NuIPC®

cPCI-8602

6U CompactPCI Single Slot 64-bit/66MHz
Hot Swappable Dual PMC Slot Carrier Board

User's Guide

Recycled Paper

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How to Use This Guide

This manual is designed to assist users in understanding the cPCI-8602 and describes how to modify settings to meet specific application requirements.

Chapter 1 **Introduction**
Overview of product features, applications, and specifications.

Chapter 2 **Getting Started**
Describes unpacking and illustrates connector pin assignments.

Chapter 3 **Installation**
Describes setup and installation.

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1

Introduction

The cPCI-8602 6U CompactPCI single slot 64-bit hot swappable dual PMC carrier board offers the flexibility required by most I/O applications. The cPCI-8602 is designed in accordance to PICMG 2.0 R3.0 and PICMG 2.1 R2.0 specifications. Its 6U cPCI design only occupies one system slot and accepts two single-sized PMC modules or one double-sized PMC module. The 64-bit/66MHz PCI R2.1-compliant bus ensures efficient cPCI communication with either 3.3V or 5V PMC modules. Rear I/O PMC modules are also supported through an optional cPCI rear I/O transition module.

The on-board transparent PCI-to-PCI bridge supplies the additional dual PMC slots without the hassles of PCI bus mastering. This bridge also supports a 32-bit/64-bit CompactPCI bus and 33/66MHz PMC cards.

An ELMA handle and hot-swappable functionality guarantee easy installation and removal. The cPCI-8602 ground is isolated to prevent signal noise from the chassis.

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1.1 Features

- PICMG 2.0 CompactPCI Specification R3.0 Compliant
- PICMG 2.1 CompactPCI Hot Swap Specification R2.0 Compliant (optional)
- 6U cPCI form factor, 1-slot (4TE/HP) width
- Design for one dual-size or two single-size PMC modules
- Optional cPCI rear I/O transition module support for rear I/O PMC modules
- 64-bit/66MHz PCI bus for both cPCI and PMC slots
- Supports universal (3.3V and 5V) voltage CompactPCI boards and PMC module (default is 5V)

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1.2 Specifications

General CompactPCI Features

- PCI Rev.2.1 compliant
- PICMG 2.0 CompactPCI R3.0 compliant
- PICMG 2.1 CompactPCI Hot-Swap specification R2.0 compliant (optional)
- PICMG 2.3 PMC I/O on CompactPCI specification R1.0 compliant

Form Factor

- Standard 6U CompactPCI (board size: 233.35mm x 160mm)
- Single slot (4TE/HP, 20.32mm)

PCI Bus Bridge

- Intel 21154 transparent PCI to PCI bridge (or equivalent)
- Supports on-board dual PMC slots with PCI bus mastering
- Supports 32-bit/64-bit PCI data/address lines for CompactPCI bus and PMC slots with 33/66MHz PCI clocking
- Full hot-swap support

PMC Slots

- Supports IEEE P1386.1 standard PMC (PCI Mezzanine Card) module
- Designed for one dual-size or two single-size PMC modules
- All on-board PMC slots are PCI bus mastered
- Supports 32-bit/64-bit PCI data/address lines with 33/66MHz PCI clocking
- Supports 3.3V, 5V, and universal voltage PMC modules (default is 5V)
- Optional PMC1 J14/P14 connects to CompactPCI J3 for rear I/O (Reserved)
- Optional PMC2 J24/P24 connects to CompactPCI J5 for rear I/O (Reserved)

Front Panel LEDs

- Power status (green LED)
- Hot-swap status indicator (blue LED)

Other

- Chassis GND is isolated from digital ground on carrier board
- ELMA handle with hot-swap micro-switch
- New Rittal EMC spring prevents EMC spring damage

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2

Getting Started

This chapter describes how to prepare the cPCI-8602 for installation. Please carefully review the unpacking information before removing the product. Optional settings are also specified below.

2.1 What's Included

In addition to this *User's Manual*, the package includes the following item:

- cPCI-8602 Dual PMC Slot Carrier Board

If anything is missing or damaged, contact the dealer the product was purchased. Save the shipping materials and carton to ship or store the product in the future.

