

# AOC-SLG3-2H8M2



# User's Guide

Revision 1.0a

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User's Guide Revision 1.0a

Release Date: March 2, 2021

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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-SLG3-2H8M2 controller card.

### About this Controller Card

The AOC-SLG3-2H8M2 is an M.2 SSD carrier card that enables the user to add up to two NVMe or SATA M.2 SSDs to any validated X11, X12, H11, or H12 motherboard. 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 power 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-SLG3-2H8M2 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 at <u>http://www.supermicro.com/RmaForm/</u>.

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:

**Warning:** Important information given to ensure proper system installation or to prevent damage to the components or injury to yourself.

Note: Additional information given for proper system setup.

# **Contacting Supermicro**

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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 refer to our website at <a href="http://www.supermicro.com">http://www.supermicro.com</a>.

### 1-2 Technical Specifications

### General

PCIe 3.0 x8 low-profile card

Supports up to two NVMe/SATA M.2 SSDs

Dual M-Key sockets

Adjustable standoffs supporting 22110, 2260, and 2242 M.2 SSD form factors

Broadcom SAS3408 Tomcat I/O RAID Controller

BMC-enabled management

Onboard LEDs for SSD Activity and Status

Thermal operating range depends on the system (55°C or higher with enough airflow)

### **OS Support**

Windows, Linux, VMWare

### **Compatible Systems**

X11, X12, H11, and H12-based systems (Check the product page for a validated platform list.)

### **Physical Dimensions**

Card PCB dimensions: 2.71" x 6.6" (H x L)

### Notes

# Chapter 2

# **Hardware Components**

### 2-1 Controller Card Layout and Components

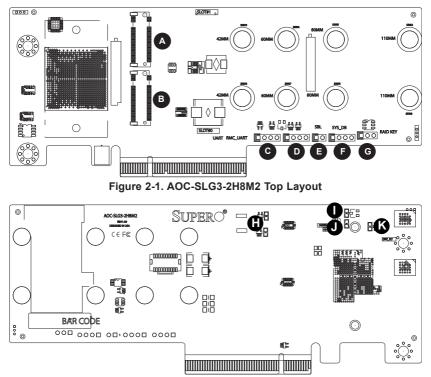


Figure 2-2. AOC-SLG3-2H8M2 Bottom Layout

### 2-2 Major Components

The following major components are on the AOC-SLG3-2H8M2:

- A. M.2 Socket 1
- B. M.2 Socket 0
- C. UART Header
- D. RMC\_UART Header
- E. SBL Jumper
- F. SYS\_DB Jumper

- G. RAID KEY Header
- H. Activity LEDs
- I. Overheat LED
- J. Heartbeat LED
- K. Drive Fault LED

### 2-3 Connectors and LEDs

#### M.2 Sockets

There are two M.2 sockets on the controller card.

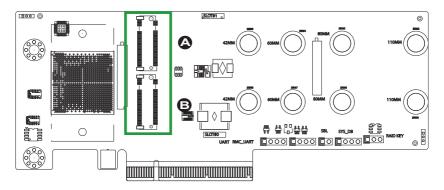


Figure 2-3. AOC-SLG3-2H8M2 NVMe Connectors

- A. M.2 Socket 1
- B. M.2 Socket 0

#### Headers and Jumpers

There are five headers/jumpers on the AOC-SLG3-2H8M2. See the table below for information:

Header/Jumper Descriptions		
Header/Jumper Purpose		
A: UART	UART Jumper, for engineering debug	
B: RMC_UART	UART Jumper, for engineering test	
C: SBL	Boot Loader Jumper, for engineering test	
D: SYS_DB	System Debug Jumper, for engineering test	
E: RAID KEY RAID Key Jumper, for engineering test		

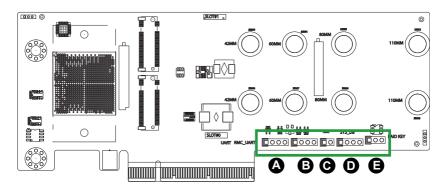


Figure 2-4. AOC-SLG3-2H8M2 Headers

#### LEDs

There are two Activity LEDs on the AOC-SLG3-2H8M2, designated LED1 and LED2. There is one Overheat LED, designated D12, one Heartbeat LED, designated D3, and one Drive Fault LED, designated D13. See the table below for information.

