





# Installation Guide

SKU: OSS-PCIe-HIB38-X8-DUAL



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# **Preface**

### **Advisories**

Five types of advisories are used throughout this manual to provide helpful information, or to alert you to the potential for hardware damage or personal injury.



### NOTE

Used to amplify or explain a comment related to procedural steps or text.



### **IMPORTANT**

Used to indicate an important piece of information or special "tip" to help you



### CAUTION

Used to indicate and prevent the following procedure or step from causing damage to the equipment.



# WARNING

Used to indicate and prevent the following step from causing injury.



### **DANGER or STOP**

Used to indicate and prevent the following step from causing serious injury or significant data loss

Disclaimer: We have attempted to identify most situations that may pose a danger, warning, or caution condition in this manual. However, the company does not claim to have covered all situations that might require the use of a Caution, Warning, or Danger indicator.

### **Safety Instructions**

Always use caution when servicing any electrical component. Before handling the expansion chassis, read the following instructions and safety guidelines to prevent damage to the product and to ensure your own personal safety. Refer to the "Advisories" section for advisory conventions used in this manual, including the distinction between Danger, Warning, Caution, Important, and Note.

- Always use caution when handling/operating the computer. Only qualified, experienced, authorized electronics personnel should access the interior of the computer and expansion chassis per UL and IEC 60950-1
- The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- Use extreme caution when installing or removing components. Refer to the installation instructions in this manual for precautions and procedures. If you have any questions, please contact Technical Support.



### WARNING

Never modify or remove the radio frequency interference shielding from your workstation or expansion unit. To do so may cause your installation to produce emissions that could interfere with other electronic equipment in the area of your

### When Working Inside a Computer

- 1. Before taking covers off a computer, perform the following steps:
- 2. Turn off the computer and any peripheral devices.
- Disconnect the computer and peripheral power cords from their AC outlets or inlets in order to prevent electric shock or system board damage.

In addition, take note of these safety guidelines when appropriate:

- To help avoid possible damage to systems boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.



## CAUTION

Do not attempt to service the system yourself except as explained in this manual. Follow installation instructions closely.

### **Protecting Against Electrostatic Discharge**



### **Electrostatic Discharge (ESD) Warning**

Electrostatic Discharge (ESD) is the enemy of semiconductor devices. You should always take precautions to eliminate any electrostatic charge from your body and clothing before touching any semiconductor device or card by using an electrostatic wrist strap and/or rubber mat.

Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedures to reduce the risk of damage to components. We strongly encourage you to follow proper ESD procedures, which can include wrist straps and smocks, when servicing equipment.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component's anti-static packaging material until you are ready to install the component in a computer. Just before unwrapping the anti-static packaging, be sure you are at an ESD workstation or are grounded.
- When transporting a sensitive component, first place it in an anti-static container or packaging.
- Handle all sensitive components at an ESD workstation. If possible, use anti-static floor pads and workbench pads.
- Handle components and boards with care. Do not touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.

# 1 Introduction

The PCIe x8 Gen 2 cable adapter with PCIe switch is a PCIe half-height add-in card with DUAL PCIe x8 cable external connectors on the slot cover. It operates in upstream or downstream mode with Dipswitch setting change. The host cable adapter installs in the PCIe slot of a host server and the target cable adapter installs in the Target slot / Upstream slot of the OSS backplane.

