Installation Guide

SKU: OSS-BP-419

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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 system.

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.
3. 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.
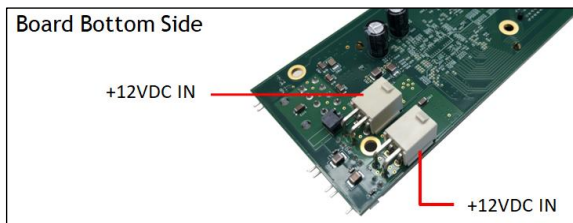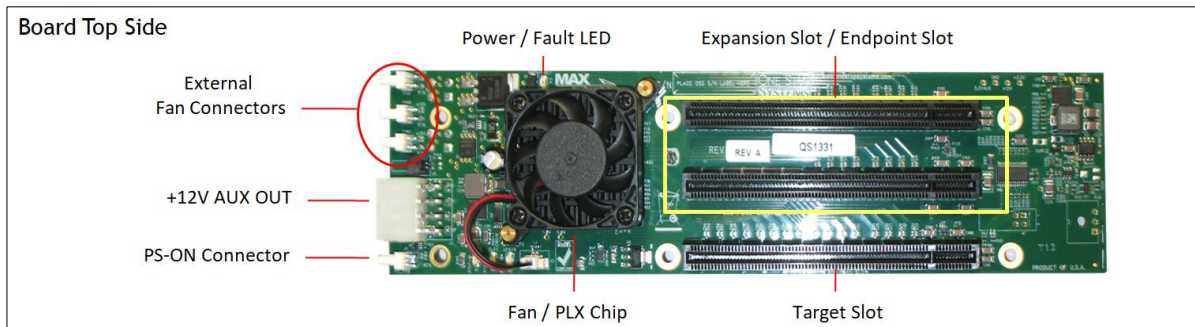
1   Introduction

PCI Express backplane with one PCIe x16 expansion slot with ATX power. Supports up to Gen3 cards.

1.1   Specifications

Item	Description
Form Factor	2 PCIe x8 Slot
Dimensions	8.8" x 2.385"
Power	Dual 12V Input Option: Available Power 326W (27.16A) Single 12V Input Option: Available Power 134W (11.16A)
Slot	(1) x16 PCIe Gen 3 Host Interface Slot • One OSS PCIe x16 3.0 target slot for OSS target cable adapter (2) x8 PCIe Gen 3 Endpoint Slots • Two PCIe x8 3.0 expansion slots (x16 mechanical)
On-Board Regulated Voltages	0.9V, 1.8V, 3.3V/3.3VStandby
LED Indicators	3.3VStandby Indication
Operating Temperature	0˚C to +85˚C environment
Operating Humidity	10% to 90% relative humidity non-condensing
Storage Humidity	5% to 95% relative humidity non-condensing
Industry Specifications	• PCI Express™ Card Electromechanical • Specification, Rev. 3.0 • PCI Express ® Base Specification, Rev. 3.0 • ATX Specification, Version 2.2
Agency Compliance	• FCC Class A • CE • RoHS
Operating System	Windows 10, Windows Server 2012 R2; Linux OS based

1.2   Overview

Board Top Side

External Fan Connectors
Power / Fault LED
Expansion Slot / Endpoint Slot
+12V AUX OUT
PS-ON Connector
Fan / PLX Chip
Target Slot

Board Bottom Side

+12VDC IN
+12VDC IN

- **End-point slot**: also known as downstream slot. This is the slot where an add-in or plug and play PCIe card is installed. It is a Gen3 x8 electrical (x16 mechanical) slot. It can accommodate x4, x8 and x16 PCIe cards.
- **Target slot** : Also known as Upstream slot. Designed for the Target card only. It is a Gen3 x 16 slot (electrical and mechanical).
- **PS_ON** : Enable force power ON. Forces the power supply to be ON all the time
- +**12VDC IN Connector:** ATX Input Power. Use this connection for external power supply
- **PWR / Fault LED:** Indicates error on the board, power not initialized.
- **+12V AUX OUT** : External AUX power for PCIe card requiring additional power.
- **Fan Connectors**: For connecting external fans

1.2.1   Connector Pinouts

Input Power +12VDC IN (Molex P/N; 0366330020)	
Pin	Definition
1	GND1
2	GND2
3	+12V1
4	+12V2

+12V AUX OUT (Molex P/N: 39-30-1080)	
Pin	Definition
1	GND
2	GND
3	GND
4	GND
5	+12V
6	+12V
7	+12V
8	+12V

PS-ON Connector / Force Power ON (Molex P/N: 22-05-3021)	
PIN	Definition
1	CE_PWR_ON#
2	GND