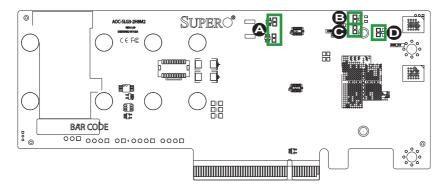


Figure 2-5. AOC-SLG3-2H8M2 LEDs

- A. Activity LEDs
- B. Overheat LED
- C. Heartbeat LED
- D. Drive Fault LED

LED Status			
LED	LED Color Status		
LED1	Green	Blinks when there is read or write activity on M.2 Socket 0.	
LED2	Green	Blinks when there is read or write activity on M.2 Socket 1.	
D12	D12 Red Illuminates when the add-on card overheats.		
D13	Red	Illuminates when a drive fault occurs.	
D3	D3 Green Blinks when the firmware is running on the controller chip.		

# 2-4 Standoffs

The AOC-SLG3-2H8M2 is designed with movable standoffs which support four different M.2 SSD lengths. Place the standoffs as indicated below:

Standoff Descriptions		
M.2 Length Standoff Positions		
22mm x 42mm	1: SRW9 and SRW8	
22mm x 60mm	2: SRW4 and SRW7	
22mm x 80mm	3: SRW5 and SRW6	
22mm x 110mm 4: SRW2 and SRW3		

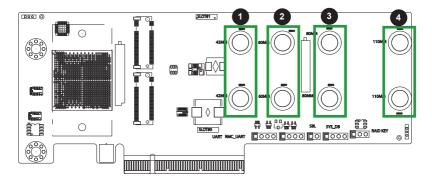


Figure 2-6. AOC-SLG3-2H8M2 Standoff Positions

# 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 Controller Cards

The AOC-SLG3-2H8M2 supports two M.2 SSDs of 42mm, 60mm, 80mm, or 110mm length. Visit the Supermicro website for a current list of supported M.2 SSDs.

#### Installing Controller 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 a wrist strap) and follow the precautions on page 3-1 to avoid damage caused by ESD.
- 3. In the rear of the chassis, remove the screw securing the PCIe slot cover over the PCIe slot and set it aside for later use.
- 4. Insert one M.2 SSD into Slot 0 or two M.2 SSDs of the same type, either NVMe or SATA, into both slots on the controller card as illustrated below.

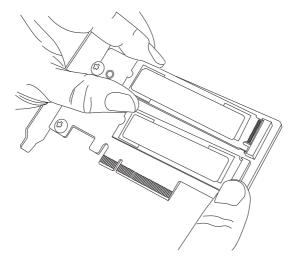


Figure 3-1. Inserting an M.2 SSD into the Controller Card Slots

Note: Your add-on card may not look exactly like the one pictured.

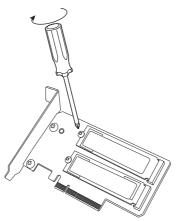


Figure 3-2. Securing the M.2 SSDs to the Controller Card

5. Secure each M.2 card by placing a screw in the mounting hole designated as 42mm, 60mm, 80mm, or 110mm.

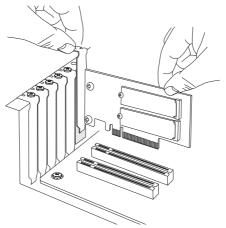


Figure 3-3. Securing the M.2 SSDs to the Controller Card

- Simultaneously slide the controller card bracket into the PCIe slot of the chassis while plugging the controller card into the appropriate slot on the motherboard.
- 7. Secure the controller card's bracket into the PCIe slot by replacing the PCIe slot screw that was previously set aside.
- 8. Plug the power cords into the rear of the power supply and power up the system.

### 3-3 Installing the Drivers in Windows

Refer to the instructions that came with your M.2 SSD and follow the manufacturer's recommended steps for installing the NVMe driver. Download the latest drivers from the Supermicro project board at <u>https://www.supermicro.com/wdl/driver</u>.

### 3-4 Uninstalling the Drivers

#### To Uninstall the Drivers in Windows:

Follow the instructions provided by your M.2 SSD manufacturer.

#### To Uninstall the Drivers in Linux:

Run the following command to uninstall the NVMe drivers: ./RemoveService.sh

# Chapter 4

# Configuring the Avago 3408 iMR Setting

This chapter provides instructions on how to configure RAID using the AVAGO <SAS 3408> Configuration Utility. If you do not wish to configure RAID settings, skip this section and go directly to OS installation.

### 4-1 RAID Minimum Drive Requirements

The AOC-SLG3-2H8M2 add-on card supports up to 2 M.2 SSDs with RAID 0 and RAID 1.

RAID	Minimum Hard Drives
RAID 0	2
RAID 1	2

### 4-2 Using the AVAGO <SAS 3408> Configuration Utility

Follow the steps below to use the AVAGO <SAS 3408> Configuration Utility.