### Part numbers:

- OSS-PCIE-HIB38-x8-DUAL-T, as target
- OSS-PCIE-HIB38-x8-DUAL-H, as host

Internal part#OSS-386

## 1.1 Specifications

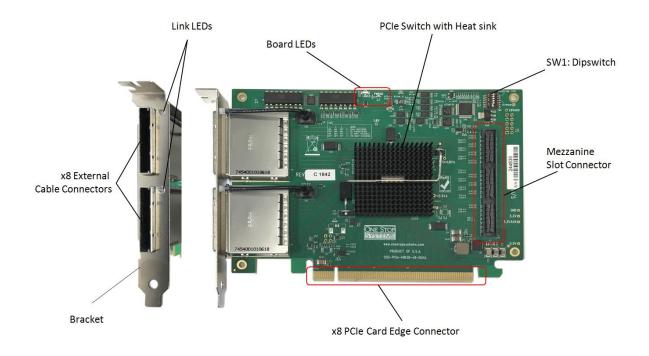
Item	Description	
Form Factor	PCIe x8 half-height, half-length	
Dimensions	5.85 x 4.00" (14.85 x 10.16 cm)	
Bandwidth / Backplane Interface	PCIe x8 Gen3	
	The OCC 20C and have been DO NOT's all deaths are accessively a contract to the death of 200 haved	
Power	The OSS-386 numbers here DO NOT include the power required to operate an installed 390 board.  Worst case: 20.5 watts	
	Typical: 11 watts	
Camaratan	DUAL PCIe x8 Cable connector	
Connector		
DOL: C. N.I.	PCIe x8 Edge connector	
PCIe Switch	PLX PEX8749 8.0 GT/s 48-Lane PCI Express Gen 3 Switch DMA controller	
Bracket	Standard and low profile brackets available	
	With two LEDs on the bracket	
Operating Temperature	0°C to +50°C environment	
Operating Humidity	10% to 90% relative humidity non-condensing	
Storage Humidity	5% to 95% relative humidity non-condensing	
Shock	30g Acceleration Peak (11ms pulse)	
Industry Specifications	PCIe External Cabling Specification, Rev. 1.0	
	<ul> <li>PCI Express™ Card Electromechanical</li> </ul>	
	Specification, Rev. 2.0	
	PCI Express ® Base Specification, Rev. 3.0	
	ATX Specification, Version 2.2	
Agency Compliance	• FCC Class B	
	• CE	
	• RoHS	
Operating System	Windows 10, Windows Server 2012 R2; Linux OS based	

## 1.2 Features

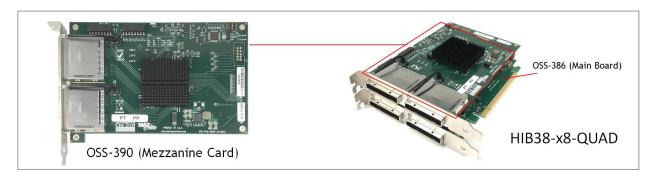
- Fits into PCIe x8, or x16 slot
- Operates in Host and Target modes (with Dipswitch setting change)
- Supports Spread Spectrum Clock Isolation
- Low Profiler Design
- Bracket LINK LED status indicator
- 48-Lane switch with built-in DMA controller
- iPass x8 external cable connector

#### 1.3 Overview

This is an overview of the HIB38-X8-DUAL board (OSS-386).



\*The OSS-386 "mezzanine slot connector" is mainly for attaching a daughter card / mezzanine card (OSS-390) with additional two x8 PCIe cable connector to use a QUAD host card (HIB38-x8-QUAD).





The HIB38-x8-QUAD card can only operate and use as a HOST card. It cannot be used as TARGET card.

#### 1.4 PCIe Card Edge x8

- The PCIe Card edge will be directly routed x8 interface to the PLX Chip
- In host mode, the add-in card will accept a clock as an input.
- In target mode, the add-in card will drive a clock. It will also provide a reset output and a PS\_ON# signal.

#### 1.5 **Power**

- Power is provided by the PCI-e card slot.
- Cable power is to be provided per PCle cable specification. When an active cable (powered transceiver) is used, additional power is required from the PCI-e card slot.
- Power will be supplied +3.3V, +3.3Vaux through Card Edge.
- Some power rails will be derived from the onboard circuitry.

#### 1.6 **PCIe Cable Sideband signals**

- All Cable sideband signals CPERST#, CPWRON, CPRSNT#, CWAKE# to be connected per the PCIe Cable specification.
- Additional isolation of signal CE\_PWRON# (card edge power control) shall be provided by a physical switch.
- This switch allows user to electrically isolate this signal from the card edge connector.

#### 1.7 **PLX PEX8749**

- Integrated DMA Engine (with four DMA channels and internal buffer space)
- 48-Lane PCIe Switch
- PCIe Gen3 (8.0 GT/s)
- Spread Spectrum Clock Isolation

#### 1.8 Link LEDS

The LINK status LEDs on the slot cover (bracket) shows that the cards have successfully linked.

