SUPERMICRO®

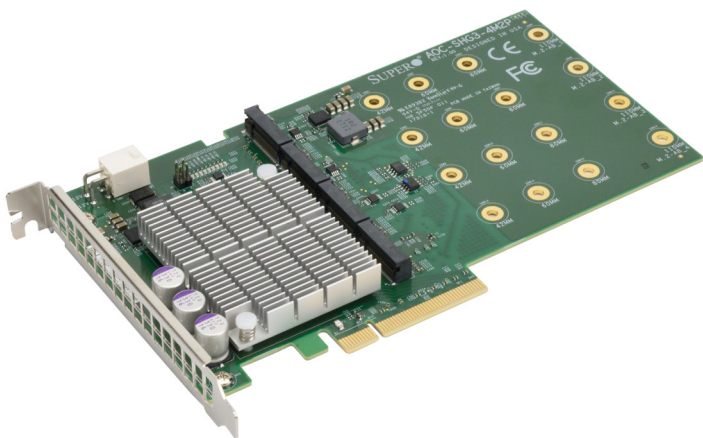# AOC-SHG3-4M2P

User's Guide

Revision 1.0a

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Preface

About this User's Guide

This user's guide is written for system integrators, IT technicians, and knowledgeable end users. It provides information for the installation and use of the AOC-SHG3-4M2P expansion card.

About this Expansion Card

The AOC-SHG3-4M2P is an M.2 SSD carrier card that enables the user to add up to four Non-Volatile Memory express (NVMe) M.2 Solid-State Drives (SSDs). M.2 solid-state technology is an optimized, high-performance, scalable storage solution, effectively streamlined for enterprise and client systems that leverage the cutting-edge capabilities of PCI Express.

An Important Note to the User

All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this user's guide.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning the AOC-SHG3-4M2P card to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and the shipping package is mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete. For faster service, you can also request a RMA authorization online http://www.supermicro.com/RmaForm/.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Conventions Used in the User's Guide

Pay special attention to the following symbols for proper system installation and for safety instructions to prevent damage to the system or injury to yourself.

Note: Additional information given for proper system setup.

Contacting Supermicro

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Table of Contents

Chapter 1

Overview

1-1   Overview

Congratulations on purchasing your expansion card from an acknowledged leader in the industry. Supermicro products are designed with the utmost attention to detail to provide you with the highest standards in quality and performance. For product support and updates, please refer to our website at http://www.supermicro.com.

1-2   Technical Specifications

General

PCIe 3.0 x8 full-height card

Ambient operating temperature from 10°C - 50 °C

Supports up to four NVMe M.2 SSDs

OS Support

The following operating systems and their later versions are supported:

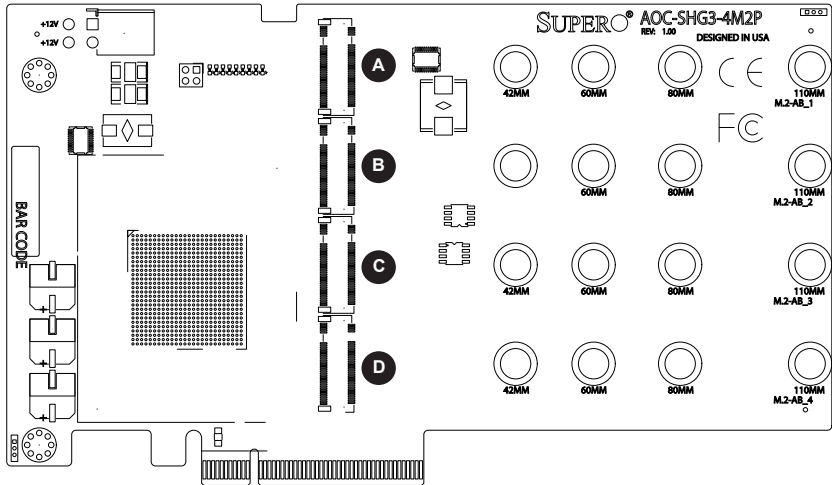Windows

Linux

Physical Dimensions

Card PCB dimensions: 4.4" x 7.5" (H x L)

Note: Please note if the motherboard or riser card has PCI-E reverse lanes, M.2 drives installed on this card will be displayed in reverse sequence in the OS compared to the sequence shown on the AOC silkscreen.

