



Connect Tech Inc.
Embedded Computing Experts

PCIe/104 to PCI Express Cable Adapter

User Manual



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Limited Lifetime Warranty

Connect Tech Inc. provides a lifetime warranty for all of our products. Should this product, in Connect Tech Inc.'s opinion, fail to be in good working order during the warranty period, Connect Tech Inc. will, at its option, repair or replace this product at no charge, provided that the product has not been subjected to abuse, misuse, accident, disaster or non Connect Tech Inc. authorized modification or repair.

You may obtain warranty service by delivering this product to an authorized Connect Tech Inc. business partner or directly to Connect Tech Inc. along with proof of purchase. Product returned to Connect Tech Inc. must be pre-authorized by Connect Tech Inc. with an RMA (Return Material Authorization) number marked on the outside of the package and sent prepaid, insured and packaged for safe shipment. Connect Tech Inc. will return this product by prepaid ground shipment service.

The Connect Tech Inc. lifetime warranty is defined as the serviceable life of the product. This is defined as the period during which all components are available. Should the product prove to be irreparable, Connect Tech Inc. reserves the right to substitute an equivalent product if available or to retract lifetime warranty if no replacement is available.

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Customer Support Overview

If you experience difficulties after reading the manual and/or using the product, contact the Connect Tech Inc. reseller from which you purchased the product. In most cases the reseller can help you with product installation and difficulties.

In the event that the reseller is unable to resolve your problem, our highly qualified support staff can assist you. Our support section is available 24 hours a day, 7 days a week on our website at: www.connecttech.com/sub/support/support.asp. See the contact information section below for more information on how to contact us directly. Our technical support is always free.

Contact Information

We offer three ways for you to contact us:

Mail/Courier

You may contact us by letter at: Connect Tech Inc.
Technical Support
42 Arrow Road, Guelph, ON
Canada N1K 1S6

Email/Internet

You may contact us through the Internet. Our email and URL addresses on the Internet are:
sales@connecttech.com
support@connecttech.com
www.connecttech.com

Note:

Please go to the [Download Zone](#) or the [Knowledge Database](#) in the [Support Center](#) on the Connect Tech Inc. website for product manuals, installation guides, device driver software and technical tips. Submit your technical support questions to our customer support engineers via the [Support Center](#) on the Connect Tech Inc. website.

Telephone/Facsimile

Technical Support representatives are ready to answer your call Monday through Friday, from 8:30 a.m. to 5:00 p.m. Eastern Standard Time. Our numbers for calls are:

Telephone: 800-426-8979 (North America only)
Telephone: 519-836-1291 (Live assistance available 8:30 a.m. to 5:00 p.m. EST, Monday to Friday)
Facsimile: 519-836-4878 (online 24 hours)

Table of Contents

Limited Lifetime Warranty	2
Copyright Notice.....	2
Trademark Acknowledgment.....	2
Customer Support Overview.....	3
Contact Information	3
Table of Contents.....	4
Revision History	4
Introduction.....	5
Block Diagram.....	5
Board Diagram.....	6
Installation	6
<i>PCI Express Cable</i>	6
PCI Express Cable Connector Pinout	7
Repeater Customization (ADG041 Only)	8

