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User Manual

PIM-Parallel-IO

PMC IO Module for PMC Parallel IO

PIM w/ SCSI II Bezel Connector

Revision A2
Hardware: Revision 02

PIM-Parallel-IO

PMC IO Module for PMC Parallel IO
PIM Module

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The electronic equipment described herein generates, uses, and can radiate radio frequency energy. Operation of this equipment in a residential area is likely to cause radio interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Dynamic Engineering's products are not authorized for use as critical components in life support devices or systems without the express written approval of the president of Dynamic Engineering.

This product has been designed to operate with PIM carriers and compatible user-provided equipment. Connection of incompatible hardware is likely to cause serious damage.

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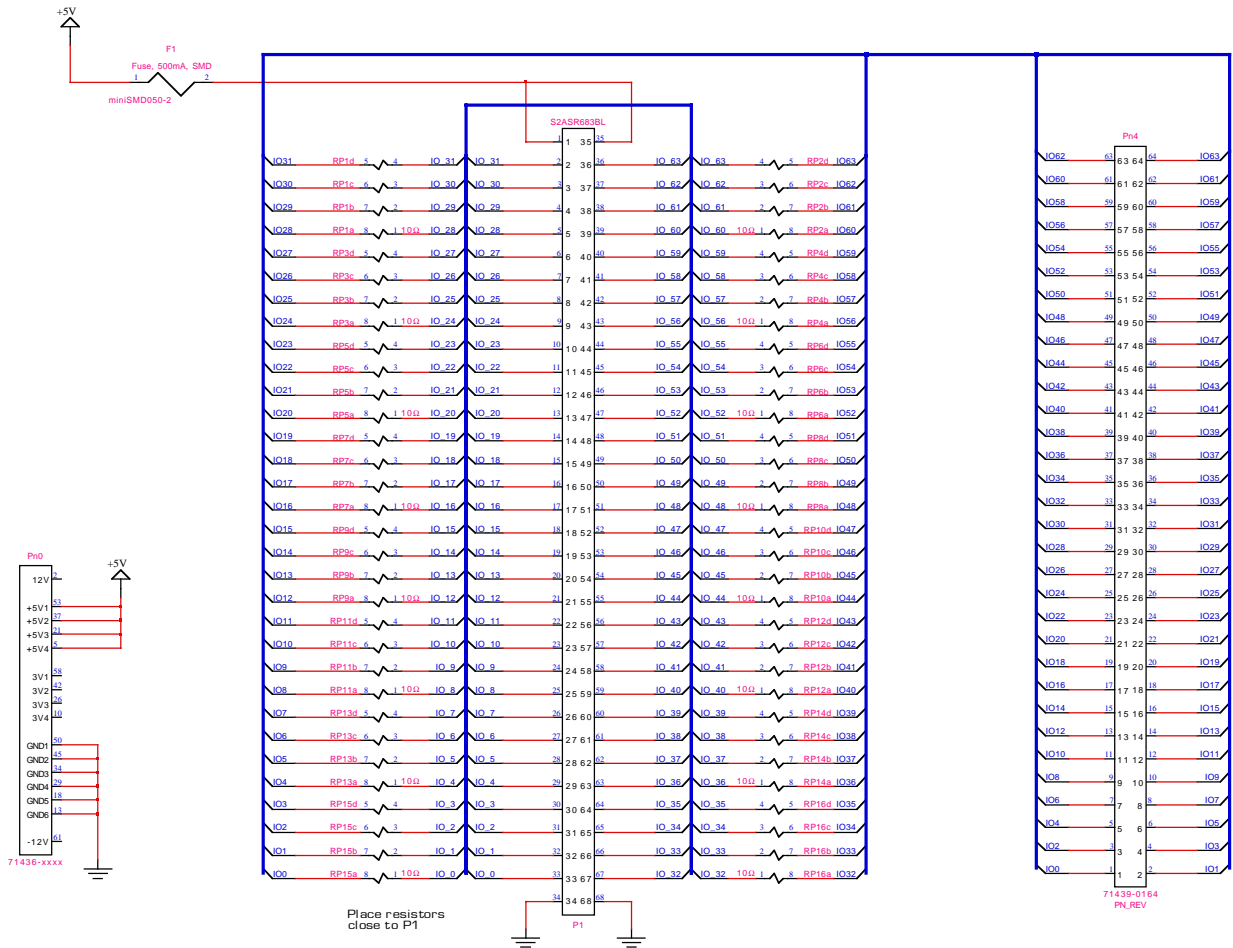


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Product Description and Operation



PIM-Parallel-IO is part of the PMC Module family of modular I/O components. The purpose of the PIM-Parallel-IO is to facilitate rear panel IO. The Pn4 "user IO" on the PMC is routed through the host "carrier" board to the backplane. A PIM Carrier is mounted to the underside of the backplane. The Pn4 IO is passed through the backplane connectors to the PIM Carrier and to the installed PIM devices. When installed the PIM-Parallel-IO will recreate the PMC-Parallel-IO front bezel IO in the rear compartment of the chassis [under the backplane]. All of the 64 IO connections are routed to the 68 pin SCSI II connector. The signals are routed through 10 ohm resistors to provide signal damping. Alternate values can be implemented if desired.