- 1. Reset the system.
- Press <DEL> to enter the BIOS Setup Utility. AOC-SLG3-2H8M2 only supports UEFI mode. If the AVAGO <SAS 3408> Configuration Utility option is not visible, select PCIe/PCI/PnP Configuration and then select a CPU slot.

Aptio Setup Utility Main Advanced Event Logs IPMI	right (C) 2020 American Megatrends, Inc. ity Boot Save & Exit
<ul> <li>Boot Feature</li> <li>CPU Configuration</li> <li>Chipset Configuration</li> <li>Server ME Information</li> <li>SATA Configuration</li> <li>SATA Configuration</li> <li>PCIE/PCI/PhP Configuration</li> <li>Super IO Configuration</li> <li>Serial Port Console Redirection</li> <li>ACPI Settings</li> <li>Trusted Computing</li> <li>TIS Auth Configuration</li> <li>RAM Disk Configuration</li> <li>Driver Health</li> </ul>	Boot Feature Configuration Page ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1276.	ght (C) 2020 American Megatrends, Inc.

Aptio Setup Utility PCIe/PCI/PnP Configuration	– Copyright (C) 2020 America	an Megatrends, Inc.
PCI Bus Driver Version	A5.01.18	Enables or disables PCIe Slot OPROM option.
PCI Devices Common Settings		OFROM OPCION.
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Onboard Video OPROM	(Legacy)	
Version 2.20.1276.	Copyright (C) 2020 American	Megatrends, Inc.

CPU1 Slot 1 PCI-E X16 OPROM Selected

3. When the below screen appears, select EFI mode, then press <F4> to save and exit.

PCI Bus Driver Version	A5.01.18	<ul> <li>Enables or disables PCIe Slot</li> <li>OPROM option.</li> </ul>
PCI Devices Common Settings		
Above 4G Decoding	[Enabled]	
SR-IOV Support	[Disabled]	
ARI Support	[Enabled]	
MMIO High Base	[56T]	
MMIO High Granularity Size	[256G]	
Maximum Read Request	[Auto]	
MMCFG Base	— CPU1 Slot 1 PCI-E ×16	OPROM
VGA Priority	)isabled	
	egacy	
	FI	Select Screen
Onboard NVME 1 OPROM		Select Item
Onboard NVME 2 OPROM		r: Select
		+/-: Change Opt.
		F1: General Help
CPU1 Slot 2 PCI-E ×16 OPROM	[Legacy]	F2: Previous Values
CPU2 Slot 3 PCI-E ×16 OPROM	(Legacy)	F3: Optimized Defaults
CPU2 Slot 4 PCI-E x8 OPROM	[Legacy]	F4: Save & Exit
CPU2 Slot 5 PCI-E ×16 OPROM	[Legacy]	ESC: Exit
CPU2 Slot 6 PCI-E x8 OPROM	[Legacy]	
Onboard Video OPROM	(Legacy)	

