIORDY	AP3D19	PIRQ	GND
21	GND	PDACT#	AP3B18	PCS3#	PCS1#	PPDIAG	GND
20	GND	PDD15	PDD14	PDD13	PDD12	AP3E17	GND
19	GND	PDD11	PDD10	PDD9	PDD8	DDAK0#	GND
18	GND	PDA0	PDA1	NC	PDA2	DDRQ0	GND
17	GND	PDD7	PDD6	PDD5	PDD4	DIOW0#	GND
16	GND	PDD3	PDD2	PDD1	PDD0	DIOR0#	GND
15	GND	DR0#	MSEN0	MTR0#	INDEX#	WDATA#	GND
12-14	Keying Area						
11	GND	DR1#	DSKCHG#	MTR1#	DENSL	RDATA#	GND
10	GND	WP#	HDSEL#	DIR#	TRK0#	STEP#	GND
9	GND	WGATE#	AP3B9	AP3C9	AP3D9	AP3E9	GND
8	GND	AP3A8	AP3B8	NC	AP3D8	AP3E8	GND
7	GND	AP3A7	AP3B7	AP3C7	AP3D7	AP3E7	GND
6	GND	AP3A6	AP3B6	AP3C6	AP3D6	AP3E6	GND
5	GND	AP3A5	AP3B5	AP3C5	AP3D5	AP3E5	GND
4	GND	AP3A4	AP3B4	NC	AP3D4	AP3E4	GND
3	GND	AP3A3	AP3B3	AP3C3	AP3D3	AP3E3	GND
2	GND	AP3A2	AP3B2	AP3C2	AP3D2	AP3E2	GND
1	GND	AP3A1	AP3B1	AP3C1	AP3D1	AP3E1	GND

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Jumper Settings

Shelf Enumeration Bus Signals [JP1] - (default: 1-2 shorted)



Column 1	Column 2	Column 3
NC	SGA0	GND
NC	SGA1	GND
NC	SGA2	GND
NC	SGA3	GND
NC	SGA4	GND

V(I/O) Setting Jumper [J4 - J6] - (default: J4-J5 shorted)

Pin	Signal
J4	+5V
J5	V(I/O)
J6	+3.3V

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3.2 cBP-6405R (64-bit/66MHz)

The backplane for the cPCIS-6400 Series 6U 64-bit, 5-slot chassis is the cBP-6405R, a 6U 64-bit, 5-slot, H.110 CompactPCI backplane with rear I/O.

Features

- Standard CompactPCI 3U height for 6U cPCI cards
- Supports 80mm rear I/O for each slot
- Suitable for one single/dual-slot system module and four expansion cards
- Supports PICMG 2.5 H.110 CT Bus
- PICMG 2.1 Hot Swap compliant 64-bit 5-slot CompactPCI backplane with P3 & P5 rear I/O

Specifications

- CompactPCI Compliancy
  - PICMG 2.0 CompactPCI core specification R3.0
  - PICMG 2.1 CompactPCI hot swap R2.0
  - PICMG 2.5 CompactPCI Computer Telephony R1.0
- Dimension: 262.05 x 120.9 (mm, W x H)
- PCI bus clock: up to 64-bit/66MHz
- System slot rear I/O: P3, P4 and P5 rear I/O with AB type shroud
- Peripheral slots: four
- H.110 bus: Compliant with PICMG 2.5, for all peripheral slots
- V (I/O): 3.3V or 5V selectable, default 5V
- Power Connectors: ATX connector x1, DC screw terminals
- System slot legacy I/O: FDD, IDE1, and IDE2 (pin compatible with cPCI-6760Dand cPCI-6780 only)
- Other connectors: INH#, Reset, PWR_FAL#, Voltage LEDs, H.110 Power Pairs (VRG, Vbat)

