User Manual
SKU: OSS-PCIe4-ADPT-x8-M.2-2
# Table of Contents

Preface .................................................................................................................................................................................... 4

Advisories ............................................................................................................................................................................................................ 4

Safety Instructions ............................................................................................................................................................................. 5

Protecting Against Electrostatic Discharge .......................................................................................................................................................... 6

1  Product Information ......................................................................................................................................................................... 7

   1.1  Removal Tray ........................................................................................................................................................................ 7

   1.2  Features .................................................................................................................................................................................. 8

   1.3  General Specification ......................................................................................................................................................... 8

   1.4  Block Diagram ................................................................................................................................................................. 9

   1.5  Dimensions ....................................................................................................................................................................... 9

   1.6  M Key Connector .......................................................................................................................................................... 10

2  Hardware Requirements .................................................................................................................................................................. 11

3  Software Requirements .............................................................................................................................................................. 11

4  Hardware Installation ................................................................................................................................................................. 12

   4.1  Installation-Procedures Overview .................................................................................................................................... 12

   4.4  Prepare OSS-537 board .................................................................................................................................................... 13

   4.5  Remove the canister ......................................................................................................................................................... 13

   4.6  Install M.2 module ........................................................................................................................................................ 13

   4.7  Secure the Media ............................................................................................................................................................ 14

   4.8  Turn OFF computer ......................................................................................................................................................... 14

   4.9  Remove Computer’s top cover ....................................................................................................................................... 14

   4.10  Remove PCIe slot cover ................................................................................................................................................... 14

   4.11  Configure SW1 Dipswitch ............................................................................................................................................. 15

   4.11.1  SW1 Dipswitch ......................................................................................................................................................... 15

   4.12  Install the PCIe carrier board ........................................................................................................................................ 15

   4.13  Install Canister .............................................................................................................................................................. 16

   4.14  Power ON the computer .................................................................................................................................................. 16

5  Hardware Check ............................................................................................................................................................................ 17

   5.1  LED Definition ............................................................................................................................................................... 17

6  Verify OSS Device on Windows OS ........................................................................................................................................... 18
6.1 Using Device Manager ................................................................. 18
6.2 Using Disk Management ........................................................... 19
6.3 Check Temperature .................................................................. 19

7 Verify OSS Device on Linux OS...................................................... 20
  7.1 Linux Commands ................................................................. 20
  7.1 Check Temperature .................................................................. 22
  7.2 Check Speed and Link width .................................................. 22
  7.3 PCIe Device Detailed Info ....................................................... 23
  7.4 Smartctl ............................................................................... 24

8 Contacting Technical Support ...................................................... 25

9 Returning Merchandise to One Stop Systems ............................. 25

10 Shipping / transporting the card ................................................. 26

11 APPENDIX A Compliance .......................................................... 26
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, One Stop Systems 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 One Stop Systems 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.

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

Before taking covers off a computer, perform the following steps:

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. One Stop Systems strongly encourages 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 Product Information

PCle x16 Gen 4 add-in card supporting dual Gen 4 hot-swap M.2 drives in removable carriers and dual SFF-8643 connectors supporting additional NVMe expansion. The hot-swap removable carriers provide interchangeability and flexibility at Gen 4 M.2 speeds for edge applications while providing scalability through the additional SFF-8643 internal connections.