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VGA Priority     [Unboard]       PCI Devices Option Rom Setting Onboard NVME 1 OPROM     [EFI]       Onboard NVME 2 OPROM     [EFI]       Onboard NVME 2 OPROM     [EFI]       OPUI Slot 1 PCI-E x16 OPROM     [EFI]       CPU1 Slot 2 PCI-E x16 OPROM     [EFI]       CPU2 Slot 3 PCI-E x16 OPROM     [Legacy]       CPU2 Slot 4 PCI-E x8 OPROM     [Legacy]       CPU2 Slot 5 PCI-E x16 OPROM     [Legacy]       CPU2 Slot 6 PCI-E x8 OPROM     [Legacy]       CPU2 Slot 6 PCI-E x8 OPROM     [Legacy]       Onboard Video OPROM     [Legacy]			
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Onboard NVME 1 OPROM       [EFI]       14: Select Item         Onboard NVME 2 OPROM       [EFI]       Enter: Select         OPU1 Slot 1 PCI-E x16 OPROM       [EFI]       F1: General Help         CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F2: Previous Values         CPU2 Slot 4 PCI-E x8 OPROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 OPROM       [Legacy]       F4: Save & Exit         CPU2 Slot 6 PCI-E x16 OPROM       [Legacy]       ESC: Exit         Onboard Video OPROM       [Legacy]       •	VGH FFIOFILG	foundation	
Onboard NVME 2 OPROM       [EFI]       Enter: Select         CPU1 Slot 1 PCI-E x16 OPROM       [EFI]       F1: General Help         CPU1 Slot 2 PCI-E x16 OPROM       [Legacy]       F2: Previous Values         CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F3: Optimized Defaults         CPU2 Slot 4 PCI-E x8 OPROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 OPROM       [Legacy]       ESC: Exit         Onboard Video OPROM       [Legacy]       •	PCI Devices Option Rom Setting		↔: Select Screen
OPU1 Slot 1 PCI-E x16 OPROM       [EFI]       F1: General Help         OPU1 Slot 2 PCI-E x16 OPROM       [Legacy]       F2: Previous Values         CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F3: 0ptimized Defaults         CPU2 Slot 4 PCI-E x8 OPROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 OPROM       [Legacy]       ESC: Exit         OPU2 Slot 6 PCI-E x8 OPROM       [Legacy]       Values         Onboard Video OPROM       [Legacy]       Values	Onboard NVME 1 OPROM	[EFI]	↑↓: Select Item
OPU1 Slot 1 PCI-E x16 OPROM       [EFI]       F1: General Help         CPU1 Slot 2 PCI-E x16 OPROM       [Legacy]       F2: Previous Values         CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F3: Optimized Defaults         CPU2 Slot 4 PCI-E x8 0PROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 0PROM       [Legacy]       ESC: Exit         Onboard Video 0PROM       [Legacy]       •	Onboard NVME 2 OPROM	[EFI]	Enter: Select
CPU1 Slot 2 PCI-E x16 OPROM       [Legacy]       F2: Previous Values         CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F3: Optimized Defaults         CPU2 Slot 4 PCI-E x8 0PROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 0PROM       [Legacy]       ESC: Exit         CPU2 Slot 6 PCI-E x8 0PROM       [Legacy]       ESC: Exit         Onboard Video 0PROM       [Legacy]       ▼			+/-: Change Opt.
CPU2 Slot 3 PCI-E x16 OPROM       [Legacy]       F3: Optimized Defaults         CPU2 Slot 4 PCI-E x8 OPROM       [Legacy]       F4: Save & Exit         CPU2 Slot 5 PCI-E x16 OPROM       [Legacy]       ESC: Exit         CPU2 Slot 6 PCI-E x8 OPROM       [Legacy]       Image: Compare the second seco	CPU1 Slot 1 PCI-E ×16 OPROM	[EFI]	
CPU2 Slot 4 PCI-E x8 OPROM [Legacy] CPU2 Slot 5 PCI-E x16 OPROM [Legacy] CPU2 Slot 6 PCI-E x8 OPROM [Legacy] Onboard Video OPROM [Legacy]	and the second		
CPU2 Slot 5 PCI-E x16 OPROM [Legacy] CPU2 Slot 6 PCI-E x8 OPROM [Legacy] Onboard Video OPROM [Legacy]			
CPU2 Slot 6 PCI-E x8 OPROM [Legacy] Onboard Video OPROM [Legacy] •			The second se
Onboard Video OPROM [Legacy] •			ESC: Exit
	CPU2 Slot 6 PCI-E ×8 OPROM	[Legacy]	
	Onboard Video OPROM	(Legacy)	
Version 2.20.1276. Copyright (C) 2020 American Megatrends, Inc.		Recuricht (C) 2020 Aportage M	entropido Teo

4. Press <ESC> to reach the Advanced tab, then select AVAGO <SAS 3408> Configuration Utility and press <Enter>.

Aptio Setup Utility – Copyright (C) 2020 American Main <mark>Advanced</mark> Event Logs IPMI Security Boot Save & Exit	Megatrends, Inc.
<ul> <li>Boot Feature</li> <li>CPU Configuration</li> <li>Chipset Configuration</li> <li>Server ME Information</li> <li>SATA Configuration</li> <li>SATA Configuration</li> <li>Super ID Configuration</li> <li>Super ID Configuration</li> <li>Serial Port Console Redirection</li> <li>ACPI Settings</li> <li>Trusted Computing</li> <li>TIS Auth Configuration</li> <li>RAM Disk Configuration</li> <li>AVAGO (SAS 3408) Configuration Utility - 07.13.06.00</li> <li>Driver Health</li> </ul>	Manage RAID Controller Configurations. ++: Select Screen 11: Select Itm Enter: Select +-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1276. Copyright (C) 2020 American Me	gatrends, Inc.