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Mechanical Drawing

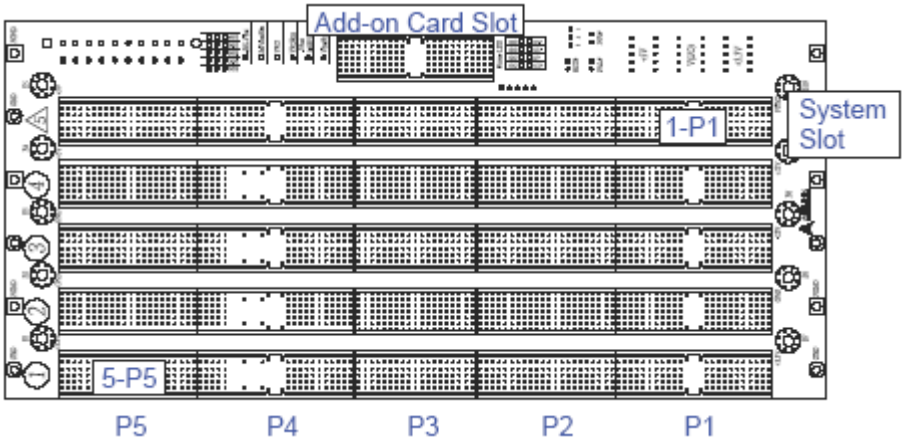


Figure 3-3: cBP-6405R Backplane Front View

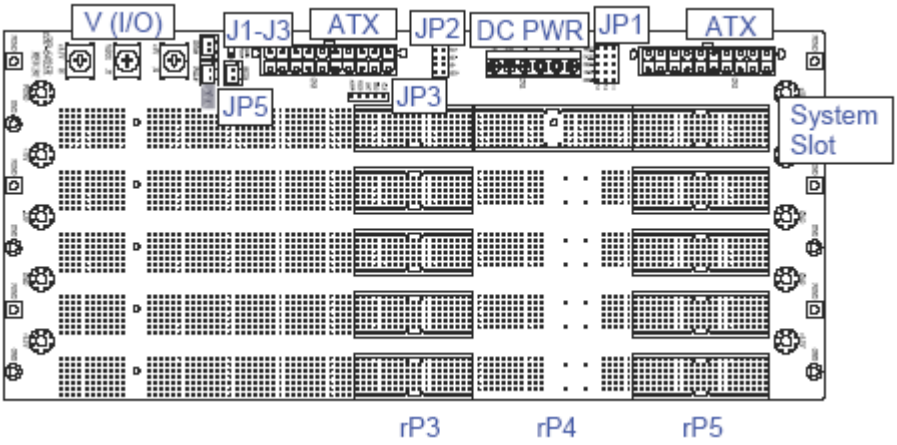
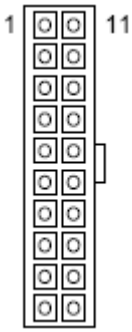


Figure 3-4: cBP-6405R Backplane Rear View

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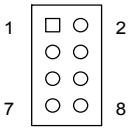
Connector Pin Assignments

ATX Power Connector [CN1, CN3]



Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON_L
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWRGOOD	18	-5V
9	STB5V	19	+5V
10	+12V	20	+5V

Power LED Connector [JP2]



Pin	Signal	Pin	Signal
1	+12V	2	GND
3	-12V	4	GND
5	+3.3V	6	GND
7	+5V	8	GND

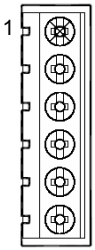
SM Bus Connector [JP3]



Pin	Signal
1	CLK
2	GND
3	DATA
4	V(I/O)
5	ALERT#

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H.110 DC Power Connector [CN6]



Pin	Signal
1	-SEL Vbat
2	SEL VbatRtn
3	VRG
4	VRGRtn
5	-Vbat
6	VbatRtn

RST# Connector [J1]



Pin	Signal
1	PRSTA#
2	GND

FAL# Connector [J2]



Pin	Signal
1	FAL#
2	GND

INH# Connector [J3]



Pin	Signal
1	INH#
2	GND

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System Slot: [1–P1]

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	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	BDSEL	TRDY#	GND
12-14	Keying 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	REQ#	GND	+3.3V	CLK	AD[31]	GND
5	GND	Reserved	Reserved	PCIRST#	GND	GNT#	GND
4	GND	IPMB_PWR	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

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System Slot: [1–P2]

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	CLK6	GND	Reserved	Reserved	Reserved	GND
20	GND	CLK5	GND	Reserved	GND	Reserved	GND
19	GND	GND	GND	SMDATA	SMCLK	ALERT#	GND
18	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
17	GND	Reserved	GND	PRST#	REQ6#	GNT6#	GND
16	GND	Reserved	Reserved	DEG#	GND	Reserved	GND
15	GND	Reserved	GND	FAL#	REQ5#	GNT5#	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)	Reserved	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

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System Slot: [1–P3]

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

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System Slot: [1–P4]

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

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System Slot: [1–P5]

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

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Peripheral Slot: [2–P1] - [5–P1]

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	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	BDSEL	TRDY#	GND
12-14	Keying 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	Reserved	Reserved	PCIRST#	GND	GNT#	GND
4	GND	IPMB_PWR	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

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Peripheral Slot: [2–P2] - [5–P2]

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
20	GND	Reserved	GND	Reserved	GND	Reserved	GND
19	GND	GND	GND	Reserved	Reserved	Reserved	GND
18	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
17	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
16	GND	Reserved	Reserved	Reserved	GND	Reserved	GND
15	GND	Reserved	GND	Reserved	Reserved	Reserved	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)	Reserved	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	Reserved	GND	Reserved	Reserved	Reserved	GND
2	GND	Reserved	Reserved	SYSEN#	Reserved	Reserved	GND
1	GND	Reserved	GND	Reserved	Reserved	Reserved	GND

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Peripheral Slot: [2–P3] - [5–P3]

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

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Peripheral Slot: [2–P4] - [5–P4]

Pin	Z	A	B	C	D	E	F
25	GND	SGA4	SGA3	SGA2	SGA1	SGA0	GND
24	GND	GA4	GA3	GA2	GA1	GA0	GND
23	GND	+12V	Reserved	CT_EN#	-12V	CT_MC	GND
22	GND	PFS0#	CT_RESET	Reserved	Reserved	Reserved	GND
21	GND	-SELVbat	PFS1#	Reserved	Reserved	-SELVbat Rtn	GND
20	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
19	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
18	GND	VRG	No Pin	No Pin	No Pin	VRG Rtn	GND
17	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
16	GND	No Pin	No Pin	No Pin	No Pin	No Pin	GND
15	GND	-Vbat	No Pin	No Pin	No Pin	-Vbat Rtn	GND
12-14	Keying Area						
11	GND	CT_D29	CT_D30	CT_D31	V(I/O)	CT_FRAME_A	GND
10	GND	CT_D27	+3.3V	CT_D28	+5V	CT_FRAME_B	GND
9	GND	CT_D24	CT_D25	CT_D26	GND	RF_COMP	GND
8	GND	CT_D21	CT_D22	CT_D23	+5V	CT_C8_A	GND
7	GND	CT_D19	+5V	CT_D20	GND	CT_C8_B	GND
6	GND	CT_D16	CT_D17	CT_D18	GND	CT_NETREF_1	GND
5	GND	CT_D13	CT_D14	CT_D16	+3.3V	CT_NETREF_2	GND
4	GND	CT_D11	+5V	CT_D12	+3.3V	SCLK	GND
3	GND	CT_D8	CT_D9	CT_D10	GND	SCLK-D	GND
2	GND	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	GND	CT_D0	+3.3V	CT_D1	CT_D2	CT_D3	GND

