cPCIS-6418U Series

4U Height 8-Slot
6U CompactPCI Subsystem

User's Manual

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1 Introduction

The cPCIS-6418U Series Subsystem is designed for maximum density and has 8 horizontal slots for 6U cPCI boards with 80mm RTMs. The chassis is 4U in height and standard 19” rack mount width.

The cPCIS-6418U provides 2+1 hot swappable 500W+250W redundant power supplies with universal AC input. It has a PICMG 2.1 Hot Swap compliant 64-bit 8-slot CompactPCI backplane with PICMG 2.5 H.110 CT Bus (cPCIS-6418U/N110 does not support CT Bus).

A built-in alarm board monitors chassis temperature, voltage and fan status and provides an RS-232 interface on the rear panel.

1.1 Features

General

- 4U height for 6U cPCI cards with 80mm rear RTMs for I/O
- Bench top or standard 19-inch rack mounted (front or mid-mount)
- Standard 6U CompactPCI and PICMG 2.5 H.110 CT bus (cPCIS-6418U/N110 does not support CT Bus)
- PICMG 2.1 Hot Swap compliant 64-bit/66MHz 8-slot CompactPCI backplane with P3 & P5 rear I/O
- One system slot and 7 peripheral slots (dual system boards occupy one peripheral slot)
- 2+1 front access, CompactPCI 2.11 hot swappable 500W+250W redundant power supplies with fused dual universal AC inlets
- Front drive bay space for one slim type EIDE CD-ROM

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- Forced-air cooling system:
  - One front-access intake fan module on R-side (4 fans, offset for efficient CPU cooling)
  - One exhaust fan on L-side
  - One exhaust fan at rear for PSU and drive bay cooling
  - All fans support hot swap
- 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, voltage, and fan status with RS-232 connector on rear panel

Boards Space

- Board space supports standard 6U height and 8-slot width
- One 4HP system slot at bottom; dual-slot system boards occupy one peripheral slot
- 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 (cPCIS-6418U/N110 does not support CT Bus)
- PICMG 2.9 R1.0 CompactPCI System Management
- PICMG 2.11 R1.0 CompactPCI Power Interface

Enclosure

- EIA RS-310C 19” 4U high rackmount enclosure
- Coated metal plate outer covering
- Comprehensive EMC shielding: EMC gaskets are installed on top and bottom edges of both front and rear panel apertures

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1.2 Specifications

CompactPCI Standards	PICMG 2.0; 2.1; 2.5; 2.9; 2.11 (cPCIS-6418U/N110 does not support CT Bus)
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
Cooling System	One front-access intake fan module on R-side (4 offset fans) One exhaust fan on L-side One exhaust fan at rear for PSU and drive bay cooling All fans support hot swap
Drive Bay	Space for one slim type EIDE CD-ROM
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 PCIS-6418U Mechanical Layout