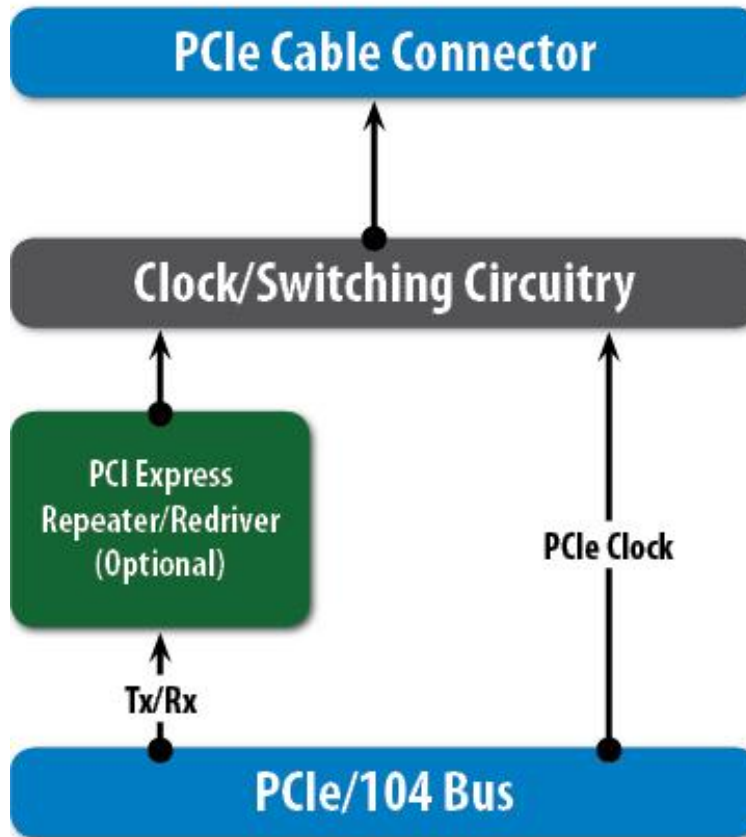
Revision History

Revision	Date	Author(s)	Change(s)
0.00	2012-01-24	Rob Callaghan	

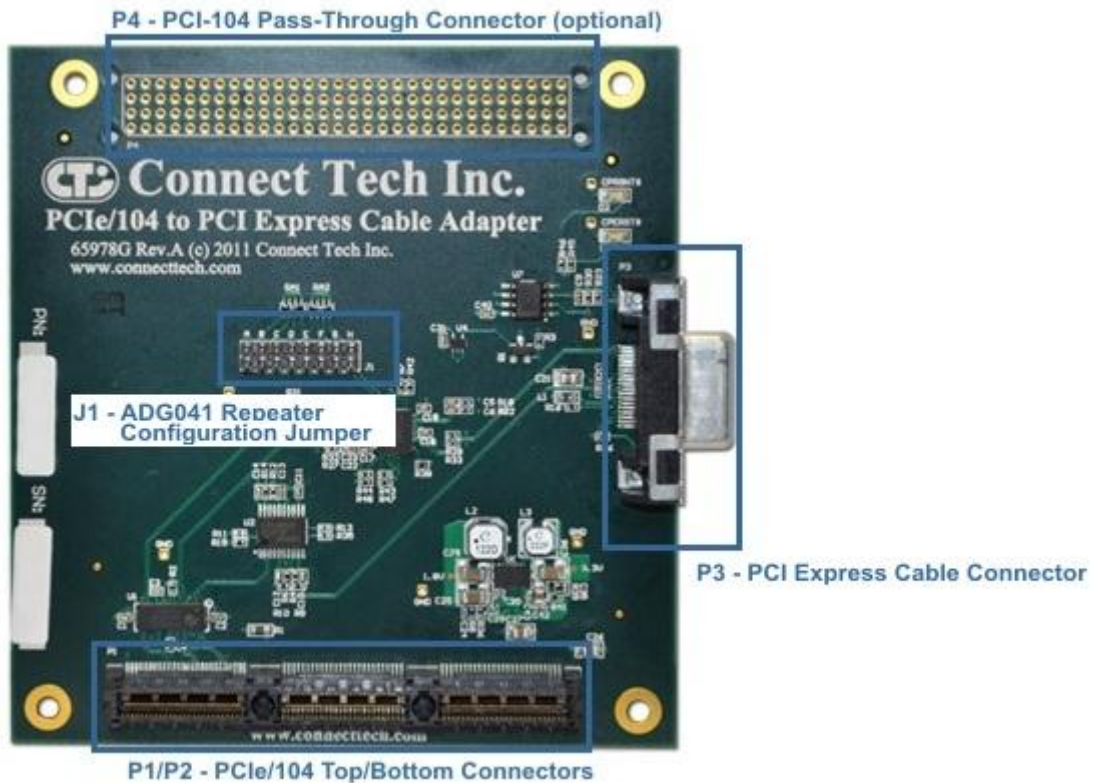
Introduction

Connect Tech's PCIe/104 to PCI Express Cable Adapter enables the testing and development of a x1 lane PCI Express device or expansion system outside of the PCI/104-Express or PCIe/104 system stack using a PCI Express cable connection.

