GIGABYTE[™] G242-P31 G242-P32

HPC Server - 2U UP 4 x GPU Ampere® Altra® ARM Serve HPC Server - 2U UP 2 x GPU Ampere® Altra® ARM Serve

User Manual

Rev. 1.0

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentation:

- User Manual: detailed information & steps about the installation, configuration and use of this product (e.g. motherboard, server barebones), covering hardware and BIOS.
- User Guide: detailed information about the installation & use of an add-on hardware or software component (e.g. BMC firmware, rail-kit) compatible with this product.
- Quick Installation Guide: a short guide with visual diagrams that you can reference easily for installation purposes of this product (e.g. motherboard, server barebones).

Please see the support section of the online product page to check the current availability of these documents.

For More Information

For related product specifications, the latest firmware and software, and other information please visit our website at http://www.gigabyte.com

For GIGABYTE distributors and resellers, additional sales & marketing materials are available from our reseller portal: http://reseller.b2b.gigabyte.com

For further technical assistance, please contact your GIGABYTE representative or visit https://esupport.gigabyte.com/ to create a new support ticket

For any general sales or marketing enquiries, you may also message GIGABYTE server directly by email: server.grp@gigabyte.com

Conventions

The following conventions are used in this user's guide:

E	NOTE! Gives bits and pieces of additional information related to the current topic.
	CAUTION! Gives precautionary measures to avoid possible hardware or software problems.
Alerts you to any damage that might result from doing or not doing specific actio	

Server Warnings and Cautions

Before installing a server, be sure that you understand the following warnings and cautions.

To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug all the power cords from the power supplies to disconnect power to the equipment.



- · Shock Hazard! Disconnect all power supply cords before servicing.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

This server is equipped with high speed fans. Keep away from hazardous moving fan blades during servicing.

This equipment is not suitable for use in locations where children are likely to be present.

This equipment is intended to be used in Restrict Access Location. The access can only be gained by Skilled person.

Only authorized by well trained professional person can access the restrict access location.



- Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.
- Danger of explosion if battery is incorrectly replaced.
- · Replace only with the same or equivalent type recommended by the manufacturer.
- · Dispose of used batteries according to the manufacturer's instructions.

Electrostatic Discharge (ESD)

ESD CAN DAMAGE DRIVES, BOARDS, AND OTHER PARTS. WE RECOMMEND THAT YOU PERFORM ALL PROCEDURES AT AN ESD WORKSTATION. IF ONE IS NOT AVAILABLE, PROVIDE SOME ESD PROTECTION BY WEARING AN ANTI-STATIC WRIST STRAP AT-TACHED TO CHASSIS GROUND -- ANY UNPAINTED METAL SURFACE -- ON YOUR SERVER WHEN HANDLING PARTS.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges without any component and pin touching. After removing a board from its protective wrapper or from the system, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

System power on/off: To remove power from system, you must remove the system from rack. Make sure the system is removed from the rack before opening the chassis, adding, or removing any non hot-plug components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the system and discon-nect the cables attached to the system before servicing it. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface on the server) when handling parts.

ESD and handling boards: Always handle boards carefully. They can be extremely sensi-tive to electrostatic discharge (ESD). Hold boards only by their edges. After removing a board from its protective wrapper or from the system, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that can be gripped with fin-gertips or with a pair of fine needle nosed pliers. If the jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can dam-age the contacts inside the jumper, causing intermittent problems with the function con-trolled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool used to remove a jumper, or the pins on the board may bend or break.



Risk of explosion if battery is replaced incorrectly or with an incorrect type. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard/system contain numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the service guide and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

NOTE:

We reserve the right to make any changes to the product specifications and product-related				
CPU	 without prior notice. Ampere® Altra® Processor Single processor, 7nm technology Up to 80-core per processor 			
Socket	 Single socket LGA4926 			
Chipset	System on Chip			
Memory	 16 x DIMM slots DDR4 memory supported only 8-Channel memory architecture RDIMM modules up to 256GB supported LRDIMM modules up to 256GB supported Up to 4TB of memory capacity supported per processor Memory speed: Up to 3200 MHz NOTE: Only supports configurations with 1, 2, 4, 6, 8, 12, or 16 DIMMs			
	 2 x 1GbE LAN ports (1 x Intel® I350-AM2) 1 x 10/100/1000 Mbps management LAN 			
Video Video	 Integrated in Aspeed® AST2500 2D Video Graphic Adapter with PCIe bus interface 1920x1200@60Hz 32bpp, DDR4 SDRAM 			
Storage	 Front side: 4 x 3.5" SATA/SAS hot-swappable HDD/SSD bays 2.5" HDD/SSD supported 			
SAS	Supported			
RAID	• RAID 0/ 1/ 1E/ 10			

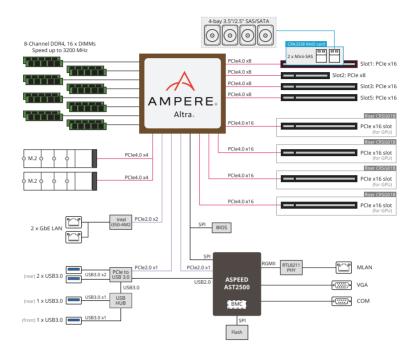
Expansion Slot (G242-P31)	Internal 4 x PCIe x16 slots (Gen4 x16 bus) for GPU cards
· · ·	Rear Side:
	 Total 3 x low profile PCIe Gen4 expansion slots Slot_7: Disabled Slot_6: 1 x PCIe x16 (Gen4 x16 bus) slot, occupied by CRSG02F Slot_5: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_4: 1 x PCIe x16 (Gen4 x16 bus) slot, occupied by CRSG02F Slot_3: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_2: 1 x PCIe x8 (Gen4 x8 bus) slot Slot_1: 1 x PCIe x16 (Gen4 x8 bus) slot, occupied by CRA3338 SAS Card
	2 x M.2 slots:
	 M-key
	 PCle Gen4 x4 Supports NGFF-2242/2260/2280/22110 cards
(G242-P32)	Internal 2 x PCle x16 slots (Gen4 x16 bus) for GPU cards
(/	
	Rear Side:
	 Total 5 x low profile PCIe Gen4 expansion slots Slot_7: Disabled Slot_6: 1 x PCIe x16 (Gen4 x16 bus) slot Slot_5: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_4: 1 x PCIe x16 (Gen4 x16 bus) slot Slot_3: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_2: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_1: 1 x PCIe x16 (Gen4 x8 bus) slot Slot_1: 1 x PCIe x16 (Gen4 x8 bus) slot, occupied by CRA3338 SAS Card
	2 x M.2 slots:
	 M-key PCIe Gen4 x4 Supports NGFF-2242/2260/2280/22110 cards
Internal I/O	 2 x M.2 slots 1 x USB 3.0 header 1 x USB 2.0 header 1 x TPM header 1 x Front panel header 1 x HDD back plane board header 1 x PMBus connector 1 x IPMB connector 1 x Clear CMOS jumper 1 x Buzzer

Front I/O	• 1 x USB 3.0
	1 x Power button with LED
	1 x ID button with LED
	1 x Reset button
	1 x NMI button
	1 x System status LED
	1 x HDD activity LED
	2 x LAN activity LEDs
Rear I/O	• 3 x USB 3.0
	 ◆ 1 x VGA
	1 x Debug port
	• 2 x RJ45
	 1 x MLAN
	1 x ID button with LED
Backplane I/O	Backplane P/N: 9CBPG041NR-00
	Speed and bandwidth:
	SAS 12Gb/s, SATA 6Gb/s
TPM	1 x TPM header with SPI interface
	Optional TPM2.0 kit: CTM010
Power Supply	2 x 1600W power supply
	80 PLUS Platinum
	AC Input:
	 100-120V~/ 12A, 50-60Hz
	 200-240V~/ 10A, 50-60Hz
	DC output:
	 Max 1000W/ 100-120V~
	 +12V/ 81.5A
	 +12Vsb/ 2.5A
	 Max 1600W/ 200-240V or 240Vdc Input
	 +12V/ 133A
	 +12Vsb/ 2.5A

