cPCI-8301

3U CompactPCI

64-bit PMC Carrier Board

User's Manual

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Table of Contents

List of Tables ..... **ii**

List of Figures ..... **iii**

1 Introduction **1**
- 1.1 Product Overview 1
- 1.2 Unpacking Checklist 2
- 1.3 cPCI-8301 Mechanical Drawing 3
- 1.4 cPCI-8301 Functional Diagram 4
- 1.5 cPCI-8301 Placement 4
- 1.6 Number of Boards Supported per PCI Bus 5

2 Connectors **7**
- 2.1 PMC Connectors 7
- 2.2 CompactPCI Connectors 10

Warranty Policy **13**

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List of Tables

Table 2-1: P1 and P2 PMC Connector Pin Definitions 7
Table 2-2: P3 PMC Connector Pin Definitions 8
Table 2-3: J1 Connector Pin Definitions 10
Table 2-4: J2 Connector Pin Definitions (64-bit) 11

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List of Figures

Figure 1-1: cPCI-8301 Carrier Board Layout 3
Figure 1-2: cPCI-8301 Functional Diagram 4
Figure 1-3: cPCI-8301 Top View..... 4
Figure 1-4: cPCI-8301 Bottom View 5

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1 Introduction

1.1 Product Overview

The cPCI-8301 is a standard 3U form factor CompactPCI 64-bit PMC carrier board with one PMC site. It supports 32/64-bit, 33/66MHz PCI buses. It is PICMG 2.0 CompactPCI Specification R2.1 and IEEE 1386.1 PMC Standard compliant.

Note: There is no VIO keying on the cPCI-8301. VIO is directly connected to connector J2 and defined by the backplane. Please check your backplane's VIO before installing your PMC card onto the cPCI-8301.

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1.2 Unpacking Checklist

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

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

Included Items
cPCI-8301 carrier board
This manual

Note: The packaging of the cPCI-8301 OEM version with non-standard configuration, functionality, or package may vary according to different configuration requests.

CAUTION: The cPCI-8301 carrier board must be protected from static discharge and physical shock. Never remove any of the socketed parts except at a static-free work-station. Use the anti-static bag shipped with the product to handle the board. Wear a grounded wrist strap when servicing.



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1.3 cPCI-8301 Mechanical Drawing

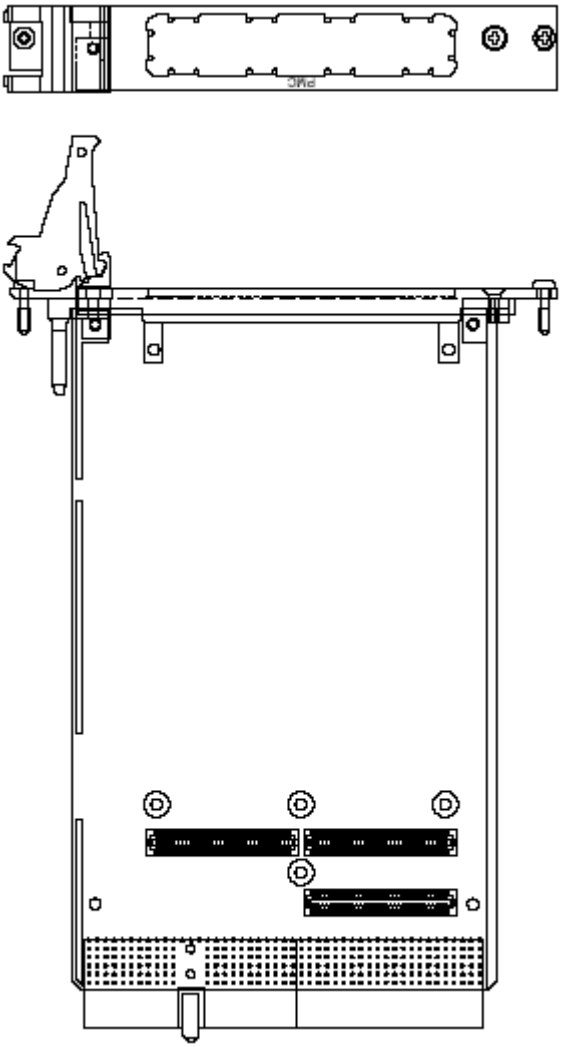


Figure 1-1: cPCI-8301 Carrier Board Layout

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1.4 cPCI-8301 Functional Diagram