1.1 Removal Tray
1.2 Features

- Operates at up to 256Gb/s at PCIe Gen 4 speeds
- Dual PCIe 4.0 NVMe M.2 slots
- Hot-swap removable drive carriers
- Dual SFF-8643 connectors for additional PCIe 4.0
- Expansion options
- Supports M.2 2242/2260/2280
- Can be modified to support 22110 M.2 and EDSFF form factors
- Supports PCIe 3.0 backward compatibility

1.3 General Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>PCIe 4.0 x16 add-in card</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8.1” x 4.2” (20.57 x 10.67 cm) at 0.063” (1.6mm) thickness</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>Up to 256Gb/s</td>
</tr>
<tr>
<td>Drive Form Factors</td>
<td>Drive form factors supported:</td>
</tr>
<tr>
<td></td>
<td>- PCIe 4.0 NVMe M.2 2242, 2260, 2280 SSDs</td>
</tr>
<tr>
<td></td>
<td>- PCIe 3.0 NVMe M.2 2242, 2260, 2280 SSDs</td>
</tr>
<tr>
<td></td>
<td>- Canisters can be modified to support 22110 M.2 and EDSFF form factors</td>
</tr>
<tr>
<td>Connectors</td>
<td>PCIe x16 card edge connector</td>
</tr>
<tr>
<td></td>
<td>Dual SFF-8643 internal connectors</td>
</tr>
<tr>
<td></td>
<td>Compliant to PCI-SIG PCI Express® External Cable Specification 3.0</td>
</tr>
<tr>
<td>Bracket</td>
<td>Standard full-height</td>
</tr>
<tr>
<td>PCIe Switch</td>
<td>Broadcom PLXPEX88032</td>
</tr>
<tr>
<td></td>
<td>- 16 GT/s 32-Lane PCI Express Gen 4 Switch</td>
</tr>
<tr>
<td></td>
<td>- DMA controller</td>
</tr>
<tr>
<td></td>
<td>- SSC Isolation</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>45W</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to 40°C (200LFM airflow required) based on 1.7°C/W</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to 85°C</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>20% to 80% relative humidity non-condensing</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>20% to 80% non-condensing</td>
</tr>
<tr>
<td>Agency Compliance</td>
<td>Designed to meet the following agency standards:</td>
</tr>
<tr>
<td></td>
<td>- FCC – Part 15 Class A, 47CFR; Canada ICES-003, issue 4, Class A; Japan: VCCI, Class A’ CE Emissions 2004-108EC</td>
</tr>
<tr>
<td></td>
<td>- UL/IEC 60950-1; Canada: CSA C22.2 No. 60950-1; Argentina: IEC60950-1; IEC 60950-1 (CB Certificate and CB Test Report)</td>
</tr>
<tr>
<td></td>
<td>- CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3)</td>
</tr>
<tr>
<td></td>
<td>- CISPR 22, CISPR 24, Class A; Australia/New Zealand AS/NZS CISPR 22, Class A</td>
</tr>
<tr>
<td></td>
<td>- RoHS 6 of 6 compliance (Directive 2002/95/EC)</td>
</tr>
<tr>
<td></td>
<td>- WEEE (EU 2012/19) &amp; RoHS 3 (EU 2015/863)</td>
</tr>
<tr>
<td>Supported Operating Systems</td>
<td>Windows 10 &amp; Windows 10 Pro</td>
</tr>
<tr>
<td></td>
<td>Windows 2012 Server</td>
</tr>
<tr>
<td></td>
<td>Centos 7</td>
</tr>
<tr>
<td></td>
<td>Ubuntu 16x</td>
</tr>
</tbody>
</table>
1.4 Block Diagram

1.5 Dimensions
1.6 M Key Connector

The OSS-537 board supports M key edge connector

![M Key Connector Image]
2  Hardware Requirements

This section provides the hardware parts needed for the OSS-537 board to work. It is strictly recommended to follow and use the hardware requirements listed below in order for the board to operate properly.

1. M.2 NVME SSD (Gen 4)
2. Recommended: Server type computer
3. Optional: Standard work station (with x16 Gen3 or Gen4 PCIe slot) with good air flow and cooling.

Your computer must have sufficient cooling and airflow to prevent overheating of the M.2 media.

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>0°C to 40°C (200LFM airflow required) based on 1.7°C/W.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For standard workstation, it is highly recommended using 20 CFM Fan or higher</td>
</tr>
</tbody>
</table>

You can measure the airflow by using an inexpensive gadget called “Anemometer Handheld Wind Speed Meter”.