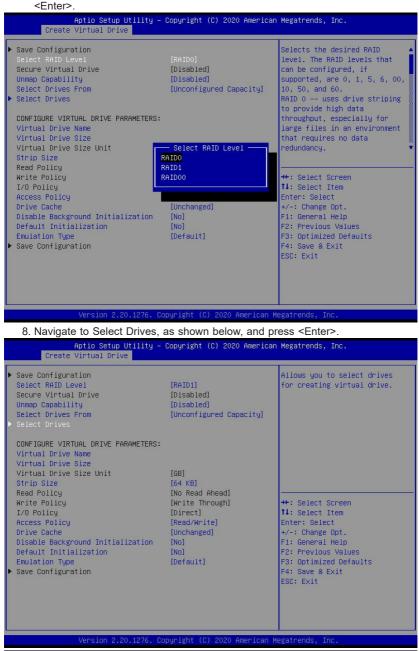
5. Select Configure from the ACTIONS submenu.

Aptio Setup Utility AVAGO <sas 3408=""> Configurat</sas>		American Megatrends, Inc. 06.00
AVAGD <sas 3408=""> Configurat  Main Menu Help PROPERTIES Status Backplane CacheVault Enclosure Drives Drives Virtual Drives Virtual Drives View Server Profile ACTIONS Configure Set Factory Defaults Update Firmware Silence Alarm BACKGROUND OPERATIONS Virtual Drive Operations in Progress Drive Operations in Progress MegaRAID ADVANCED SOFTWARE OPTIONS</sas>	[Optimal] 1 [No] 0 2 0 0 0	<ul> <li>Displays configuration options. Some options appear only if the controller supports them. As an example, Create Profile Based Virtual Drive, Create Virtual Drive, Create Virtual Drive, Make JBOD, Make Unconfigured Good, Clear configuration, Manage Foreign Configuration, View Drive Group properties and View Global Hot Spare</li> <li>*: Select Screen</li> <li>1: Select Item Enter: Select</li> <li>*/-: Change Opt.</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Defaults</li> <li>F4: Save &amp; Exit</li> <li>ESC: Exit</li> </ul>
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6. Select Create Virtual Drive and press <Enter>.

Aptio Setup Utility – Copyright (C) 2020 American Configuration Management	Megatrends, Inc.
<ul> <li>Create Virtual Drive</li> <li>Create Profile Based Virtual Drive</li> <li>Make Unconfigured Good</li> <li>Clear Configuration</li> </ul>	Creates a virtual drive by selecting the RAID level, drives, and virtual drive parameters. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1276. Copyright (C) 2020 American M	egatrends, Inc.

7. On the Create Virtual Drive menu, navigate to Select RAID Level and press <Enter>. Use the up and down arrow keys to select the a RAID level and press



9. On the Select Drives menu, select the unconfigured drives and choose Enabled.



10. Select Apply Changes and press <Enter>.

Aptio Setup Utility - Select Drives	Copyright (C) 2020 Americar	n Megatrends, Inc.
Apply Changes     Select Media Type     Select Interface Type     Logical Sector Size     CHOOSE UNCONFIGURED DRIVES:	(Both) [A11] [Both]	Submits the changes made to the entire form.
Drive CO :01:00: SSD, NVMe, 1.454TB, Unconfigured Good, (512B) Drive C1 :01:01: SSD, NVMe, 1.454TB, Unconfigured Good, (512B) Check All Uncheck All	[Enabled] (Enabled)	
▶ Apply Changes		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.20.1276. Copyright (C) 2020 American Megatrends, Inc.		



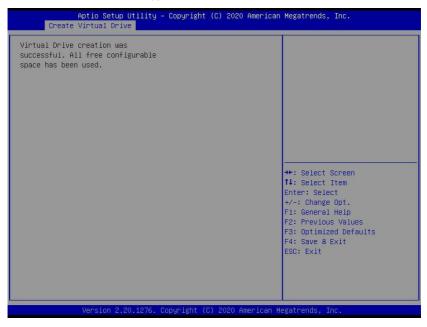
11. Press <ESC> to exit to the Create Virtual Drive menu. There, navigate to Save Configuration and press <Enter>.

RAID1] Disabled] Disabled] Unconfigured Capacity]	Submits the changes made to the entire form and creates a virtual drive with the specified parameters.
.454 TB] 64 KB] No Read Ahead] Write Through] Direct] Read/Write] Unchanged] No] No] Default]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
	454 B] 454 B] 44 KB] 10 Read Ahead] 10 rite Through] 10 ritet 10 ritet] 10 ritet] 10 ritet] 10 ritet]