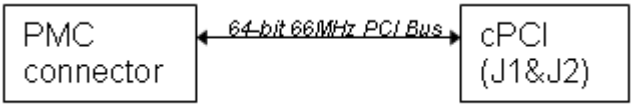


Figure 1-2: cPCI-8301 Functional Diagram

1.5 cPCI-8301 Placement

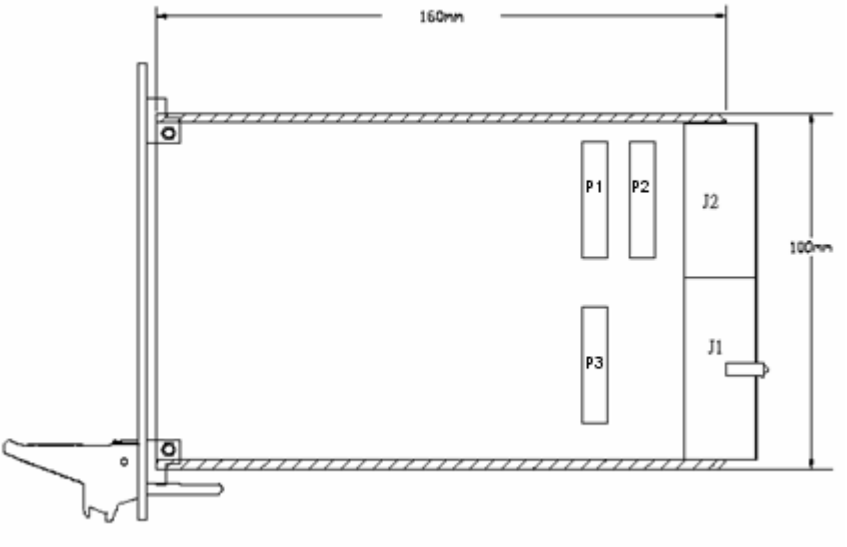


Figure 1-3: cPCI-8301 Top View

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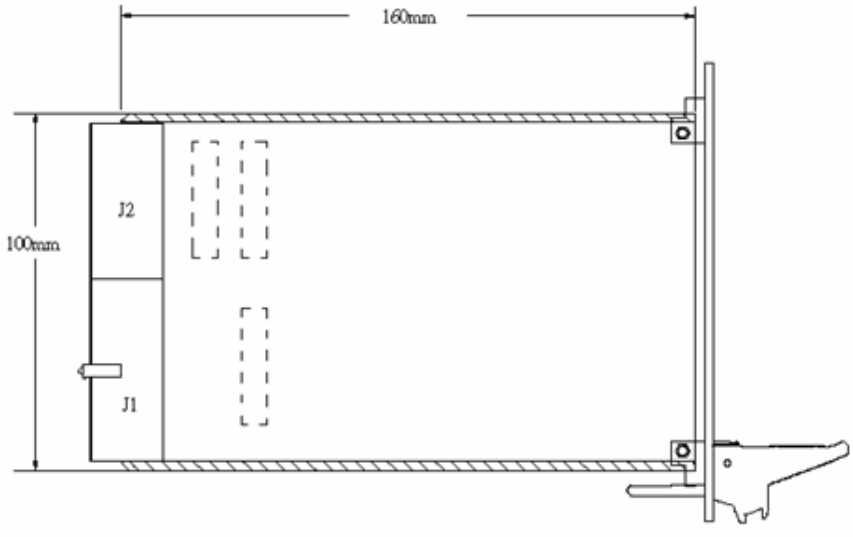


Figure 1-4: cPCI-8301 Bottom View

1.6 Number of Boards Supported per PCI Bus

The maximum number of cPCI-8301 boards that can be supported on one PCI bus is dependant on the frequency of the PMC cards installed. Please refer to the following table:

PMC Card frequency	33MHz	66MHz
Number of Boards on one PCI bus	4	2

Note: If one or more 33MHz PMC cards is installed, all cards will run at 33MHz, and this will determine the maximum number of boards supported.