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2.2 Unpacking

The cPCI-8602 contains sensitive electronic components that can be easily damaged by static electricity.

Prepare a grounded anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same point as the anti-static mat.

Inspect the card module carton for obvious damage. Shipping and handling may cause damage to the module. Be sure there is no obvious damage due to shipping and handing by examining the shipping box.

After opening the card module carton, extract the system module and place it only on a grounded anti-static surface, component side up.

Note: DO NOT APPLY POWER TO THE CARD IF IT HAS BEEN DAMAGED.

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2.3 cPCI-8602 Layout

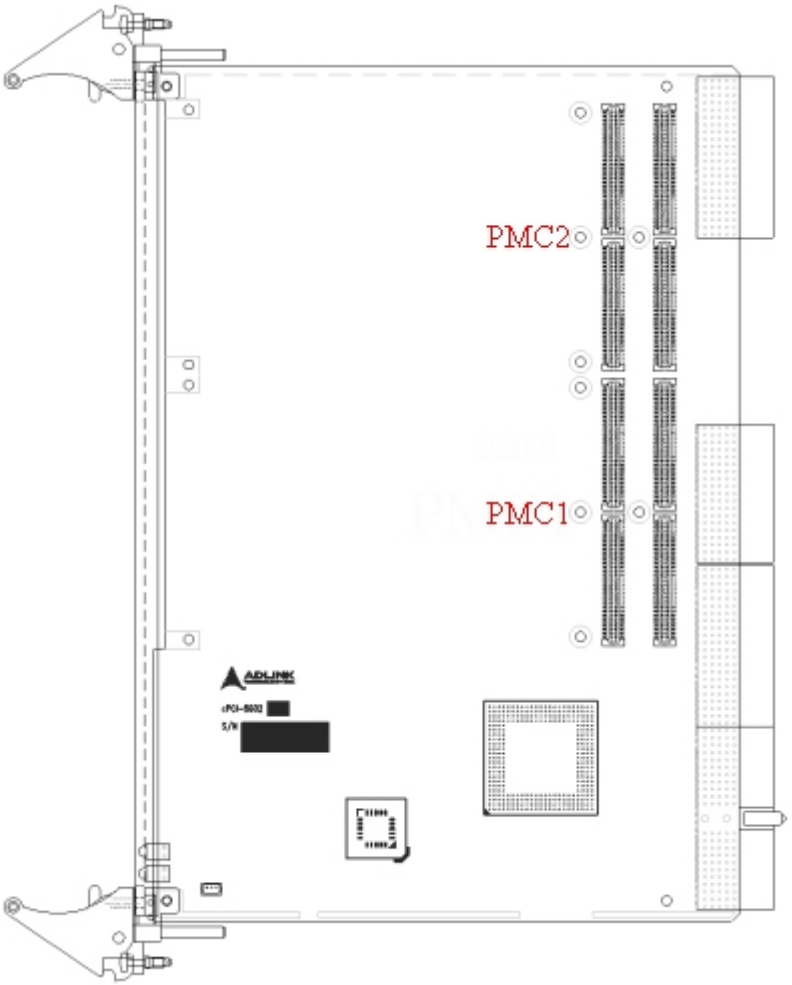
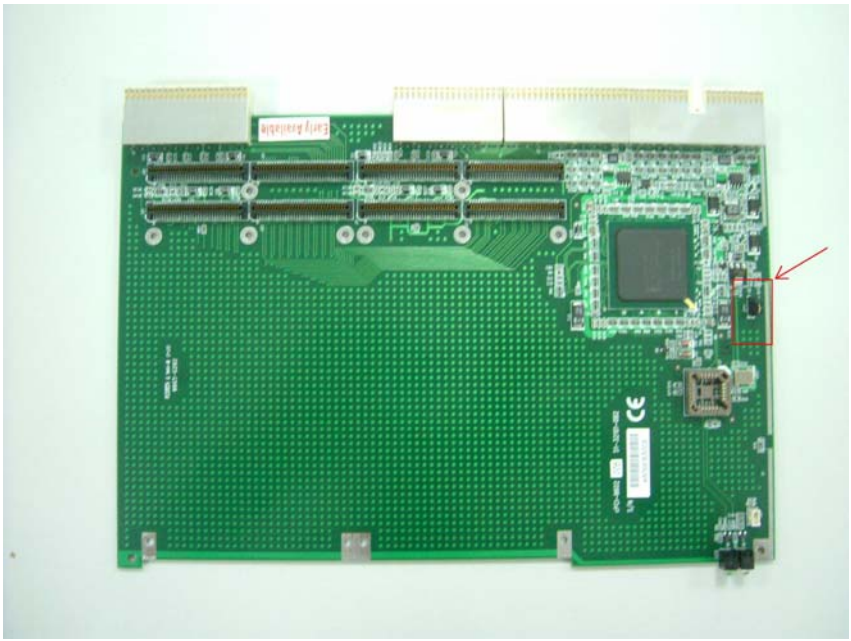