Fan Connectors (Molex P/N: 22-05-3021)	
PIN	Definition
1	+12V
2	FAN_RTN

1.3   Block Diagram
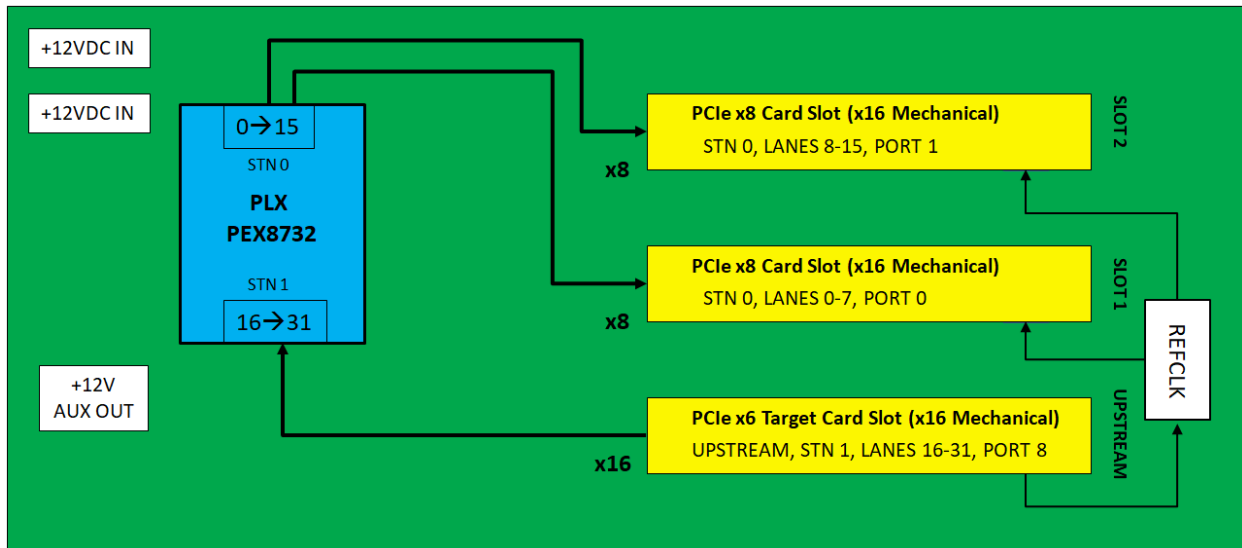
1.4   Dimensions
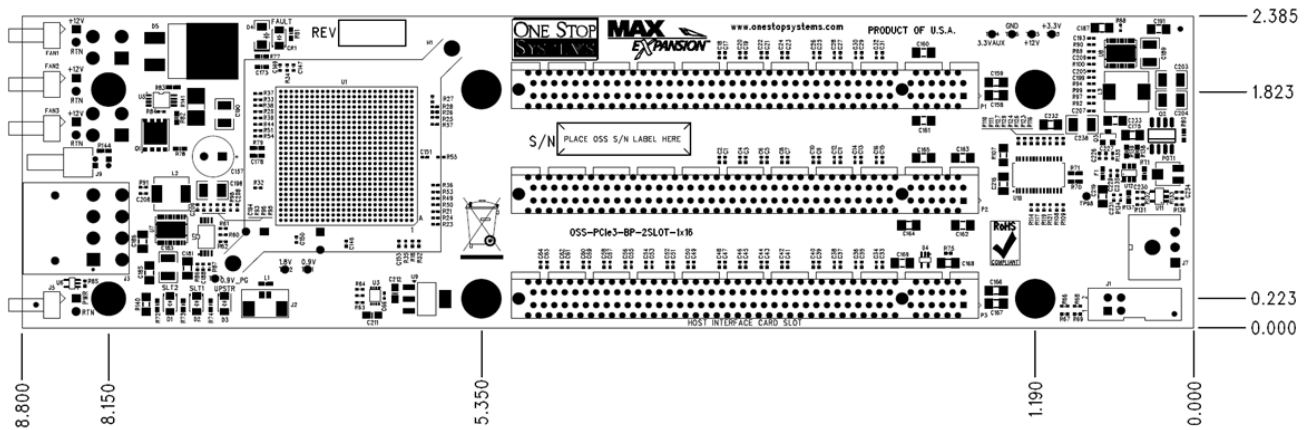
1.5 x16 Target Slot Connector Pin Outs

Pin #	Name	Pin #	Name	
B1	+12V	A1	GND	
B2	+12V	A2	+12V	
B3	+12V	A3	+12V	
B4	GND	A4	GND	
B5	SMCLK	A5	NC	
B6	SMDAT	A6	**REFCLK1+**	
B7	GND	A7	**REFCLK1-**	
B8	+3.3V	A8	NC	
B9	**PS_ON#**	A9	+3.3V	
B10	3.3Vaux	A10	+3.3V	Mechanical Key
B11	WAKE#	A11	PERST#	
B12	RSVD	A12	GND	
B13	GND	A13	REFCLK2+	
B14	PETp0	A14	REFCLK2-	
B15	PETn0	A15	GND	
B16	GND	A16	PERp0	
B17	PRSNT_X1#	A17	PERn0	End of the x1 Connector
B18	GND	A18	GND	
B19	PETp1	A19	RSVD	
B20	PETn1	A20	GND	
B21	GND	A21	PERp1	
B22	GND	A22	PERn1	
B23	PETp2	A23	GND	
B24	PETn2	A24	GND	
B25	GND	A25	PERp2	
B26	GND	A26	PERn2	
B27	PETp3	A27	GND	
B28	PETn3	A28	GND	
B29	GND	A29	PERp3	
B30	RSVD	A30	PERn3	End of the x4 Connector
B31	PRSNT_X4#	A31	GND	
B32	GND	A32	RSVD	
B33	PETp4	A33	RSVD	
B34	PETn4	A34	GND	
B35	GND	A35	PERp4	
B36	GND	A36	PERn4	
B37	PETp5	A37	GND	
B38	PETn5	A38	GND	
B39	GND	A39	PERp5	
B40	GND	A40	PERn5	
B41	PETp6	A41	GND	
B42	PETn6	A42	GND	
B43	GND	A43	PERp6	
B44	GND	A44	PERn6	
B45	PETp7	A45	GND	
B46	PETn7	A46	GND	
B47	GND	A47	PERp7	End of the x8 Connector
B48	PRSNT_X8#	A48	PERn7	
B49	GND	A49	GND	
B50	PETp8	A50	RSVD	
B51	PETn8	A51	GND	
B52	GND	A52	PERp8	
B53	GND	A53	PERn8	End of the x16 Connector
B54	PETp9	A54	GND	
B55	PETn9	A55	GND	

B56	GND	A56	PERp9
B57	GND	A57	PERn9
B58	PETp10	A58	GND
B59	PETn10	A59	GND
B60	GND	A60	PERp10
B61	GND	A61	PERn10
B62	PETp11	A62	GND
B63	PETn11	A63	GND
B64	GND	A64	PERp11
B65	GND	A65	PERn11
B66	PETp12	A66	GND
B67	PETn12	A67	GND
B68	GND	A68	PERp12
B69	GND	A69	PERn12
B70	PETp13	A70	GND
B71	PETn13	A71	GND
B72	GND	A72	PERp13
B73	GND	A73	PERn13
B74	PETp14	A74	GND
B75	PETn14	A75	GND
B76	GND	A76	PERp14
B77	GND	A77	PERn14
B78	PETp15	A78	GND
B79	PETn15	A79	GND
B80	GND	A80	PERp15
B81	PRSNT_X16#	A81	PERn15
B82	RSVD	A82	GND