- OFF Link is down
- ON Link is UP, 8.0 GT/s
  - o Gen3- solid green (8.0GT/s)
  - Gen2 Blinking frequency: 2Hz (5.0GT/s)
  - Gen1 Blinking frequency: 1Hz (2.5GT/s
- RED No link from the Host side or Target side; Fatal error on PCle switch;



<sup>\*</sup>The target card and expansion unit are powered UP instantly upon turning ON the host computer.

#### 1.9 **Board LEDs**

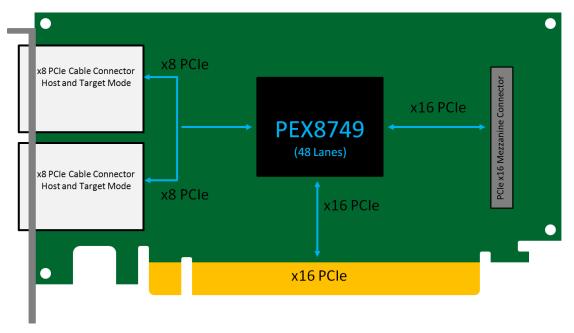
There are two LEDs on the HIB38-x8. They are located in the upper right of the board.

- PWRGD--Power good, board has power
- CE LINK—Card edge, successful link with the card edge

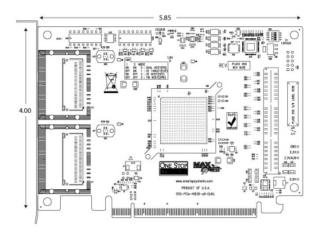


# 1.10 Block Diagram





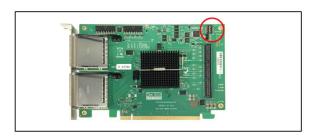
#### 1.11 **Dimensions**

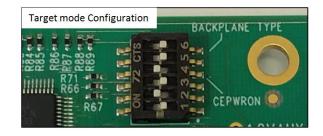


#### 1.12 **Operating Modes**

Mode 1: Target Mode: The card is ready to operate in Target mode and must be plugged into an OSS expansion backplane "Upstream slot". The dipswitches must be set to the following settings:

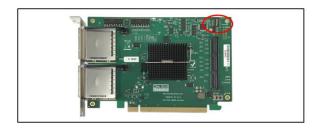
#1=OFF; #2=ON; #3=OFF; #4=ON; #5=OFF; #6=OFF

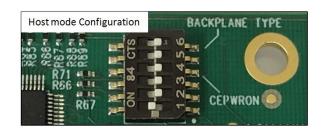




Mode 2: Host Mode. In this mode, the SW1 dipswitch #1 is set to ON and the rest are OFF. The card is ready to operate in Host mode and it must be plugged into computer's motherboard PCIe slot. Use Gen3 x16 PCIe slot.

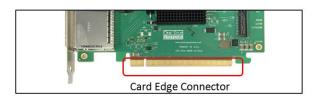
#1=ON; #2=OFF; #3=OFF; #4=OFF; #5=OFF and #6 =OFF





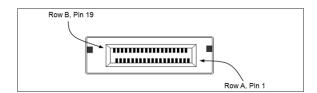
When the card dipswitch is configured as Host mode, do not install the card in a target slot (Upstream slot) on the OSS expansion backplane.

