



# AOC-SLG3-4X4P



## 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-SLG3-4X4P expansion card.

### About this Expansion Card

The Supermicro AOC-SLG3-4X4P is a low-profile, standard Gen 3.0 PCIe x16 add-on card designed for use in JBOF systems. The card features a x16 PCIe external connector for high-performance storage connectivity. This HBA card is built around a PLX PEX9733 PCIe switch IC, which is a proven NVMe technology with optimum performance for increased bandwidth.

Streamlined for the growing demand for increased data throughput and scalability requirements across enterprise-class JBOF server platforms, this AOC is perfect for connecting a JBOF to multiple hosts.

### 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-SLG3-4X4P 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 alternation, misuse, abuse or improper maintenance of products.

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# 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 visit our website at <http://www.supermicro.com/>

### 1-2 Technical Specifications

#### General

- PCIe x16 buffer card
- Gen-3 PCIe x16
- Ambient operating temperature from 10°C - 55°C

#### OS Support

Windows, Linux

#### Power Consumption

24 Watts

#### Physical Dimensions

Card PCB dimensions: 6.1" x 2.71 " (L x H)

## Notes

## Chapter 2

### Hardware Components

#### 2-1 Expansion Card Layout and Components



Figure 2-1. AOC-SLG3-4X4P

The AOC-SLG3-4X4P is a low-profile, PCIe x16 buffer expansion card with an aggregate performance of 16GT/s. The following pages describe the components and settings for the AOC-SLG3-4X4P.

## 2-2 Major Components

The following are the major components that make up the AOC-SLG3-4X4P expansion card:

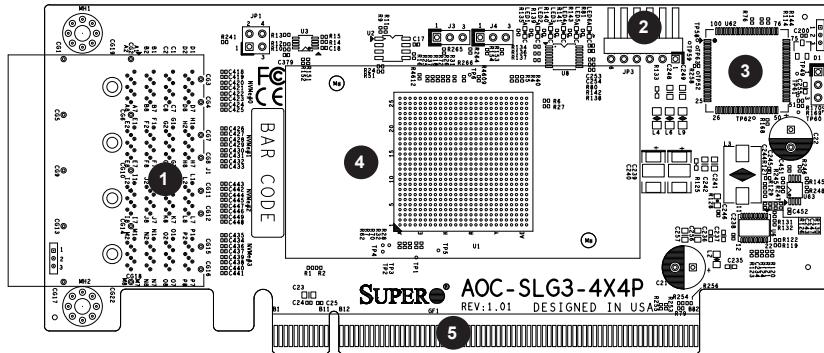


Figure 2-2. AOC-SLG3-4X4P Layout

AOC-SLG3-4X4P Components	
Item	Description
1	MiniSAS HD Connector for x16 PCIe
2	CPLD Interface Header
3	CPLD (Complex Programmable Logic Device)
4	PCIe Switch
5	PCIe x16 Slot Connector

## 2-3 Connectors

### NVMe Connectors

There is one NVMe connector on the expansion card, which provides a transfer rate speed of up to 16GB/s.

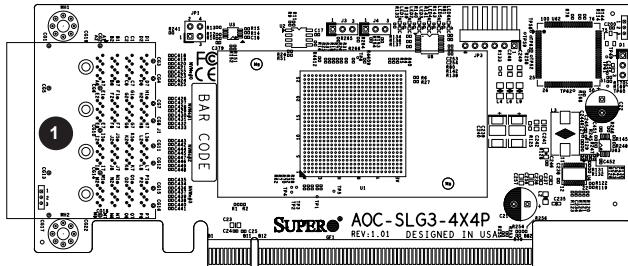
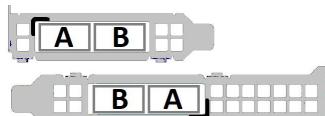


Figure 2-3. NVMe Connector

AOC-SLG3-4X4P Connectors	
Item	Description
1	MiniSAS HD Connector for PCIe x16

While the number of hosts can vary based on the configuration, in every configuration the cables between the JBOF and the hosts are usually connected from Port A (JBOF) to Port A (Host) and from Port B (JBOF) to Port B (Host). Looking at the L bracket from the outside, there is a clear marking on the end where Cable A should go (and Cable B goes in to the other port).