11. Select the Yes option and then Confirm Enabled.

12. The below screen appears once Virtual Drive creation is successful.



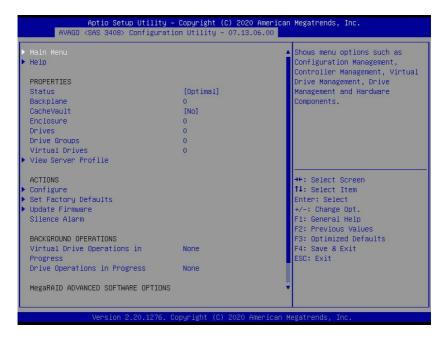
# Chapter 5

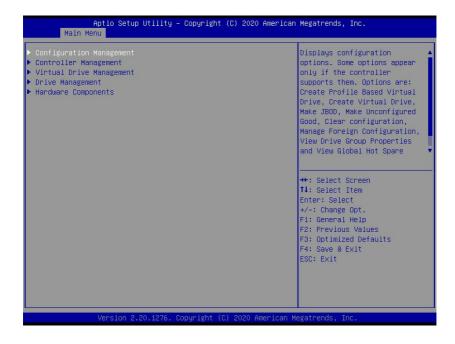
# Hybrid Drive Type Change

This chapter provides instructions on how to change the drive type through SATA or NVMe. By default, AOC-SLG3-2H8M2 has a SATA drive type. When changing the type, remove any installed M.2 device.

# 5-1 Changing Drive Type under UEFI

1. Select AVAGO <SAS 3408> Configuration Utility and enter the Main Menu.





2. On the Main Menu, select Controller Management.

Aptio Setup   Main Menu	Utility — Copyright (C) 2020 American	Megatrends, Inc.
<ul> <li>Configuration Management</li> <li>Controller Management</li> <li>Virtual Drive Management</li> <li>Drive Management</li> <li>Hardware Components</li> </ul>		Displays the controller status and basic properties of the controller such as product name, serial number, PEI ID, firmware version and NVDATA Version. You can also use the Advanced link to view additional properties and perform additional tasks such as changing the security key, saving the TTY log. ++: Select Screen <b>11</b> : Select Ttem Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.2	0.1276. Copyright (C) 2020 American M	egatrends, Inc.

4. On the Controller Management menu, select Advanced Controller Management.

Aptio Setup Utility Controller Management	– Copyright (C) 2020 American	n Megatrends, Inc.
BASIC PROPERTIES: Product Name Serial Number Controller Status Personality Mode Select Boot Device PCI ID PCI Segment:Bus:Device:Function PCI Slot Number Package Version Firmware Version NVDATA Version	SAS 3408 HA204S006121 [0ptimal] [RAID] [None] 0×1000[0×0017]0×15D9]0× 1863 0×0000[0×018]0×00]0×0 1 5.13.0-3524 5.130.01-3211 5.1300.21-0004	Provides a link to various controller management activities such as, clear and save controller events, schedule a consistency check, set factory defaults, and so on.
Drive Count Virtual Drive Count ▶ Advanced Controller Management ▶ Advanced Controller Properties	0	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

5. Enter Manage Controller Profiles.

Aptio Setup Utility – Copyright (C) Advanced Controller Management	2020 American Megatrends, Inc.
Clear Controller Events Save Controller Events Save TTY Log Enable Drive Security Disable Drive Security Change SAS Storage Link Speed Manage POIE Storage Interface Manage MegaRAID Advanced Software Options Schedule Consistency Check Set Factory Defaults Manage Controller Profiles	Allows you to see the details of the profile and choose the desired profile, if supported.
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6. Select Choose Profile.

Number of Profiles       2         Choose Profile       [10_PD63]         DETAILS OF THE PROFILE:       profile and its type (if applicable) for this controller and allows you to select the desired profile.         Personality Mode       [RAID]         Profile ID       10         Default Profile       [Yes]         Compatible       [Yes]         Max VD Count       32         Max NVME Count       0         > Set Profile       0         +*: Select Screen         Ti: Select Item         Enter: Select         +/-: Change Opt.         F1: General Help         F2: Previous Values         F3: Optimized Defaults         F4: Save & Exit         ESC: Exit	Aptio Setup Utility – Copyright (C) 2020 American Megatrends, Inc. Manage Controller Profiles		
	Choose Profile DETAILS OF THE PROFILE: Personality Mode Profile ID Default Profile Compatible Max PD Count Max VD Count Max NVMe Count	[10_PD63] [RAID] 10 [Yes] [Yes] 63 32	<pre>profile and its type (if applicable) for this controller and allows you to select the desired profile. **: Select Screen 11: Select Item Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit</pre>

7. Select SATA mode (by default) for 10\_PD62 and NVMe mode for 11\_NVMe2.



Aptio Setup Utility - Manage Controller Profiles	- Copyright (C) 2020 America	n Megatrends, Inc.
Number of Profiles Choose Profile DETAILS OF THE PROFILE: Personality Mode Profile ID Default Profile Compatible Max VD Count Max NVMe Count ► Set Profile	2 [11_NVMe2] [RAID] 11 [No] [Yes] 32 2	Displays the name for the profile and its type (if applicable) for this controller and allows you to select the desired profile. ++: Select Screen f1: Select Item
	Copyright (C) 2020 American	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

8. Press <F4> to save and exit.

# Chapter 6

## **Secure Boot Settings**

Secure boot is a feature of UEFI (Unified Extensible Firmware Interface) that ensures boot loaders are digitally signed and validated. This chapter provides instructions on how to enable the secure boot features.