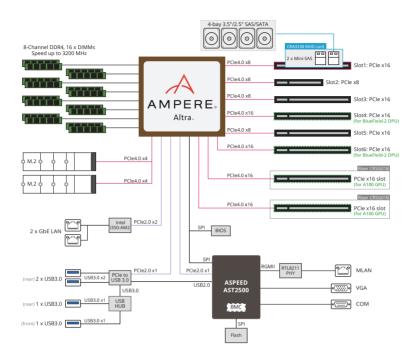
System	Aspeed® AST2500 management controller
Management	GIGABYTE Management Console (AMI MegaRAC SP-X) web interface
	Dashboard
	JAVA Based Serial Over LAN
	 HTML5 KVM
	 Sensor Monitor (Voltage, RPM, Temperature, CPU Statusetc.)
	Sensor Reading History Data
	FRU Information
	 SEL Log in Linear Storage / Circular Storage Policy
	Hardware Inventory
	Fan Profile
	System Firewall
	Power Consumption
	Power Control
	LDAP / AD / RADIUS Support
	Backup & Restore Configuration
	Remote BIOS/BMC/CPLD Update
	Event Log Filter
	User Management
	Media Redirection Settings
	PAM Order Settings
	SSL Settings
	SMTP Settings
Environment	Operating temperature: 10°C to 35°C
Ambient	 Operating humidity: 8-80% (non-condensing)
Temperature	
Relative	 Non-operating temperature: -40°C to 60°C
Humidity	 Non-operating humidity: 20%-95% (non-condensing)
System	 ◆ 2U
Dimension	 438mm (W) x 87.5mm (H) x 820mm (D)

1-3 System Block Diagram

1-3-1 G242-P31



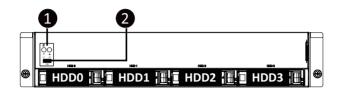
1-3-2 G242-P32



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Chapter 2 System Appearance

2-1 Front View



No.	Description	
1.	Front Panel LEDs and Buttons	
2.	Front USB 3.0 Port	



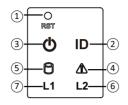
Please Go to Chapter 2-3 Front Panel LED and Buttons for detail description of function LEDs.

2-2 Rear View

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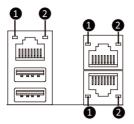
No.	Description
1.	Serial Port
2.	VGA Port
3.	Mezzanine Slot (OCP2 Card)
4.	ID LED
5.	USB 3.0 Port x 2
6.	10/100/10000 Server Management LAN Port
7.	GbE LAN Port x 2
8.	USB 3.0 Port
9.	PCIe Card Slot x 7

2-3 Front Panel LED and Buttons



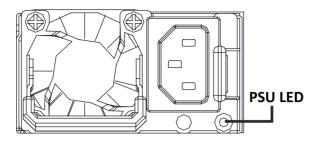
me	Color	Status	Description
set Button			Press the button to reset the system.
Button			Press the button to activate system identification
	Green	On	Indicates the system is powered on.
ver button	Green	Blink	System is in ACPI S1 state (sleep mode).
with LED	N/A	Off	 System is not powered on or in ACPI S5 state (power off) System is in ACPI S4 state (hibernate mode)
	Green	On	Indicates system is operating normally.
			Indicates a critical condition, may include:
		On	-System fan failure
	Amhar		-System temperature issue Indicates non-critical condition, may include:
	Amper		-Redundant power module failure
Status LED		Blink	-Temperature and voltage issue
			-Chassis intrusion
		Off	Indicates system is not ready, may include:
5. HDD Status LED	N/A		-POST error
			-Processor or terminator is missing
	Green	On	Indicates locating the HDD.
		Blink	Indicates accessing the HDD.
	Amber	On	Indicates HDD error.
	Green/ Amber	Blink	Indicates HDD rebuilding.
	N/A	Off	Indicates no HDD access or no HDD error.
N 1/2	Green	On	Indicates a link between the system and the network or no access.
Active/Link	Green	Blink	Indicates data trasmission or receiving is occuring.
Js	N/A	Off	Indicates no data transmission or receiving is occuring.
	set Button Button h LED stem tus LED D Status D	set Button Button Green N/A Green N/A Green N/A Amber N/A D Status Green Amber Green/ Amber N/A Status Constant Stem Constant Constant Status Constant Status Constant Cons	set Button Set Button Mer button n LED Set Button Green Green Amber M/A On Amber Blink N/A Off On Blink N/A Off On Blink N/A Off Blink N/A Off Blink N/A Off Blink N/A Off Blink On Green/ Amber On Blink On Green/ Amber On Blink On Blink On Blink N/A Off On Blink N/A Off Blink N/A Off Blink

2-4 Rear System LAN LEDs



No.	Name	Color	Status	Description
		Yellow	On	1 Gbps data rate
1.	1GbE Speed LED	Green	On	100 Mbps data rate
Speed LED		N/A	Off	10 Mbps data rate
1GbE	1GbE	0	On	Link between system and
	2. Link/ Activity	Green		network or no access
2.			Blink	Data transmission or receiving is occurring
	LED	N/A	Off	No data transmission or
				receiving is occurring

2-5 Power Supply Unit (PSU) LED



State	Description
OFF	Indicates no AC power to all power supplies
0.5Hz Blink GREEN	Indicates AC present/ only standby on/ Cold redundant mode
2Hz Blink GREEN	Indicates power supply firmware in updating mode
Amber	Indicates AC cord unplugged or AC power lost; with a second power supply in parallel still with AC input power
	Indicates power supply critical event causing shut down: failure, OCP, OVP, Fan Fail, UVP
0.5Hz Blink Amber	Indicates power supply warning events where the power supply continues to operate: high temp, high power, high current, slow fan

2-6 Hard Disk Drive LEDs

	ED1 ED2
--	------------

RAID SKU		LED1	Locate	HDD Fault	Rebuilding	HDD Access	HDD Present (No Access)
	Disk LED (LED on	Green	ON(*1)	OFF		BLINK (*2)	OFF
	Back Panel)	Amber	OFF	OFF		OFF	OFF
No RAID configuration (via HBA)	Removed HDD Slot	Green	ON(*1)	OFF			
	(LED on Back Panel)	Amber	OFF	OFF		-	
RAID configuration (via HW RAID Card or SW RAID Card)	Disk LED	Green	ON	OFF		BLINK (*2)	OFF
		Amber	OFF	ON	(Low Speed: 2 Hz)	OFF	OFF
		Green	ON(*1)	OFF	(*3)	-	
	Removed HDD Slot	Amber	OFF	ON	(*3)	-	

LED 2	HDD Present	No HDD
Green	ON	OFF

NOTE:

*1: Depends on HBA/Utility Spec.

*2: Blink cycle depends on HDD's activity signal.

*3: If HDD is pulled out during rebuilding, the disk status of this HDD is regarded as faulty.

Chapter 3 System Hardware Installation



Pre-installation Instructions

Computer components and electronic circuit boards can be damaged electrostatic discharge. electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow the simple guidelines below to avoid damage to your computer or injury to yourself.

