

PCIe x4 Host Cable Adapter (HIB2) User Manual

OSS-PCIe-HIB2-x4-H (Host)
OSS-PCIe-HIB2-x4-T (Target)

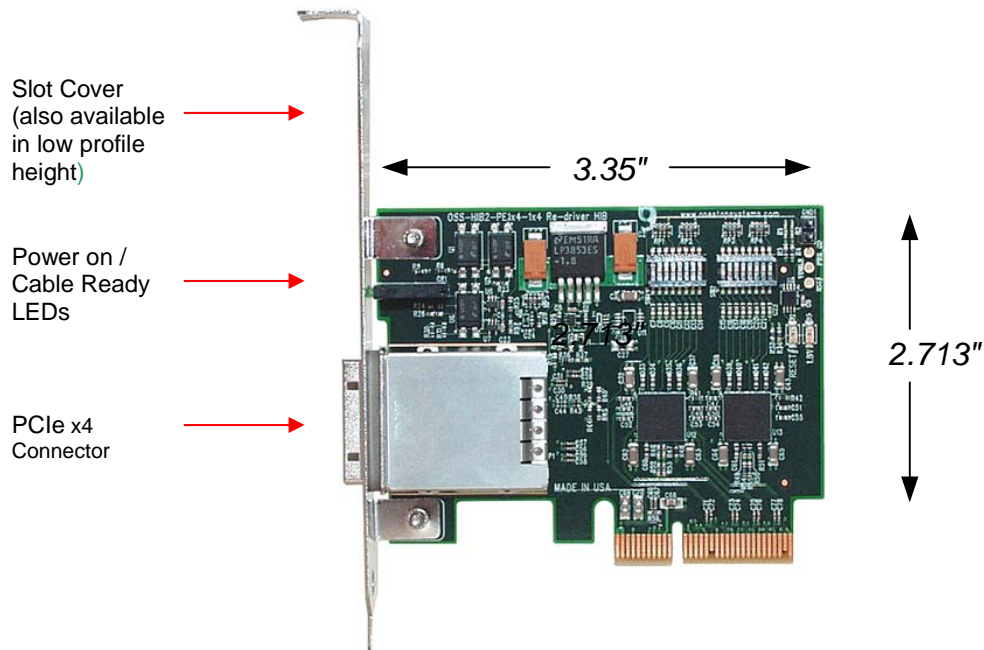


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Description

The Host Cable Adapter (Part # OSS-PCIe-HIB2-x4-H) allows communication between a processor and an I/O port. The OSS-PCIe-HIB2-x4-T is used as a target in a One Stop Systems 2 slot backplane (OSS-EBP-2000).



Initial Set-Up

Unpacking Instructions

1. If the carton is damaged when you receive it, request that the carrier's agent be present when you unpack and inspect the equipment.
2. After unpacking, verify that all items listed in the packing list are present.
3. Inspect the equipment for shipping damage.
4. Save all packing material for storage or return shipment of the equipment.
5. For repairs or replacement of equipment damaged during shipment, contact One Stop Systems, Inc. to obtain a Return Materials Authorization (RMA) number and further shipping instructions.

Installation and Removal

1. Power down the host system.
2. Open the chassis according to your system documentation.
3. Let the power supply cool down, if necessary.
4. Remove the Host Cable Adapter from the protective bag, observing proper ESD safety procedures.

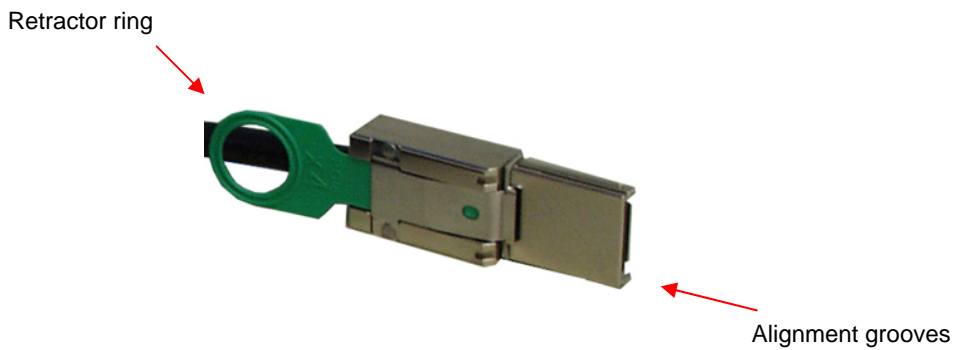
Installing the Host Cable Adapter:

1. Insert the Host Cable Adapter into a PCIe x4, x8 or x16¹ add-in card slot. Make sure that the card is well seated and tighten the screw.