### 6-1 Boot Mode Select Feature

Press <DEL> during system boot to enter the BIOS Setup utility. Navigate to the Boot tab. Use the arrow keys to select Boot mode select and press <Enter>. The options are LEGACY, UEFI, and DUAL. Set Boot mode select to UEFI. For the changes to take effect, press <F4> to save the settings and exit the BIOS Setup utility.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Main Advanced Event Logs IPMI Security <mark>Boot</mark> Save & Exit		
Boot Configuration		Select boot mode LEGACY/UEFI
Boot mode select LEGACY to EFI support	(DUAL) [Disabled]	
FIXED BOOT ORDER Priorities Boot Option #1 Boot Option #2 Boot Option #2 Boot Option #4 Boot Option #5 Boot Option #5 Boot Option #7 Boot Option #7 Boot Option #8 Boot Option #9 Boot Option #10	[Hard Disk] [CD/2V0] [USB Hard Disk] [USB CD/2V0] Boot mode select LEGRCY UEFT DUAL	
Boot Option #11 Boot Option #12 Boot Option #13 Boot Option #14 Boot Option #15 Boot Option #15 Boot Option #17 > Delete Boot Option	(UEFI USB Hand Disk) (UEFI USB CO/VO) (UEFI USB Key] (UEFI USB Loopy) (UEFI USB Lon) (UEFI MEtwork:UEFI) (UEFI AP:UEFI: Bui)	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 19 1268	Copyright (C) 2017 American Me	vatrends Inc

# 6-2 Secure Boot/Secure Boot Mode/CSM Support Features

Press <DEL> during system boot to enter the BIOS Setup utility. Navigate to the Security tab as shown below.

Aptio Setup Utility - Cogyright (C) 2017 American Megatrends, Inc. Main Advanced Event Logs IPMI <mark>Security</mark> Boot Save & Exit		
Administrator Password User Password	Not Installed Not Installed	Customizable Secure Boot settings
Password Description		
If the Administrator's / User's pa then this only limits access to Se asked for when entering Setup. Please set Administrator's passwor to set User's password, if clear f password, the User's password will	tup and is d first in order dministrator's	
The password length must be in the following range: Minimum length	3	
Maximum length	20	
Administrator Password Password Check	[Setup]	↔: Select Screen ↑↓: Select Item Enter: Select
▶ Secure Boot		+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1268.	Copyright (C) 2017 American	Megatrends, Inc.

Use the arrow keys to select Secure Boot and press <Enter> to access the menu items. The following screen will appear.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Security		
System Mode Secure Boot Secure Boot Secure Boot DSH Support > Key Management	User Not Active Not Active (Disabled) (Custom) (Enabled)	Secure Boot activated when Platform Key(PK) is ennolled, System mode is User/Denloyed, and CSM function is disabled +*: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Helo F2: Previous Values F3: Optimized Defaults F4: Save a Exit
Version 2.19	.1268. Copyright (C) 2017 America	ESC: Exit

#### Secure Boot

This feature is available when the platform key (PK) is pre-registered where the platform operates in the User mode and compatibility support module (CSM) support is disabled in the BIOS Setup utility. Select Enabled for secure boot flow control. The options are **Disabled** and Enabled.

#### Secure Boot Mode

Use this feature to set the secure boot mode. The options are Standard and **Custom**. Select Standard to load manufacturer's default secure variables. Select Custom to change the image execution policy and to manage secure boot keys.

#### **CSM Support**

Select Enabled to support the legacy CSM, which provides compatibility support for traditional legacy BIOS for system boot. The options are Disabled and **Enabled**.

### 6-3 Secure Boot Settings

To have secure boot support, follow the steps below.