3  Software Requirements

1. Computer running Windows Server or Windows 10 and Windows 10 Pro
   a. For Windows 10 and Windows Pro you need to download and install the driver manually.
      ii. Click the "Downloads", click “Driver” and click the link “ITsas35…..and download the file
      iii. You can also go to “https://www.broadcom.com/support/download-search” and search for keyword "ITSas35"
   b. On Windows Server, requires no driver. OS loads the driver automatically.
2. Centos 7
3. Ubuntu 16
   a. NOTE: Ubuntu 18.x to 20.X are not yet compatible due to lack of driver support
4 Hardware Installation

The following steps will guide you through the installation of your OSS-537 board.

4.1 Installation-Procedures Overview

Following steps provide the exact sequence that needs to be followed in order to properly install the OSS-537 Board:

1. Set the OSS-537 board on a sturdy surface
2. Remove the module canister
3. Install the M.2 onto the circuit board
4. Secure the M.2 onto the circuit board
5. Turn OFF computer before installation
6. Remove cover from the computer
7. Remove the corresponding slot cover from computer chassis
8. Configure SW1 Dipswitch
10. Slide the canister back into the PCIe carrier board
11. Power ON the computer
12. Perform Hardware check (Verify LED indicators)
13. Verify device installation (i.e Windows Device Manager or Linux lspci tree)
4.4 Prepare OSS-537 board

Place the OSS-537 board on a sturdy surface

4.5 Remove the canister

Remove the module canister from the carrier board by pulling the tab to disengage.

4.6 Install M.2 module

Align the M.2 Key edge connector to the M.2 key edge socket on the circuit board
Slowly insert the media at ~30 degree position into the connector socket until it is fully seated inside the connector.

4.7 Secure the Media

Secure the M.2 media onto the circuit board

Follow the steps below on how to install the canister in the PCIe card carrier and hot to plug in the PCIe cards in the computer.

4.8 Turn OFF computer

Prior to installing the OSS-537 board make sure to turn OFF or power down the computer.

4.9 Remove Computer’s top cover

Remove the top cover of the computer to gain access to the motherboard.

4.10 Remove PCIe slot cover

Locate an unused PCI express 1x6 slot and remove the corresponding slot cover from computer chassis.
4.11 Configure SW1 Dipswitch

Set the SW1 Dipswitch using the settings below.

1= ON, 2= OFF, 3= OFF, 4= ON

4.11.1 SW1 Dipswitch

<table>
<thead>
<tr>
<th>Toggle Switch#</th>
<th>Description / Purpose</th>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flash 0 or Flash 1 SBR select</td>
<td>Flash 1 (default)</td>
<td>Flash 0</td>
</tr>
<tr>
<td>2</td>
<td>Spare switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Spare switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PCIe Switch Debug Serial Port select</td>
<td>UART port</td>
<td>SDB port</td>
</tr>
</tbody>
</table>

4.12 Install the PCIe carrier board

Plug-in the PCIe carrier board onto PCI express x16 slot.

Align the x16 edge connector of the PCIe card on top of the x16 slot connector on the motherboard and gently push the card down until it is seated firmly.
Secure the bracket with a screw.

4.13 Install Canister

After installing PCIe carrier card into the computer, the next step is to install the canister.

- Slide the canister back into the enclosure of the PCIe carrier board.
- Push the lever forward to latch the canister in place

4.14 Power ON the computer

Prior to powering ON the computer, verify that the PCIe card edge connector is fully seated in the PCIe slot connector as shown from the photos below.
5 Hardware Check

Once the host computer has booted up, verify that all LEDs are correctly illuminated on the carrier card. An operational OSS-537 board will show the following LEDs illuminated.