# 1.13 PCI Express x8 Card Edge Connector Pin Outs



Pin		Side B	Side A	
#	Name	Description	Name	Description
1	+12V	12V Power	PRSNT1#	Hot-Plug presence detect
2	+12V	12V Power	+12V	12V Power
3	+12V	12V Power	+12V	12V Power
4	GND	Ground	GND	Ground
5	SMCLK	SMBus clock	JTAG2	TCK
6	SMDAT	SMBus data	JTAG3	TSTCLK+
7	GND	Ground	JTAG4	TSTCLK-
8	+3.3V	3.3 V power	JTAG5	TMS
9	JTAG1	PWR ON#	+3.3V	3.3 V power
10	3.3Vaux	3.3 V auxiliary power	+3.3V	3.3 V power
11	WAKE#	Signal for link reactivation	PERST#	Fundamental reset
		Mech	nanical key	
12	RSVD	Reserved	GND	Ground
13	GND	Ground	REFCLK+	
14	PETp0		REFCLK	Reference clock (differential pair)
15	PETn0	Transmitter differential pair, Lane 0	GND	Ground
16	GND	Ground	PERp0	
17	PRSNT2#	Hot-Plug presence detect	PERn0	Receiver differential pair, Lane 0
18	GND	Ground	GND	Ground
19	PETp1		RSVD	Reserved
20	PETn1	Transmitter differential pair, Lane 1	GND	Ground
21	GND	Ground	PERp1	
22	GND	Ground	PERn1	Receiver differential pair, Lane 1
23	PETp2		GND	Ground
24	PETn2	Transmitter differential pair, Lane 2	GND	Ground
25	GND	Ground	PERp2	
26	GND	Ground	PERn2	Receiver differential pair, Lane 2
27	PETp3		GND	Ground
28	PETn3	Transmitter differential pair, Lane 3	GND	Ground
29	GND	Ground	PERp3	
30	RSVD	Reserved	PERn3	Receiver differential pair, Lane 3
31	PRSNT2#	Hot-Plug presence detect	GND	Ground
32	GND	Ground	RSVD	Reserved
33	PETp4		RSVD	Reserved
34	PETn4	Transmitter differential pair, Lane 4	GND	Ground
35	GND	Ground	PERp4	
36	GND	Ground	PERn4	Receiver differential pair, Lane 4
37	PETp5		GND	Ground
38	PETn5	Transmitter differential pair, Lane 5	GND	Ground
39	GND	Ground	PERp5	
40	GND	Ground	PERn5	Receiver differential pair, Lane 5
41	PETp6		GND	Ground
42	PETn6	Transmitter differential pair, Lane 6	GND	Ground
43	GND	Ground	PERp6	
44	GND	Ground	PERn6	Receiver differential pair, Lane 6
45	PETp7		GND	Ground
46	PETn7	Transmitter differential pair, Lane 7	GND	Ground
47	GND	Ground	PERp7	
40	DDCNT3#	Hot Dive pro	DED:-7	Descriper differential and 7
48 49	PRSNT2#	Hot-Plug presence detect	PERn7 GND	Receiver differential pair, Lane 7
49	GND	Ground	GND	Ground

# 1.14 x8 Cable Wire Connections / Pin Outs



	Row A	Row B
Pin #	Signal Name	Signal Name
1	GND	GND
2	PETp0	PERp0
3	PETn0	PERn0
4	GND	GND
5	PETp1	PERp1
6	PETn1	PERn1
7	GND	GND
8	PETp2	PERp2
9	PETn2	PERn2
10	GND	GND
11	PETp3	PERp3
12	PETn3	PERn3
13	GND	GND
14	CREFCLK+	PWR (3.3V)
15	CREFCLK-	PWR (3.3V)
16	GND	PWR (3.3V)
17	RSVD	PWR RTN
18	RSVD	PWR RTN
19	SB_RTN	PWR RTN
20	CPSRNT\$#	CWAKE#
21	CPWRON	CPERST#
22	GND	GND
23	PETp4	PETp4
24	PETn4	PERp4
25	GND	GND
26	PETp5	PERp5
27	PETn5	PERn5
28	GND	GND
29	PETp6	PERp6
30	PETn6	PERn6
31	GND	GND
32	PETp7	PERp7
33	PETn7	PERn7
34	GND	GND

<sup>\*</sup>NC: Not Connected

# 1.15 x8 Cable Signal Descriptions

PETp(x)	PCI Express Transmit Positive signal of (x) pair.
PETn(x)	PCI Express Transmit Negative signal of (x) pair.
PERp(x)	PCI Express Receive Positive signal of (x) pair.
PERn(x)	PCI Express Receive Negative signal of (x) pair.
CREFCLK+/-	Cable REFerence CLocK: Provides a reference clock from the host system to the remote system.
SB_RTN	Return path for single ended signals from remote systems.
CPRSNT#	Cable Present: Indicates the presence of a device beyond the cable.
PWR	Power: Provides local power for in-cable redriver circuits. Only needed on long cables (Power does not go across the cable.)
PWR_RTN Po	Provides local power return path for PWR pins.
CWAKE#	Cable WAKE
CPERST#	Cable PCI Express Reset

### **Hardware Requirements** 2

The following are the hardware and software requirement in order for the HIB38-x8-DUAL Host and Target cards to function / operate properly.