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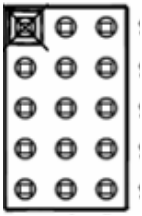
Peripheral Slot: [2–P5] - [5–P5]

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

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Jumper Settings

Shelf Enumeration Bus Signals [JP1] - (default: 1-2 shorted)



Column 1	Column 2	Column 3
NC	SGA0	GND
NC	SGA1	GND
NC	SGA2	GND
NC	SGA3	GND
NC	SGA4	GND

PCI 33/66MHz Select [JP5]



Pin	Signal
1	M66EN
2	GND

Settings: shorted 33MHz, open 66MHz – default: open

V(I/O) Setting Jumper [J4 - J6] - (default: J4-J5 shorted)

Pin	Signal
J4	+5V
J5	V(I/O)
J6	+3.3V

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3.3 cBP-3063 CompactPCI Power Backplane

The power backplane for the cPCIS-6400U 5-slot chassis is the cBP-3063.

Specifications

- PICMG 2.11 3U CompactPCI 47-pin Power Backplane
- Dimension: 120.92 x 128.7 (mm, W x H)
- Power Module Sockets: three
- DC output (ATX connector): three
- Cascading Current Sharing
- Cascading Voltage Sense: Dedicated voltage sense connector
- PICMG 2.9 IPMB Socket

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Mechanical Drawing

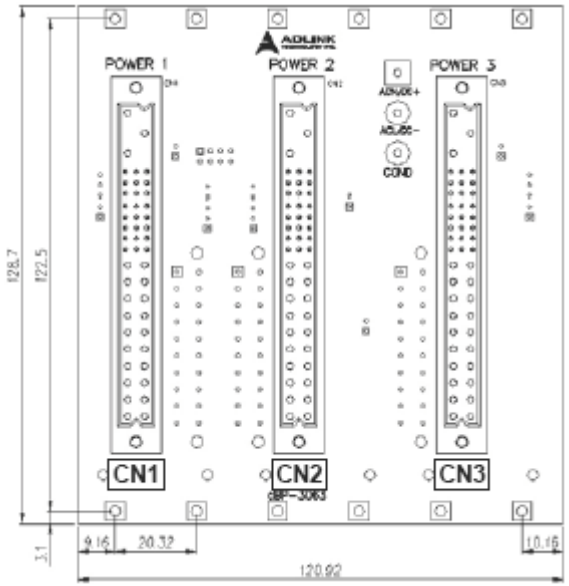


Figure 3-5: cBP-3063 Power Backplane Front View

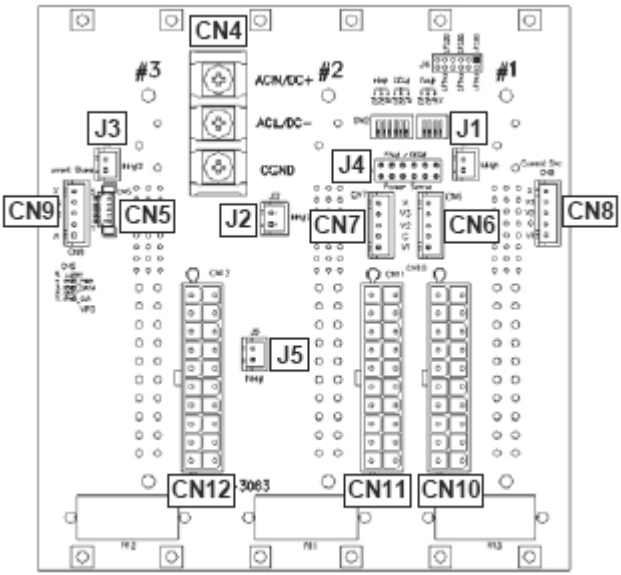
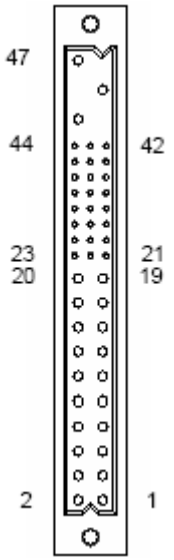


Figure 3-6: cBP-3063 Power Backplane Rear View

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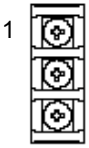
Connector Pin Assignments

CompactPCI 47-Pin PSU Connector: Power 1-3 [CN1-CN3]



Pin	Signal	Pin	Signal
47	ACL/-DC IN	31	GA2
46	ACN/+DC IN	30	V1 SENSE
45	CGND	29	V1ADJ
44	V3 SHARE	28	GA1
43	IPMB_PWR	27	EN#
42	+FAL#	26	RESERVED
41	V2 SHARE	25	GA0
40	IPMB_SDA	24	RTN
39	INH#	23	RESERVED
38	DEG#	22	RTN
37	IPMB_SCL	21	V4
36	V3 SENSE	20	V3
35	V1 SHARE	19	RTN
34	S RTN	13-18	V2
33	V2 SENSE	5-12	RTN
32	V2ADJ	1-4	V1

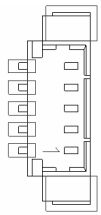
AC-Inlet Connector [CN4]



Pin	Signal
1	ACN/DC+
2	ACL/DC-
3	CGND

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IPMB Connector [CN5]



Pin	Signal
1	CLK
2	GND
3	DATA
	V(I/O)
	ALERT#

Power Sense Connector [CN6, CN7]