- Always disconnect the computer from the power outlet whenever you are working inside the computer case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal system of the computer case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board.
- Leave all components inside the static-proof packaging until you are ready to use the component for the installation.

3-1 Removing Chassis Cover

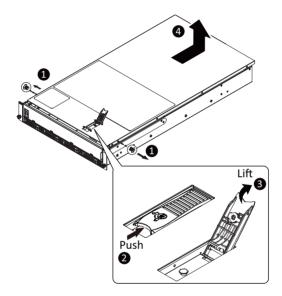


Before you remove or install the system cover

· Make sure the system is not turned on or connected to AC power.

Follow these instructions to remove the chassis cover:

- 1. Remove the two screws on the sides of the top cover.
- 2. Unlock the plastic handle and pull the grip handle to open the panel cover.
- Slide the cover cover to the rear of the system and then remove the cover in the direction indicated by the arrow.
- 4. To reinstall the chassis cover reverse steps 1-3.

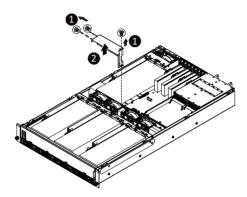


3-2 Removing and Installing the Fan Duct

Follow these instructions to remove/install the fan duct:

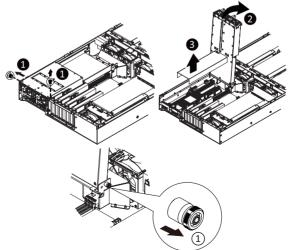
GPU Fan Duct:

- 1. Remove the screws securing the mental fanduct.
- 2. Lift up to remove the fan duct.
- 3. To install the fan duct, align the fan duct with the guiding groove. Push down the fan duct into chassis until its firmly seats



CPU Fan Duct:

- 1. Remove the screws securing the mental fanduct.
- 2. Flip over the tray to 90 degree until it clicks.
- 3. Lift up to remove the CPU fan duct.
- 4. To install the fan duct, align the fan duct with the guiding groove. Push down the fan duct into chassis until its firmly seats.
- 5. To re-install the tray, pull outward the thumbscrew.



3-3 Removing and Installing the CPU



Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Unplug all cables from the power outlets.
- Disconnect all telecommunication cables from their ports.
- Place the system unit on a flat and stable surface.
- Open the system according to the instructions.

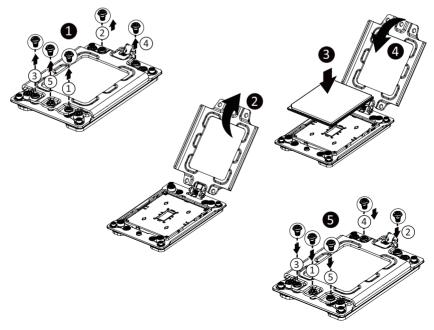


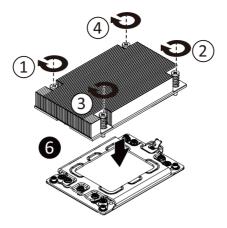
WARNING!

Failure to properly turn off the server before you start installing components may cause serious damage. Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Follow these instructions to install the CPU:

- 1. Loosen the three captive screws securing the CPU cover in sequential order $(1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5)$.
- 2. Flip open the CPU cover.
- 3. Remove the CPU carrier from the CPU frame using the handle on the CPU carrier.
- 4. Install the CPU into place in the CPU socket.
- 5. Flip the CPU cover into place over the CPU socket.
- Tighten the CPU cover screws in sequential order (1→2→3→4→5) to secure the CPU cover in place.
- 7. To remove the CPUs, follow steps 1-6 in reverse order.





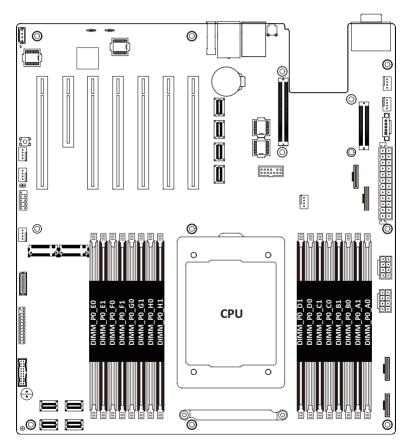
3-4 Installing the Memory

Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

3-4-1 Eight Channel Memory Configuration

This motherboard provides 16 DDR4 memory sockets and supports Eight Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Four Channel memory mode will be four times of the original memory bandwidth.



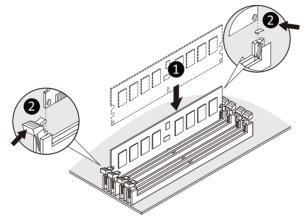
3-4-2 Installing a Memory

Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.

Be sure to install DDR4 DIMMs on this motherboard.

Follow these instructions to install the Memory:

- 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.
- 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
- 3. Reverse the installation steps when you want to remove the DIMM module.



3-4-3 DIMM Population Table

		DIMM	Speed (MT/s); Voltage (Slot Per Channel (SPC DIMM Per Channel (DP			
Туре	Ranks Per DIMM and Data Width	Capacity (GB)	1 Slot per Channel 2 Slots per Channel		s per nnel	
		DIMM Density	1DPC	1DPC	2DPC	
		8Gb	1.2V	1.2V	1.2V	
RDIMM	SRx4	16GB	3200	3200	3200	
RDIMM	DRx8	16GB	0200	5200	0200	

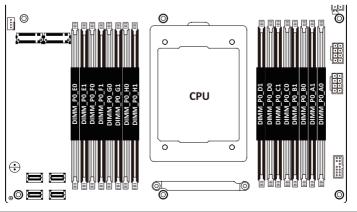
3-4-4 Altra Platform DDR4 Suggest Configuration Table

Channels	Channels used (✓ = Memory Installed)							
Used	DIMM_P0_E0	DIMM_P0_F0	DIMM_P0_G0	DIMM_P0_H0	DIMM_P0_D0	DIMM_P0_C0	DIMM_P0_B0	DIMM_P0_A0
1								\checkmark
1	\checkmark							
2	\checkmark							\checkmark
4	~	~					\checkmark	\checkmark
6	\checkmark	~	~			~	\checkmark	~
8	~	\checkmark	\checkmark	~	\checkmark	~	\checkmark	~

Channels	Channels used ($$ = Memory Installed)							
Used	DIMM_P0_E0 DIMM_P0_E1	DIMM_P0_F0 DIMM_P0_F1	DIMM_P0_G0 DIMM_P0_G1	DIMM_P0_H0 DIMM_P0_H1	DIMM_P0_D0 DIMM_P0_D1	DIMM_P0_C0 DIMM_P0_C1	DIMM_P0_B0 DIMM_P0_B1	DIMM_P0_A0 DIMM_P0_A1
1								✓ ✓
1	\checkmark \checkmark							
2	✓							< <
4	✓ ✓	 ✓ 					\checkmark	\checkmark \checkmark
6	✓ ✓	✓	\checkmark \checkmark			✓ ✓	✓ ✓	~ <i>~</i>
8	✓	\checkmark \checkmark	✓ ✓	$\checkmark \checkmark$	$\checkmark \checkmark$	✓ ✓	\checkmark	✓

1 DIMM Per Channel

	Channels	Channels used ($$ = Memory Installed)							
	Used	DIMM_P0_E0	DIMM_P0_F0	DIMM_P0_G0	DIMM_P0_H0	DIMM_P0_D0	DIMM_P0_C0	DIMM_P0_B0	DIMM_P0_A0
Ì	8	\checkmark	~	~	~	~	~	~	~



3-5 Installing the PCI Expansion Card



Voltages can be present within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position. Ensure that the system is powered-down and all power sources have been disconnected from the server prior to installing a PCI card.