#### Hardware & System Requirements 2.1

1. Computer / Server motherboard with x16 Gen3 PCIe slot

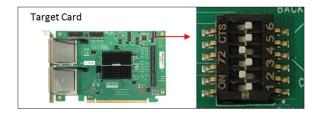
2. HIB38-x8-DUAL-H, qty 1: Host card 3. HIB38-x8-DUAL-T, qty 1: Target card

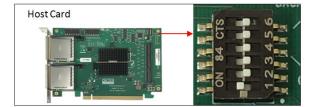
NOTE: The HIB38-x8-DUAL card works in pair (one as host card and other as target card)

- One or two x8 iPass cable(s).
  - When connecting two external expansion unit, you need two x8 iPass cable.
- OSS Expansion chassis with Gen3 backplane, or OSS expansion backplane and power supply (one or two expansion unit).

### 2.1.1 HIB38-x8-DUAL card (Host and Target)

A pair of HIB38-x8-DUAL card (Target and Host cards)





### 2.1.2 PCle Slot & Motherboard Requirement

For Host Adapter card: Use a server-computer motherboard that has a Gen3 x16 PCle slot in order for the card to operate to its max performance. The Host adapter card is recommended to be installed in a x16 Gen3 PCle slot.

### 2.1.3 x8 iPass Cable

Use x8 iPass cable for connecting between host card and target card.



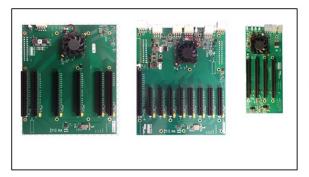


### 2.1.4 Expansion Chassis / backplanes

You need an expansion chassis with Gen3 backplane . Photos below are example of an OSS backplanes and an expansion unit. OSS offers a multitude of expansion units and expansion backplanes, please visit our website to get further details on all products. Here is the web link: https://www.onestopsystems.com



The HIB card has custom pin out that unique to OSS and only OSS Target adapters will work in the upstream slot of our expansion backplanes.



OR



### 2.1.5 ATX Power Supply

If you are using an OSS backplane with the HIB38-x8-DUAL card, you need a power supply unit to provide power. A standard ATX power supply will work with the boards.



#### 2.2 **Software Requirement**

- Computer running Windows 7, 8, 10 and or Server
- No driver is needed for the OSS-HIB38-x8-dual

#### 3 **Installation Procedures**

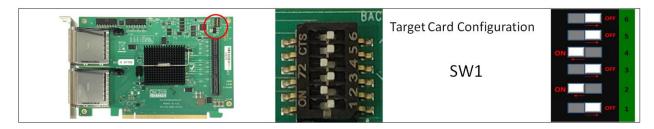
The following steps will guide you through the installation of your HIB38-x8-DUAL Host and Target cards.

#### 3.1 Configure Dipswitches

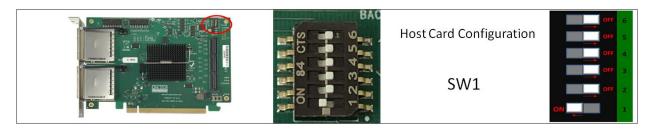


Select the appropriate card to use. Make sure you have the correct host and target cards. Below are photos to help you identify between Target card and Host card.

Target Card: set the Dipswitches to #1=OFF; #2=ON; #3=OFF; #4=ON; #5=OFF; #6=OFF



Host Card, set the Dipswitches to: #1=ON, the rest are OFF

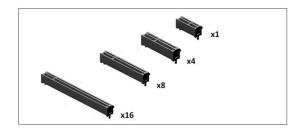


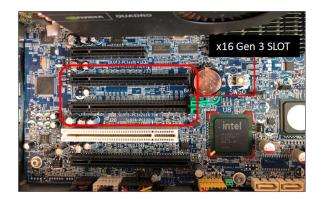
#### 3.2 Install HIB Host card



Power down the host computer first before installing the host card. Do not install the host card while the computer is ON.