¹ "Up-plugging" the Target Cable Adapter into a x8 or x16 slot is allowed, but the motherboard manufacture may limit the bandwidth to x1 (250MB/s) speeds. If you need to do this, check with the motherboard manufacturer to see how up-plugging is handled on their motherboards. A PCIe x4 board will not physically fit in a x1 slot.

2. Attach the cable by first pulling back on the retractor ring. With the keyed slot aligned with the connector key ridge on the slot cover, insert the cable connector into the cable port connector on the board until the cable locks in place.
3. The connectors on either end of the PCIe x4 cable are identical. Each connector is equipped with a retractor to allow the connector to be locked into place.

Retractor on Cable Connector



4. Attach the other end of the cable to the upstream port connector of the ELB in the expansion enclosure. To link to a second expansion enclosure, connect a second cable from the downstream port connector on the ELB of the first expansion enclosure to the upstream port connector on the ELB of the second enclosure.

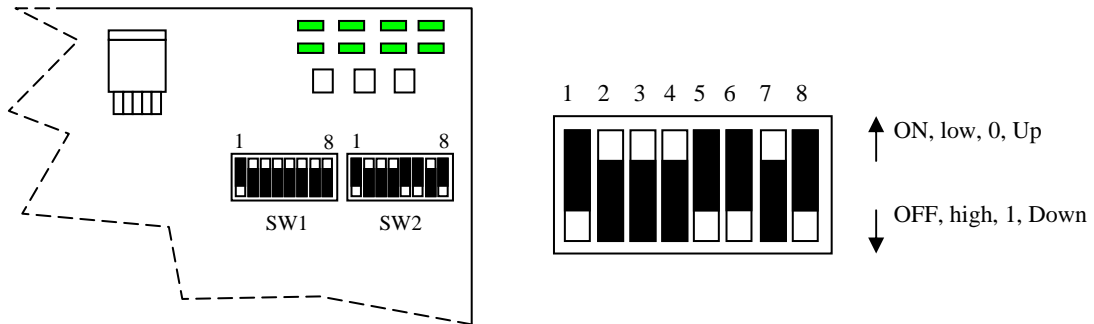
Removing the Host Cable Adapter:

1. Remove the cable by pulling on the green retractor ring which releases the locking mechanism.
2. Loosen and remove the screw before removing the Host Cable Adapter from the card slot.

Specifications

Electrical/Mechanical Specifications	
Form Factor:	x4 PCIe add-in card
Dimensions (H x L):	2.7 x 3.4 inches (68 x 86mm)
Front Panel Connectors:	One PCIe x4 cable connector
Front Panel Indicators:	Power On / Cable Present LEDs
Power Consumption (designed to meet the following conditions)	
	3.75W typical, 3.3@1.3A
Operating Environment (designed to meet the following conditions)	
Temperature Range:	0° to 50°C (32° to 122°F)
Relative Humidity:	10 to 90% non-condensing
Shock:	30g acceleration peak (11ms pulse)
Vibration:	5-17 Hz 0.5" double amplitude displacement; 7-2000Hz, 1.5g acceleration.
Redriver	
Pericom PI2EQX4402	
Agency Compliance Designed to meet, but not tested	
	UL60950, FCC Class B, CE safety and emissions

Switches



SW1 and SW2 Switch Location and Orientation

Switch SW1 Settings

Switch #	Signal Name	Default*	Comments
1	ENABLE	Down	Up = Disable all Lanes Down = Normal operation
2	RX_SEL0	Up	Rx Equalizer Selection See Table 1
3	RX_SEL1	Up	
4	RX_SEL2	Up	
5	RX_SEL3	Up	Rx Amplifier Selection See Table 2
6	RX_SEL4	Up	Rx De-Emphasis Selection See Table 3
7	RX_SEL5	Up	
8	RX_SEL6	Up	

Switch SW2 Settings

Switch #	Signal Name	Default*	Comments
1	N/C		Not connected
2	TX_SEL0	Up	Tx Equalizer Selection See Table 1
3	TX_SEL1	Up	
4	TX_SEL2	Up	
5	TX_SEL3	Down	Rx Amplifier Selection See Table 2
6	TX_SEL4	Down	Tx De-Emphasis Selection See Table 3
7	TX_SEL5	Up	
8	TX_SEL6	Down	