Figure 2.1 cPCI-6802 Layout

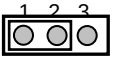
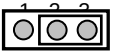
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2.4 Voltage Selection

The cPCI-8602 supports both 3.3V and 5.0V PMC modules. The factory default setting is 5V. To change to 3.3V, change the mini-jumper position of JPY1 from pin2-3 to pin1-2.



JPY1Jumper Setting : The mini-jumper of JPY1 is used to set the PMC VIO to 3.3V or 5V (Default)

Status	JPY1
PMC VIO set to 3.3V	
PMC VIO set to 5V (Default)	

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2.5 Functional Block Diagram

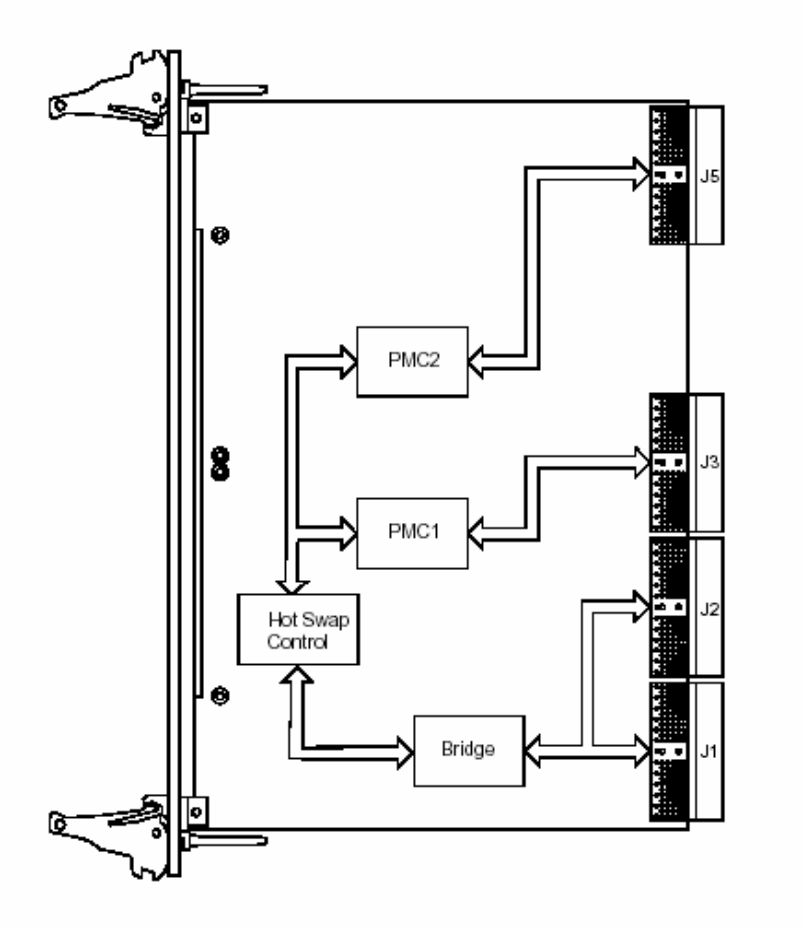


Figure 2.2 cPCI-6802 Functional Layout

Note: J3 and J5 are reserved.