Chapter 2

Hardware Components

2-1   Expansion Card Layout and Components

The AOC-SHG3-4M2P Layout

2-2   Major Components

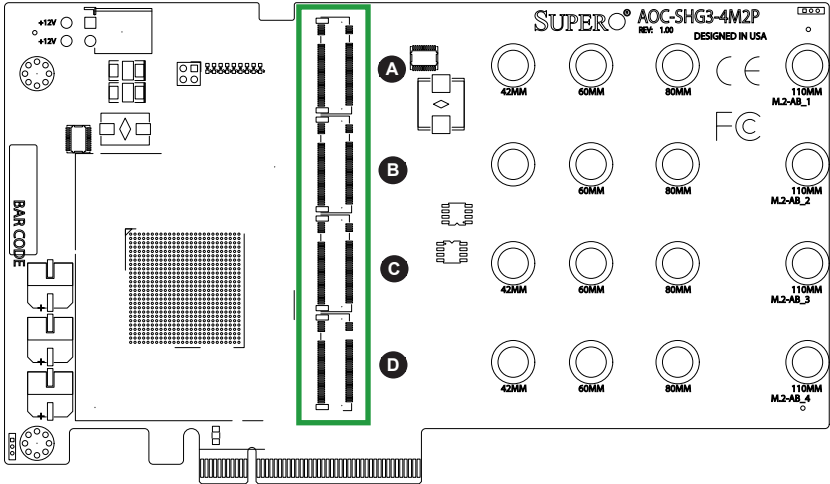The following major components are on the AOC-SHG3-4M2P:

A. M.2 Socket 1

B. M.2 Socket 2

C. M.2 Socket 3

D. M.2 Socket 4

2-3   Connectors

M.2 Sockets

There are four M.2 sockets on the expansion card.

The AOC-SHG3-4M2P NVMe Connectors

A. M.2 Socket 1, designated J1

B. M.2 Socket 2, designated J2

C. M.2 Socket 3, designated J3

D. M.2 Socket 4, designated J4

2-4   Standoffs

The AOC-SHG3-4M2P is designed with movable standoffs which support three different M.2 SSD lengths and permanent standoffs which support one M.2 SSD length. The standoff positions are as indicated below:

M.2 Length	Standoff Positions
22 mm x 42 mm	1: SRW1, SRW5, SRW9, and SRW13
22 mm x 60 mm	2: SRW2, SRW6, SRW10, and SRW14
22 mm x 80 mm	3: SRW3, SRW7, SRW11, and SRW15
22 mm x 110 mm	4: SRW4, SRW8, SRW12, and SRW16
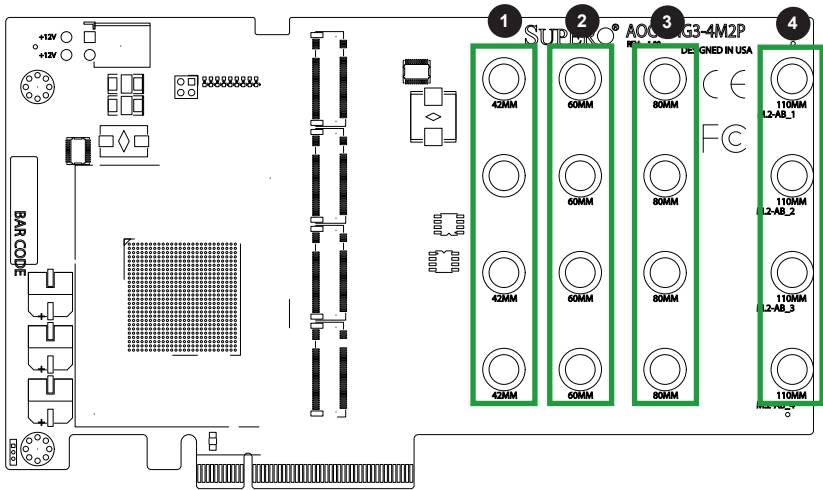
The AOC-SHG3-4M2P Standoff Positions

Chapter 3

Installation

3-1   Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To avoid damaging your expansion card, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.

- Touch a grounded metal object before removing the expansion card from the antistatic bag.

- Handle the expansion card by its edges only; do not touch its components or peripheral chips.

- Put the expansion card back into the antistatic bags when not in use.

- For grounding purposes, make sure that your system chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the expansion card.

Unpacking

The expansion card is shipped in antistatic packaging to avoid static damage. When unpacking your component, make sure you are static protected.

Note: To avoid damaging your components and to ensure proper installation, be sure to always connect the power cord last, and always remove it before adding, removing, or changing any hardware components.

3-2   Installing Expansion Cards

The AOC-SHG3-4M2P supports four M.2 SSDs in 42 mm, 60 mm, 80 mm, or 110 mm length. Visit the Supermicro website for a current list of supported M.2 SSDs.

Installing Expansion Cards

1. Power down the system and remove the power cord from the rear of the power supply.

2. Use industry-standard anti-static equipment (such as gloves or wrist strap) and follow the precautions on page 3-1 to avoid damage caused by ESD.