Table 1

2	3	4	Equalization
0	0	0	No Equalization
0	0	1	1.5db @ 1.25 GHz
0	1	0	2.5db @ 1.25 GHz
0	1	1	3.5db @ 1.25 GHz
1	0	0	4.5db @ 1.25 GHz
1	0	1	5.5db @ 1.25 GHz
1	1	0	5.5db @ 1.25 GHz
1	1	1	7.5db @ 1.25 GHz

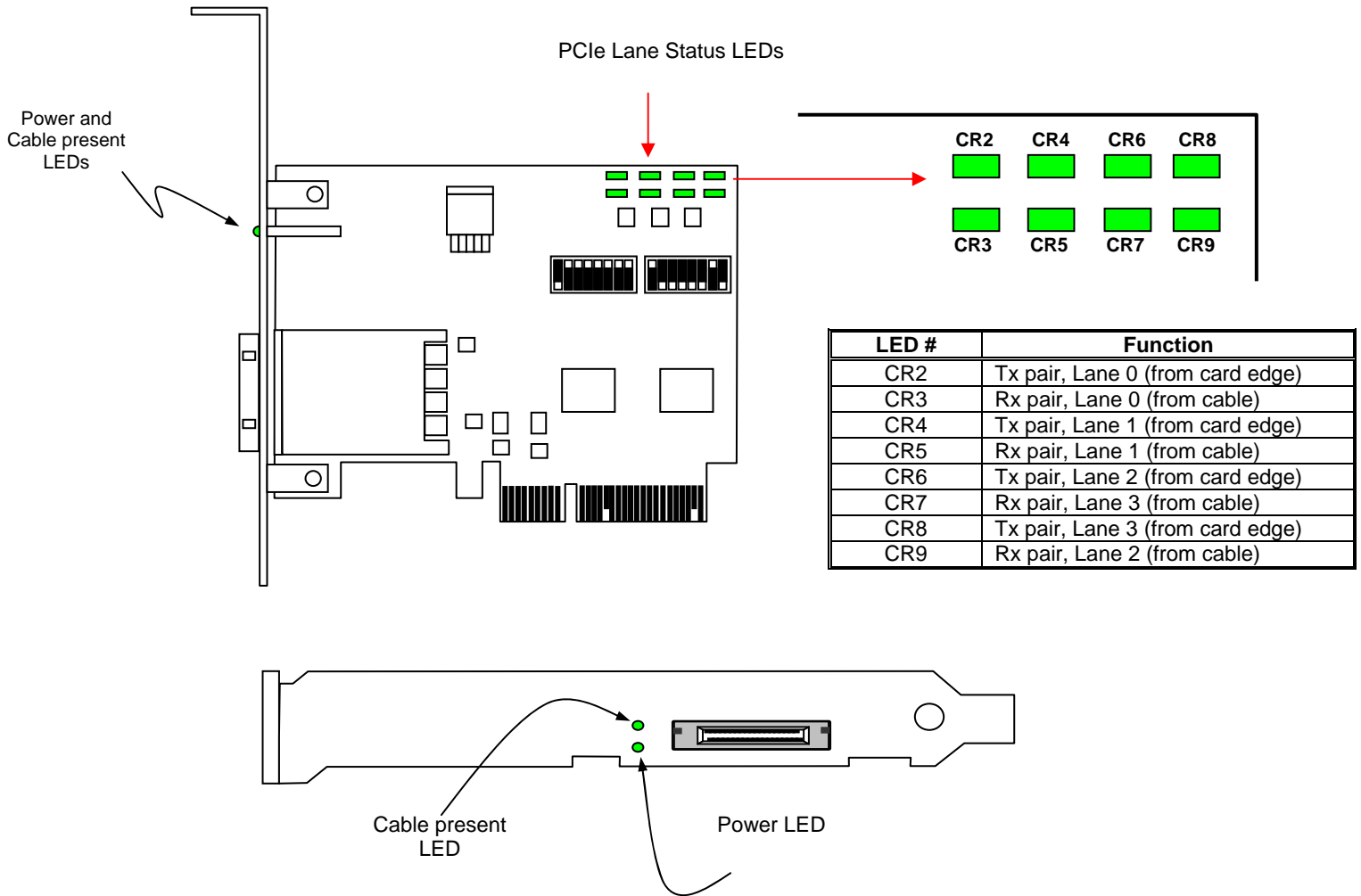
Table 2

5	6	Swing
0	0	1x
0	1	0.8x
1	0	1.2x
1	1	1.4x

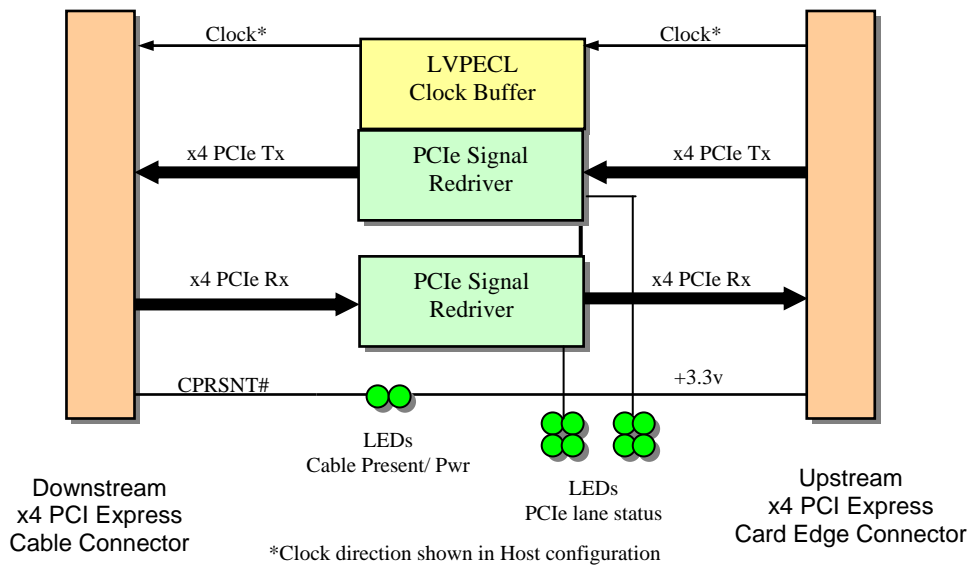
Table 3

7	8	De-emphasis
0	0	0db
0	1	-2.5db
1	0	-3.5db
1	1	-4.5db

LEDs



Block Diagram



Connectors

PCIe x4 Card Edge Connector

The pins are numbered as shown with side A on the top of the centerline on the solder side of the board and side B on the bottom of the centerline on the component side of the board.

The PCIe interface pins PETpx, PETnx, PERpx, and PERnx are named with the following convention: “PE” stands for PCIe high speed, “T” for Transmitter, “R” for Receiver, “p” for positive (+), and “n” for negative (-).

Note that adjacent differential pairs are separated by two ground pins to manage the connector crosstalk.

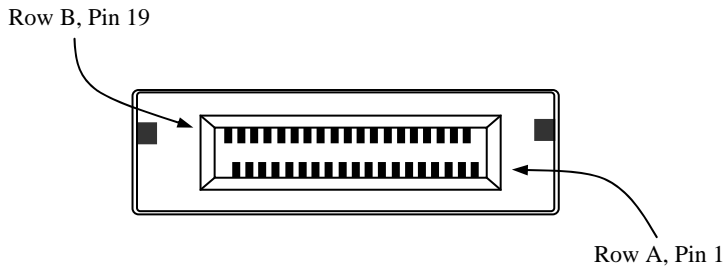
Pin-out for the PCIe x4 Card Edge Connector on the Host Cable Adapter

Pin #	Side B		Side A	
	Name	Description	Name	Description
1	N/C	N/C	PRSNT1#	Hot-Plug presence detect