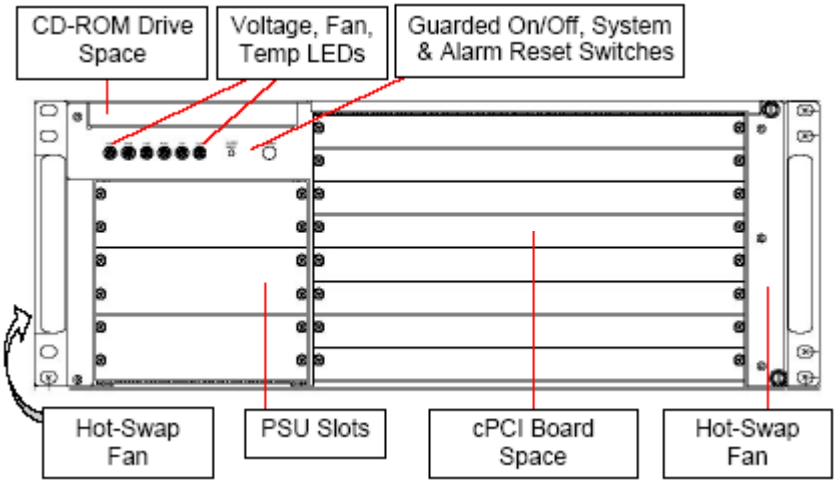


Figure 1-1: cPCIS-6418U Front View

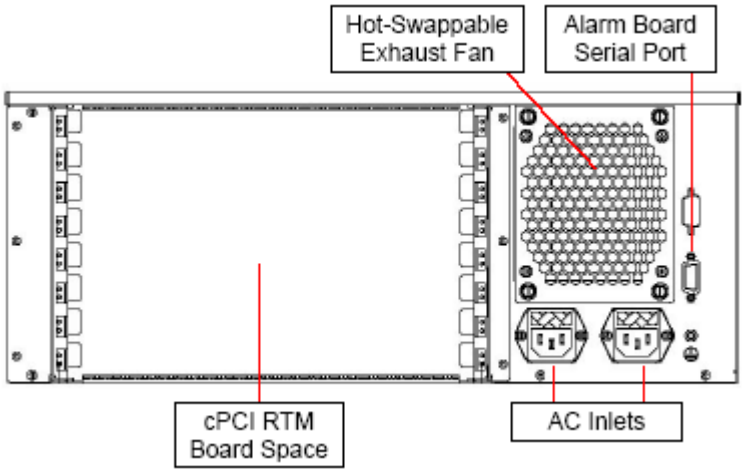


Figure 1-2: cPCIS-6418U Rear View

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Dimensions in mm

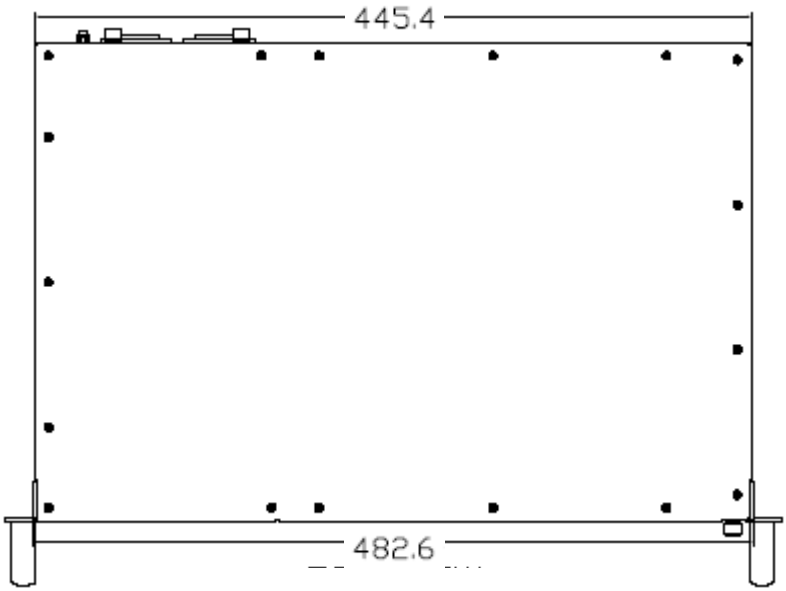


Figure 1-3: cPCIS-6418U Top View

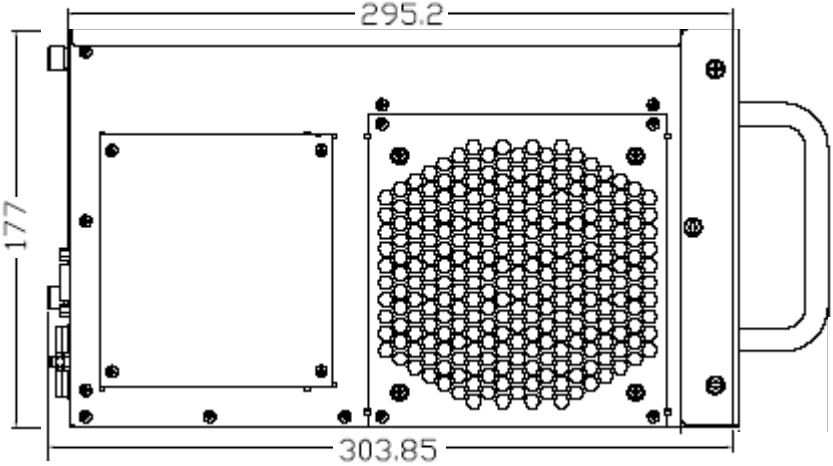


Figure 1-4: cPCIS-6418U Side View

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1.4 Compatible CPU Modules

For complete systems, users must order CPU modules in addition to the subsystem. The following table lists which ADLINK CompactPCI CPU modules are compatible with the cPCIS-6418U Series models.

CPU Module	64-bit/66MHz
cPCI-6860A	yes
cPCI-6840	yes
cPCI-6830	yes
cPCI-6820	yes
cPCI-6810	yes
cPCI-6780	yes
cPCI-6765/6765A	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 subsystem 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 subsystem and installation procedures for CompactPCI boards and power supply units (PSUs).

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-6418U Series Subsystem
- 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 subsystem 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.

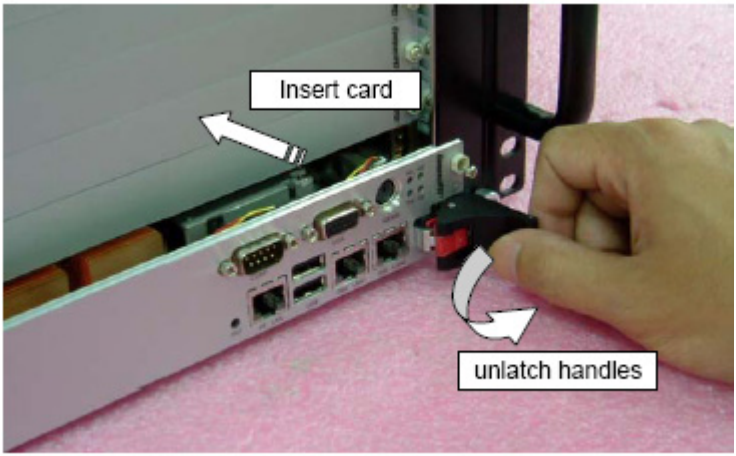


Figure 2-1: Installing a 6U SBC module

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

The cPCIS-6418U Subsystem comes 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.

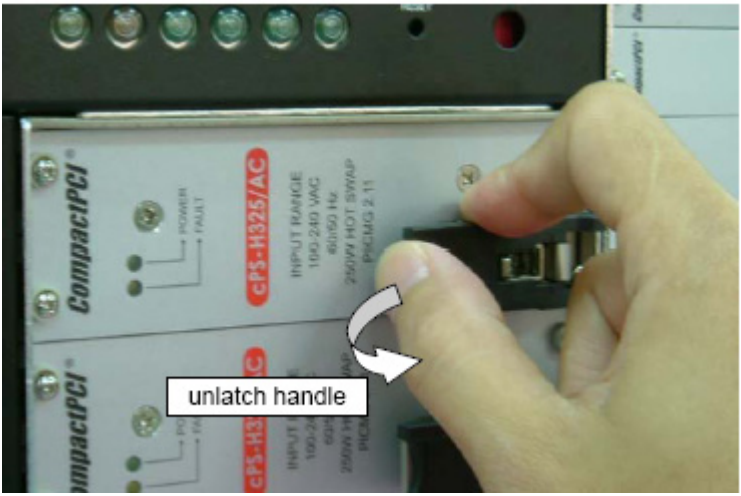


Figure 2-3: Unlatch the PSU module handle

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2. Pull outwards to remove the PSU.