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2.6 Pinouts

CompactPCI J3 Pin Assignments (Reserved)

	ROW A	ROW B	ROW C	ROW D	ROW E	
14	+3.3V	+3.3V	+3.3V	+5V	+5V	14
13	PMC1IO5	PMC1IO4	PMC1IO3	PMC1IO2	PMC1IO1	13
12	PMC1IO10	PMC1IO9	PMC1IO8	PMC1IO7	PMC1IO6	12
11	PMC1IO15	PMC1IO14	PMC1IO13	PMC1IO12	PMC1IO11	11
10	PMC1IO20	PMC1IO19	PMC1IO18	PMC1IO17	PMC1IO16	10
9	PMC1IO25	PMC1IO24	PMC1IO23	PMC1IO22	PMC1IO21	9
8	PMC1IO30	PMC1IO29	PMC1IO28	PMC1IO27	PMC1IO26	8
7	PMC1IO35	PMC1IO34	PMC1IO33	PMC1IO32	PMC1IO31	7
6	PMC1IO40	PMC1IO39	PMC1IO38	PMC1IO37	PMC1IO36	6
5	PMC1IO45	PMC1IO44	PMC1IO43	PMC1IO42	PMC1IO41	5
4	PMC1IO50	PMC1IO49	PMC1IO48	PMC1IO47	PMC1IO46	4
3	PMC1IO55	PMC1IO54	PMC1IO53	PMC1IO52	PMC1IO51	3
2	PMC1IO60	PMC1IO59	PMC1IO58	PMC1IO57	PMC1IO56	2
1	V(I/O)	PMC1IO64	PMC1IO63	PMC1IO62	PMC1IO61	1

Notes:

1. PMC1IO* signals are connected to the lower PMC Slot (i.e. Slot 1).
2. Pins in J3 columns 15 through 19 are not connected (NC).
3. V(I/O) default is 5V and is controlled by JPY1. However, 3.3 V is available as a factory option (see Section 2.4).

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CompactPCI J5 Pin Assignments (Reserved)

	ROW A	ROW B	ROW C	ROW D	ROW E	
13	PMC2IO5	PMC2IO4	PMC2IO3	PMC2IO2	PMC2IO1	13
12	PMC2IO10	PMC2IO9	PMC2IO8	PMC2IO7	PMC2IO6	12
11	PMC2IO15	PMC2IO14	PMC2IO13	PMC2IO12	PMC2IO11	11
10	PMC2IO20	PMC2IO19	PMC2IO18	PMC2IO17	PMC2IO16	10
9	PMC2IO25	PMC2IO24	PMC2IO23	PMC2IO22	PMC2IO21	9
8	PMC2IO30	PMC2IO29	PMC2IO28	PMC2IO27	PMC2IO26	8
7	PMC2IO35	PMC2IO34	PMC2IO33	PMC2IO32	PMC2IO31	7
6	PMC2IO40	PMC2IO39	PMC2IO38	PMC2IO37	PMC2IO36	6
5	PMC2IO45	PMC2IO44	PMC2IO43	PMC2IO42	PMC2IO41	5
4	PMC2IO50	PMC2IO49	PMC2IO48	PMC2IO47	PMC2IO46	4
3	PMC2IO55	PMC2IO54	PMC2IO53	PMC2IO52	PMC2IO51	3
2	PMC2IO60	PMC2IO59	PMC2IO58	PMC2IO57	PMC2IO56	2
1	(NC)	PMC2IO64	PMC2IO63	PMC2IO62	PMC2IO61	1

Notes:

1. PMC2IO* signals are connected to the upper PMC slot (i.e. Slot 2).
2. Pins in J5 columns 14 through 22 are not connected (NC).
3. Pin A1 is active low on some transition modules to indicate the module is present (TMPRSNT_L).