- Install the HIB38-x8-DUAL host card into the available PCIe slot in the computer's motherboard. Use a x16 Gen3 PCIe slot.
- Make sure to secure the card.

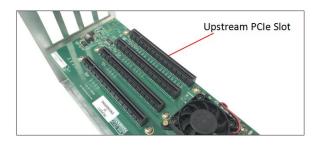






#### Install HIB Target card 3.3

Install the Target card in the OSS expansion backplane. Plug-in the target card in the "Upstream" PCIe slot.





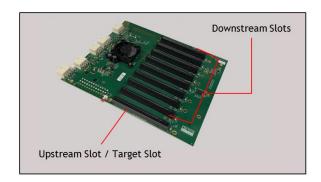


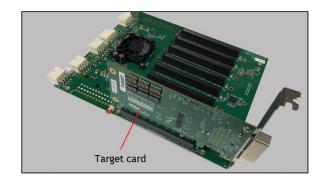
Do not plug in the target card while expansion unit or the expansion backplane is ON as this can damage the board. Turn OFF the unit first before installing the card.

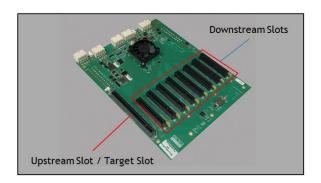


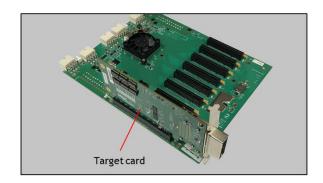
The HIB Target card will only work in the OSS backplane "Upstream" slot. It will not function in the downstream slot or the end-point slot of the backplane.

Photos below are example of different backplanes showing where the locations of the "Upstream" slot.



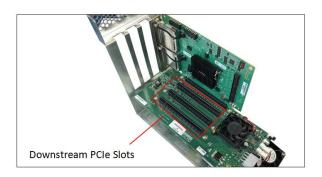




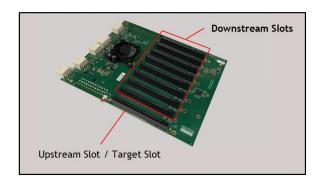


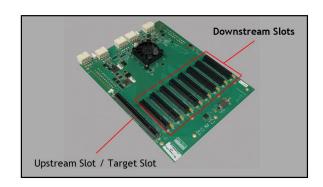
#### 3.4 Install PCIe card

Plug-in your third party PCle card in the expansion backplane. Use the downstream slot on the OSS backplane. See photos below for the location of the downstream slot / end-point slot on the backplane.









#### 3.5 Install x8 iPass cable

#### 3.5.1 Connect Cable to Target card

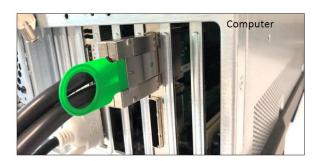
Plug in the x8 iPass cable to the target card. Connect the cable to the "Top external connector / port". Do not use the bottom port of the card. Make sure the cable is firmly latched in to the cable connectors of the card.





#### 3.5.2 **Connect Cable to Host card**

Plug in the other end of the two cables to the Host card. If you are only connecting a single cable (for one expansion unit), you can use either the top or bottom port of the host card.

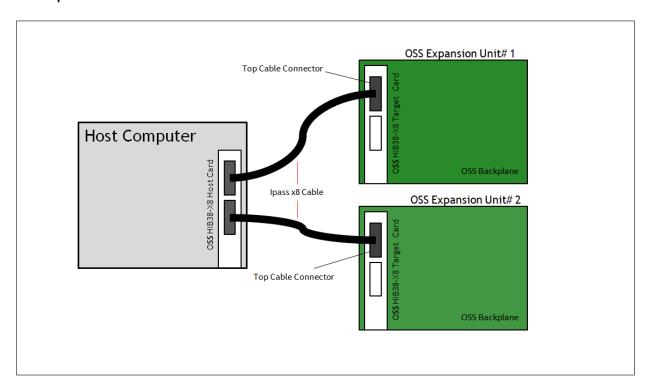




### 3.5.3 Use Case Diagrams

The block diagram below shows the supported and valid configuration. This illustrates the proper way to set up and how to use the HIB38-x8 Dual cards correctly.