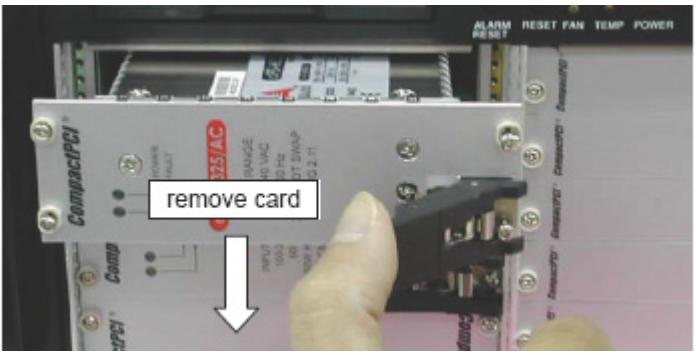


Figure 2-4: Pull outwards to remove the PSU

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

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2.5 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-6418U Subsystem features a guarded power switch. Use the tool provided in the Accessory Packet or a suitably shaped object (such as a pen) to actuate the power switch and power up the system. Voltage LEDs allow convenient monitoring of the power supply.

Refer to the diagrams below for LED and switch locations.

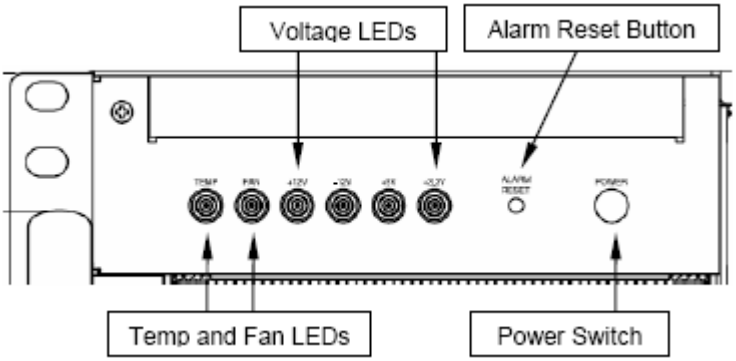


Figure 2-5: cPCIS-6418U Series switches and LEDs

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3 Backplanes

In this chapter, we will describe the backplanes for the cPCIS-6418U Series Subsystems. The cBP-6418U is a 6U 8-slot H.110 64-bit CompactPCI backplane for the cPCIS-6418U Subsystem and supports rear I/O. The cBP-6418U/N110 is the backplane for the cPCIS-6418U Subsystem and has the same features as the cBP-6418U but does not support CT Bus

3.1 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 (cBP-6418U/N110 does not support CT Bus)
- PICMG 2.1 Hot Swap compliant 32-bit 8-slot CompactPCI backplane with P3 & P5 rear I/O

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3.2 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 (cBP-6418U/N110 does not support CT Bus)
- 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 (cBP-6418U/N110 does not support CT Bus)
- 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 - cBP-6418U only)