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2 Connectors

This chapter will familiarize the user with the connectors on the cPCI-8301.

2.1 PMC Connectors

The cPCI-8301 is a single I/O board for 64-bit PMC to cPCI transfer. PMC connectors P1-P3 are implemented. The P4 connector (User IO) is not implemented.

The Jn1, Jn2, and Jn3 PMC connector pin definitions are shown in the following tables:

Jn1 (32 Bit)				Jn2 (32Bit)			
Pin	**Signal**	**Signal**	**Pin**	**Pin**	**Signal**	**Signal**	**Pin**
1	TCK	-12V	2	1	+12V	TRST#	2
3	GND	INTA#	4	3	TMS	TDO	4
5	INTB#	INTC#	6	5	TDI	GND	6
7	NC	+5V	8	7	GND	NC	8
9	INTD#	NC	10	9	NC	NC	10
11	GND	NC	12	11	BUSMODE2#	+3.3V	12
13	CLK	GND	14	13	RST#	BUSMODE3#	14
15	GND	GNT#	16	15	+3.3V	BUSMODE4#	16
17	REQ#	+5V	18	17	NC	GND	18
19	V(I/O)	AD[31]	20	19	AD[30]	AD[29]	20
21	AD[28]	AD[27]	22	21	GND	AD[26]	22
23	AD[25]	GND	24	23	AD[24]	+3.3V	24
25	GND	C/BE[3]#	26	25	IDSEL	AD[23]	26
27	AD[22]	AD[21]	28	27	+3.3V	AD[20]	28
29	AD[19]	+5V	30	29	AD[18]	GND	30
31	V(I/O)	AD[17]	32	31	AD[16]	C/BE[2]#	32
33	FRAME#	GND	34	33	GND	NC	34
35	GND	IRDY#	36	35	TRDY#	+3.3V	36
37	DEVSEL#	+5V	38	37	GND	STOP#	38

Table 2-1: P1 and P2 PMC Connector Pin Definitions

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Jn1 (32 Bit)				Jn2 (32Bit)			
Pin	**Signal**	**Signal**	**Pin**	**Pin**	**Signal**	**Signal**	**Pin**
39	GND	LOCK#	40	39	PERR#	GND	40
41	NC	NC	42	41	+3.3V	SERR#	42
43	PAR	GND	44	43	C/BE[1]#	GND	44
45	V(I/O)	AD[15]	46	45	AD[14]	AD[13]	46
47	AD[12]	AD[11]	48	47	M66EN	AD[10]	48
49	AD[09]	+5V	50	49	AD[08]	+3.3V	50
51	GND	C/BE[0]#	52	51	AD[07]	NC	52
53	AD[06]	AD[05]	54	53	+3.3V	NC	54
55	AD[04]	GND	56	55	PMC-RSVD1	GND	56
57	V(I/O)	AD[03]	58	57	PMC-RSVD2	PMC-RSVD3	58
59	AD[02]	AD[01]	60	59	GND	PMC-RSVD4	60
61	AD[00]	+5V	62	61	ACK64#	+3.3V	62
63	GND	REQ64#	64	63	GND	NC	64

Table 2-1: P1 and P2 PMC Connector Pin Definitions

Note: For pins 11, 14 and 16 of Jn2, BUSMODE is set to *capable of performing PCI protocol*:

BUSMODE[4:2]#
L L H

Jn3 (64 Bit)			
Pin	**Signal**	**Signal**	**Pin**
1	NC	GND	2
3	GND	C/BE[7]#	4
5	C/BE[6]#	C/BE[5]#	6
7	C/BE[4]#	GND	8
9	V(I/O)	PAR64	10
11	AD[63]	AD[62]	12
13	AD[61]	GND	14
15	GND	AD[60]	16