2	N/C	N/C	N/C	N/C
3	N/C	N/C	N/C	N/C
4	GND	Ground	GND	Ground
5	NC	N/C	N/C	Not connected
6	N/C	N/C	JTAG3	TDI (Test Data Input)
7	GND	Ground	JTAG4	TDO (Test Data Output)
8	+3.3V	3.3 V power	N/C	Not connected
9	N/C	Not connected	N/C	Not connected
10	3.3Vaux	3.3 V auxiliary power	+3.3V	3.3 V power
11	N/C	N/C	PERST#	Fundamental reset
Mechanical key				
12	RSVD	Reserved	GND	Ground
13	GND	Ground	REFCLK+	Reference clock (differential pair)
14	PETp0	Transmitter differential pair, Lane 0	REFCLK	
15	PETn0		GND	Ground
16	GND	Ground	PERp0	Receiver differential pair, Lane 0
17	PRSNT2#	Hot-Plug presence detect	PERn0	
18	GND	Ground	GND	Ground
19	PETp1	Transmitter differential pair, Lane 1	RSVD	Reserved
20	PETn1		GND	Ground
21	GND	Ground	PERp1	Receiver differential pair, Lane 1
22	GND	Ground	PERn1	
23	PETp2	Transmitter differential pair, Lane 2	GND	Ground
24	PETn2		GND	Ground
25	GND	Ground	PERp2	Receiver differential pair, Lane 2
26	GND	Ground	PERn2	
27	PETp3	Transmitter differential pair, Lane 3	GND	Ground
28	PETn3		GND	Ground
29	GND	Ground	PERp3	Receiver differential pair, Lane 3
30	RSVD	Reserved	PERn3	
31	PRSNT2#	Hot-Plug presence detect	GND	Ground
32	GND	Ground	RSVD	Reserved