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3.3 Mechanical Drawing

Power Section

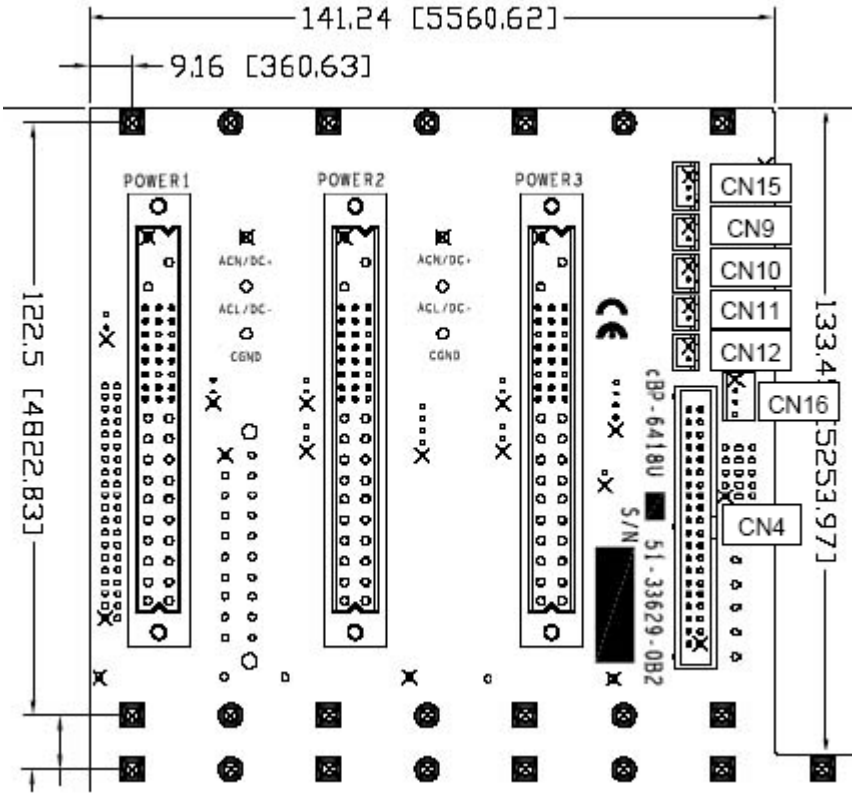


Figure 3-1: cBP-6814U Backplane Front View

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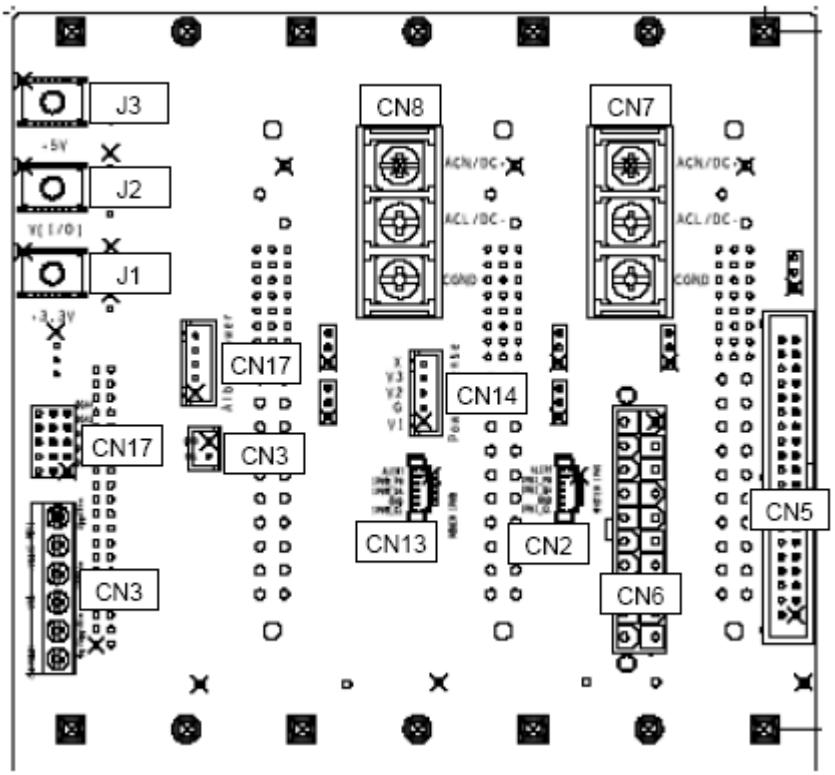


Figure 3-2: cBP-6814U Backplane Rear View

Note: cBP-6814U/N110 does not have connectors CN3 and CN17.

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CompactPCI Section

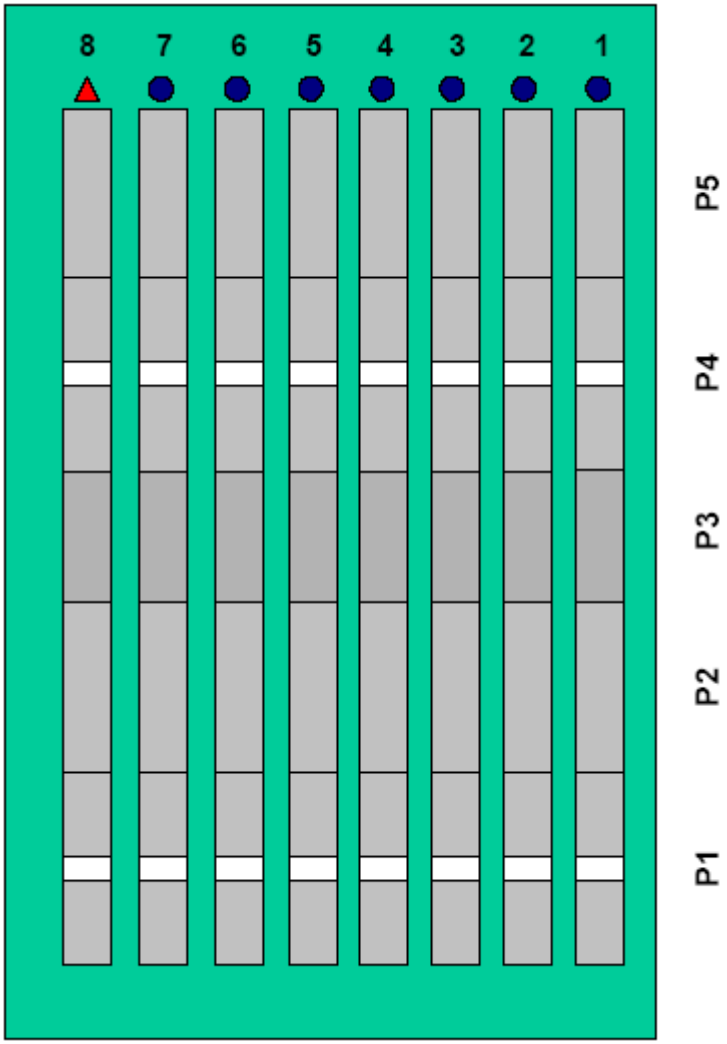


Figure 3-3: cBP-6814U Backplane Front View

Red triangle indicates system slots (Slot 8). Blue circles are peripheral slots (Slots 1–7).

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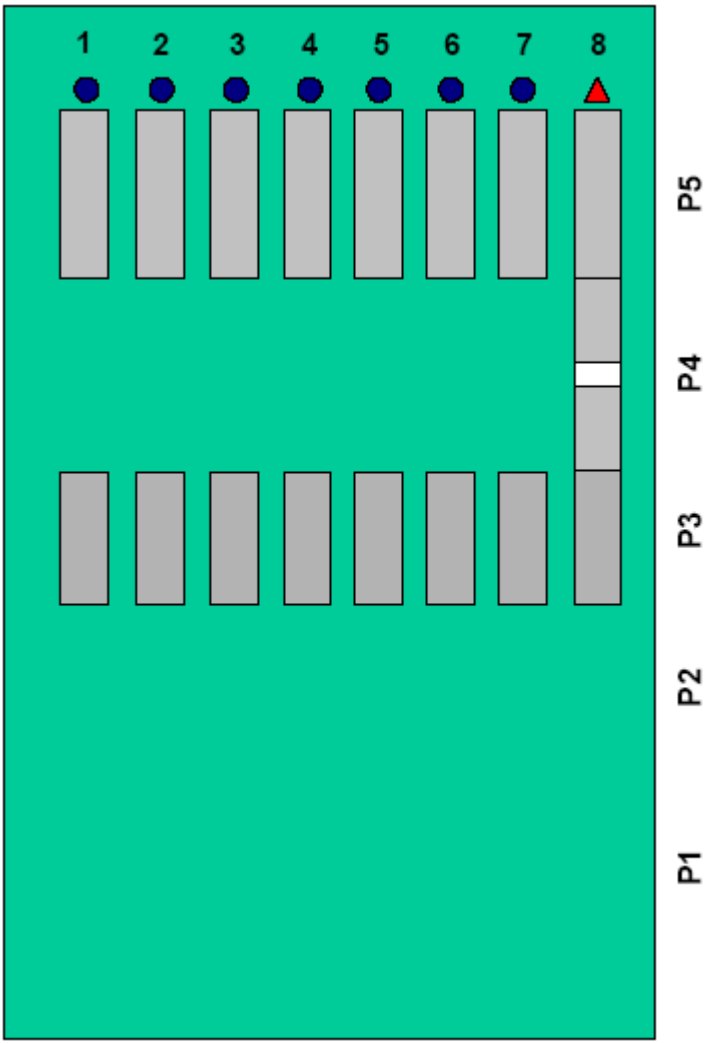