Pin	Signal
1	Ground
2	+3.3V
3	-12V
4	+12V
5	+5V

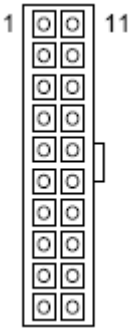
Current Share Connector [CN8, CN9]



Pin	Signal
1	Ground
2	+3.3V
3	-12V
4	+12V
5	+5V

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DC Power Out [CN10, CN11, C12])



Pin	Signal	Pin	Signal
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	INH#
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	FAL#	18	-5V
9	DEG#	19	+5V
10	+12V	20	+5V

INH#1 Connector [J1]



Pin	Signal
1	INH#1
2	GND

INH#2 Connector [J2]



Pin	Signal
1	INH#2
2	GND

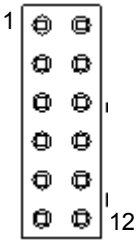
INH#3 Connector [J3]



Pin	Signal
1	INH#3
2	GND

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DEG#/FAL# Connector [J5]



Pin	Signal
1	DEG#1
2	FAL#1
3	RSV23A
4	RSV26A
5	DEG#2
6	FAL#2
7	RSV23B
8	RSV26B
9	DEG#3
10	FAL#3
11	RSV23C
12	RSV26C

INH# Connector [J5]



Pin	Signal
1	INH#
2	GND

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4 Cooling System

The cPCIS-6400U/X Series subsystems are equipped with several fans to provide cooling for the system board, peripheral cards and power supply units. There is one front-access intake fan at the right side of the chassis with a replaceable air filter. Two small exhaust fans are at the top rear of the chassis, and one large fan provides exhaust at the left rear for the power supply units. There is a four-fan module on the left side panel of the chassis for additional exhaust. An embedded alarm board monitors fan status and initiates a visible and audible alarm upon fan failure.

Only cPCIS-6400U fan units are hot-swappable. Fan modules other than the front-access intake fan require the user to manually disconnect the power cable.

Note:	For safety reasons, only the cPCIS-6400U fans are field serviceable by the user.

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4.1 System Alarm Board

- Supports fault alarm for up to 8 fans. If any fan faults, the Fan LED will flash and an audible alarm will sound
- Can detect temperature at two different locations.
- Trigger temperature for each sensor can be set independently (50°C, 60°C, 70°C - default 50 °C).
- Alarm mute
- LED indicators for fan and temperature status

Mechanical Drawing

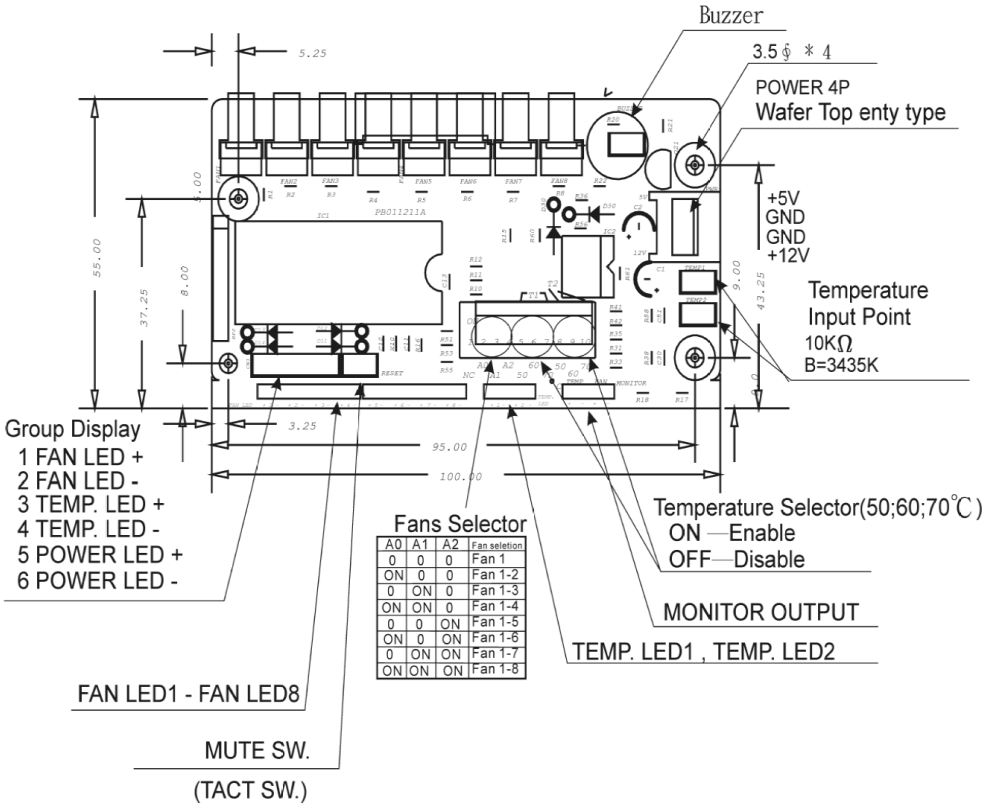


Figure 4-1: System Alarm Board Mechanical Drawing

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4.2 Fan Alarm

The embedded alarm board monitors temperature & fan status. Should a fan become disabled, the Fan LED will light up and an audible warning will be heard. To disable the audible warning, press the Alarm Reset button. The Fan LED will continue to flash until the faulty fan is replaced.