The PIM specification provides for power and ground references. The ground reference is used to tie into internal planes used as references for the signals routed across the PIM.

The Bezel, Connector and connections are the same as the PMC -Parallel-IO to allow the same cables to be used on the front panel bezel or the PIM bezel. The only exception being the signals on pins 1,35 of the SCSI connector which are not available on the Pn4 connector. Pins 1 and 35 are connected to 5V via a resettable fuse. All 64 IO are available. Two signal grounds are provided. Please refer to the following tables with the connector definitions.



PIM Module Front Panel IO Interface Pin Assignment

The figure below gives the pin assignments for the PIM Module IO Interface on the PIM-Parallel_IO.

Fused 5V	Fused 5V	1	35
IO_31	IO_63	2	36
IO_30	IO_62	3	37
IO_29	IO_61	4	38
IO_28	IO_60	5	39
IO_27	IO_59	6	40
IO_26	IO_58	7	41
IO_25	IO_57	8	42
IO_24	IO_56	9	43
IO_23	IO_55	10	44
IO_22	IO_54	11	45
IO_21	IO_53	12	46
IO_20	IO_52	13	47
IO_19	IO_51	14	48
IO_18	IO_50	15	49
IO_17	IO_49	16	50
IO_16	IO_48	17	51
IO_15	IO_47	18	52
IO_14	IO_46	19	53
IO_13	IO_45	20	54
IO_12	IO_44	21	55
IO_11	IO_43	22	56
IO_10	IO_42	23	57
IO_9	IO_41	24	58
IO_8	IO_40	25	59
IO_7	IO_39	26	60
IO_6	IO_38	27	61
IO_5	IO_37	28	62
IO_4	IO_36	29	63
IO_3	IO_35	30	64
IO_2	IO_34	31	65
IO_1	IO_33	32	66
IO_0	IO_32	33	67
GND	GND	34	68

FIGURE 1

PIM-PARALLEL-IO BEZEL



PIM Module Pn4 IO Interface Pin Assignment

The figure below gives the pin assignments for the PIM Module IO Interface on the PIM-Parallel_IO and routed from Pn4. Also see the User Manual for your carrier board for more information.

IO_0	IO_1	1	2
IO_2	IO_3	3	4
IO_4	IO_5	5	6
IO_6	IO_7	7	8
IO_8	IO_9	9	10
IO_10	IO_11	11	12
IO_12	IO_13	13	14
IO_14	IO_15	15	16
IO_16	IO_17	17	18
IO_18	IO_19	19	20
IO_20	IO_21	21	22
IO_22	IO_23	23	24
IO_24	IO_25	25	26
IO_26	IO_27	27	28
IO_28	IO_29	29	30
IO_30	IO_31	31	32
IO_32	IO_33	33	34
IO_34	IO_35	35	36
IO_36	IO_37	37	38
IO_38	IO_39	39	40
IO_40	IO_41	41	42
IO_42	IO_43	43	44
IO_44	IO_45	45	46
IO_46	IO_47	47	48
IO_48	IO_49	49	50
IO_50	IO_51	51	52
IO_52	IO_53	53	54
IO_54	IO_55	55	56
IO_56	IO_57	57	58
IO_58	IO_59	59	60
IO_60	IO_61	61	62
IO_62	IO_63	63	64

FIGURE 2

PIM-PARALLEL-IO PN4 INTERFACE



PIM Module Pn4 to Bezel Interconnect

The figure below provides a reference for the signal routing from Pn4 to the Bezel on the PIM-Parallel-IO card. When the PIM is used with PMC's other than the PMC-Parallel-IO the table can help to create a translation table for the IO.