If two cables are plugged into the AOC, then all x16 lanes will be used. If only Cable A is connected, then it's limited to x8. The table below lists supported cables.



Part Number	Cable Length
CBL-SAST-1035-1	1 meter
CBL-SAST-1035-2	1 meter
CBL-SAST-1036-1	2 meters
CBL-SAST-1036-2	2 meters
CBL-SAST-1037-1	3 meters
CBL-SAST-1037-2	3 meters

## 2-4 Jumpers

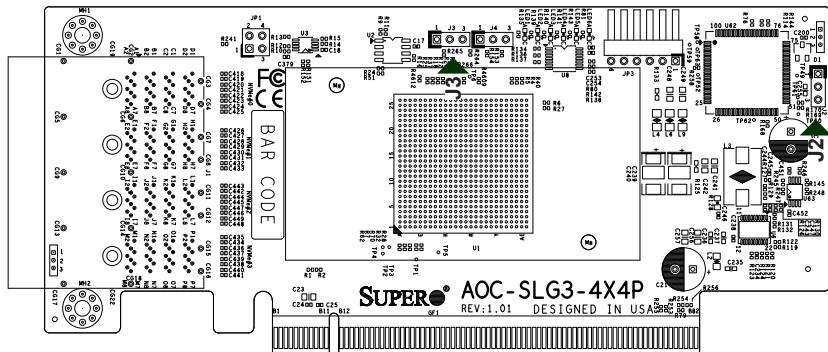
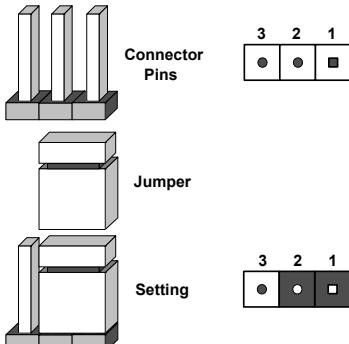


Figure 2-4. Jumpers

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Note: Unless explicitly instructed otherwise by the manufacturer, do not move the jumpers from their default location. Doing so will likely cause the card to become disabled. Jumpers not detailed below are unpopulated.

AOC-SLG3-4X4P Components		
Jumper	Description	Setting
J2	CPLD Power	Pins 1-2: 3.3V standby power for CPLD
J3*	PCIe Down Link Mode Select	Pins 1-2: (1x PCIe x16) - default setting Pins 2-3: (2x PCIe x8)

\*When 8 or more hosts are connected to the JBOF, it is recommended to set J3 to pins 2-3 (for 2x8 mode). "A" and "B" on the AOC can either be connected to "A" or "B" on the host AOC, but use "A" on the host as the first choice

The table below shows different configurations and their relative settings. Only 4 Host mode, 8 Host mode and NVMe-oF modes are supported.

In 4-Zone or 8-Zone modes (only), users can install more than one AOC into one node. (Limited to one AOC per CPU socket with a maximum of two AOCs in one node.)

AOC-SLG3-4X4P Configurations		
Mode	Number of AOCs	Cable/Port Routing
4-Host Mode	One AOC per Node	1x8 cable: A port*
		2x8 cables: A to A and B to B
8-Host Mode	Two AOCs per Node	2x8 cables: A port if using only 1x8 cable*
		4x8 cables: A to A and B to B
	One AOC per Node	1x8 cable: can use either A or B port
		2x8 cables
	Two AOCs per Node	2x8 cables: can use either A or B port
		3x8 cables: can use either A or B port
		4x8 cables

\*Note that performance is degraded when using the fewer number of cables.

## 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 Before Installation

To install the expansion card properly, follow the steps below.

### *Prior to Installation*

1. Power down the system and unplug the power cord.
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.

## 3-3 Installing the Expansion Card

1. Once the system is fully powered down, remove the power cords from the rear of the power supply, and remove the system cover.
2. Verify that the expansion card is equipped with the correct PCIe slot bracket length for your system. AOC-SLG3-4X4P expansion cards include a low-profile PCIe bracket. However, if your system features full-height PCIe locations, replace the low-profile bracket with a full-height bracket.
3. Install the add-on card into a PCIe x16 slot on your motherboard and secure the bracket with the hardware provided.
4. Replace the system cover, plug in the power cord, and power up the system.

(Disclaimer Continued)

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