Figure 3-4: cBP-6814U Backplane Rear View

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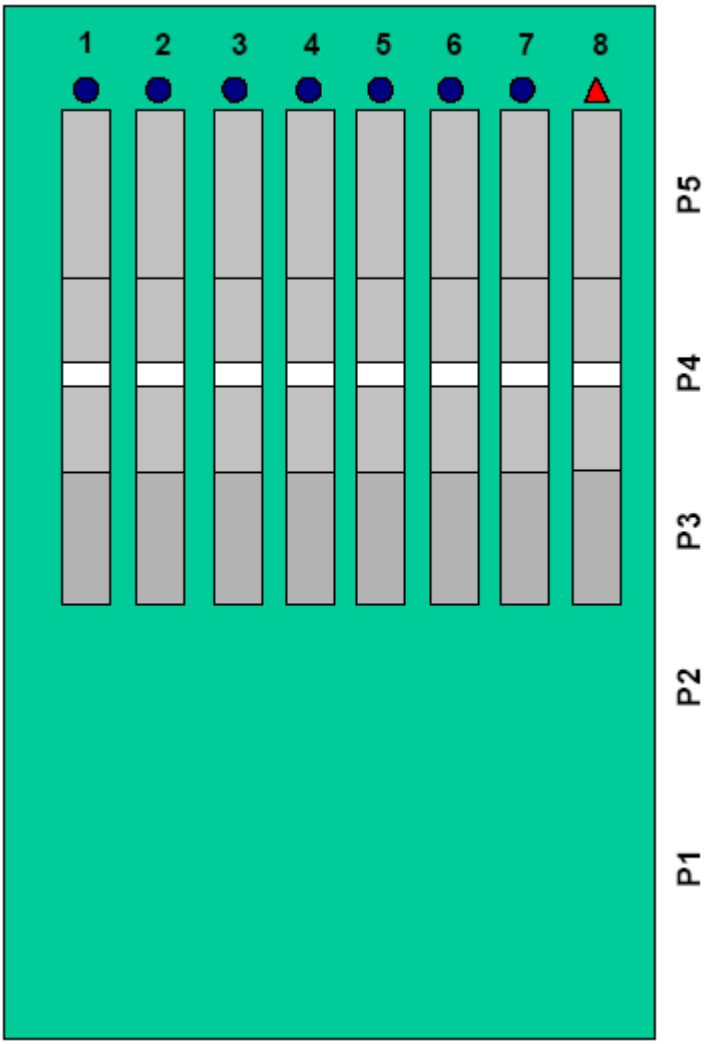
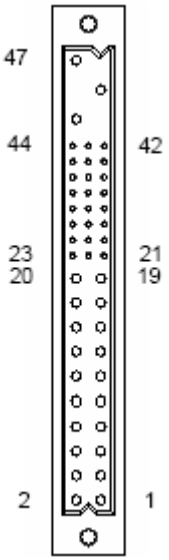


Figure 3-5: cBP-6814U/N110 Backplane Rear View

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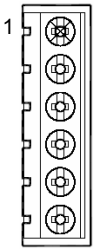
Connector Pin Assignments

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



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

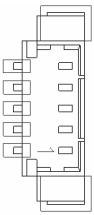
H.110 DC Power Connector [CN1] (cBP-6814U only)



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

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System IPMB Connector [CN2]



Pin	Signal
1	IPMI_CLK
2	GND
3	IPMI_DATA
	IPMI_Power
	ALERT#

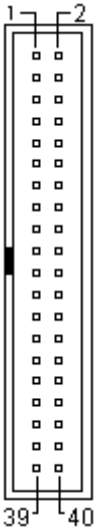
Album Power [CN3]



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

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IDE Connectors (CN4/CN5)

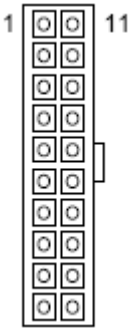


Signal	Pin	Pin	Signal
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	No connect
DRQ0 / DRQ1	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0 / DACK1	29	30	Ground
IRQ14 / IRQ 15	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

Note: Connect IDE devices to CN4. Connect CN5 to the desired RTM. The IDE signals are passed through the backplane between CN4 and CN5.

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ATX Power Connector [CN6]



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

AC-Inlet Connector [CN7, CN8]



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

+12V Connector [CN9]



Pin	Signal
1	+12V
2	GND

-12V Connector [CN10]



Pin	Signal
1	-12V
2	GND

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-5V Connector [CN11]



Pin	Signal
1	-5V
2	GND

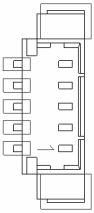
+3.3V Connector [CN12]



Pin	Signal
1	+3.3V
2	GND

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Power IPMB Connector [CN13]



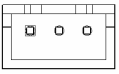
Pin	Signal
1	IPMI_CLK
2	GND
3	IPMI_DATA
	IPMI_Power
	ALERT#

Power Sense [CN14]



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

INH# Connector [CN15]



Pin	Signal
1	INH#
2	GND
3	DEG#

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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 P1: [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 P2: [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 P3: [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 P4: [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 P5: [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 P1: [P6, P11, P16, P21, P26, P31, P36]]

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 P2: [P7, P12, P17, P22, P27, P32, P37]]

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 P3: [P8, P13, P18, P23, P28, P33, P38]