1. Set Secure Boot Mode to Standard. Press Yes to install factory default keys as needed.





**Note:** The Key Management menu will become unavailable when Secure Boot Mode is set to Standard.

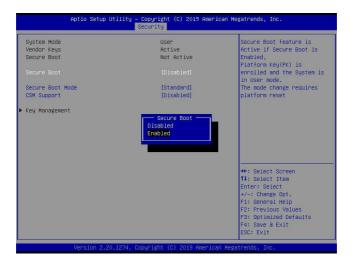
- Copyright (C) 2017 American Megatrends, Inc. Security Aptio Setup Utility -Secure Boot mode selector: System Mode Standard/Custom. Not Active Secure Boot In Custom mode Secure Boot Vendor Keys Not Active Variables can be configured without authentication Secure Boot [Disabled] CSM Support [Enabled] Key Management ave & Exit Setup Save configuration and exit? Ňň ↔: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. +/-: Change Upt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
- 2. For the changes to take effect, press <F4> to save the settings and exit the BIOS Setup utility.

3. Press <DEL> during system boot to enter the BIOS Setup utility. Navigate to the Security tab and enter the Secure Boot menu. Set CSM Support to Disabled.

Aptio Setup Utility – Copyright (C) 2019 American Megatrends, Inc.		
System Mode Vendor Keys Secure Boot Secure Boot Secure Boot Mode CSH Support • Key Management	User Active Not Active (Disabled) (Standard) Enabled Cisabled Enabled	Enable/Disable CSM Support.
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt, F1: General Heip F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

For the changes to take effect, press <F4> to save the settings and exit the BIOS Setup utility.

 Press <DEL> during system boot to enter the BIOS Setup utility. Navigate to the Security tab and enter the Secure Boot menu. Set Secure Boot to Enabled.



For the changes to take effect, press <F4> to save the settings and exit the BIOS Setup utility. Press <DEL> during system boot to enter the BIOS Setup utility. Navigate to the Security tab and enter the Secure Boot menu. The following screen will appear.

System Mode	User	Secure Boot feature is
/endor Keys	Active	Active if Secure Boot is
Secure Boot	Active	Enabled, Platform Key(PK) is
Secure Boot	[Enabled]	enrolled and the System is in User mode.
Secure Boot Mode	[Standard]	The mode change requires
CSM Support	[Disabled]	platform reset
eg minisenente		
eg nanaganan -		
(ey Management		
eg nanogenere		++: Select Screen
eg indingelikerte		11: Select Item
eg management		↑↓: Select Item Enter: Select
		11: Select Item
eg indingenerit		11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
n ga indendigamente		tl: Select Item Enter: Select +/-: Change Opt. F1: General Help

**Note:** Once Secure Boot is enabled, CSM Support will become disabled and the legacy environment is no longer valid. The authorized UEFI support such as UEFI OS, AOC UEFI FW, and UEFI PXE server are allowed.

5. Now that Secure Boot is enabled, navigate to the Advanced tab and select AVAGO <SAS 3408> Configuration Utility - 07.13.06.00.

Aptio Setup - AMI		
Main Advanced Event Logs IPMI Security Boot Save & Exit	t	
Boot Feature     CPU Configuration     CPU Configuration     Server ME Information     PCH SATA Configuration     PCH SATA Configuration     PCH SATA Configuration     Network Configuration     PCIE-PCI/PAP Configuration     PCIE-PCI/PAP Configuration     Serial Port Console Redirection     ACPI Settings     Trusted Computing     HTTP Boot Configuration	Manage RAID Controller Configurations.	
<ul> <li>ISSE Configuration</li> <li>Intel(R) Ethernet Controller X710 for 10GBASE-T - SolEC:EF:1F:05:B4</li> <li>Intel(R) Ethernet Controller X710 for 10GBASE-T - SolEC:EF:1F:05:B5</li> <li>TLS Authenticate Configuration</li> <li>AVAGO CSRS 34065 Configuration Utility - 07.13.06.00</li> <li>Driver Health</li> </ul>	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
	ESC: Exit	

The following screen will appear.

Aptio Setup - AMI Advanced			
▶ Main Menu		▲ Shows menu options such as	
Help     PROPERTIES     Status     Backplane     CacheVault     Enclosure     Drives     Drives     Drives	[Optimal] 1 [No] 0 2 1	Configuration Management, Controller Management, Virtual Drive Management, Drive Management and Hardware Components.	
Virtual Drives > View Server Profile ACTIONS > Configure > Set Factory Defaults > Uddate Firmware	1		
Silence Alarm		++: Select Screen ↑↓: Select Item Enter: Select	
Virtual Drive Operations in Progress	None	+/-: Change Opt.	
Drive Operations in Progress	None	F1: General Help F2: Previous Values	
MegaRAID ADVANCED SOFTWARE OPTIONS		F3: Optimized Defaults	
MegaRAID SafeStore	[Enabled]	F4: Save & Exit ESC: Exit	

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