SCSI Connector P1		Pn4	
33	32	1	2
31	30	3	4
29	28	5	6
27	26	7	8
25	24	9	10
23	22	11	12
21	20	13	14
19	18	15	16
17	16	17	18
15	14	19	20
13	12	21	22
11	10	23	24
9	8	25	26
7	6	27	28
5	4	29	30
3	2	31	32
67	66	33	34
65	64	35	36
63	62	37	38
61	60	39	40
59	58	41	42
57	56	43	44
55	54	45	46
53	52	47	48
51	50	49	50
49	48	51	52
47	46	53	54
45	44	55	56
43	42	57	58
41	40	59	60
39	38	61	62
37	36	63	64
1	35		
34	68		
			fused 5V
			gnd

FIGURE 3

PIM-PARALLEL-IO INTERCONNECT TABLE



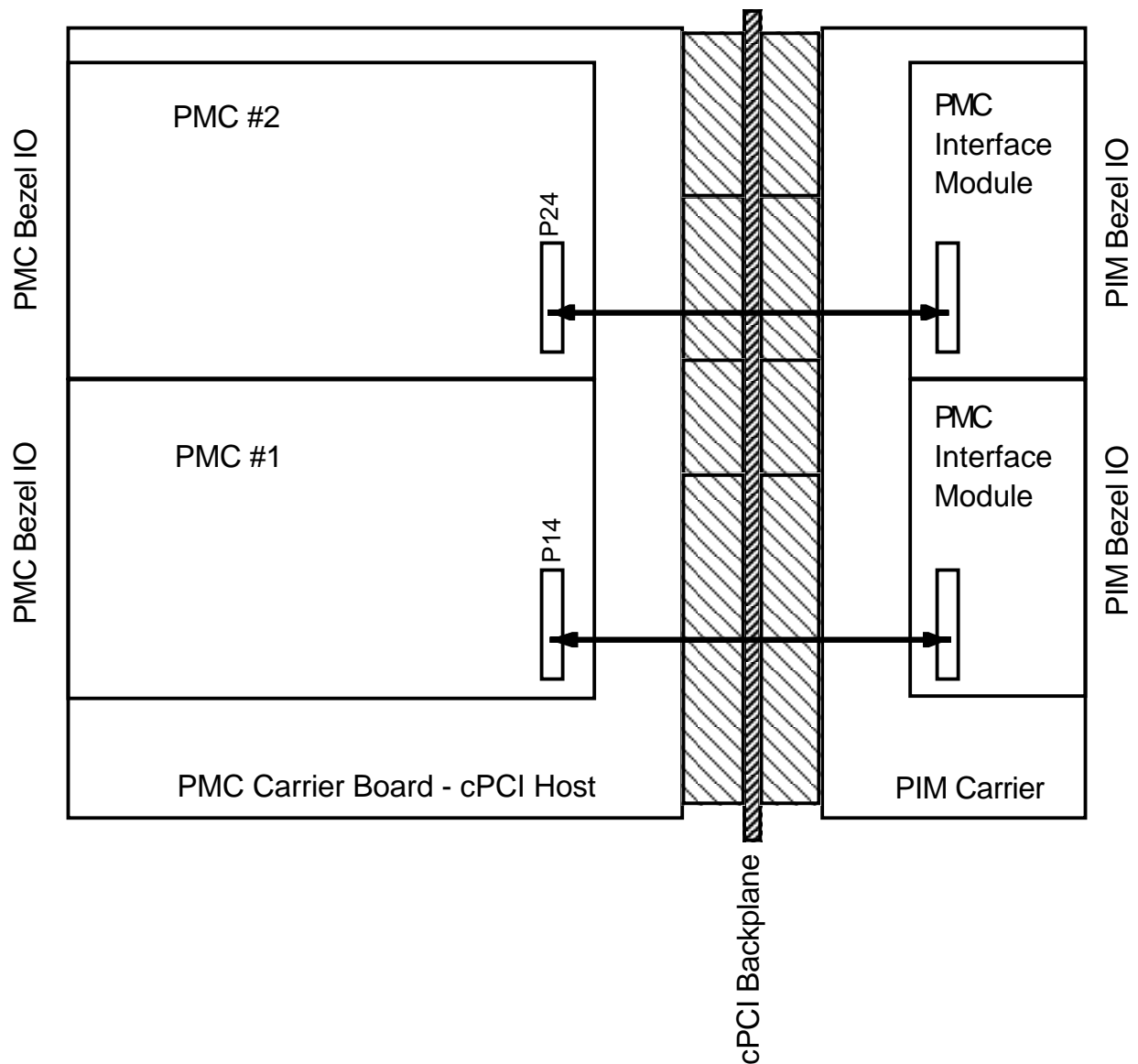


FIGURE 4

PIM-PARALLEL-IO SYSTEM DIAGRAM

The Figure above shows the relative connections of the PIM installed into the PIM Carrier . The Carrier attached to the rear of the backplane and the host to the front of the backplane. The PMC attached to the host. The Pn4 IO is routed from the PMC to the PIM to provide the PIM Bezel IO. With the PMC Parallel IO and PIM Parallel IO combination the Bezel IO is the same for the 64 IO signals on the two connectors. If the PIM Parallel IO is used with another PMC then the routing tables will need to be consulted to see what the Pin definitions are for the PIM Bezel IO.