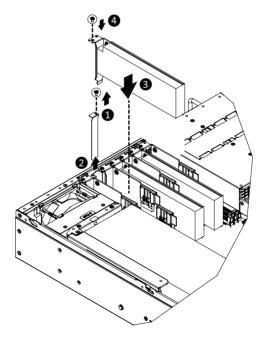
Failure to observe these warnings could result in personal injury or damage to equipment.



The PCI riser assembly does not include a riser card or any cabling as standard. To install a PCI card, a riser card must be installed.

Follow these instructions to PCI Expansion card:

- 1. Loosen the thumbscrew securing the riser bracket to the system.
- 2. Pull the riser bracket in the direction indicated to unlock the riser bracket.
- 3. Remove the screw securing the slot cover to the riser bracket.
- 4. Remove the slot covers from the riser bracket.
- Orient the PCIe card with the riser guide slot and push in the direction of the arrow until the PCIecard sits in the PCI card connector.
- 6. Secure the PCIe card with the screw.
- 7. Reverse the steps 3 1 to install the riser bracket.



3-6 Installing the GPU Card



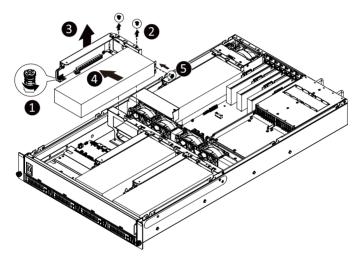
Read the following guidelines before you begin to install the GPU Card:

Voltages can be present within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position. Ensure that the system is powered down and all power sources have been disconnected from the server prior to installing a PCIe card. Make sure the system is not turned on or connected to AC power.

Failure to observe these warnings could result in personal injury or damage to the equipment.

Follow these instructions to install the GPU card:

- 1. Loosen the thumbnail screw securing the GPU card cage in place.
- Remove the fourscrews securing the GPU card slot bracket and covers in place and remove the PCIe card slot covers.
- 3. Insert the GPU card into the selected slot. Make sure the GPU card is properly seated.
- 4. Install thefour screws to secure the GPU card in place.



3-7 Installing the Hard Disk Drive

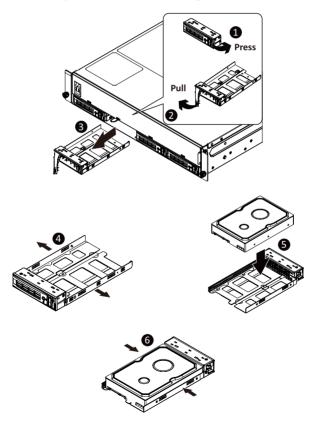


Read the following guidelines before you begin to install the Hard disk drive:

- Take note of the drive tray orientation before sliding it out.
- · The tray will not fit back into the bay if inserted incorrectly.
- Make sure that the HDD is connected to the HDD connector on the backplane.

Follow these instructions to install a 3.5" hard disk drive:

- 1. Press the release button.
- 2. Extend the locking lever.
- 3. Pull the locking lever in the direction indicated to remove the 3.5" HDD tray.
- 4. Pull the sides of the HDD tray in the direction indicated.
- 5. Slide the hard disk drive into the HDD tray.
- 6. Push the sides of the HDD tray back in the direction indicated to secure the hard disk drive in place.
- 7. Reinsert the HDD tray into the slot and close the locking lever.



3-8 Installing and Removing an M.2 Solid State Drive

Follow these instructions to install an optional M.2 solid state drive (SSD):



To install/remove the M.2 heatsink use a No. 1 Phillips-head screwdriver with a screw torque of 1.5 \pm 0.2 kgf*cm

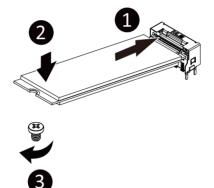


CAUTION

NOTE:

The position of the stand-off screw will depend on the size of the M.2 device. The stand-off screw is pre-installed for 22110 cards as standard. Refer to the size of the M.2 device and change the position of the stand-off screw accordingly.

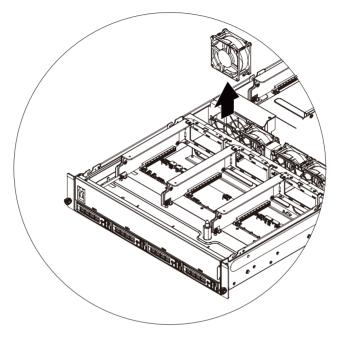
- 1. Place the solid state drive into the M.2 connector.
- Secure the solid state drive to the motherboard with a single screw.
 NOTE: The position of the screw will depend on the size of the SSD. Refer to the second image below for proper placement.
- 3. Reverse steps 1-2 to remove the solid state drive.



3-9 Replacing the Fan Assembly

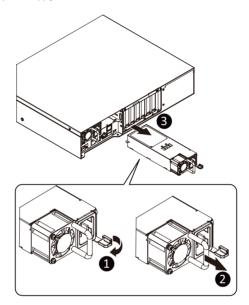
Follow these instructions to replace the fan assembly:

- 1. Lift up the fan assembly from the chassis.
- 2. Reverse the previous steps to install the replacement fan assembly.



3-10 Replacing the Power Supply Follow these instructions to replace the power supply:

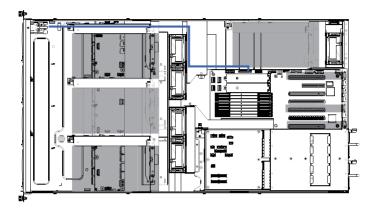
- 1. Press the retaining clip on the right side of the power supply along the direction of the arrow.
- 2. Pull up the power supply handle at the same time and pull out the power supply.
- 3. Insert the replacement power supply firmly into the chassis. Connect the AC power cord to the replacement power supply.