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PMC slot pin assignments

J11 & J21 32-bit PCI

Pin#	Signal Name	Signal Name	Pin #
1	TCK	-12V	2
3	GND	INTA#	4
5	INTB#	INTC#	6
7	BUSMODE1#	+5V	8
9	INTD#	PCI-RSVD	10
11	GND	3.3VAUX (NC)	12
13	CLK	GND	14
15	GND	GNT#	16
17	REQ#	+5V	18
19	V(I/O)	AD[31]	20
21	AD[28]	AD[27]	22
23	AD[25]	GND	24
25	GND	C/BE[3]#	26
27	AD[22]	AD[21]	28
29	AD[19]	+5V	30
31	V(I/O)	AD[17]	32
33	FRAME#	GND	34
35	GND	IRDY#	36
37	DEVSEL#	+5V	38
39	GND	LOCK#	40
41	PCI-RSVD*	PCI-RSVD*	42
43	PAR	GND	44
45	V(I/O)	AD[15]	46
47	AD[12]	AD[11]	48
49	AD[09]	+5V	50
51	GND	C/BE[0]#	52
53	AD[06]	AD[05]	54

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Pin#	Signal Name	Signal Name	Pin #
55	AD[04]	GND	56
57	V(I/O)	AD[03]	58
59	AD[02]	AD[01]	60
61	AD[00]	+5V	62
63	GND	REQ64#	64

J12 & J22 32-bit PCI

Pin#	Signal Name	Signal Name	Pin #
1	+12V	TRST#	2
3	TMS	TDO	4
5	TDI	GND	6
7	GND	PCI-RSVD	8
9	PCI-RSVD	PCI-RSVD	10
11	BUSMODE2#	+3.3V	12
13	RST#	BUSMODE3#	14
15	+3.3V	BUSMODE4#	16
17	PME# (NC)	GND	18
19	AD[30]	AD[29]	20
21	GND	AD[26]	22
23	AD[24]	+3.3V	24
25	IDSEL	AD[23]	26
27	+3.3V	AD[20]	28
29	AD[18]	GND	30
31	AD[16]	C/BE[2]#	32

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Pin#	Signal Name	Signal Name	Pin #
33	GND	PMC-RSVD	34
35	TRDY#	+3.3V	36
37	GND	STOP#	38
39	PERR#	GND	40
41	+3.3V	SERR#	42
43	C/BE[1]#	GND	44
45	AD[14]	AD[13]	46
47	M66EN*	AD[10]	48
49	AD[08]	+3.3V	50
51	AD[07]	PMC-RSVD	52
53	+3.3V	PMC-RSVD	54
55	PMC-RSVD	GND	56
57	PMC-RSVD	PMC-RSVD	58
59	GND	PMC-RSVD	60
61	ACK64#	+3.3V	62
63	GND	PMC-RSVD	64

J13 & J23 64-bit PCI Extension

Pin#	Signal Name	Signal Name	Pin #
37	AD45	GND	38
39	V(I/O)	AD44	40
41	AD43	AD42	42
43	AD41	GND	44
45	GND	AD40	46
47	AD39	AD38	48
49	AD37	GND	50
51	GND	AD36	52
53	AD35	AD34	54
55	AD33	GND	56
57	V(I/O)	AD32	58
59	PCI-RSVD	PCI-RSVD	60
61	PCI-RSVD	GND	62
63	GND	PCI-RSVD	64

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Pin#	Signal Name	Signal Name	Pin #
1	PCI-RSVD	GND	2
3	GND	C/BE7#	4
5	C/BE6#	C/BE5#	6
7	C/BE4#	GND	8
9	V(I/O)	PAR64	10
11	AD63	AD62	12
13	AD61	GND	14
15	GND	AD60	16
17	AD59	AD58	18
19	AD57	GND	20
21	V(I/O)	AD56	22
23	AD55	AD54	24
25	AD53	GND	26
27	GND	AD52	28
29	AD51	AD50	30
31	AD49	GND	32
33	GND	AD48	34
35	AD47	AD46	36

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J14 & J24 User defined I/O (for rear I/O)

Pin#	Signal Name	Signal Name	Pin #
1	I/O	I/O	2
3	I/O	I/O	4
5	I/O	I/O	6
7	I/O	I/O	8
9	I/O	I/O	10
11	I/O	I/O	12
13	I/O	I/O	14
15	I/O	I/O	16
17	I/O	I/O	18
19	I/O	I/O	20
21	I/O	I/O	22
23	I/O	I/O	24
25	I/O	I/O	26
27	I/O	I/O	28
29	I/O	I/O	30
31	I/O	I/O	32
33	I/O	I/O	34
35	I/O	I/O	36
37	I/O	I/O	38
39	I/O	I/O	40
41	I/O	I/O	42
43	I/O	I/O	44
45	I/O	I/O	46
47	I/O	I/O	48
49	I/O	I/O	50
51	I/O	I/O	52
53	I/O	I/O	54