1.6   x16 End Point Slot Connector Pin Outs

Pin #	Name	Pin #	Name	
B1	+12V	A1	GND	
B2	+12V	A2	+12V	
B3	+12V	A3	+12V	
B4	GND	A4	GND	
B5	SMCLK	A5	NC	
B6	SMDAT	A6	**REFCLK2+**	
B7	GND	A7	**REFCLK2-**	
B8	+3.3V	A8	NC	
B9	NC	A9	+3.3V	
B10	3.3Vaux	A10	+3.3V	Mechanical Key
B11	WAKE#	A11	PERST#	
B12	RSVD	A12	GND	
B13	GND	A13	REFCLK1+	
B14	PERp0	A14	REFCLK1-	
B15	PERn0	A15	GND	
B16	GND	A16	PETp0	End of the x1 Connector
B17	PRSNT_X1#	A17	PETn0	

B18	GND	A18	GND	
B19	PERp1	A19	RSVD	
B20	PERn1	A20	GND	
B21	GND	A21	PETp1	
B22	GND	A22	PETn1	
B23	PERp2	A23	GND	
B24	PERn2	A24	GND	
B25	GND	A25	PETp2	
B26	GND	A26	PETn2	
B27	PERp3	A27	GND	
B28	PERn3	A28	GND	
B29	GND	A29	PETp3	
B30	RSVD	A30	PETn3	
B31	PRSNT_X4#	A31	GND	End of the x4 Connector
B32	GND	A32	RSVD	
B33	PERp4	A33	RSVD	
B34	PERn4	A34	GND	
B35	GND	A35	PETp4	
B36	GND	A36	PETn4	
B37	PERp5	A37	GND	
B38	PERn5	A38	GND	
B39	GND	A39	PETp5	
B40	GND	A40	PETn5	
B41	PERp6	A41	GND	
B42	PERn6	A42	GND	
B43	GND	A43	PETp6	
B44	GND	A44	PETn6	
B45	PERp7	A45	GND	
B46	PERn7	A46	GND	
B47	GND	A47	PETp7	
B48	PRSNT_X8#	A48	PETn7	End of the x8 Connector
B49	GND	A49	GND	
B50	PERp8	A50	RSVD	
B51	PERn8	A51	GND	
B52	GND	A52	PETp8	
B53	GND	A53	PETn8	
B54	PERp9	A54	GND	
B55	PERn9	A55	GND	
B56	GND	A56	PETp9	
B57	GND	A57	PETn9	
B58	PERp10	A58	GND	
B59	PERn10	A59	GND	
B60	GND	A60	PETp10	End of the x16 Connector
B61	GND	A61	PETn10	

B62	PERp11	A62	GND
B63	PERn11	A63	GND
B64	GND	A64	PETp11
B65	GND	A65	PETn11
B66	PERp12	A66	GND
B67	PERn12	A67	GND
B68	GND	A68	PETp12
B69	GND	A69	PETn12
B70	PERp13	A70	GND
B71	PERn13	A71	GND
B72	GND	A72	PETp13
B73	GND	A73	PETn13
B74	PERp14	A74	GND
B75	PERn14	A75	GND
B76	GND	A76	PETp14
B77	GND	A77	PETn14
B78	PERp15	A78	GND
B79	PERn15	A79	GND
B80	GND	A80	PETp15
B81	PRSNT_X16#	A81	PETn15
B82	RSVD	A82	GND

NC = NOT CONNECTED

2 Hardware Requirements

This section describes the supported configuration and hardware requirements to use to ensure the product works properly

2.1 Supported Configuration

The block diagram below shows the supported / valid configuration. This illustrates the proper way to set up and how to use the OSS-BP-419 board correctly.

1. Using an OSS PCIe Host and Target adapter cards
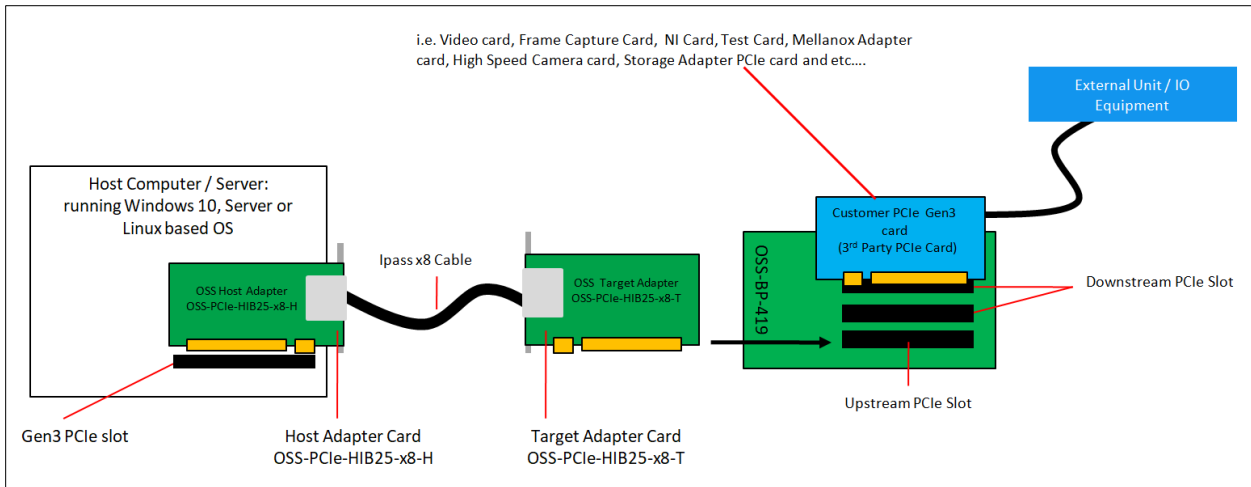
2. Using a single compatible OSS Thunderbolt2 Option card.
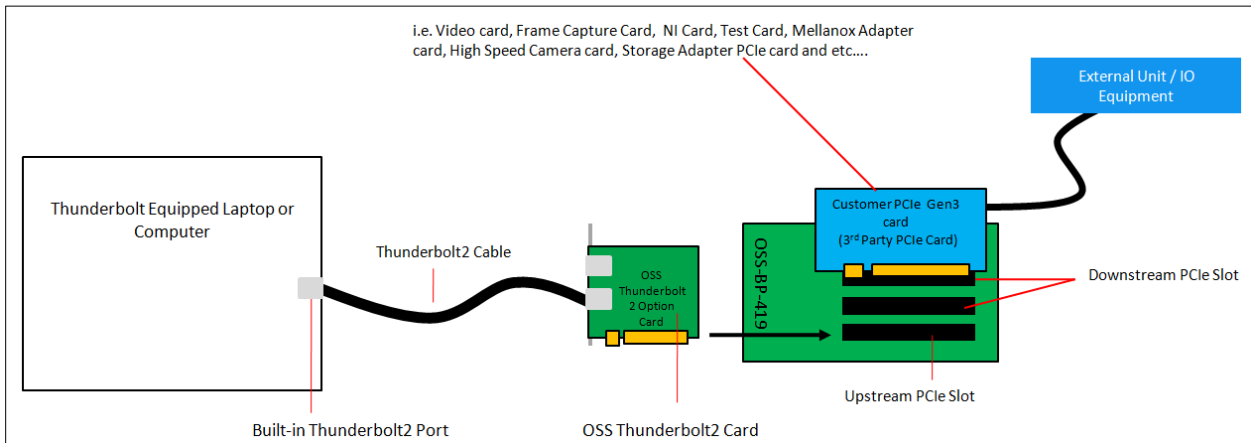
2.2 Unsupported / Invalid Configuration