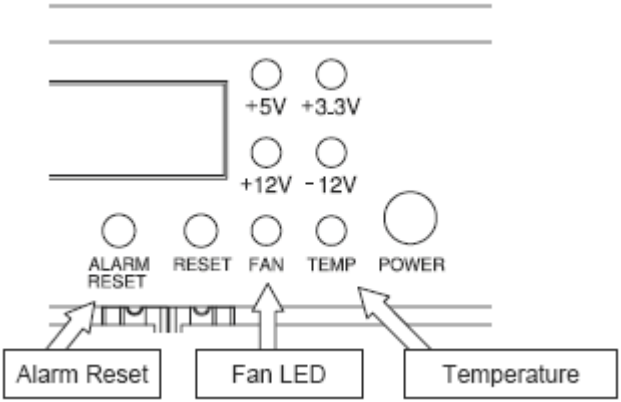


Figure 4-2: Alarm LEDs and reset button

4.3 Fan Removal and Replacement Procedure (cPCIS-6400U only)

To remove and replace a faulty fan module, follow the procedures below. For safety reasons, only the cPCIS-6400U is field serviceable by the user.

Front-Access Intake Fan

1. Loosen the screws attaching the front-access intake fan module at the right side of the chassis.
2. Pull the faulty fan module out of the chassis and replace with a functional fan module.
3. Reverse steps 1-2 to replace the fan module.

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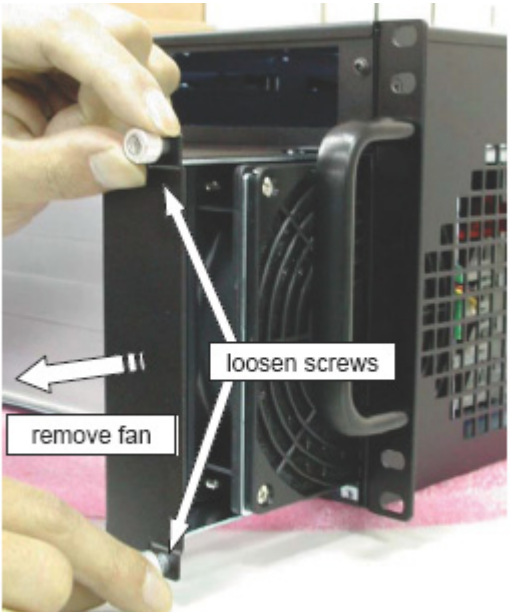


Figure 4-3: Remove the front-access intake fan module

Rear Exhaust Fans (small)

1. Loosen the screws attaching the rear exhaust fan module (small) at the top rear of the chassis.
2. Pull the fan module out, disconnect the power cable, and replace with a functional fan module.
3. Reverse steps 1-2 to replace the fan module.

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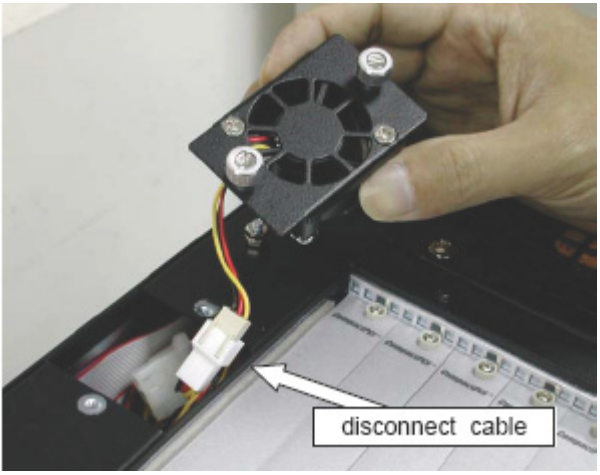


Figure 4-4: Remove the rear exhaust fan module (small)

Rear Exhaust Fan (PSU)

1. Loosen the screws attaching the rear exhaust fan module (PSU) at the right rear of the chassis as shown below.

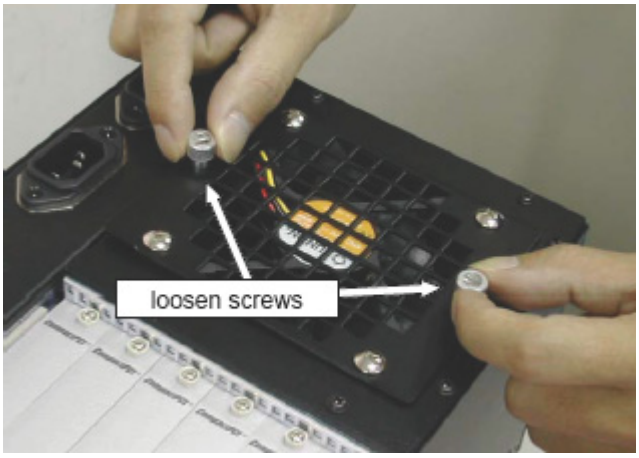


Figure 4-5: Remove the rear exhaust fan module (PSU)

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2. Pull the fan module out, disconnect the power cable, and replace with a functional fan module.