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Pin#	Signal Name	Signal Name	Pin #
55	I/O	I/O	56
57	I/O	I/O	58
59	I/O	I/O	60
61	I/O	I/O	62
63	I/O	I/O	64

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3

Installation

3.1 PMC Board Installation

Insert the face of the PMC module into the front of the cPCI-8602 carrier board. Carefully align the PMC connector to the carrier board and firmly place it in the slot. Secure the module to the carrier board with screws.

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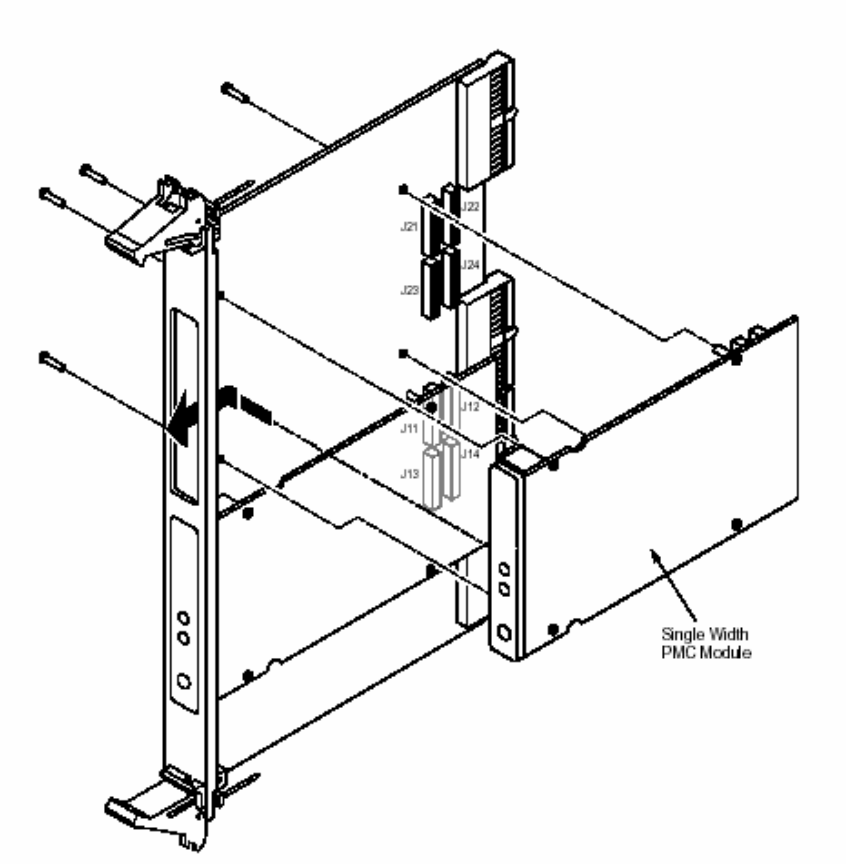


Figure 3.1 PMC Module Installation

Note: Ensure that the PMC module(s) are properly installed before connecting the cPCI-6802 carrier board to the system.

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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.

2. When sending in damaged products for repair, please attach an RMA application form.

3. All ADLINK products come with a two-year guarantee, repaired free of charge.

    - 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.
    - End users requiring maintenance services should contact their local dealers. Local warranty conditions will depend on local dealers.

4. This warranty will not cover repair costs due to:

    - Damage caused by not following instructions.
    - Damage caused by carelessness on the users' 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.
    - Damage from improper repair by unauthorized technicians.
    - Products with altered and/or damaged serial numbers.
    - Other categories not protected under our guarantees.

5. Customers are responsible for shipping costs to transport damaged products to our company or sales office.

6. To ensure the speed and quality of product repair, please download a RMA application form from our company website: www.adlinktech.com. Damaged products with attached RMA forms receive priority.

For further questions, please contact our FAE staff.

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