1. Connecting "Other Backplane" or similar to OSS-BP-419.
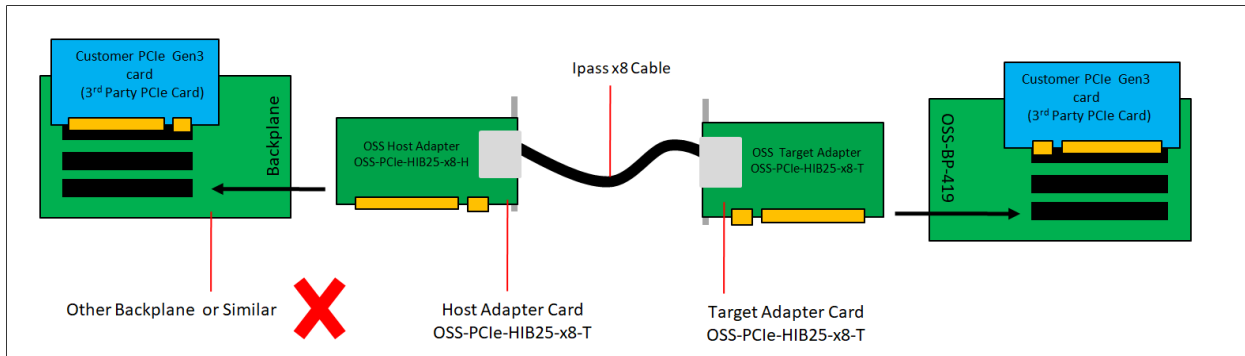
2. Using an unknown target adapter card or other brand of adapter card (made by different vendor).
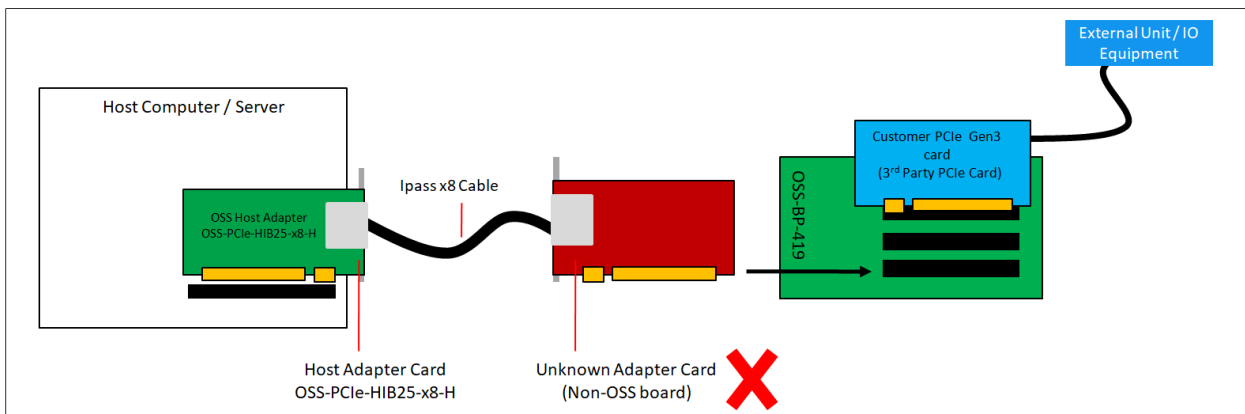
3. Connecting to host computer via onboard / built-in Ipass cable port.
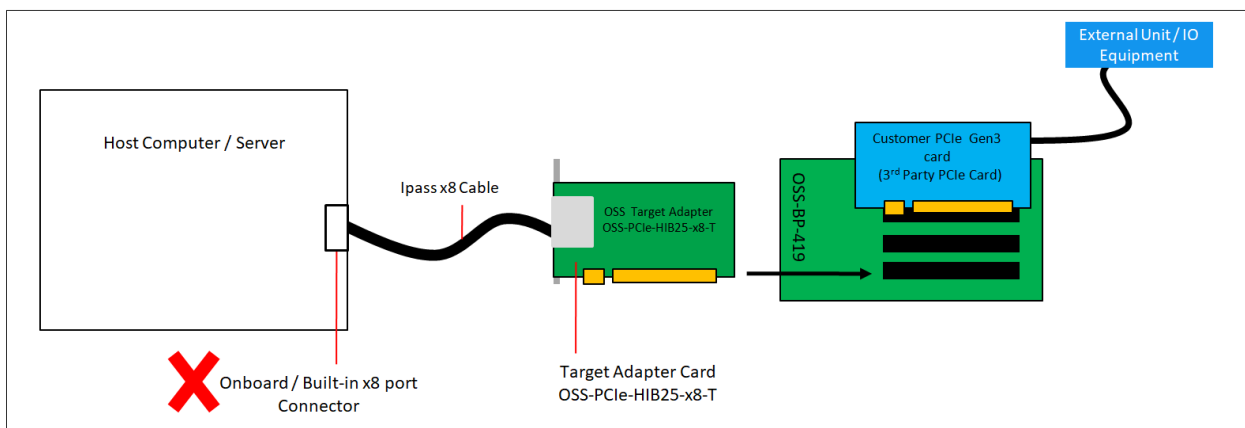
4. Connecting the OSS-419 board to an unknown adapter card and connecting to host computer via onboard Ipass cable port.
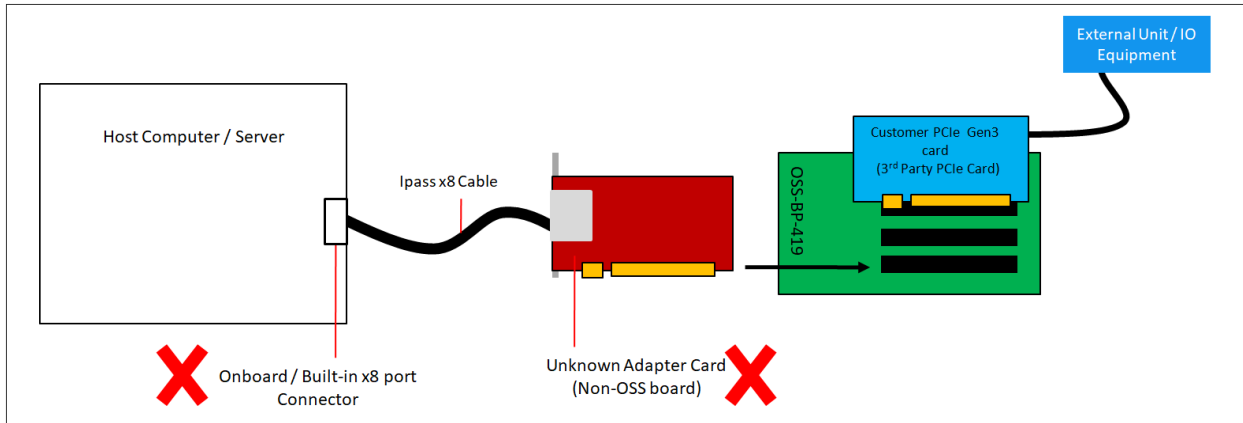
5. Using an unknown host adapter card or another brand (made by different vendor).
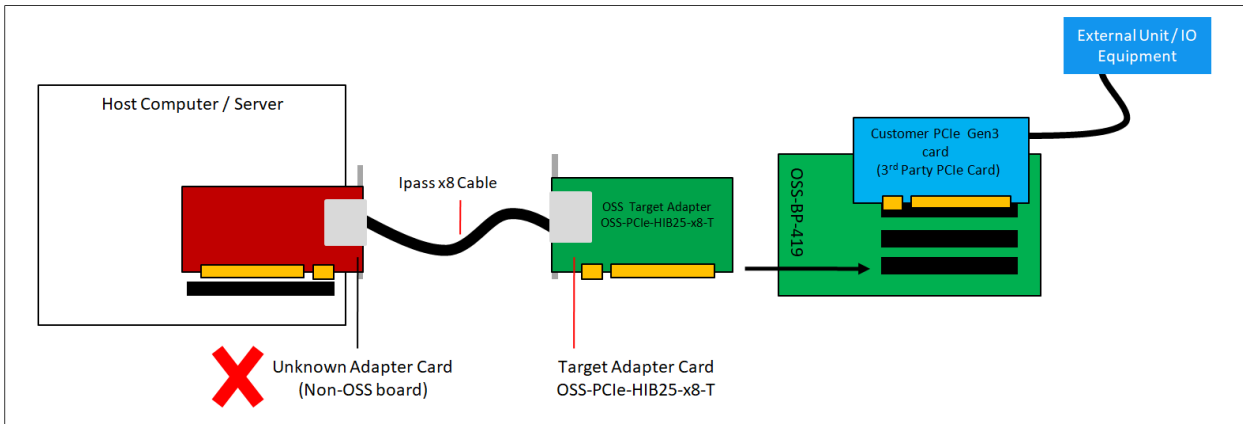
2.3   Hardware to Use