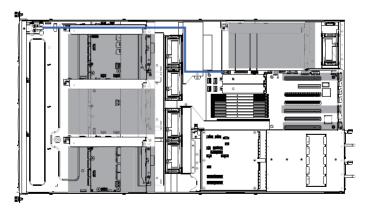
3-11 Cable Routing

3-11-1 G242-P31

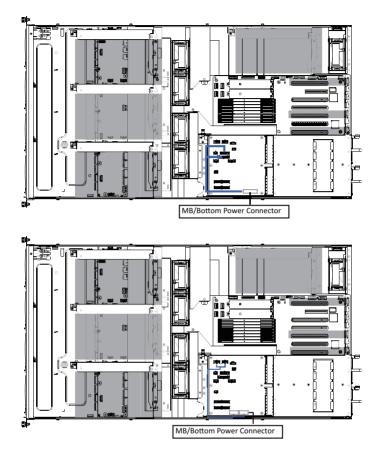
Front Panel LEDs and Buttons Cable



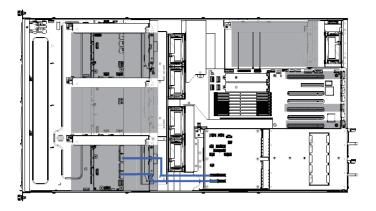
Front Panel USB 3.0 Port Cable



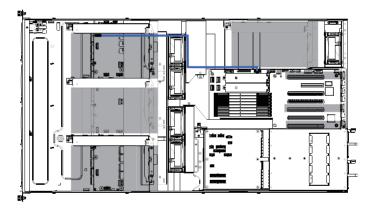
System Main Power Cable



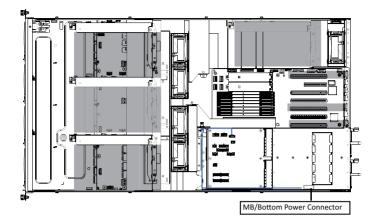
HDD Backplane Board Power Cable



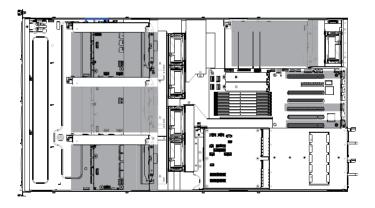
HDD Backplane Board Signal Cable

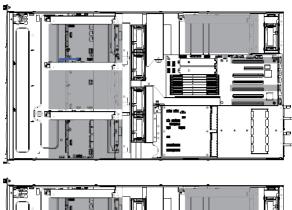


PMBus Signal Cable

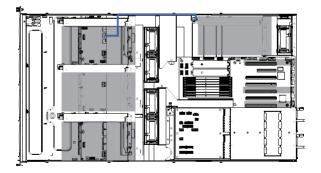


GPU Riser Card Power Cable





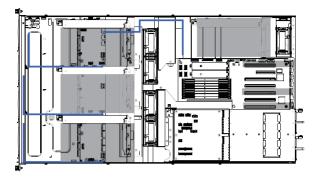




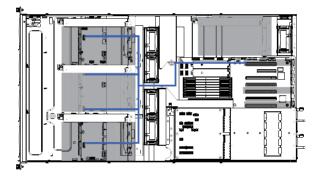
GPU Signal Cable



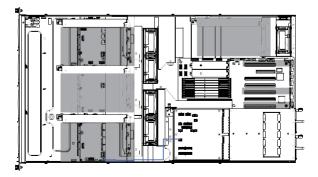
GPU Card Power Cable (Reserved)



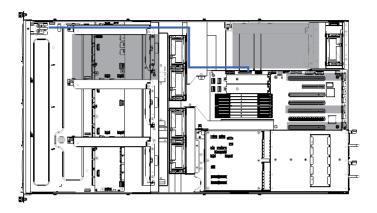
RAID Card Cable



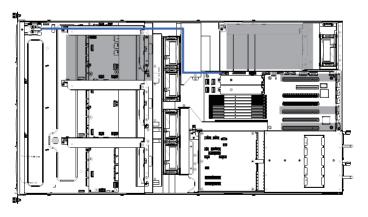
PS-ON Signal Cable



3-11-2 G242-P32 Front Panel LEDs and Buttons Cable



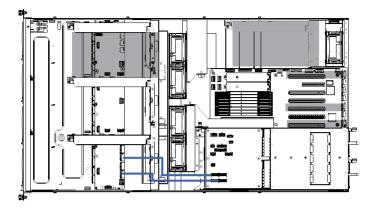
Front Panel USB 3.0 Port Cable



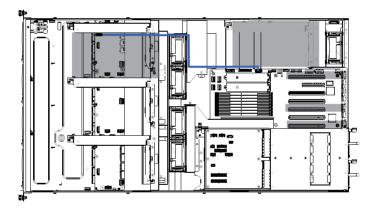
System Main Power Cable

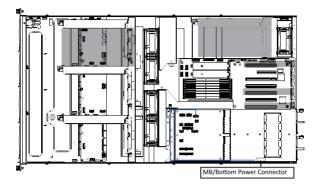


HDD Backplane Board Power Cable



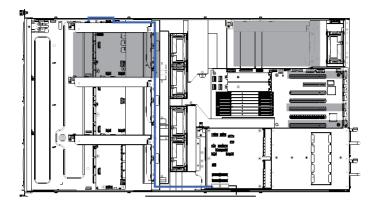
HDD Backplane Board Signal Cable

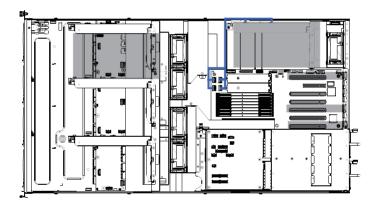




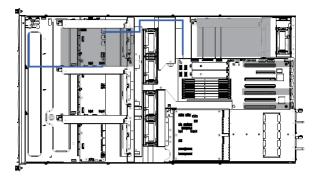
GPU Riser Card Power Cable



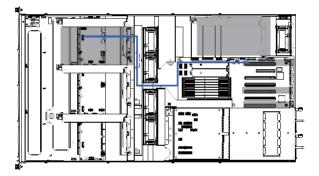




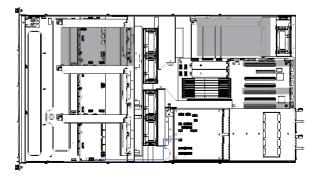
GPU Card Power Cable (Reserved)



RAID Card Cable



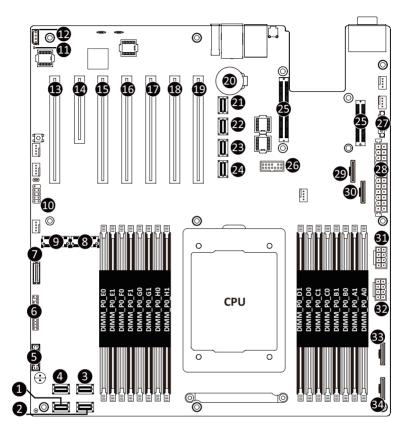
PS-ON Signal Cable



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Chapter 4 Motherboard Components

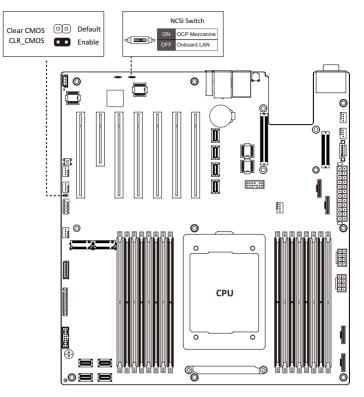
4-1 Motherboard Components



Item	Description
1	SlimLine SAS Connector (U2_3)
2	SlimLine SAS Connector (U2_2)
3	SlimLine SAS Connector (U2_1)
4	SlimLine SAS Connector (U2_0)
5	Front panel USB 3.0 Connector
6	Front Panel Connector
7	HDD Back Plane Board Connector

8	M.2 Connector (PCIe4 x4, NGFF-22110)
9	M.2 Connector (PCIe4 x4, NGFF-22110)
10	USB 2.0 Connector
11	BMC Firmware Readiness LED
12	IPMB Connector
13	PCle x16 Slot #1 (x8 Signal)
14	PCle x8 Slot #2 (x8 Signal)
15	PCle x16 Slot #3 (x8 Signal)
16	PCle x16 Slot #4 (x16 Signal)
17	PCle x16 Slot #5 (x8 Signal)
18	PCle x16 Slot #6 (x16 Signal)
19	PCle x16 Slot #7 (x16 Signal)
20	System Battery
21	SlimLine SAS Connector (SLINK0)
22	SlimLine SAS Connector (SLINK1)
23	SlimLine SAS Connector (SLINK2)
24	SlimLine SAS Connector (SLINK3)
25	OCP Mezzanine Connector
26	TPM Module Connector
27	PMBus Connector
28	2 x 13 Pin Power Connector
29	SlimLine Connector (U2_A0)
30	SlimLine Connector (U2_B0)
31	2 x 4 Pin 12V Power Connector
32	2 x 4 Pin 12V Power Connector
33	SlimLine Connector (U2_P0_PE1B)
34	SlimLine Connector (U2_P0_PE1A)





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Chapter 5 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the EFI on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the key during the POST when the power is turned on.