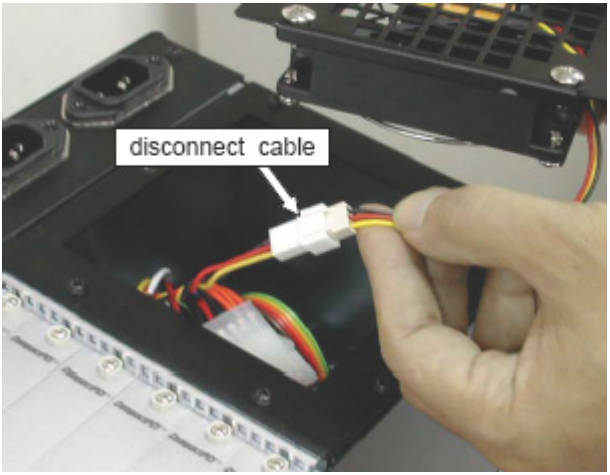


Figure 4-6: Disconnect the rear exhaust fan module (PSU) power cable

3. Reverse steps 1-2 to replace the fan module.

Left-Side Exhaust Fan

1. Remove the screws attaching the left-side exhaust fan module as shown below.

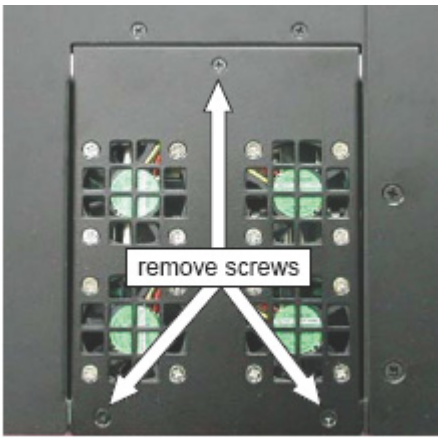


Figure 4-7: Remove the left-side exhaust fan module screws

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2. Lift the fan module out of the chassis from the bottom edge, disconnect the power cables, and replace with a functional fan module.

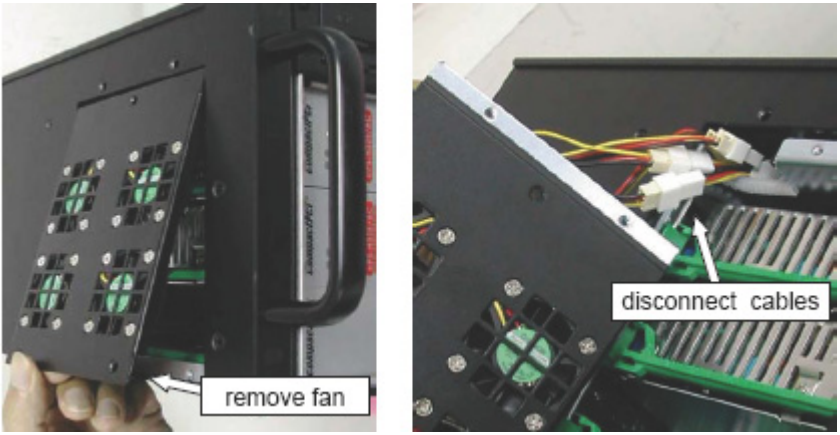


Figure 4-8: Remove the left exhaust fan module and disconnect the power cables

3. Reverse steps 1-2 to replace the fan module.

For replacement fan modules, please contact your ADLINK distributor.

4.4 Air Filter Replacement (cPCIS-6400U only)

To ensure proper performance of the system, the air filter should be cleaned or replaced as necessary.

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Air Filter Removal and Replacement Procedure

1. Remove the front-access intake fan module as shown in Figure 4.3 above.
2. Lay the fan module on its side, remove the four screws securing the filter cover, and lift the cover to expose the filter element.

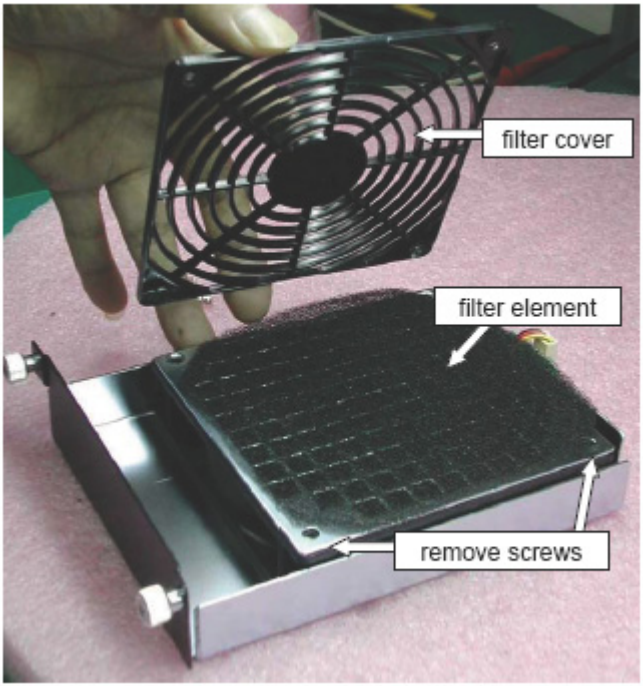


Figure 4-9: Air filter removal and replacement

3. Clean the existing filter.
4. Place the filter back in position, replace the filter cover and screws, and reinstall the filter module into the chassis.

4.5 Temperature Alarm

When the subsystem's internal temperature exceeds 50°C, the TEMP LED will flash and an audible warning will be heard (see

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Figure 5.2 above for LED location). To reset the alarm and disable the audible warning, press the Alarm Reset button.

In order to protect the system from damage resulting from overheating, it should be shut down immediately. Inspect the operating environment for causes of the overheating condition. After the system has cooled down sufficiently, power it up and be observant of any future temperature alarm conditions.