This section provides the hardware parts needed for the OSS-419 to work. It is strictly recommended to follow and use the hardware requirements listed below in order for the OSS-BP-419 board to operate properly.

1. Computer / Server motherboard with x16 or x8 Gen3 PCIe slot.
2. Host and Target adapter cards. The HBA card works in pair.
   - OSS-PCIe-HIB25-x8-T OSS Target Card (x8 Gen 3)
   - OSS-PCIe-HIB25-x8-H OSS Host Card (x8 Gen3).
3. One x8 iPass cable
4. Power Supply
   - External Power Brick Supply: 180-watt (AC Input: 100 - 240V, 2.5A, 50/60Hz ** DC Output: 12V, 15.0A). This require to a "Power Cable Adapter (part# 80-520-5343-RC)", for connecting between the power supply and the board.
   - Standard ATX power supply that has 4pin +12v connector
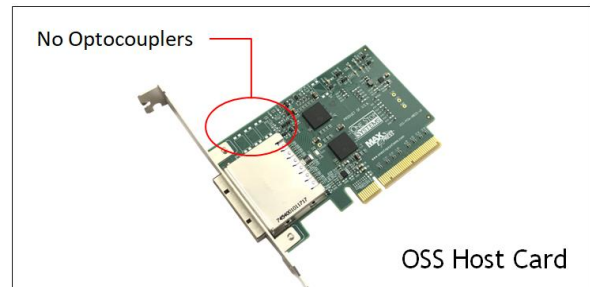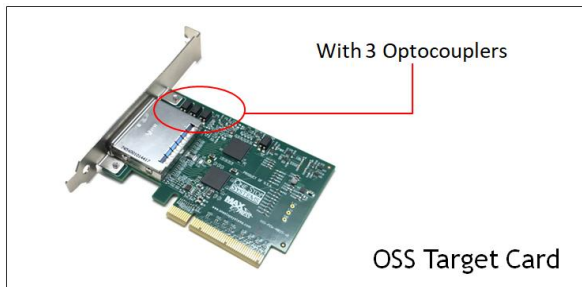
2.3.1   PCIe Slot & Motherboard Requirement

Use a computer motherboard with a Gen3 x16 or Gen3 x8 PCIe slots.
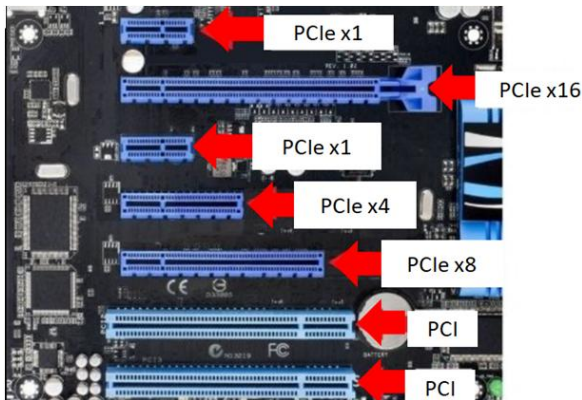
2.3.2   Host and Target Cards

Use a x8 Gen3 OSS Host and Target cards

- The **Host card** does not have an Optocouplers. The card will only operate in host mode and it is plugged into the computer's motherboard PCIe slot.