1. CE LINK, SSD RST and RESET LED
2. M.2 LINK LEDs
3. D2 LED

5.1 LED Definition

<table>
<thead>
<tr>
<th>LED Name</th>
<th>When ON</th>
<th>When OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B Stat</td>
<td>Swap status still in development.</td>
<td>Normal for now</td>
</tr>
<tr>
<td>Core Stat</td>
<td>ARM core running when flashing</td>
<td>ARM core not running</td>
</tr>
<tr>
<td>CE</td>
<td>Card edge link status: solid on when Gen4</td>
<td>Not linked</td>
</tr>
<tr>
<td></td>
<td>• On for Gen4,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Flashing fast for Gen3,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Flashing slow for Gen2</td>
<td></td>
</tr>
<tr>
<td>SSD RST</td>
<td>One or more M.2 is seated in the carrier</td>
<td>Stuck in reset</td>
</tr>
<tr>
<td>PWR GOOD</td>
<td>Power is present on the board</td>
<td>No Power</td>
</tr>
<tr>
<td>M.2 Link LED</td>
<td>M.2 media is present / detected can flash at different rates</td>
<td>M.2 media is missing / not detected</td>
</tr>
</tbody>
</table>
6 Verify OSS Device on Windows OS

6.1 Using Device Manager

Verify the hardware device in Windows Device Manager. As your Windows computer starts up, you will see a small message box popping-up in the lower-right corner of the screen to alert you that Windows has found new hardware.

To verify a successful installation on Windows, find the 'My Computer' icon and "right-click" on it. Then select 'Manage' from the pop-up menu. Next, click on 'Device Manager' in the leftmost Computer Management window. Finally, click on the View Menu and select View Devices by Connection.

Open ACPI (BIOS) → Open PCI Bus → Click the ‘+’ sign several times until you reach a PCI Express Root Port Complex with PCI Express standard Upstream Switch Port and PCI Express standard Downstream Switch Port.

When installed properly, you will see the two M.2 media devices and Standard NVM Express Controllers. The screenshots below represent the structure of a single OSS-5377 carrier board with two M.2 media devices detected on Windows 10 host computer.
6.2 Using Disk Management

You can also view the new M.2 storage devices by using the Disk Management, see photo below.

![Disk Management Screenshot]

6.3 Check Temperature

You can check the temperature of the M.2 media via "Windows Powershell", see screenshot below.

![Windows Powershell Screenshot]
7 Verify OSS Device on Linux OS

On a Linux based system, the installation can be verified by typing the following command lines:

7.1 Linux Commands

To check the storage devices, type the following commands

```
# nvme -list
```

```
# lsblk -a
```

```
# lspci -vvtt | grep Phison
```

```
# lspci -vvtt | grep Broadcom
```

# lshw –short –class storage

```
[root@localhost ~]# lshw -short -class storage

H/W path  Device  Class               Description
---------  --------  -------------------------------
/0/100/11.4 storage  C610/X99 series chipset sATA Controller [AHCI mode]
/0/100/11.2 storage  C610/X99 series chipset sATA Controller [AHCI mode]
/0/2/0/0/0 storage  Phison Electronics Corporation
/0/2/0/1/0 storage  Phison Electronics Corporation
/0/2/0/1/0/0 storage  Broadcom / LSI
```

# lsblk –f

```
[root@localhost ~]# lsblk -f

NAME     FSTYPE      LABEL       UUID                      MOUNTPOINT
--------- ------------- ----------- ------------------------- ---------------
 sda      ext4         1317593c-b57a-4cf4-8cc7-11ed574fc681 /boot
 sda2     xfs          dcb0e12-9558-49e2-9268-0bf13f843ead /home
 sda3     xfs          3968e32a-8100-4eb2-b11b-6f668c5a4975 /
 sda4     LV_Member    35a74c-4pyp-L5sh-2kDF-3kCu-17Ah-xL42y /
 sda5     swap         ffebe3e1-323f-9c92-6a2089c5871 [SNAP]
 sda6     swap         6aa7588c-6d78-4b56-8a34-8b9233de2c /home
 sda7     swap         b79888a0-c3df-4b23-9e7c-2895465d2b17
```