Table 2-2: P3 PMC Connector Pin Definitions

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Jn3 (64 Bit)			
Pin	**Signal**	**Signal**	**Pin**
17	AD[59]	AD[58]	18
19	AD[57]	GND	20
21	V(I/O)	AD[56]	22
23	AD[55]	AD[54]	24
25	AD[53]	GND	26
27	GND	AD[52]	28
29	AD[51]	AD[50]	30
31	AD[49]	GND	32
33	GND	AD[48]	34
35	AD[47]	AD[46]	36
37	AD[45]	GND	38
39	V(I/O)	AD[44]	40
41	AD[43]	AD[42]	42
43	AD[41]	GND	44
45	GND	AD[40]	46
47	AD[39]	AD[38]	48
49	AD[37]	GND	50
51	GND	AD[36]	52
53	AD[35]	AD[34]	54
55	AD[33]	GND	56
57	V(I/O)	AD[32]	58
59	NC	NC	60
61	NC	GND	62
63	GND	NC	64

Table 2-2: P3 PMC Connector Pin Definitions

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2.2 CompactPCI Connectors

The J1 and J2 CompactPCI connector definitions are shown in the tables below:

J1						
Pin	**A**	**B**	**C**	**D**	**E**	**F**
J1-25	+5V	REQ64#	NC	+3.3V	+5V	GND
J1-24	AD[1]	+5V	VIO	AD[0]	ACK64#	GND
J1-23	+3.3V	AD[4]	AD[3]	+5V	AD[2]	GND
J1-22	AD[7]	GND	+3.3V	AD[6]	AD[5]	GND
J1-21	+3.3V	AD[9]	AD[8]	GND	C/BE[0]#	GND
J1-20	AD[12]	GND	VIO	AD[11]	AD[10]	GND
J1-19	+3.3V	AD[15]	AD[14]	GND	AD[13]	GND
J1-18	SERR#	GND	+3.3V	PAR	C/BE[1]#	GND
J1-17	+3.3V	PMC-RSVD3	PMC-RSVD4	GND	PERR#	GND
J1-16	DEVSEL#	GND	VIO	STOP#	LOCK#	GND
J1-15	+3.3V	FRAME#	IRDY#	GND	TRDY#	GND
J1-12-14	Keying Area					
J1-11	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
J1-10	AD[21]	GND	+3.3V	AD[20]	AD[19]	GND
J1-9	C/BE[3]#	IDSEL	AD[23]	GND	AD[22]	GND
J1-8	AD[26]	GND	VIO	AD[25]	AD[24]	GND
J1-7	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
J1-6	REQ#	GND	+3.3V	CLK	AD[31]	GND
J1-5	NC	NC	RST#	GND	GNT#	GND
J1-4	PMC-RSVD1	NC	VIO	NC	PMC-RSVD2	GND
J1-3	INTA#	INTB#	INTC#	+5V	INTD#	GND
J1-2	TCK	+5V	TMS	TDO	TDI	GND
J1-1	+5V	-12V	TRST#	+12V	+5V	GND

Table 2-3: J1 Connector Pin Definitions

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J2 (64-bit)						
Pin	**A**	**B**	**C**	**D**	**E**	**F**
J2-22	NC	NC	NC	NC	NC	GND
J2-21	NC	NC	NC	NC	NC	GND
J2-20	NC	NC	NC	GND	NC	GND
J2-19	NC	NC	NC	NC	NC	GND
J2-18	NC	NC	NC	GND	NC	GND
J2-17	NC	GND	NC	NC	NC	GND
J2-16	NC	NC	NC	GND	NC	GND
J2-15	NC	GND	NC	NC	NC	GND
J2-14	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND
J2-13	AD[38]	GND	VIO	AD[37]	AD[36]	GND
J2-12	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND
J2-11	AD[45]	GND	VIO	AD[44]	AD[43]	GND
J2-10	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND
J2-9	AD[52]	GND	VIO	AD[51]	AD[50]	GND
J2-8	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND
J2-7	AD[59]	GND	VIO	AD[58]	AD[57]	GND
J2-6	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND
J2-5	C/BE[5]#	GND	VIO	C/BE[4]#	PAR64	GND
J2-4	VIO	NC	C/BE[7]#	GND	C/BE[6]#	GND
J2-3	NC	GND	NC	NC	NC	GND
J2-2	NC	NC	NC	NC	NC	GND
J2-1	NC	GND	NC	NC	NC	GND

Table 2-4: J2 Connector Pin Definitions (64-bit)

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   - ▶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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   ▶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.

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   ▶Other categories not protected under our warranty.

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