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 P4: [P9, P14, P19, P24, P29, P34, P39]

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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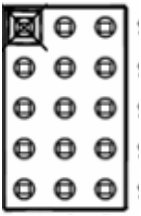
Peripheral Slot P5: [P10, P15, P20, P25, P30, P35, P40]

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] (cBP-6814U only)



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

(default: 1-2 shorted)

V(I/O) Setting Jumper [J4 - J6]

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

(default: J4-J5 shorted)

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4 Cooling System

The cPCIS-6418U Subsystem is equipped with several fans to provide cooling for the system board, peripheral cards and power supply units. There is one front-access hot swappable four-fan intake module at the right side of the chassis with a replaceable air filter. One large hot swappable fan provides exhaust at the left rear for the power supply units. A swappable fan on the left side panel of the chassis provides additional exhaust. An embedded alarm board monitors fan status and initiates a visible and audible alarm upon fan failure and over-temperature condition.

4.1 System Alarm Board

- Supports fault alarm for up to 6 fans. If any fan faults, the Fan LED will flash and an audible alarm will sound
- Can detect temperature at two different locations.
- Fan speed can be set by temperature (medium or high) .
- 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
- RS-232 connector on rear panel provides information on fan, temperature, and voltage status by HyperTerminal.

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Mechanical Drawing

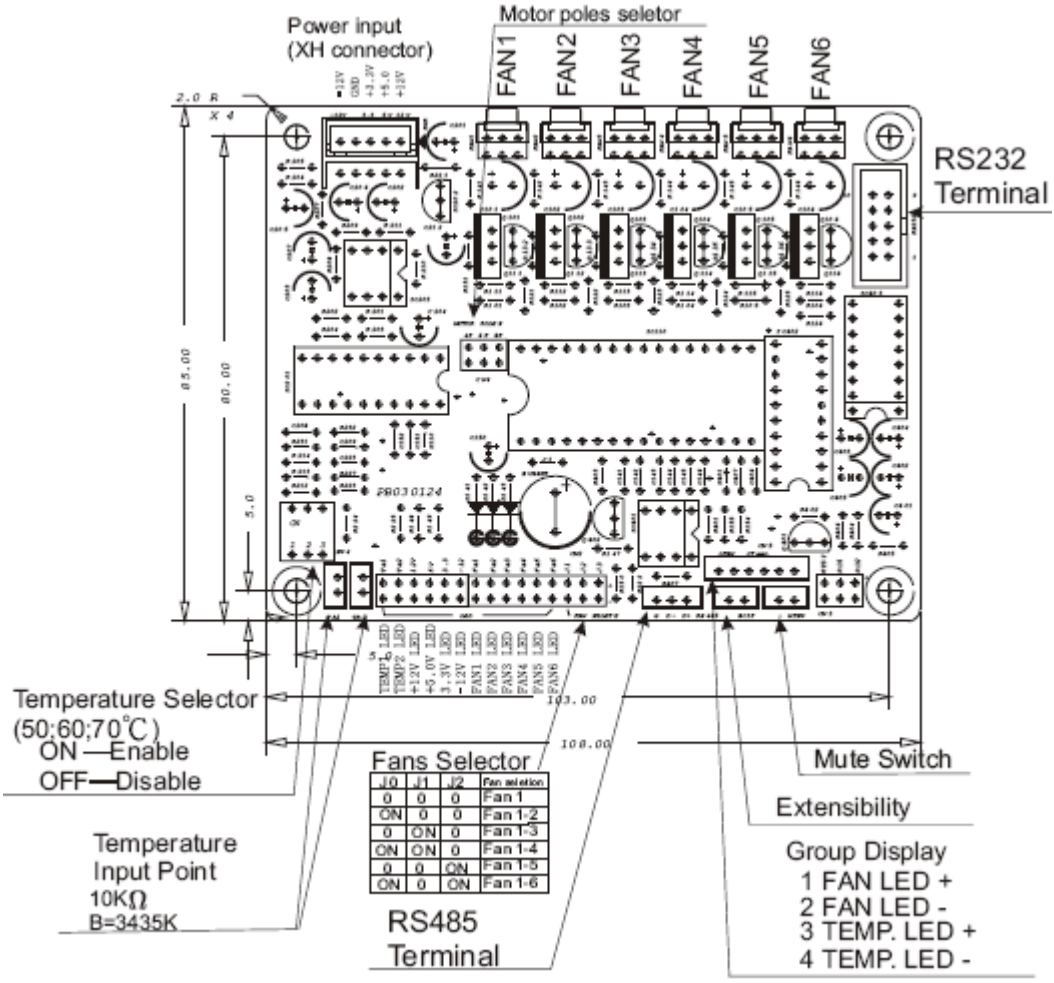


Figure 4-1: System Alarm Board Mechanical Drawing

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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.

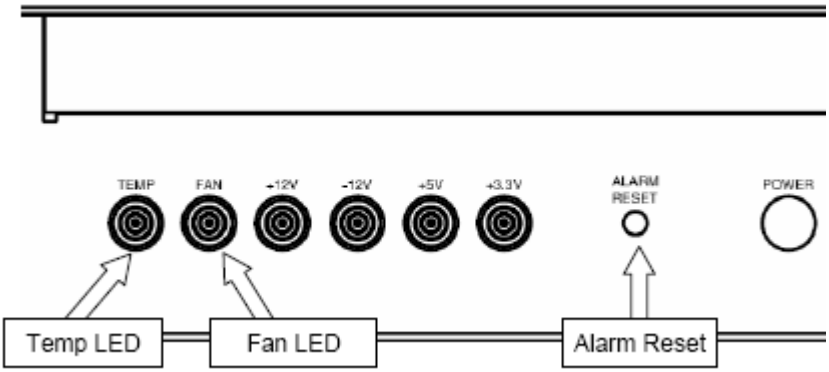


Figure 4-2: Alarm LEDs and reset button

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4.3 Fan Removal and Replacement Procedure

To remove and replace a faulty fan module, follow the procedures below. For replacement fan modules, please contact your ADLINK distributor.