4.6 Fan Specifications

SUNON KD1212PTB1-6A (right side front-access fan)

- Dimensions: 120 x 120 x 25mm
- Weight: 205 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.4A
- Rated power: 4.8 W/each
- Fan speed: 3100RPM
- Maximum Air flow: 90 CFM/each (when zero static pressure)
- Noise: 44.5 dBA/each

SUNON KD1204PKVX (rear exhaust fans x2)

- Dimensions: 40 x 40 x 20mm
- Weight: 30 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.13A
- Rated power: 1.6 W/each
- Fan speed: 8200RPM
- Maximum Air flow: 10.8CFM/each (when zero static pressure)
- Noise: 27.5 dBA/each

SUNON KD1209PFV1 (rear PSU exhaust fan)

- Dimensions: 92 x 92 x 25mm

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- Weight: 123 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.23A
- Rated power: 2.8 W/each
- Fan speed: 3600RPM
- Maximum Air flow: 51 CFM/each (when zero static pressure)
- Noise: 37 dBA/each

SUNON KD1204PFV1 (left side fan module fans x4)

- Dimensions: 40 x 40 x 10mm
- Weight: 16 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.08A
- Rated power: 1 W/each
- Fan speed: 7400RPM
- Maximum Air flow: 7.3CFM/each (when zero static pressure)
- Noise: 30dBA/each

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5 Power Supply Unit

The power supply options for the cPCIS-6400 Series are as follows: The cPCIS-6400U Series is equipped with ADLINK's cPS-H325/AC CompactPCI power module and the cPCIS-6400X Series is equipped with the APS940XA ATX power supply.

5.1 cPCIS-6400U: cPS-H325/AC

Features

- PICMG 2.11 CompactPCI power interface compliant
- 250W 3U X 8HP Eurocard package
- Meets IEC1000-3-2 harmonic correction
- Internal OR-ing diodes for N+1 redundancy
- Hot-swappable
- Third-wire current sharing
- EMI meets EN 55022 / FCC CLASS A
- CE marking compliance

Specifications

- Operating Temperature Range: 0 °C to 50°C at full load with specified air flow (Derates linearly to 50% at +70 °C)
- Storage Temperature: -40 to +85 °C
- Temperature Coefficient: Typ. ±0.02% / °C
- Cooling: >20 CFM moving air required to achieve full rated power
- Dimensions: Eurocard 3U X 8HP X 160mm CompactPCI format
- Efficiency: 78-79% typical
- Switching Frequency: 120K Hz
- Safety: IEC60950 Class I
- Circuit Topology: Forward circuit
- Transient Response: Peak transient less than 100mV and recovers within 2mS after 25% load-change

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Input Characteristics

- Input Voltage: Typ. 90 - 264 VAC
- Power Factor Correction: Meets Harmonic Correction IEC1000-3-2. Power Factor typ. 0.95-0.97
- Input Connector: Positronic 47-pin PCIH47M400A1
- Input Frequency: 47-63Hz
- Inrush Current: Less than 30A @ 230VAC
- Input Current: 2.8A @115VAC / 1.4A @230VAC
- Dielectric Withstand: Meets IEC950 regulations
- EMI: Meets EN55022 / FCC Class A
- Hold-up Time: 5mS after power fail signal
- Remote ON/OFF: Available at [INH#] & [EN#] pins
- Power Fail Signal: Available at [FAL#] pin
- Status LED: <Green> means valid input voltage; <Amber> means a critical fault.
- Thermal Protection (OTP): Installed NTC and thermostat for thermal sensor at [DEG#] pin
- Power OK: Installed at all outputs
- Leakage Current: Typ. 0.5mA

Output Characteristics

Output Voltage (see below for properties)	**Output Current (A)**			
	MIN.	MAX.	TYP.	PEAK.
5V MAIN +VO1 (1, 2, 3, 4, 6)	2.0	33.0	25.0	–
3.3V AUX. +VO2 (1, 2, 3, 4, 6, 7)	0	33.0	18.0	–
12V AUX. +VO3 (1, 2, 3, 4, 6, 7)	0	5.5	5.5	6.0
-12V AUX. –VO4 (1, 5, 6, 8, 9)	0	1	0.5	1.5

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Properties

1: OVP built-in
2: Adjustable
3: Remote sensing
4: 3rd-wire Load Sharing
5: Droop Current Sharing
6: Installed with Or-ing diode
7: Magnetic Amplifier
8: Installed with Post-regulator
9: Common Choke

Remarks

Peak load sustainable for less than 60sec. with duty cycle <10%. Max. load is the continuous operating load of each rail. Max. load of each rail cannot be drawn from all outputs at the same time.

- Over Load Protection: Fully protected against output over-load or short circuit. Typical 120% max. load.
- Over Current Protection: Installed at each rail
- Output Wattage: Typ. 250W continuous.
- Output Connector: Positronic 47-pin PCIH47M400A1.
- Line Regulation: Typ. 0.1%.
- Load Regulation: Typ. ±1–2%.
- Noise & Ripple: Typ. 1% peak to peak or 50mV, whichever is greater.
- OVP: Built-in at all outputs.
- Adjustability: Available at VO1, 2 & 3.
- Output Trim: Electrical trim available at VO1/VO2 [ADJ #].
- Remote Sensing: Available at VO1, VO2 & VO3.
- Hot-Swap: Available.
- N+1 Redundancy: Installed with internal OR-ing diodes at all outputs for N+1 redundancy operation.
- Current Sharing: Third-wire current sharing at VO1,2 &3.
- Power OK Signal: Available for all output.
- Over Current Protection: Installed at each rail.
- Overload Protection: Fully protected against output over-load or short circuit. Typical 120% max. load.