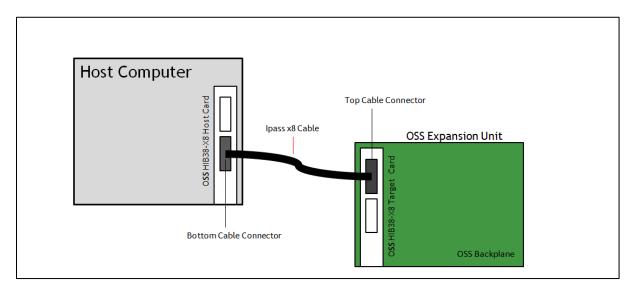
### Two expansion units

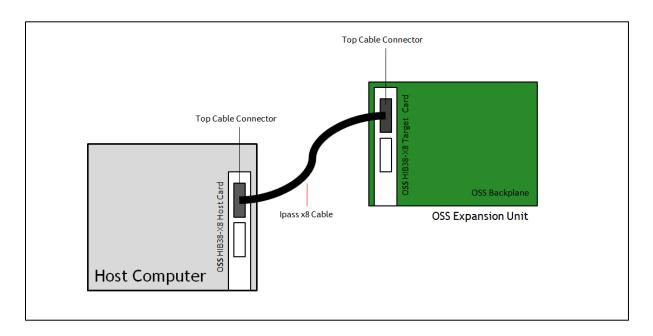


- The OSS HIB38-x8 Dual card works in a pair, one host card and target card.
- The HIB38-x8 car is designed to work and will only operate properly in an OSS expansion backplane.
- The HIB38-x8 Dual card (target) is not compatible on different brand or another backplane.
- The HIB38-X8 Dual target card will not work on a different backplane.
- Connecting the HIB38-X8 Dual host card directly to unknown end-point device or a non-OSS backplane is not supported.

### One Expansion unit

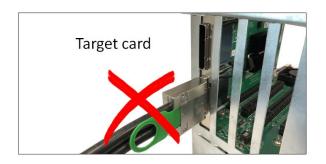
- The cable on the host side (Host Computer) can be connected to either top or bottom external cable connector.
- The cable on the target side (OSS Expansion Unit), can be only attached to the top connector.

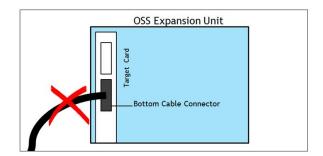






# DO NOT connect the cable to the bottom external port of the Target card.





#### **Connect ATX Power Supply** 3.6



If you are using an expansion chassis, the power supply is already part of the unit. You can skip this step.

If you are using an expansion backplane, plug-in the ATX power supply cable into the 24pin ATX power connector on the OSS board.



Connect power to the PSU and turn the switch to ON position.



### 3.7 Power ON the system

- Turn ON the main power of the host computer.
- Start the computer by pushing the power button.
- Upon powering ON the Host system, it will send a sideband signal to the Target card triggering the expansion system to turn ON.



If the expansion unit or the HIB card are not powering ON, check the link cable make sure it is firmly connected. The target and host card must be fully seated in the PCIe slot in order to work correctly. Check the Dipswitch is set correctly on each card.

### Verify Hardware 4

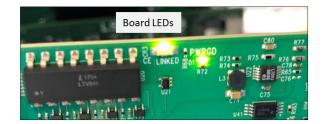
An operational Target and Host cards will have the following LEDs illuminated.

## 4.1 Target card LEDs

- Bracket LINK LED: Solid green Gen 3 or Blinking green Gen 2 (Blinking frequency: 2Hz). Gen1 (Blinking frequency: 1Hz)
- Board LEDs:
  - PWRGD Solid green
  - CE LINKED Solid green or blinking green, depending on the blink rate.
    - Gen3- solid green
    - Gen2 Blinking frequency: 2Hz
    - Gen1 Blinking frequency: 1Hz

NOTE: 1 Hz means it blinks one time per second. Therefore, .25 would be once every 4 seconds and 2Hz would be twice a second.