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.

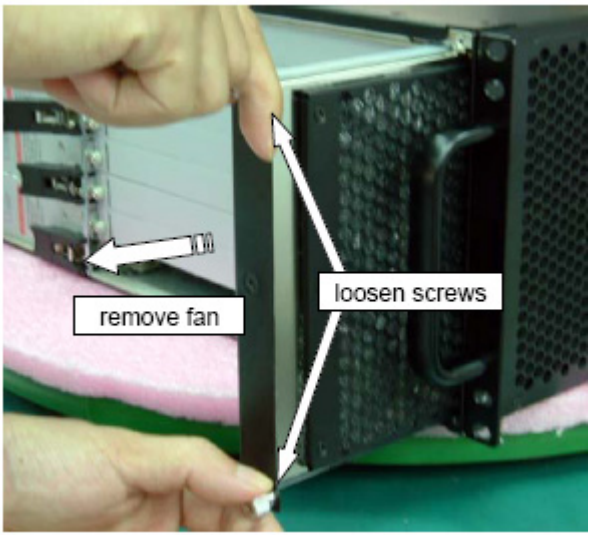


Figure 4-3: Remove the front-access intake fan module

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Rear Exhaust Fan

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

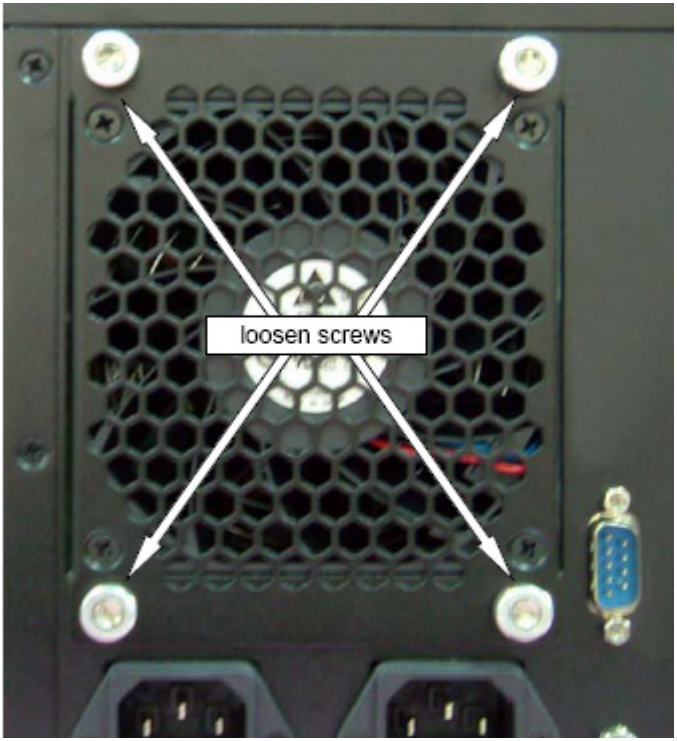


Figure 4-4: Remove the rear exhaust fan module (PSU)

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

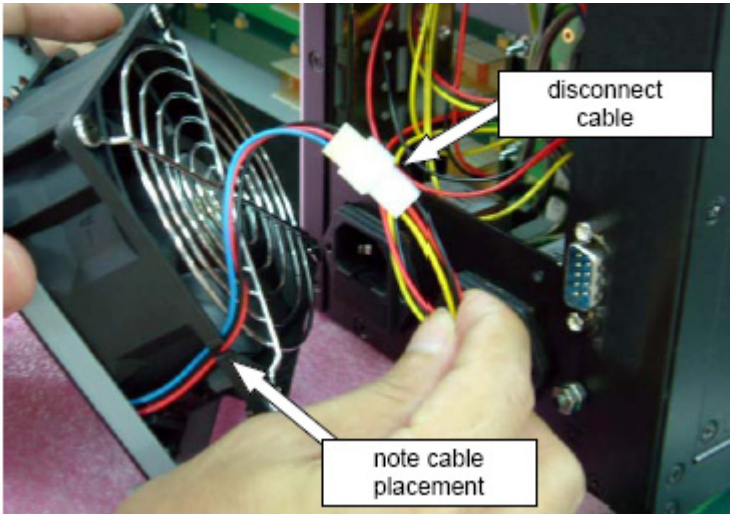


Figure 4-5: Disconnect the rear exhaust fan module (PSU) power cable

3. Reverse steps 1-2 to replace the fan module. Ensure the power cable is properly placed in the cut-out on the fan casing to prevent it from catching during installation.

Left-Side Exhaust Fan

1. Remove the 4 screws attaching the left-side exhaust fan module as shown below.

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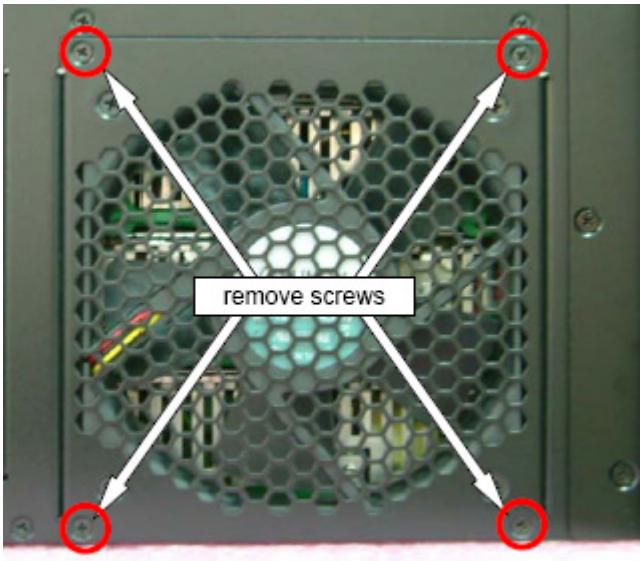


Figure 4-6: Remove the left-side exhaust fan module screws

2. Pull the fan module out of the chassis by the front edge, disconnect the power cable, and replace with a functional fan module.