- The **Target card** is populated with three Optocouplers (see photo above). The card will only operate in the OSS expansion backplane Upstream slot.

2.3.3 x8 iPass Cable

Use x8 iPass cable for linking host card and target card together. Preferably use a 1 meter long cable.

2.3.4 Power Supply

There are several options to power up your OSS-419 board. You can use an external power brick or standard ATX power supply.

1. **External Power Brick:** Photo below is an example of an external power brick

   - 180-watt (AC Input: 100 - 240V, 2.5A, 50/60Hz ** DC Output: 12V, 15.0A).
   - This requires a "Power Cable Adapter (part# 80-520-5343-RC)" for connecting between the power supply and the OSS-419 board.

80-520-5343-RC

Power Cable Adapter: You will require a power cable adapter in order to connect the external power brick to the INPUT power connector on OSS-419 backplane.

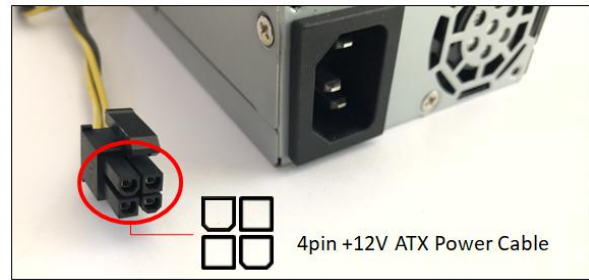Contact OSS Sales team (sales@onestopsystems.com) for further details on how to order this item.

Important

The INPUT power connector on the backplane has 4 pins, see photo below.
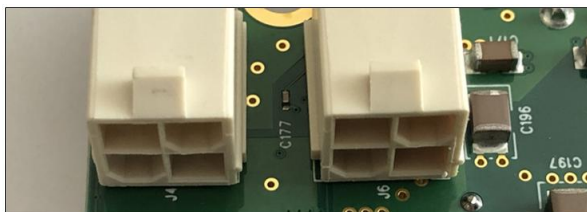
Input Power +12VDC IN (Molex P/N; 0366330020)	
Pin	**Definition**
1	GND1
2	GND2
3	+12V1
4	+12V2

2. **Standard ATX Power Supply:** Use a standard ATX Power Supply that has a 4pin +12V power cable, see photos below.

The 4 pin +12 volt cable is polarized so it can only be plugged into the 4 pin board connector correctly. The motherboard connectors and the OSS backplane have the same square and rounded arrangement so the power cable only fits in one way.

2.4   Software Requirement

1. Computer running Windows 7, 8, 10 and or Server
2. No driver is needed for the Host card, Target card and backplane.

3   Installation Procedures

The following steps will guide you through the installation of your backplane.
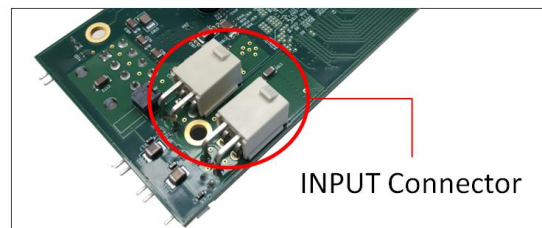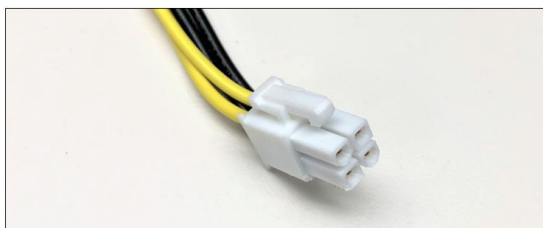
3.1   Connect Power Supply

This section shows you how to connect an external power brick or a standard power supply to OSS-419 board. You can either use an external power brick or a standard ATX power supply.

3.1.1   Plug-in External Power Brick

- Connect the "cable power adapter" and "external power brick supply" together, sees photos below.

Cable Power Adapter

External Power Brick Supply
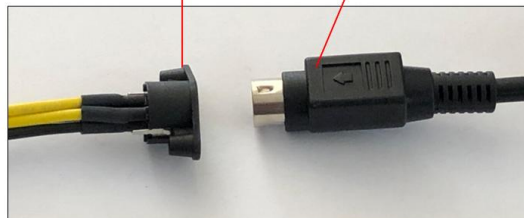
- Plug-in the +12V connector to the INPUT connector on the OSS-419 backplane.

INPUT Connector

3.1.2 Standard ATX Power Supply

If an external power brick is not available you can use a standard ATX power supply that has a 4pin +12V cable connector, see attached photo

ATX Power Supply Unit

4pin +12V ATX Power Cable
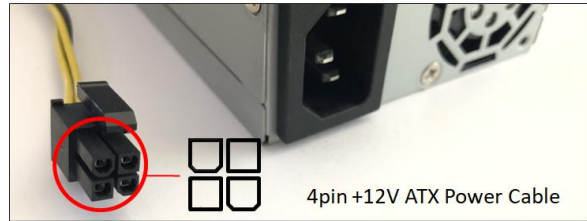
3.1.3 4pin-to-12V Adapter Cable

If the power supply does not have a 4pin +12V connector, you can use a "4 Pin MOLEX to ATX P4 CPU 4Pin 12V" adapter cable, see photo below. You can buy this from any online electronic stores.

4 Pin MOLEX to ATX P4 +12V PSU Adapter Cable

You are only connecting the power supply to the OSS-419 board. DO NOT plug-in the power cord yet!

 CAUTION: Do not attempt to plug in the power cord to the power supply yet! Please unplug the power cord from the power supply before installing the target card and PCIe cards.

3.2   Install OSS Target

Makes sure you have the correct target card. To help you identify the card, below is a photo of the OSS HIB25-x8 Target card.

Once you have identified the correct card to use, plug the "Target card" into the Upstream slot on the OSS-419 board. See photo below for the right location of the Upstream slot.