- BIOS flashing is potentially risky, if you do not encounter problems of using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the Exit section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

	-
<←><→>	Move the selection bar to select the screen
<↑><↓>	Move the selection bar to select an item
<+>	Increase the numeric value or make changes
<->	Decrease the numeric value or make changes
<enter></enter>	Execute command or enter the submenu
<esc></esc>	Main Menu: Exit the BIOS Setup program
	Submenus: Exit current submenu
<f1></f1>	Show descriptions of general help
<f3></f3>	Restore the previous BIOS settings for the current submenus
<f9></f9>	Load the Optimized BIOS default settings for the current submenus
<f10></f10>	Save all the changes and exit the BIOS Setup program

Main

This setup page includes all the items in standard compatible BIOS.

Advanced

This setup page includes all the items of AMI BIOS special enhanced features.

(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

Chipset

This setup page includes all the submenu options for configuring the function of processor, network, North Bridge, South Bridge, and System event logs.

Server Management

Server additional features enabled/disabled setup menus.

Security

Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

Boot

This setup page provides items for configuration of boot sequence.

Save & Exit

Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

5-1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.



When the system is not stable as usual, select the **Restore Defaults** item to set your system to its defaults.

The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

BIOS Information		▲ Memory Slot Information.
Access Level	Administrator	
System Product Name	G242-P32-QZ	
Project Name	MP32-AR2-00	
Project Version	F17b	
Build Date and Time	07/30/2021 11:09:20	
BMC Information		
BMC Firmware Version	12.56.04	
Processor Information		
CPU 0 Brand String	Ampere(R) Altra(R)	
	Processor Q80-30	
Processor Core	80	++: Select Screen
Processor Speed	1000 MHz	↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
Memory Information		F3: Previous Values
Total Memory	256GB	F9: Optimized Defaults
Memory Frequency	3200MHz	F10: Save & Exit
		ESC: Exit
System Language	[English]	

Aptio Setup – AMI Main Advanced Chipset Server Ngmt Security Boot Save & Exit		
System Product Name	G242-P32-QZ	▲ Set the Time. Use Tab to
Project Name	MP32-AR2-00	switch between Time
Project Version	F17b	elements.
Build Date and Time	07/30/2021 11:09:20	
BMC Information		
BMC Firmware Version	12.56.04	
Processor Information		
CPU 0 Brand String	Ampere(R) Altra(R)	
	Processor Q80–30	
Processor Core	80	
Processor Speed	1000 MHz	
		++: Select Screen
		14: Select Item
		Enter: Select
Memory Information		+/-: Change Opt.
Total Memory	256GB	F1: General Help
Hemory Frequency	3200MHz	F3: Previous Values
Memory Slot Information		F9: Optimized Defaults F10: Save & Exit
System Language	[English]	ESC: Exit
System Date	[Fri 08/20/2021]	
	[08:43:08]	

Parameter	Description
BIOS Information	
Access Level	Display the privileges level information.
System Project Name	Displays the system project name information.
Project Name	Displays the motherboard project name information.
Project Version	Displays version number of the BIOS setup utility.
Build Date and Time	Displays the date and time when the BIOS setup utility was created.
BMC Information	
BMC Firmware Version	Displays version number of the BIOS setup utility.
Processor Information	
CPU0 Brand String	
Processor Core	Displays the technical specifications for the installed processor.
Max CPU Speed	
Memory Information	
Total Memory	Displays the technical specifications for the installed memory.
Memory Frequency	Displays the technical specifications for the installed methody.
Memory Slot Information	Press [Enter] to view installed memory slot information.
System Language	Option: English
System Date	Sets the date following the weekday-month-day-year format.
System Time	Sets the system time following the hour-minute-second format.

5-2 Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press [Enter] to access the related submenu screen.

Aptio Setup — AMI Main <mark>Advanced</mark> Chipset Server Mgmt Security Boot Save & Exit	
 Trusted Computing ACPT Settings General Matchdog Timer APEI Configuration K86 Emulator Configuration PCI Subsystem Settings Info Report Configuration USB Configuration Wetwork Stack Configuration NVMe Configuration NVMe Configuration Second State Configuration Graphic Output Configuration Power Restore Configuration MAC:B42E99AFF72-IPV4 Network Configuration MaC:B42E99AFF72-IPV4 Network Configuration MaC:B42E99AFF72-IPV4 Network Configuration MaC:B42E99AFF72-IPV4 Network Configuration Second State State Configuration Second State Stat	Trusted Computing Settings ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2.22.1282 Copyright (C) 2021 AM	Т

5-2-1 Trusted Computing

Advanced	Aptio Setup – AMI	
Configuration Security Device Support NO Security Device Found	[Enable]	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TGG EFI protocol and INTIA interface will not be available. **: Select screen f4: Select Item Enter: Select */-: Change Opt. F1: General Help
		F3: Previous Values F3: Optimized Defaults F10: Save & Exit ESC: Exit
l l l l l l l l l l l l l l l l l l l	ersion 2.21.1280 Coouright (C)	2021 AMI
Parameter	Description	
Configuration		
Security Device Support	Security Device Support Select Enabled to activate TPM support feature. Options available: Enable/Disable. Default setting is Enabl	

5-2-2 ACPI Settings

Advanced	Aptio Setup — AMI	
ACPI Settings		Enables or Disables BIOS ACPI Auto Configuration.
Enable ACPI Auto Configuration		
Enable CPPC Enable DVFS Mode Enable LPI Enable Max Performance	[Enabled] [Disabled] [Enabled] [Enabled]	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>
Onin Lair	2 21 1280 Conveight (E) 2021 AM	

Parameter	Description
ACPI Settings	
Enable ACPI Auto Configuration	Enable or disable BIOS ACPI auto configuration.
Enable ACFT Auto Configuration	Options available: Enabled/Disabled. Default setting is Enabled.
Enable CPPC	Enable or disable CPPC.
	Options available: Enable/Disable. Default setting is Enabled.
Enable DVFS Mode	Options available: Enabled/Disabled. Default setting is Disabled .
Enable LPI	Options available: Enabled/Disabled. Default setting is Enabled .
Enable Max Performance	Options available: Enabled/Disabled. Default setting is Enabled.

5-2-3 General Watchdog Timer

Advanced	Aptio Setup — AMI	
General Watchdog Timer Secure Watchdog Timeout BIOS Watchdog Timeout OS Watchdog Timeout	[5 minutes] [5 minutes] [Disable]	Timeout when SCP will reset system if it doesn't receive response from ARMV8.
		<pre>**: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>
Ven	sion 2.21.1280 Copyright (C) 20	121 AMT

Parameter	Description	
General Watchdog Timer		
	Timeout when SCP will reset system if it doesn't receive response from	
Secure Watchdog Timeout	ARMv8.	
Secure watchuog nineout	Options available: 5 minutes/6 minutes/10 minutes/15 minutes/25 minutes.	
	Default setting is 5 minutes.	
BIOS Watchdog Timeout	Options available: 5 minutes/6 minutes/10 minutes/15 minutes/25 minutes.	
BIOS Watchuog Timeout	Default setting is 5 minutes .	
	Timeout when boot OS.	
OS Watchdog Timeout	Options available: Disable/3 minutes/4 minutes/5 minutes/6 minutes/	
US Watchuog Timeout	10 minutes/15 minutes/20 minutes.	
	Default setting is Disable .	