# fdisk –l | grep nvme

```
[root@localhost ~]# fdisk -l | grep nvme

Disk /dev/nvme0n1: 2000.4 GB, 200398934016 bytes, 3907029168 sectors
/dev/nvme0n1p1 1 4294967295 2147483647+  ee GPT
Disk /dev/nvme1n1: 2000.4 GB, 200398934016 bytes, 3907029168 sectors
/dev/nvme1n1p1 1 4294967295 2147483647+  ee GPT
```

# blkid

```
[root@localhost ~]# blkid
/dev/sda1: UUID=1317593c-b57a-4cf4-8cc7-11ed574fc681  TYPE="ext4"
/dev/sda3: UUID=dcb0e12-9558-49e2-9268-0bf13f843ead  TYPE="xfs"
/dev/sda4: UUID=35a74c-4pyp-L5sh-2kDF-3kCu-17Ah-xL42y  TYPE="LV_Member"
/dev/sda5: UUID=fbebe3e1-323f-9c92-6a2089c5871  TYPE="swap"
/dev/mapper/centos-root: UUID=356e9e1a-c100-4dc2-b315-6269d97a6975  TYPE="xfs"
/dev/mapper/centos-home: UUID=6aa7588c-6d78-4b56-8a34-8b9233de2c  TYPE="xfs"
```

OSS-PCle4-ADPT-x8-M.2-2
7.1 Check Temperature

To check the M.2 media temperature on Linux, use the `nvme smart-log` command, see screenshot below.

```
[72x709]7.1 Check Temperature
[72x686]To check the M.2 media temperature on Linux, use the nvme smart-log command, see screenshot below.

![Screenshot of nvme smart-log output]
```

7.2 Check Speed and Link width

You can check the speed and link width of the OSS-537 board by using the commands below (see screenshot).

```
[72x337]7.2 Check Speed and Link width
[72x361]You can check the speed and link width of the OSS-537 board by using the commands below (see screenshot).

![Screenshot of command output]
```
7.3 PCIe Device Detailed Info

You can view and capture the detailed information of the device by using the command below "lspci -vvv –s XX:xx.x (see screenshot below).
7.4 Smartctl

Smartctl (Self-Monitoring, Analysis and Reporting Technology) is a command line utility or a tool that performs SMART tasks such as printing the SMART self-test and error logs, enabling and disabling SMART automatic testing, and initiating device self-tests.