PCI Express x4 Cable Connector

The PCI Express x4 connector is a 38 position edge card connector with metallic shell as defined in the PCI Express External Cabling Rev 1.0, Molex part number 75586-0010, or equivalent. On the x4 connector, the pins are recessed far back inside the EMI Housing Guide (metallic shell) and are not easily accessed.

PCI Express x4 Connector Pin Assignment



Pin #	Row A Signal Name	Row B Signal Name	Pin #
1	GND	GND	1
2	PET0+	PER0+	2
3	PET0-	PER0-	3
4	GND	GND	4
5	N/C	N/C	5
6	N/C	N/C	6
7	GND	GND	7
8	N/C	N/C	8
9	N/C	N/C	9
10	GND	GND	10
11	N/C	N/C	11
12	N/C	N/C	12
13	GND	GND	13
14	CREFCLK+	3.3V	14
15	CREFCLK-	3.3V	15
16	GND	GND	16
17	GND	GND	17
18	CPRSNT#	CWAKE#	18
19	CPWRON	CPERST#	19

OSS-EBP-2000 Backplane



The OSS-EBP-2000 has two PCI Express x8 link slots connected together. One slot supports the OSS-PCIe-HIB2-x4-T that brings a remote PCIe bus to the backplane via a cable interface. Any x8, x4, or x1 IO PCIe add-in board can be installed in the second slot and operate as a remote slot from the host PC. For example, the One Stop Systems quad USB board can be installed in the second slot allowing four USB devices to be operated from the remote computer.

Limited Warranty

One Stop Systems warrants this product to be free of defects in material and workmanship for an initial period of two years from date of delivery to the original purchaser from One Stop Systems.

During this period, One Stop Systems will, at its option, repair or replace this product at no additional charge to the purchaser, except as set forth in this warranty agreement.

One Stop Systems will, at its option, repair or replace this product at no additional charge to the purchaser, if the defect is related to the One Stop Systems manufactured product, such as a power supply, backplane, other chassis components or CPUs. One Stop Systems is not liable for any defects in material or workmanship of any peripherals, products or parts, which One Stop Systems does not design or manufacture. However, One Stop Systems will honor the original manufacturer's warranty on these products. One Stop Systems will analyze the defective component and the customer will be charged in the following instances:

- No problem found: \$75 (U.S. dollars).
- Damage: Parts and labor at \$75 per hour with a \$100 minimum charge (U.S. dollars). Receipt of damaged goods voids the One Stop Systems warranty.

Repair parts and replacement products will be furnished on an exchange basis and will be either new or reconditioned. All replacement parts and products shall become the property of One Stop Systems, if such parts or products are provided under this warranty agreement. In the event a defect is not related to the One Stop Systems manufactured product, One Stop Systems shall repair or replace the defective parts at the purchaser's cost and deliver the defective parts to the purchaser.

This limited warranty shall not apply if the product has been misused, carelessly handled, defaced, modified or altered, or if unauthorized repairs have been attempted by others. The above warranty is the only warranty authorized by One Stop Systems and is in lieu of any implied warranties, including implied warranty of merchantability and fitness for a particular purpose. In no event will One Stop Systems be liable for any such damage as lost business, lost profits, lost savings, downtime or delay, labor, repair or material cost, injury to person or property or any similar or dissimilar consequential loss or damage incurred by the purchaser, even if One Stop Systems has been advised of the possibility of such losses or damages.

In order to obtain warranty service, the product must be delivered to the One Stop Systems facility, or to an authorized One Stop Systems service representative, with all included parts and accessories as originally shipped, along with the proof of purchase and a Returned Merchandise Authorization (RMA) number.

The RMA number is obtained, in advance, from One Stop Systems Customer Service Department and is valid for 30 days. The RMA number must be clearly marked on the exterior of the original shipping container or equivalent. Purchaser will be responsible and liable for any missing or damaged parts. Purchaser agrees to pay for shipping charges one way, and to either insure the product or assume the liability for loss or damage during transit. Ship to:

One Stop Systems

ATTENTION: RMA REPAIR DEPARTMENT

RMA #####

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