5-2-4 APEI Configuration

Advanced	Aptio Setup – AMI	
APEI Configuration		Enable/Disable ACPI Platform Error Interface
APEI Enable		support
		++: Select Screen
		†↓: Select Item Enter: Select
		+/−: Change Opt. F1: General Help F3: Previous Values
		F3: Previous values F9: Optimized Defaults F10: Save & Exit
		ESC: Exit
	/ersion 2.21.1280 Convright (C)	2021 AMT

Parameter	Description
APEI Configuration	
	Enable/Disable ACPI Platform Error Interface support.
APEI Enable	Options available: Enabled/Disabled.
	Default setting is Disabled .

5-2-5 X86 Emulation Configuration

Advanced	Aptio Setup – AMI	
APEI Configuration		Enable/Disable ACPI Platform Error Interface
APEI Enable		support
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Ve	ersion 2.21.1280 Convright (C) :	2021 AMT

Parameter	Description
X86 Emulator	
Configuration	
	Enable/Disable X86 Emulator suuport.
X86 Emulator Enable	Options available: Enabled/Disabled.
	Default setting is Disabled .

5-2-6 PCI Subsystem Settings



The second se		
Slot #32 Occupied [Mass Stora Location: S:05h]8:01h]D:00h]F VID:1000]DID:0097 Supports: PCIe GEN1[X]; GEN2[GEN3[X]; GEN4[:00h;	Value to be programmed into PCI Latency Timer Register.
PCI Latency Timer PCI-X Latency Timer VGA Palette Snoop PERR# Generation SERR# Generation Disable PCIE Init Disable PCIE DEN 2 PCI Express GEN 1 Settings PCI Express GEN 2 Settings	(32 PCI Bus Clocks) (64 PCI Bus Clocks) (Disabled) (Enabled) (Disabled) (Disabled) (Disabled)	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults
	rsion 2.22.1282.Romun(wht (f) 202	F10: Save & Exit ESC: Exit

Parameter	Description
AMI PCI Bus Driver Version	Displays the AMI PCI Bus Driver version information.
SR-IOV Support	If the system has SR-IOV capable PCIe devices, this item Enable/Disable Single Root IO Virtualization Support. Options available: Enabled/Disabled. Default setting is Enabled .
Change Settings of the Following PCI Devices	
	 PCI Latency Timer Value to be programmed onto PCI Latency Timer Register. Options available: 32/64/96/128/160/192/224/248 PCI Bus Clocks. Default setting is 32 PCI Bus Clocks.
Slot #32 Occupied Onboard Device #	 PCI-X Latency Timer Value to be programmed onto PCI Latency Timer Register. Options available: 32/64/96/128/160/192/224/248 PCI Bus Clocks. Default setting is 64 PCI Bus Clocks.
	 VGA Palette Snoop Enable or disable VGA Palette Registers Snooping. Options available: Enabled/Disabled. Default setting is Disabled.
	 PERR# Enable or disable PCI device to generate PERR. Options available: Enabled/Disabled. Default setting is Disabled. SERR# Enable or disable PCI device to generate SERR. Options available: Enabled/Disabled. Default setting is Disabled.

5-2-6-1 PCI Express GEN 1 Settings

Advanced	Aptio Setup — AMI	
PCI Express GEN 1 Settings PCI Express Device Register Settings Relaxed Ordering Extended Tag No Snoop Maximum Payload Maximum Read Request	[Enabled] [Disabled] [Auto] [Auto]	Enables or Disables PCI Express Device Relaxed Ordering.
PCI Express Link Register Settings Extended Synch Clock Power Management Link Training Retry Link Training Timeout (uS) Disable Empty Links WARNING: Enabling ASPM may cause som PCI-E devices to fail!	(Disabled) (Disabled) (5) 1000 (Disabled) e	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2	.22.1282 Copyright (C) 2021 AM	T

 PCI Express GEN1 Device Register Settings Relaxed Ordering Enable or disable PCI Express Device Relaxed Ordering. Options available: Enabled/Disabled. Default setting is Enabled. Extend Tag	Parameter	Description
Options available: Auto/128 Bytes/ 256 Bytes. Default setting is Auto.		 PCI Express GEN1 Device Register Settings Relaxed Ordering Enable or disable PCI Express Device Relaxed Ordering. Options available: Enabled/Disabled. Default setting is Enabled. Extend Tag If enabled, allows device to use 8-bit Tag field as a requester. Options available: Enabled/Disabled. Default setting is Disabled. No Snoop Enable or disable PCI Express Device No Snoop option. Options available: Enabled/Disabled. Default setting is Disabled. No Snoop Enable or disable PCI Express Device No Snoop option. Options available: Enabled/Disabled. Default setting is Disabled. Maximum Payload Set Maximum Payload of PCI Express Device or allow System BIOS to select the value. Options available: Auto/128 Bytes/ 256 Bytes. Default setting is

Parameter	Description
	 PCI Express Device Link Register Settings Maximum Read Request Set Maximum Read Request of PCI Express Device or allow System BIOS to select the value. Options available: Auto/128 /256/512/1024/2048/4096 Bytes. Default setting is Auto.
	 Extended Synch If enabled, allows generation of Extended Synchronization patterns. Options available: Enabled/Disabled. Default setting is Disabled.
PCI Express GEN1 Setting	 Clock Power Management If support by hardware and set to 'Enabled', the device is permitted to use CLKREQ# signal for power management of link clock in accordance to protocol defined in appropriate form factor specification. Options available: Enabled/Disabled. Default setting is Disabled.
	 Link Training Retry Defines numbers of Retry Attempts software will take to retrain the link if previous training attempt was unsuccessful. Options available: Disabled/2/3/5. Default setting is Disabled.
	 Link Training Timeout (uS) Press '+' and '-' keys to set the values. Link Training Retry Defines numbers of Retry Attempts software will take to retrain the link if previous training attempt was unsuccessful.
	 Disable Empty Links In order to save software will disable unpopulated PCI Express Device links, if this option set to 'Disabled Link'. Options available: Enabled/Disabled. Default setting is Disabled.

5-2-6-2 PCI Express GEN 2 Settings

Advanced	Aptio Setup – AMI	
PCI Express GEN 2 Settings PCI Express GEN2 Device Register Completion Timeout ARI Forwarding AtomicOp Requester Enable AtomicOp Egress Blocking IDD Request Enable IDD Completion Enable LTR Mechanism Enable	Settings [Default] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled]	In device Functions that support Completion Timeout programmability, allows system software to modify the Completion Timeout value. 'Default' 50us to 50ms. If 'Shorter' is selected, software will use shorter timeout ranges supported by hardware. If
End-End TLP Prefix Blocking PCI Express GEN2 Link Register S Compliance SOS Hardware Autonomous Width Hardware Autonomous Speed	[Disabled]	*Longer' is selected, * *Longer' is selected, * *t: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Versi	on 2.22.1282 Copyright (C) (2021 AMI

Parameter	Description
	 PCI Express GEN2 Device Register Settings Completion Timeout In device Functions that support Completion Timeout programmability, allows system software to modify the Completion Timeout value. 'Default' 50us to 50ms. If 'Shorter' is selected, software will use shorter timeout ranges supported by hardware. If 'Longer' is selected, software will use longer timeout ranges. Options available: Default/Shorter/Longer/Disabled. Default setting is Default.
PCI Express GEN2 Setting	 ARI Forwarding If supported by hardware and set to 'Enabled', the Downstream Port disables its traditional Device Number field being 0 enforcement when turning a Type1 Configuration Request into a Type0 Configuration Request, permitting access to Extended Functions in an ARI Device immediately below the Port. Options available: Default/Shorter/Longer/Disabled. Default setting is Default.
	 AtomicOp Requester Enable If supported by hardware and set to 'Enabled', this function initiates AtomicOp Requests only if Bus Master Enable bit is in the Command Register Set. Options available: Enabled/Disabled. Default setting is Disabled. AtomicOp Egress Blocking
	 If supported by hardware and set to 'Enabled', outbound AtomicOp Requestsvia Egress Ports will be blocked. Options available: Enabled/Disabled. Default setting is Disabled.
	 IDO Request Enable If supported by hardware and set to 'Enabled', this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated Options available: Enabled/Disabled. Default setting is Disabled.