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5.2 cPCIS-6400X: APS940XA ATX 400W

Features

- Active PFC (full range)
- 12V Max. Current : 30A
- Noise & Thermal Control

Specifications

- Operating Temperature Range: -10°C – 40°C
- Cooling: one 80mm DC fan
- Active Power Factor Correction meets IEC-1000-3-2 CLASS D
- Dimensions: 140.00x150.00x86.00 (mm)
- Hold Up Time: 16 ms minimum at full load & normal input voltage
- Dielectric Withstand: input/output 1500 VAC for 1 sec.
  input to frame ground 1500 VAC for 1 sec.
- Efficiency: 68% typical
- Power Good Signal: on delay 100 ms to 500 ms, off delay 1 ms
- Over Load Protection: 130 +/- 20%
- Over Voltage Protection:
  5V – 5.7V – 6.5V; 3.3V – 3.9V – 4.3V; 12V – 13.6V – 15V
- Short Circuit Protection: +5V, -5V, +12V, -12V, +3.3V
- EMI Noise Filter: FCC CLASS B, CISPR22 CLASS B
- Safety: UL 1950, CSA 22.2 NO/ 950, TUV IEC 950
- MTBF: 102,391

Input Characteristics

- Voltage: 90 – 240 VAC Full Range
- Frequency : 47 – 63 HZ
- Input Current: 8.0 A (RMS) FOR 115 VAC
  4.0 A (RMS) FOR 230 VAC
- Inrush Current: 65A MAX. FOR 115 VAC
  125A MAX. FOR 230 VAC

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Output Characteristics

Output Voltage	Output Current(A)			Regulation		Output
	MIN.	MAX.	PEAK	LOAD	LINE	Ripple& Noise Max[P-P]
5V	3	35	–	± 5%	± 1%	50mV
12V	2	30	–	+7 – -5%	± 1%	120mV
-5V	0	0.8	–	± 5%	± 1%	150mV
-12V	0	1.0	–	± 5%	± 1%	150mV
3.3V	1	25	–	± 5%	± 1%	50mV
+5VSB	0.1	2	–	± 5%	± 1%	50mV

Note: The output current of 5V & 3.3V must not exceed 45A.

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Important Safety Instructions

Please read and follow all instructions marked on the product and in the documentation before operating the system. Retain all safety and operating instructions for future use.

- Please read these safety instructions carefully.
- Please keep this User's Manual for future reference.
- The equipment should be operated in an ambient temperature between 0 and 40°C for the cPCIS-6400X and 50°C for the cPCIS-6400U.
- The equipment should be operated only from the type of power source indicated on the rating label. Make sure the voltage of the power source is correct when connecting the equipment to the power outlet.
- If the user's equipment has a voltage selector switch, make sure that the switch is set to the proper position for the area. The voltage selector switch is set at the factory to the correct voltage.
- For pluggable equipment, ensure they are installed near a socket-outlet that is easily accessible.
- Secure the power cord to prevent unnecessary accidents. Do not place anything over the power cord.
- If the equipment will not be in use for long periods of time, disconnect the equipment from mains to avoid being damaged by transient overvoltage.
- All cautions and warnings on the equipment should be noted.
- Please keep this equipment away from humidity.
- Do not use this equipment near water or a heat source.
- Place this equipment on a reliable surface when installing. A drop or fall could cause injury.
- Never pour any liquid into the opening, this could cause fire or electrical shock.

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- Openings in the case are provided for ventilation. Do not block or cover these openings. Make sure there is adequate space around the system for ventilation when setting up the work area. Never insert objects of any kind into the ventilation openings.
- To avoid electrical shock, always unplug all power and modem cables from the wall outlets before removing covers.
- Lithium Battery provided (real time clock battery)

  "CAUTION - Risk of explosion if battery is replaced by an incorrect type. Dispose used batteries as instructed in the instructions"
- The equipment should be checked by service personnel if one of the following situation arises:
  - The power cord or plug is damaged.
  - Liquid has penetrated the equipment.
  - The equipment has been exposed to moisture.
  - The equipment is not functioning or does not function according to the user's manual.
  - The equipment has been dropped and damaged.
  - If the equipment has obvious sign of breakage.
- Never open the equipment. For safety reasons, the equipment should only be opened by qualified service personnel.

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Warranty Policy

Thank you for choosing ADLINK. To understand your rights and enjoy all the after-sales services we offer, please read the following carefully.

1. Before using ADLINK's products please read the user manual and follow the instructions exactly. When sending in damaged products for repair, please attach an RMA application form which can be downloaded from: http://rma.adlinktech.com/policy/.
2. All ADLINK products come with a two-year guarantee:
   - The warranty period starts from the product's shipment date from ADLINK's factory.
   - Peripherals and third-party products not manufactured by ADLINK will be covered by the original manufacturers' warranty.
   - For products containing storage devices (hard drives, flash cards, etc.), please back up your data before sending them for repair. ADLINK is not responsible for loss of data.
   - Please ensure the use of properly licensed software with our systems. ADLINK does not condone the use of pirated software and will not service systems using such software. ADLINK will not be held legally responsible for products shipped with unlicensed software installed by the user.
   - For general repairs, please do not include peripheral accessories. If peripherals need to be included, be certain to specify which items you sent on the RMA Request & Confirmation Form. ADLINK is not responsible for items not listed on the RMA Request & Confirmation Form.

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3. Our repair service is not covered by ADLINK's two-year guarantee in the following situations:
   - Damage caused by not following instructions in the user's manual.
   - Damage caused by carelessness on the user's part during product transportation.
   - Damage caused by fire, earthquakes, floods, lightening, pollution, other acts of God, and/or incorrect usage of voltage transformers.
   - Damage caused by unsuitable storage environments (i.e. high temperatures, high humidity, or volatile chemicals).
   - Damage caused by leakage of battery fluid during or after change of batteries by customer/user.
   - Damage from improper repair by unauthorized technicians.
   - Products with altered and/or damaged serial numbers are not entitled to our service.
   - Other categories not protected under our warranty.
4. Customers are responsible for shipping costs to transport damaged products to our company or sales office.
5. To ensure the speed and quality of product repair, please download an RMA application form from our company website: http://rma.adlinktech.com/policy. Damaged products with attached RMA forms receive priority.

If you have any further questions, please email our FAE staff: service@adlinktech.com.

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