With 3 Optocouplers

OSS Target Card

Target Slot / Upstream Slot
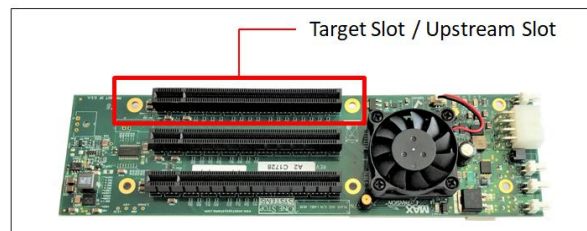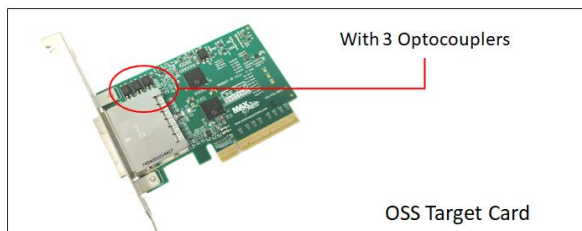
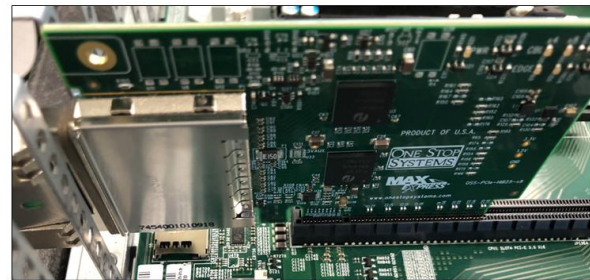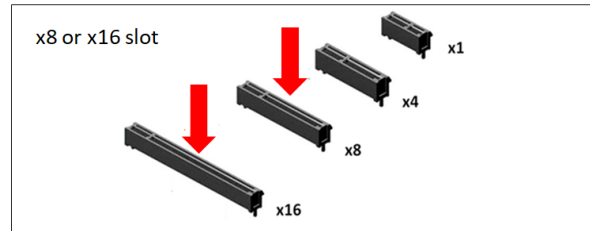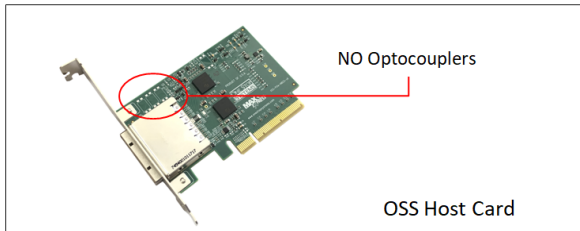The photo below shows the "Target Card" installed in the Upstream slot.
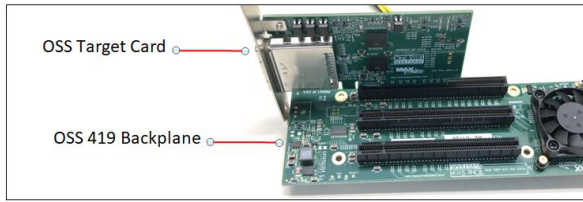
3.3   Install OSS Host card

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

- Install the HIB25-x8 host card into the available PCIe slot in the computer motherboard. Use a x8 or x16 Gen3 PCIe slot.
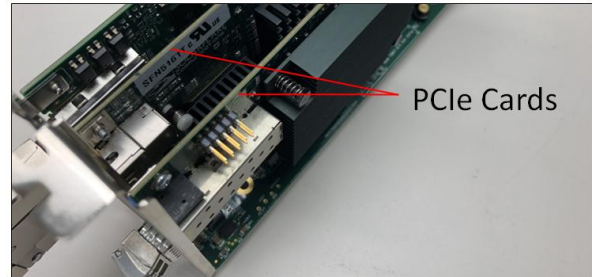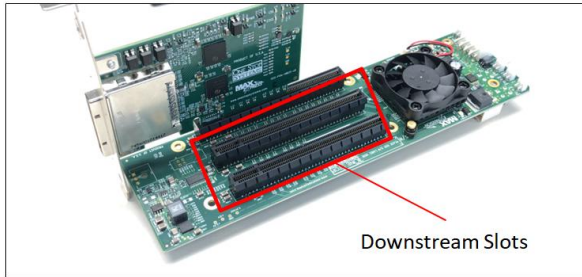
3.5   Install PCIe card

CAUTION: Please unplug the power cord from the power supply before installing your PCIe cards.

Plug-in your 3rd party PCIe card in the expansion backplane. Use the two available downstream slots on OSS backplane. See photos below.

Downstream Slots

PCIe Cards

3.6   Connect Ipass cable

- Connect the PCIe iPass x8 cable between the host and target cards. Plug in the cable to the host card.
- Plug in the other end of the cable to the target card. Make sure the cable is firmly latched into the cable connectors of the card.
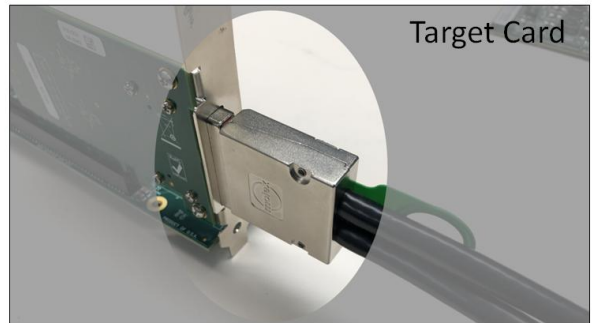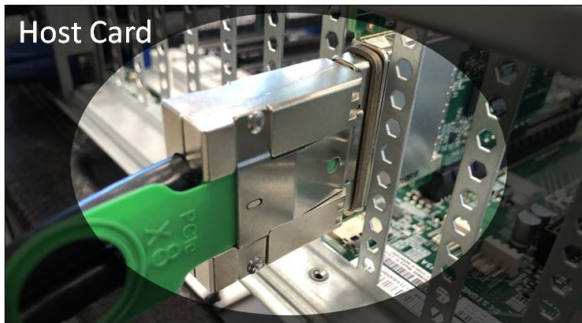

Host Card

Target Card

Photo below is a block diagram of an Ipass x8 cable linking both host server and OSS-BP-419
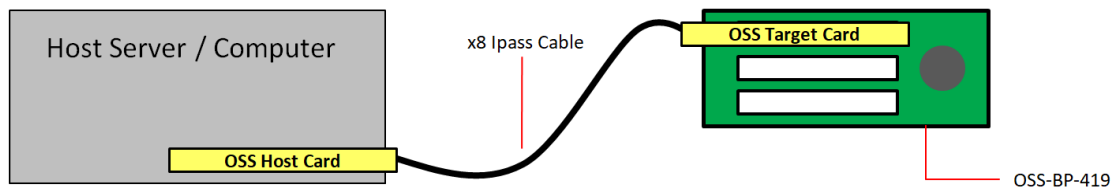
3.7   Connect Power Cord

Connect the power cord to the power supply and turn the switch to ON position.