3. For each SSD of 42 mm, 60 mm, or 80 mm length, install the standoff in the appropriate hole that corresponds with the form factor of the SSD to be installed. Push the plastic standoff until it snaps into the carrier card.
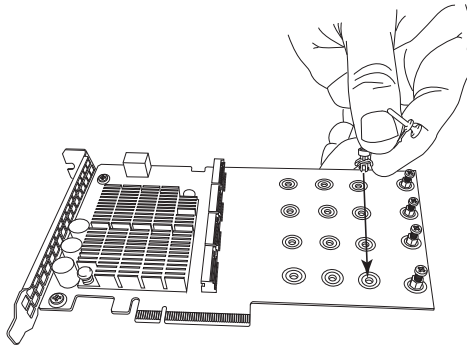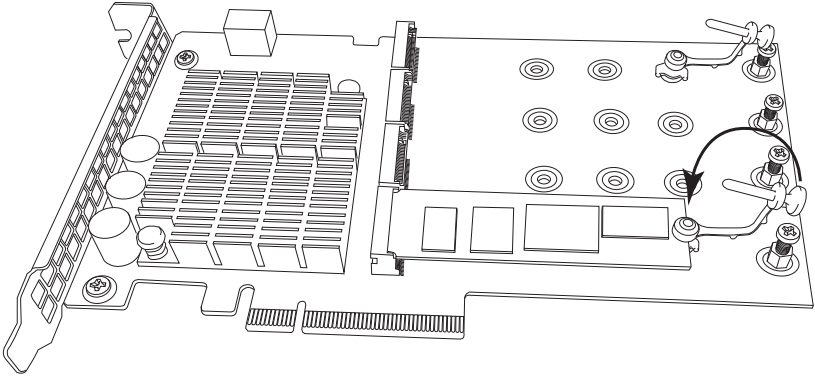

Inserting a Plastic Standoff into a Mounting Hole

4. Insert one to four M.2 SSDs into the slots on the expansion card. Then push them flat against the carrier card and the plastic standoff.
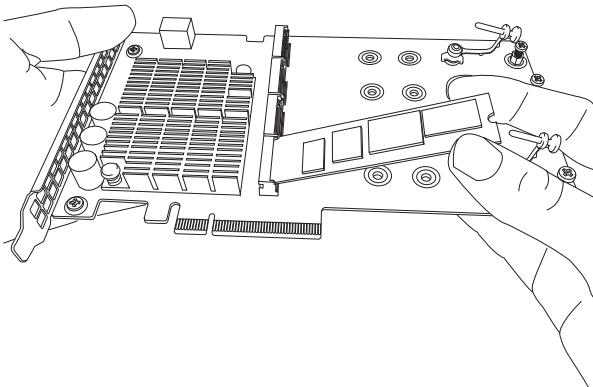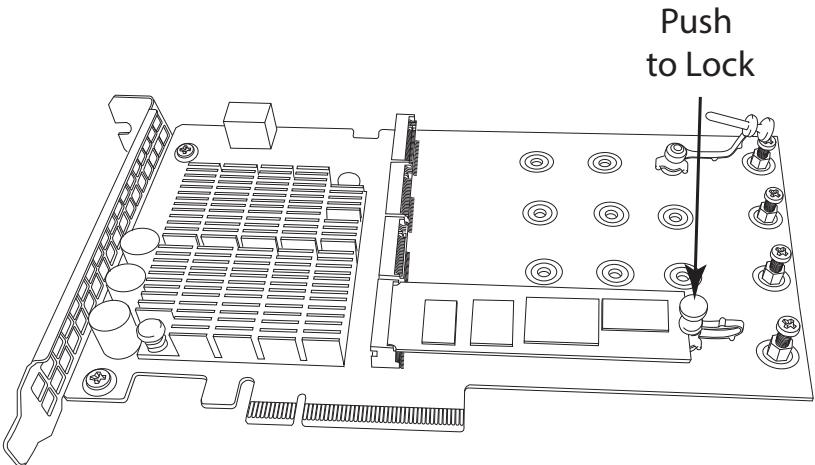

Inserting an M.2 SSD into an Expansion Card Slot

5. Secure each M.2 card by pushing the standoff plug into place in the mounting hole designated as 42 mm, 60 mm, or 80 mm.
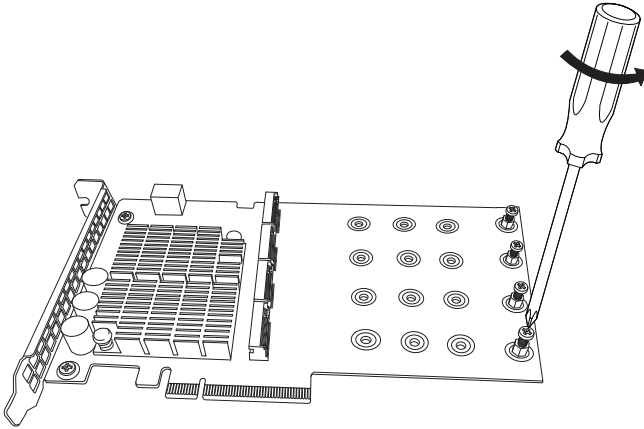