Block Diagram



Board Diagram



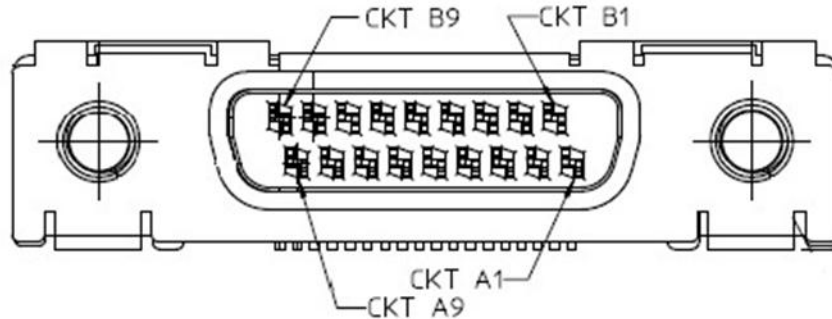
Installation

Ensure that the PCI Express cable is connected between the adapter and the downstream device before booting the host system. For optional active circuitry within the cable, +3.3V is provided on pin B6 on the PCI Express cable connector. Jackposts can be used on the PCI Express cable connector, mating part number is Molex 749620001 or equivalent.

PCI Express Cable

The ADG040/ADG041 PCIe/104 to PCI Express Cable Adapter must be used with a cable meeting the requirements of the PCI SIG External Cable Specification 1.0 (Molex part number 0745760000, 0799250001 or equivalent).

PCI Express Cable Connector Pinout



PIN #	Signal	Description
A1	PERn0	PER0-
A2	PERp0	PER0+
A3	NC	Not Connected
A4	SB_RTN	Signal Return for Single Ended Sideband Signals
A5	CREFCLKn	CREFCLK-
A6	CREFCLKp	CREFCLK+
A7	PWR_RTN	Return for +3.3 V Power
A8	CPERST#	Cable PERST#
A9	GND	Ground Reference
B1	GND	Ground Reference
B2	NC	Not Connected
B3	NC	Not Connected
B4	CPRSNT#	Used for Detection of a powered Downstream PCI Express device
B5	GND	Ground Reference
B6	PWR	+3.3V Power
B7	CPWRON	Upstream Subsystem's Power Valid Notification
B8	PETn0	PET0-
B9	PETp0	PET0+

Repeater Customization (ADG041 Only)

The ADG041 includes a PCI Express repeater with customizable transmit and receive amplitude, de-emphasis and equalization settings to improve signal quality and support longer cable lengths.

Jumper block J1 controls the various settings for the PCI Express transmit and receive signals. The default setting (all jumpers out/uninstalled) is recommended for most applications however specific tuning of each parameter can be set using the tables below:



External = PCIe TX Channel (*Going out to Downstream device*).

Internal = PCIe RX Channel (*Coming from Downstream device*).

J1-A	J1-B	External Equalizer
OUT	OUT	[4.5:6.5dB] @ 1.25 GHz
OUT	IN	[2.5:4.5dB] @ 1.25GHz
IN	OUT	[0:2.5dB] @ 1.25GHz
IN	IN	No Equalization

J1-C	J1-D	Internal Equalizer
OUT	OUT	[4.5:6.5dB] @ 1.25 GHz
OUT	IN	[2.5:4.5dB] @ 1.25GHz
IN	OUT	[0:2.5dB] @ 1.25GHz
IN	IN	No Equalization

J1-E	External Output Swing
IN	1x
OUT	1.2x

J1-F	Internal Output Swing
IN	1x
OUT	1.2x

J1-G	External Output De-Emphasis
IN	0dB
OUT	-3.5dB

J1-H	Internal Output De-Emphasis
IN	0dB
OUT	-3.5dB