Some power supplies don't have an ON/OFF switch button

If you are using an external power brick, simply plug-in the power-cord to the brick.

Upon connecting the power cord to the power supply, the OSS-419 board will be on a "stand-by power" mode and the RED LED on the board will illuminate as shown from the photo below.

- The RED LED will turn OFF as soon as the OSS-419 board is initialized by powering UP the host computer and link is established successfully between Target card and Host card.
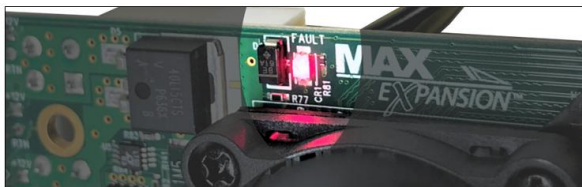
3.8   Power ON the system

Before powering ON the system please check the following:

1. Is the Ipass x8 cable fully and firmly attached between the target and host card?
2. Is the Target card fully seated in the Upstream slot?
3. Is the Host card is plugged into a Gen3 x8 or Gen3 x16 slot in the computer's motherboard and is fully seated?
4. Ensure that the two slots on the OSS-419 backplane are populated with your PCIe cards and are fully seated in the slot?
5. Is the Power supply cable connected to the INPUT power connection on the OSS-419 board?

- If everything is checked out GOOD, next is to turn ON the main power of the host computer.
- Upon powering ON the Host system, it will send a sideband signal to the Target card triggering the target expansion system to turn ON.
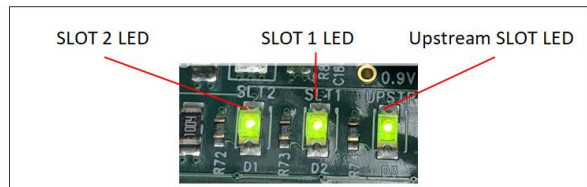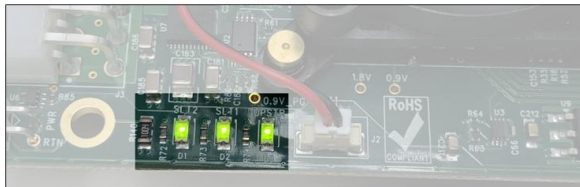
4   Verify Hardware

Verify all the LED indicators on the board and cards are properly illuminated.

4.1   Board Slot LEDs

On the OSS-419 backplane, the following LEDs are illuminated as solid green.

- SLT1: Slot 1
- SLT2: Slot 2
- UPSTR: Upstream Slot

4.2   Target & Host Cards LEDs

Check the LED indicators on both Target and Host cards.   An operational host and target cards will have the following LEDs on the board illuminated as green.

1. PWR LED	2. x4 CBL and EDGE LEDs	3. x8 CBL and EDGE LEDs

4.3   LED Definition

PWR – Board has power	CBL – Signal detect on cable*	EDGE – Signal detect on card edge*

*Signal detect does not mean it has a link, but rather it identifies there is a signal on the card edge. If the link does not appear to be stable, it could mean that there is a compliance pattern being generated by the PCIe device interfacing with this card.

If the board is operating **on x4 mode**, x4 CBL and EDGE are only illuminated. This is indicative of a x4 slot PCIe slot (electrical) where the host or target card is installed.

5   Troubleshooting

5.1   The OSS-419 board is not powering ON

1.   Check the power cable; make sure it is attached to the OSS-419 INPUT power connection.
2.   Try swapping your power supply with a known good power supply.
3.   Swap the OSS-419 or send the board to OSS for service / repair if it is under warranty.
4.   Buy a replacement board.

5.2   Both Target and Host cards are not linking up

1.   Make sure you have the target card fully seated in the Upstream slot on the OSS-419 backplane.
        a.   Try reseating the card.
2.   Check the host card; make sure it is firmly seated.
        a.   Try reseating the card
3.   Check the Ipass cable; make sure both of the cable connectors are firmly attached on each card (Host and Target cards).
        a.   Try another Ipass x8 cable
4.   Swap the Target card with a known good card.
        a.   Replace the Target card or buy a new one.
5.   Swap the Host card with a known good card.
        a.   Replace the Host card or buy a new one.

5.3   The Red LED on the board stays LIT all the time.

1.   This is likely a indication that your OSS-419 board is faulty or you may have a components failure on the board.
        a.   Contact OSS Technical Support. You may need to send the board for repair, if it is under warranty
        b.   Buy a replacement board
2.   If the board is not getting initialized, the RED FAULD LED will stay ON.
        a.   You may need to check your Host and Target cards
                i.   Reseat the Target and Host card
                ii.   Swap or replace the Target card and or the Host card
        b.   Check the Ipass cable
                i.   Reseat the Ipass cable
                ii.   Replace the Ipass cable

5.4   My PCIe cards is not getting detected

1.   Make sure your PCIe card is installed in the "Downstream Slot" on the OSS-419 backplane.
2.   Reseat your PCIe card
3.   Try another known-good PCIe card
4.   Check your Target and Host cards; make sure you have a solid LINK between both cards.
        a.   Check how many solid green LEDs on the Target and Host cards. Make sure you have five solid green LEDs illuminated.
        b.   If you are only seeing ONE solid green LED, you may have issue with the cards or cable
                i.   Reseat the Target and Host Cards
                ii.   Reseat the Ipass cable
                iii.   Swap or replace the Target card with a known-good card
                iv.   Swap or replace the Host card with a known-good card
                v.   Replace the OSS-419 backplane or send it for service / repair if it is under warranty.
5.   Try another computer or a different computer; see if it fixes the problem.

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 1 (760) 745-9883. 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: https://www.onestopsystems.com/support 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

2235 Enterprise Street, Suite#110, Escondido CA 92029

Toll-Free : +1(800)285-8900 US • Main: +1 (760) 745-9883 • Fax: +1 (760) 745-9824

www.onestopsystems.com