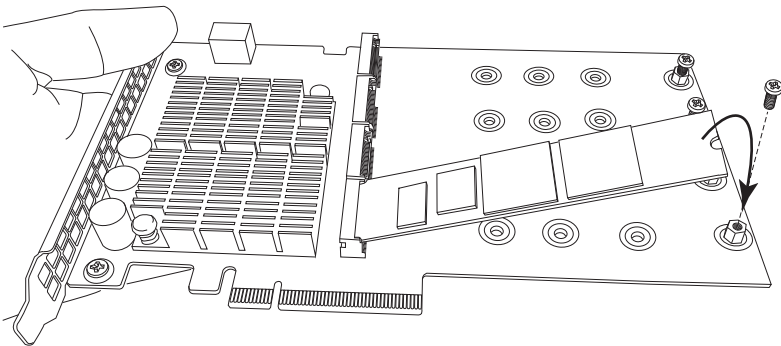**Securing the M.2 SSD to the Expansion Card**

Push
to Lock

The M.2 SSD Secured to the Expansion Card

6. For each SSD of 110 mm length, unscrew the metal standoff.

Unscrewing the Metal Standoff

7. Insert one to four M.2 SSDs into the slots on the expansion card. Then push them flat against the carrier card and the base of the metal standoff.
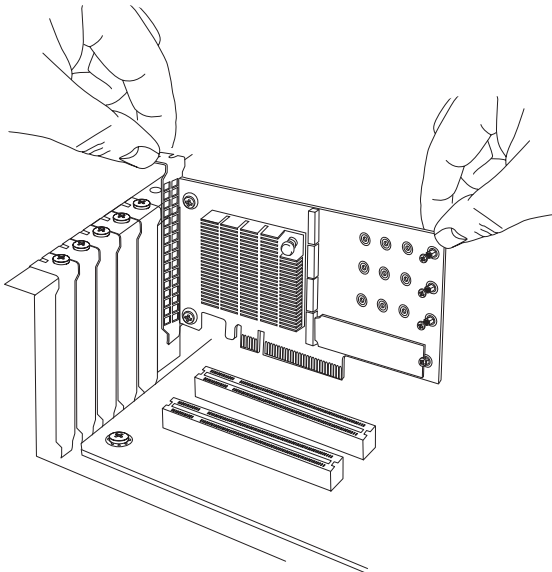

Inserting an M.2 SSD into an Expansion Card Slot

8. Secure each M.2 card by twisting the screw down over the edge of the card on the standoff.
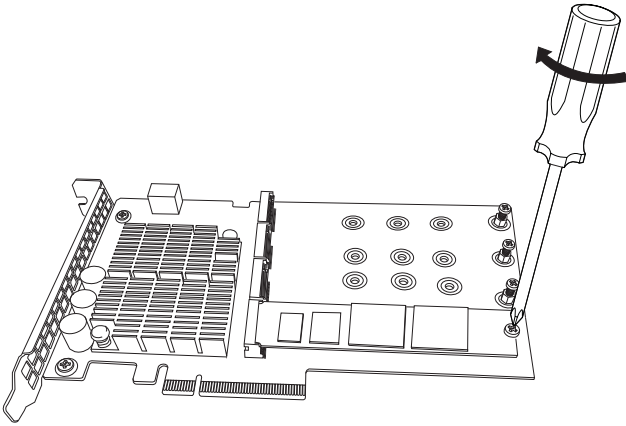
Securing the M.2 SSD to the Expansion Card

9. Simultaneously slide the expansion card bracket into the PCIe slot of the chassis while plugging the expansion card into the appropriate slot on the motherboard.

Installing the Expansion Card

10. Plug the power cords into the rear of the power supply and power up the system.

3-3   Additional Settings

Depending on the system, motherboard, and BIOS version, the following BIOS settings may be necessary for the proper operation of M.2 NVMe drives:

- Having the CPU IOU settings set to x4x4x4x4 PCIe bifurcation. This option may be found under **BIOS Setup -> Advanced -> Chipset Configuration -> North Bridge -> IIO Configuration -> CPU Configuration -> IOU Setting -> x4x4x4x4**.

- Having the NVMe Firmware Source set to AMI Native Support. This option may be found under **BIOS Setup -> Advanced -> PCIe/PCI/PnP Configuration -> NVMe Firmware Source -> AMI Native Support**.

Refer to the applicable system or motherboard User Manual.