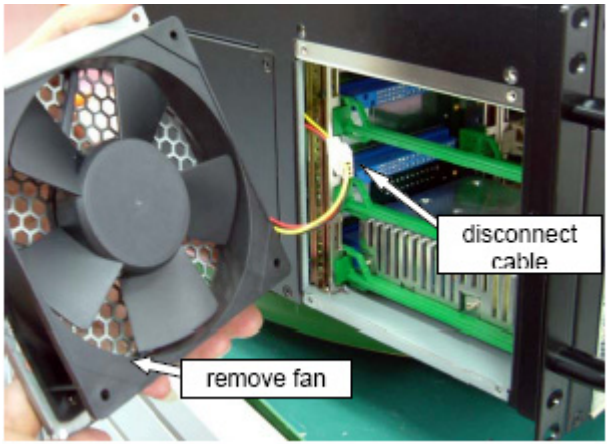


Figure 4-7: Remove the left exhaust fan module and disconnect the power cable

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

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4.4 Air Filter Replacement

To ensure proper performance of the system, the air filter should be cleaned or replaced as necessary. A replacement air filter is supplied and can be found in the Accessory Packet.

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 9 screws securing the filter cover, and lift the cover to expose the filter element.

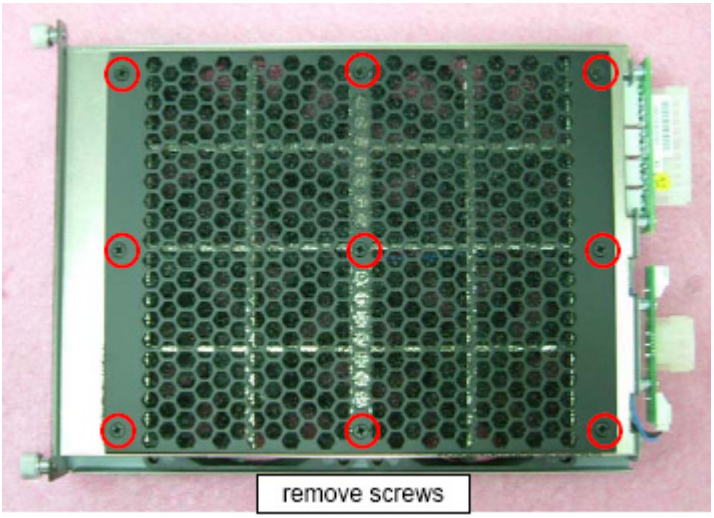


Figure 4-8: Remove air filter cover screws

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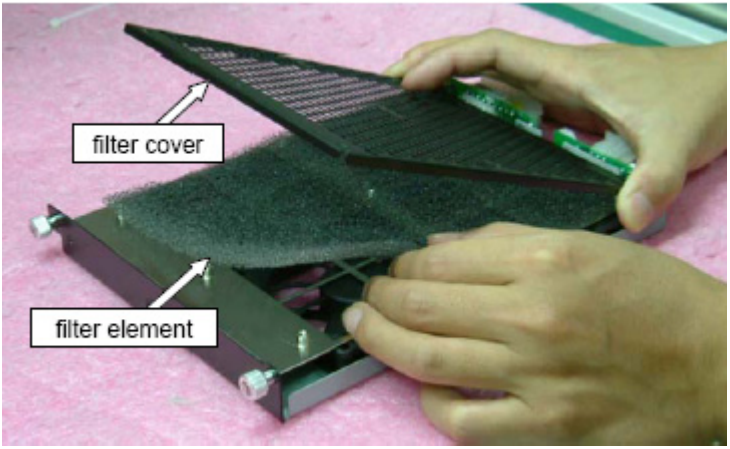


Figure 4-9: Clean or replace filter

3. Clean the existing filter or replace it with the one provided.
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 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.

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4.6 Alarm Board Serial Port Access

To access fan, temperature, and voltage information monitored by the alarm board, connect a PC to the serial port on the rear of the cPCIS-6418U chassis using a 1-to-1 DB-9 cable (not a nul modem cable). Use Windows HyperTerminal to interface with the alarm board using the following settings:

Type:	RS232/RS485
Baud Rate:	9600bps
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	Hardware

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4.7 Fan Specifications

Delta AFB0824SHB (right side front-access fans x4)

- Dimensions: 80 x 80 x15mm
- Weight: 58 g
- Type:12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.27A
- Rated power: 3.24 W
- Fan speed: 4000 RPM
- Maximum Air flow: 42.7 CFM/each (when zero static pressure)
- Noise: 42.5 dBA/each

Delta FFB0912EHE (rear exhaust fan)

- Dimensions: 92 x 92 x 38mm
- Weight: 198 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 1.0A
- Rated power: 12W
- Fan speed: 4800 RPM
- Maximum Air flow: 110CFM (when zero static pressure)
- Noise: 55.0 dBA

Delta KD1204PFV1 (left side fan)

- Dimensions: 120 x 120 x 25.4mm
- Weight: 198 g
- Type: 12V DC brush-less, with ball bearing motor
- Rated voltage: 12V @ 0.53A
- Rated power: 6.36 W
- Fan speed: 3400RPM
- Maximum Air flow:113 CFM (when zero static pressure)
- Noise: 46.5dBA/each

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5 Power Supply Unit

The power supply options for the cPCIS-6418U Series is ADLINK's cPS-H325/AC CompactPCI power module.

5.1 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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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 50°C.
- 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 limited two-year warranty, one year for products bought in China:
   - The warranty period starts on the day the product is shipped 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 any 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 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 ADLINK technicians.
   - Products with altered and/or damaged serial numbers are not entitled to our service.
   - This warranty is not transferable or extendible.
   - 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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