DYNAMIC ENGINEERING
150 DuBois St. Suite B&C, Santa Cruz Ca. 95060
831-457-8891 sales@dyneng.com
www.dyneng.com
Est. 1988

User Manual

CPCI-J2-SCSI

CPCI User IO for 3U
J2 ⇔ SCSI connector
Rear Panel IO system

Revision 1p2
Corresponding Hardware: Revision 01/02
10-2004-0501/2

cPCI-J2-SCSI
Rear Panel IO for J2 in 3U cPCI system

Dynamic Engineering has made every effort to ensure that this manual is accurate and complete. Still, the company reserves the right to make improvements or changes in the product described in this document at any time and without notice. Furthermore, Dynamic Engineering assumes no liability arising out of the application or use of the device described herein.

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 cPCI Modules and compatible user-provided equipment. Connection of incompatible hardware is likely to cause serious damage.

Revised 9/13/23

Table of Contents

List of Figures

Product Description

Frequently in Compact PCI systems there are advantages to using cable options on the rear of the equipment rack. Modules can be inserted and removed from the front without all of the cables to deal with, plus it is a neater installation. For users with rear IO requirements cPCI-J2-SCSI provides a path to the rear IO on the chassis.

The J2 connector in a 3U cPCI system can be used for IO or the upper half of the PCI bus. For systems with IO on J2, and using PMCs; the definitions on J2 will match the Pn4 connector on the PMC. The signals are routed to a 68 pin SCSI connector with the cPCI-J2-SCSI cable system. The SCSI connector has 4 extra pins which have fused power and ground references. The pin numbering follows the VITA specification for J2 IO.

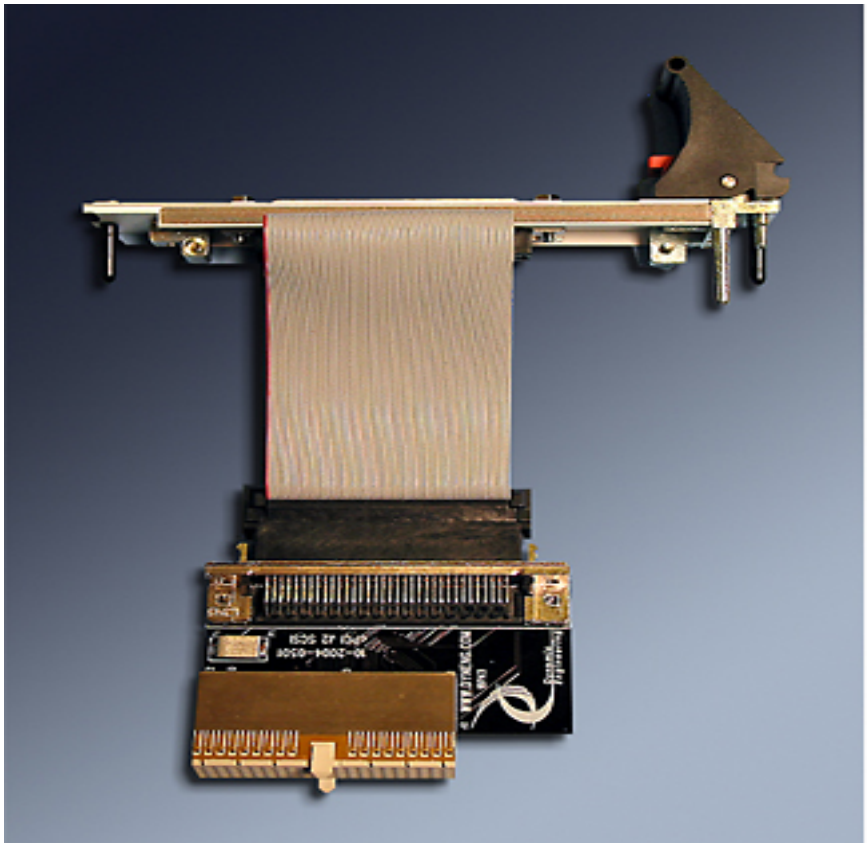

FIGURE 1 CPCI-J2-SCSI

Installation is easy – the J2 connector installs on the rear side of J2 on the cPCI backplane at the slot of interest. The PC board attached to the J2 connector

interconnects the J2 connector and the internal SCSI connector plus provides a mounting position for the fuse.

The cable provides a flexible connection to the rear panel. The External SCSI connector is mounted to a 3U rear bezel and mounts directly to the mounting holes on the rear of the chassis. The bezel has a lock and release handle, alignment pins etc. for installation and removal.