Smartctl command allows you to check for errors and extract info regarding the disks that are used, see example below

```bash
[root@localhost etc]# smartctl -a /dev/nvme0n1
smartctl 7.0 2010-12-09 r4603 [x86_64-linux-3.2.0-1022.1.2-x86_64.el7]
Copyright (C) 2002-15, Bruce Allen, Christian Franke, Oskar Kewisch
== START OF INFORMATION SECTION ==
Model Number: 5450h Rocket 4.0 3TB
Serial Number: 7F05031929200211828
Firmware Version: N17401.2
PCI Vendor/Subsystem ID: 0x1007
UEFI OUI Identifier: 0x4984a00
Total NVMe Capacity: 2,000,399,924,016 [2.00 TB]
Unallocated NVMe Capacity: 0
Controller ID: 1
Number of Namespaces: 1
Namespace 1 Size/Capacity: 2,000,399,924,016 [2.00 TB]
Namespace 1 Formatated LBA Size: 512
Namespace 1 IEEE E01-64: 4470a7 3c3f082070
Local Time iso: Mon Aug 10 11:17:16 2020 EDT
Firmware Updates (0x18): 1 8.0, no Base required
Optional Admin Commands [0x0017]: Security Format From_Dl Self_Test
Optional NVMe Commands [0x0058]: Comp Lba Magnet Dl_zero Sav/Scf_Feat TimeStamp
Maximum Data Transfer Size: 312 Pages
Warning Comp. Temp. Threshold: 90 Celsius
Critical Comp. Temp. Threshold: 95 Celsius
Supported Power States
St: Op Max Active Idle PL1 PL2 PL3 Int_Lat Int_Lat
 0 + 9.78U - - 0 0 0 0 0 0 0
 1 + 6.75U - - 1 1 1 1 0 0 0
 2 + 5.23U - - 2 2 2 2 0 0 0
 3 - 0.344U - - 3 3 3 3 1000 1000 1000
 4 - 0.060U - - 4 4 4 4 25500 25500 25500
Supported LBA Sizes [NSID 0x1]
Id Est Data Read Error Rel_Err
 0 + 512 0 2
 1 - 4096 0 1
== START OF SMART DATA SECTION ==
SMART overall-health self-assessment test result: PASSED
SMART/Health Information (SMART Log 0x02)
Critical Warning: 0x600
Temperature: 25 Celsius
Available Spare: 100%
Available Spare Threshold: 5%
Percentage Used: 0%
data Units Read: 13,698,598 [6.56 TB]
data Units Written: 12,049,784 [6.63 TB]
Real Read Commands: 163,551,479
Real Write Commands: 211,407,584
Controller Busy Time: 0h
Power Cycles: 254
Power On Hours: 296
Unsafe Shutdowns: 63
Media and Data Integrity Errors: 0
Error Information Log Entries: 186
Warning Comp. Temp. Threshold: 0
Critical Comp. Temp. Threshold: 0
Error Information Log (ID: 0x02, max 63 entries)
No Errors Logged
```
8  Contacting Technical Support

Our support department can be reached by fax at (858) 530-2733 or by phone at (858) 530-2511. Support is available Monday through Friday, 8:00 AM to 5:00 PM PT. When contacting One Stop Systems Technical Support, please be sure to include the following information:

1) Name  
2) Company Name  
3) Phone Number  
4) Fax Number  
5) Email Address  
6) Model Number  
7) Serial Number  
8) Computer Make  
9) Computer Model  
10) Operating System and Version  
11) Make/Model of PCI cards in expansion chassis  
12) Detailed description of the problem

You can also visit our web site at: https://www.onestopsystems.com/support

To submit a support ticket or case, use our OSS Online Support portal: https://onestopsystems.desk.com/customer/portal/emails/new

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. For example: Don’t say “Won’t boot up.” Do say “Tried all the steps in the Troubleshooting Section and it still won’t boot up.”

For faster diagnosis of your problem, please run the two utility programs described in the following sections and include the diagnostic files they generate with your email.

9  Returning Merchandise to One Stop Systems

If factory service is required, you must contact OSS Service Representative to obtain 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. One Stop Systems will return any product that is not accompanied by an RMA number. 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:

RMA # ________  
One Stop Systems  
2235 Enterprise Street, Suite#110  
Escondido, CA 92029  
USA

It is not required, though highly recommended, that you keep the packaging from the original shipment of your One Stop Systems product. However, if you return a product to One Stop Systems 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. One Stop Systems 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 PCIe 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.
10 Shipping / transporting the card

Use appropriate packaging materials.

**IMPORTANT**

PCIe cards should be removed (or not to be installed) prior to shipping to avoid or prevent possible damage, failure to do so, will void the warranty of the unit.

11 APPENDIX A Compliance

**FCC**

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the service personnel will be required to correct the interference at his own expense. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the service personnel’s authority to operate the equipment.

**NOTE**

The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interferences or to be noncompliant with the appropriate standards for its intended use.

**Industry Canada**

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada

**CE**

The product(s) described in this manual complies with all applicable European Union (CE) directives. One Stop Systems will not retest or recertify systems or components that have been reconfigured by customers.