#### 4.2 **Host card LEDs**

If you have two expansion units that are attached, the two LINK LED will be illuminated.

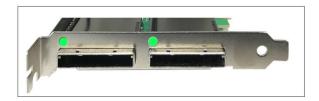
- Bracket LED : Solid green Gen 3 or Blinking green Gen 2 (Blinking frequency: 2Hz ). Gen1 (Blinking frequency: 1Hz)
- Board LEDs: 3.
  - PWRGD Solid green
  - CE LINKED Solid green or blinking green, depending on the blink rate.
    - Gen3- solid green
    - Gen2 Blinking frequency: 2Hz
    - Gen1 Blinking frequency: 1Hz





#### 4.3 **LED Indicators**

Green – Successful link between host and target



 $\label{eq:Red-Fatal} \textit{Red}-\textit{Fatal error} \ \textit{on PCIe} \ \textit{switch}. \ \textit{Indication of faulty connection}.$ 



No LED – No power. No link.



# 5 Software Installation

No software or driver is required for the Host Adapter card.

# 6 How to Get More Help

You can visit the Technical Support FAQ pages on the Internet at https://www.onestopsystems.com/support

### 6.1 Contacting Technical Support

Our support department can be reached by phone at <u>1 (760) 745-9883</u>. Support is available Monday through Friday, 8:00 AM to 5:00 PM PT. When contacting Technical Support make sure to include the following information:

- 1. Exact and correct serial #
- 2. Service Ticket or Case # (if you already submitted an online request)
- 3. Computer Type & Model: Operating System
- 4. Make & Model of PCI/PCIe cards: Application
- 5. Problem description

When submitting an online technical support request always provide a valid working e-mail address, phone number, shipping address and proper contact name. Check your e-mail for an automated response containing the case # and updates. You can also visit our web site at: <a href="https://www.onestopsystems.com/support">https://www.onestopsystems.com/support</a> for a quick response, use the Technical Support and RMA Request Form available in the Support Section of the website. Simply complete the form with all required information. Please make sure that your problem description is sufficiently detailed to help us understand your problem.

### Shipping or Transporting of Expansion Unit with PCI / PCIe cards

Any PCIe cards in should be removed (or not to be installed) prior to shipment to avoid or prevent possible damage. Note: Expansion board and PCIe / PCI cards that arrive damaged in shipment will not be covered under warranty.

### 6.2 Returning Merchandise

If factory service is required, a Service Representative will give you a Return Merchandise Authorization (RMA) number. Put this number and your return address on the shipping label when you return the item(s) for service. Please note that One Stop Systems WILL NOT accept COD packages, so be sure to return the product freight and duties-paid. Ship the well-packaged product to the address below:

Attention:RMA # \_\_\_\_\_\_, One Stop Systems 2235 Enterprise Street, #110 Escondido, CA 92029 USA

It is not required, though highly recommended, that you keep the packaging from the original shipment of your product. However, if you return a product for warranty repair/ replacement or take advantage of the 30-day money back guarantee, you will need to package the product in a manner similar to the manner in which it was received from our plant. We cannot be responsible for any physical damage to the product or component pieces of the product (such as the host or expansion interfaces for the expansion chassis) that are damaged due to inadequate packing. Physical damage sustained in such a situation will be repaired at the owner's expense in accordance with Out of Warranty Procedures. Please, protect your investment, a bit more padding in a good box will go a long way to insuring the device is returned to use in the same condition you shipped it in. Please call for an RMA number first.

### 6.3 Online Support Resources

As a product user and customer, listed below are our Online Support Resources

https://www.onestopsystems.com/support provides Knowledgebase Articles such as troubleshooting methods, compatibility, FAQ, documentation, and product technical information.

If you need technical support, product assistance or have a technical inquiry we encourage you to submit it on-line using our Technical Support Form. If you need to send a unit for repair or diagnostic evaluation, fill out our RMA (Return Material Authorization) online request form.

https://www.onestopsystems.com/support



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