The Engineering model retains the J2 mating connector, PCB, Fused power, and rear SCSI connector leaving out the ribbon cable, bezel, and SCSI connector mounted there.

The Engineering version can be used when the rear panel above the mounted position of the device is covered or obstructed. It can also be used when an intermediate interface is also in use. For example, HDEterm68 has DIN rail mounting and is frequently used in these systems. The J2 interface is interconnected to the HDEterm68 via SCSI cable. The cable can be ribbon or standard SCSI [round twisted pair] for these purposes.

CPCI-J2-SCSI Pin Assignment

The figure below gives the pin assignments. Pn4 is shown for reference and is based on the VITA definition. Also see the User Manual for your carrier board for more information.

J2		Pn4		SCSI	
E13	D13	1	2	1	2
C13	B13	3	4	3	4
A13	E12	5	6	5	6
D12	C12	7	8	7	8
B12	A12	9	10	9	10
E11	D11	11	12	11	12
C11	B11	13	14	13	14
A11	E10	15	16	15	16
D10	C10	17	18	17	18
B10	A10	19	20	19	20
E9	D9	21	22	21	22
C9	B9	23	24	23	24
A9	E8	25	26	25	26
D8	C8	27	28	27	28
B8	A8	29	30	29	30
E7	D7	31	32	31	32
C7	B7	33	34	33	34
A7	E6	35	36	35	36
D6	C6	37	38	37	38
B6	A6	39	40	39	40
E5	D5	41	42	41	42
C5	B5	43	44	43	44
A5	E4	45	46	45	46
D4	C4	47	48	47	48
B4	A4	49	50	49	50
E3	D3	51	52	51	52
C3	B3	53	54	53	54
A3	E2	55	56	55	56
D2	C2	57	58	57	58
B2	A2	59	60	59	60
E1	D1	61	62	61	62
C1	B1	63	64	63	64
Fused +5V 500 mA total				65	66
Ground				67	68

FIGURE 2 CPCI-J2-SCSI CONNECTOR PINOUT

Applications Guide

Interfacing

The pin-out tables are displayed with the pins in the same relative order so you can read across the table and see the connector pin numbers. The pin definitions are defined with straight through non differential signaling in mind. Pin 1 on the SCSI matches Pin 1 on the PMC rear IO connector.

The table applies to both the internal and bezel mounted SCSI connectors.

If you need a differential version, we can group 1,3 5,7 etc on the Pn4 side to match with 1,35 2,36 etc. on the SCSI side. Please contact Dynamic Engineering if you are interested in a differential version.

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.

Power all system power supplies from one switch. Connecting external voltage to the PMC when it is not powered can damage it, as well as the rest of the host system. This problem may be avoided by turning all power supplies on and off at the same time. This design is passive and mostly immune to power transients.

Custom cables can be manufactured with discrete wire header and direct connection to your mating equipment.

Terminal Block. We offer a high quality 68-screw terminal block that directly connects to the SCSI cable and connector. The terminal block can mount on standard DIN rails. HDEterm68: [https://www.dyneng.com/HDEterm68.html]

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, or by applying voltage outside of the PMC device's rated voltages.

Construction and Reliability

The PCB for cPCI-J2-SCSI is engineered for rugged industrial environments. Constructed out of 0.062 inch thick high temp FR4 material.

Through hole and surface mounting of components are used.

The design is passive with few components for a highly rated system.

Thermal Considerations

The power dissipation due to internal circuitry is very low. A minor amount of heat will be generated due to capacitive loading at the connectors and power dissipated at the fuse. For this board if something is getting warm there is a something wrong that should be corrected.

Warranty and Repair

Please refer to the warranty page on our website for the current warranty offered and options.

https://www.dyneng.com/warranty.html

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. 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
Dynamic Engineering
150 DuBois St. Suite B&C
Santa Cruz, CA 95060
831-457-8891
support@dyneng.com

Specifications

IO	64 VITA defined PMC IO routed from J2 through to SCSI connector 1:1
Power:	Typical **500** mA @ 5V available as fused power at the SCSI connector
Temperature Range	Industrial Temperature rated –40 + 85C. Conformal Coating option for condensing environments

Order Information

CPCI-J2-SCSI	J2 to SCSI adapter for PMC in 3U cPCI rear IO designs
-CC	Add for conformal coating
-ENG	Minimized version with PCB, J2 mate and SCSI plus fused power.
-ROHS	Switch to ROHS soldering process.