Applications Guide

Interfacing

Some general interfacing guidelines are presented below. Do not hesitate to contact the factory if you need more assistance.

Watch the system grounds. All electrically connected equipment should have a fail safe common ground that is large enough to handle all current loads without affecting noise immunity. Power supplies and power consuming loads should all have their own ground wires back to a common point.

We provide the components. You provide the system. Safety and reliability can be achieved only by careful planning and practice. Inputs can be damaged by static discharge, by applying voltage less than ground or more than +5 volts with the IP powered. With the IP unpowered, driven input voltages should be kept within .7 volts of ground potential.

Terminal Block. We offer a high quality 68 position screw terminal block that directly connects to a SCSI II cable. The terminal block mounts on standard DIN rails.

[<http://www.dyneng.com/HDEterm68.html>]



Construction and Reliability

PIMs are conceived and engineered for rugged industrial environments. The PIM-PARALLEL-IO is constructed out of 0.062 inch thick FR4 material.

Through hole and surface mounting of components are used. High insertion and removal forces are required, which assists in the retention of components. The stand-offs should be used to mount the PIM to the PIM carrier to provide added protection against vibration induced intermittent connections.

The PMC Module connectors are keyed and shrouded with Gold plated pins on both plugs and receptacles. They are rated at .5 Amp per pin, 200 insertion cycles minimum. These connectors make consistent, correct insertion easy and reliable.

The PIM-Parallel-IO is entirely passive.

Warranty and Repair

Dynamic Engineering warrants this product to be free from defects in workmanship and materials under normal use and service and in its original, unmodified condition, for a period of one year from the time of purchase. If the product is found to be defective within the terms of this warranty, Dynamic Engineering's sole responsibility shall be to repair, or at Dynamic Engineering's sole option to replace, the defective product. The product must be returned by the original customer, insured, and shipped prepaid to Dynamic Engineering. All replaced products become the sole property of Dynamic Engineering.

Dynamic Engineering's warranty of and liability for defective products is limited to that set forth herein. Dynamic Engineering disclaims and excludes all other product warranties and product liability, expressed or implied, including but not limited to any implied warranties of merchandisability or fitness for a particular purpose or use, liability for negligence in manufacture or shipment of product, liability for injury to persons or property, or for any incidental or consequential damages.

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Service Policy

Before returning a product for repair, verify as well as possible that the suspected unit is at fault. Then call the Customer Service Department for a RETURN MATERIAL AUTHORIZATION (RMA) number. Carefully package the unit, in the original shipping carton if this is available, and ship prepaid and insured with the RMA number clearly written on the outside of the package. Include a return address and the telephone number of a technical contact. For out-of-warranty repairs, a purchase order for repair charges must accompany the return. Dynamic Engineering will not be responsible for damages due to improper packaging of returned items. For service on Dynamic Engineering Products not purchased directly from Dynamic Engineering contact your reseller. Products returned to Dynamic Engineering for repair by other than the original customer will be treated as out-of-warranty.

Out of Warranty Repairs

Out of warranty repairs will be billed on a material and labor basis. The current minimum repair charge is \$50. Customer approval will be obtained before repairing any item if the repair charges will exceed one half of the quantity one list price for that unit. Return transportation and insurance will be billed as part of the repair and is in addition to the minimum charge.

For Service Contact:

Customer Service Department
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Specifications

Carrier Connector:	PMC Pn4 connector
Bezel Connector:	SCSI II connector with latch-blocks standard
IO:	64 IO routed plus 2 additional ground and 2 additional 5V connections. 10 Ω series resistors in signal path between Pn4 and P1.

Order Information

The PIM-Parallel-IO board has 2 standard configurations.

http://www.dyneng.com/pim_parallel_io.html

PIM-Parallel-IO	PIM with SCSI II latch-block style connector Also available with screw terminal connector by special order. Alternate series resistor values available by special request.
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Tools for PIM-PARALLEL-IO	SCSI Cables http://www.dyneng.com/HDEcabi68.html
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	HDEterm68 – SCSI II cable interface to 68 screw terminals. Comes with DIN rail mounting capability. http://www.dyneng.com/HDEterm68.html
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