Parameter	Description
	PCI Express GEN2 Device Register Settings
PCI Express GEN2 Setting	 IDO Request Enable If supported by hardware and set to 'Enabled', this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated. Options available: Enabled/Disabled. Default setting is Disabled. IDO Completion Enable If supported by hardware and set to 'Enabled', this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated. IDO Completion Enable If supported by hardware and set to 'Enabled', this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated. Options available: Enabled/Disabled. Default setting is Disabled. LTR Mechanism Enable If supported by hardware and set to 'Enabled', this enables the Latency Tolerance Reporting (LTR) Mechanism. Options available: Enabled/Disabled. Default setting is Disabled. End-End TLP Prefix Blocking If supported by hardware and set to 'Enabled', this function will block forwarding of TLPs containing End-End TLP Prefixes. Options available: Enabled/Disabled. Default setting is Disabled.
FOI Express GEIVE Setting	Options available. Litableu/Disableu. Delault setting is Disableu.
	PCI Express GEN2 Device Link Settings
	Compliance SOS
	 If supported by hardware and set to 'Enabled', this will force LTSSM to send SKP Ordered Sets between sequences when sending Compliance Pattern or Modified Compliance Pattern.
	Options available: Enabled/Disabled. Default setting is Disabled .
	 Hardware Autonomous Width If supported by hardware and set to 'Disabled', this will disable the hardware's ability to change link width except width size reduction for the purpose of correcting unstable link operation.
	Options available: Enabled/Disabled. Default setting is Disabled .
	 Hardware Autonomous Speed If supported by hardware and set to 'Disabled', this will disable the hardware's ability to change link speed except speed rate reduction for the purpose of correcting unstable link operation
	Options available: Enabled/Disabled. Default setting is Disabled.

5-2-7 Info Report Configuration

Advanced	Aptio Setup – AMI	
Info Report Configuration		Post Report Support
Post Report		
Delay Time	[1]	
Error Message Report		
Info Error Message	[Enabled]	
		++: Select Screen 11: Select Item Enter: Select
		+/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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Parameter	Description
Info Report Configuration	
Post Report	
Post Report	Enable/Disable Post Report support.
	Options available: Enabled/Disabled. Default setting is Enabled.
Delay Time	Options available: 0/1/2/3/4/5/6/78/9/10/Util Press ESC.
	Default setting is 1.
Error Message Report	
Info Error Message	Enable/Disable Info Error Message support.
	Options available: Enabled/Disabled. Default setting is Enabled.

5-2-8 USB Configuration

Advanced	Aptio Setup — AMI	
USB Configuration		This is a workaround for OSes without XHCI hand-off
USB Module Version	24	support. The XHCI ownership change should be
USB Controllers: 1 XHCI		claimed by XHCI driver.
USB Devices: 2 Drives, 1 Keyboard, 1 Mouse	5 Hube	
XHCI Hand-off USB Mass Storage Driver Support	[Enabled] [Enabled]	
USB Mass storage briver support	[Eliabieu]	
USB hardware delays and time-outs:		++: Select Screen
Mass Storage Devices:		î↓: Select Item
		Enter: Select
		+/-: Change Opt. F1: General Help
		F3: Previous Values
		F9: Optimized Defaults F10: Save & Exit
		ESC: Exit
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Parameter	Description
USB Configuration	
USB Module Version	Displays USB module version information.
USB Controller	Displays the supported USB controllers.
USB Devices:	Displays the USB devices connected to the system.
XHCI Hand-off	Enable/Disable the XHCI (USB 3.0) Hand-off support.
	Options available: Enabled/Disabled. Default setting is Enabled.
USB Mass Storage Driver	Enable/Disable the USB Mass Storage Driver Support.
Support ^(Note)	Options available: Enabled/Disabled. Default setting is Enabled .

5-2-9 Network Stack Configuration

Advanced	Aptio Setup – AMI	
Network Stack PXE Retry IPv4 PXE Support IPv4 HTTP Support IPv6 FXE Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Enabled] [Disabled] [Disabled] [Disabled] 1 1	Enable/Disable UEFI Network Stack ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
L	/ersion 2.21.1280 Copyright (C)	9091 AMT

Parameter	Description
Network Stack	Enable/Disable the UEFI network stack.
Network Oldek	Options available: Enabled/Disabled. Default setting is Enabled .
Ipv4 PXE Support	Enable/Disable the Ipv4 PXE feature.
Ipv4 PXE Support	Options available: Enabled/Disabled. Default setting is Enabled .
Ipv4 HTTP Support	Enable/Disable the Ipv4 HTTP feature.
	Options available: Enabled/Disabled. Default setting is Disabled .
Ipv6 PXE Support	Enable/Disable the Ipv6 PXE feature.
	Options available: Enabled/Disabled. Default setting is Disabled .
Ipv6 HTTP Support	Enable/Disable the Ipv6 HTTP feature.
	Options available: Enabled/Disabled. Default setting is Disabled .
IPSEC Certificate	Enable/Disable the IPSEC Certificate feature.
Media detect count	Press the <+> / <-> keys to increase or decrease the desired values.

5-2-10 IP Configuration



Parameter	Description
IP Configuration Settings	
Provide the Options to Configure the IP Address	
Auto Configuration	Options available: Disabled/Every Boot/On Demand. Default setting is Disabled .

5-2-11 NVMe Configuration

WVMe controller and Drive infor	mation	4
[NVME_00]	Empty	
√vme Size / Serial Number	Empty	
[NVME_01]	Empty	
Vvme Size / Serial Number	Empty	
[NVME_02]	Empty	
Nvme Size / Serial Number	Empty	
[NVME_03]	Empty	
Nvme Size / Serial Number	Empty	
		↔+: Select Screen 1↓: Select Item
		Enter: Select
		+/-: Change Opt. F1: General Help
		F3: Previous Values
		F9: Optimized Defaults
		F10: Save & Exit ESC: Exit

Parameter	Description	
NVMe controller and Drive	Dianlove the NV/Me devices connected to the overtem	
Information	Displays the NVMe devices connected to the system.	

5-2-12 Graphic Output Configuration

Advanced	Aptio Setup — AMI	
Graphic Output Configuration		Select Output Device Type
Output Device Type OS graphics output	[Onboard Device] [Controlled by OS]	
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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Parameter	Description
UEFI Configuration	
Output Device Type	Select output device. Options available: First loaded Device,Onboard Device,External Device, Specific Device. Default setting is Onboard Device .
OS graphics output	Options available: Controlled by OS/Onboard VGA. Default setting is Onboard VGA .

5-2-13 Power Restore Configuration

Advanced	Aptio Setup – AMI	
Power Restore Power restore nee (about 1.5 minute	(Power Off) ds to wait for BMC to be ready s)	Specify what state when power is re-applied after a power failure (G3 state).
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
	Version 2.22.1282 Copyright (C)) 2021 AMI
arameter	Description	
	Specify what state when power	is re-applied after a power failure
ower Restore	(G3 state).	
Jwer Restore	Options available: Last State/P	ower On/Power Off

Default setting is Last State.

5-2-14 Intel(R) I350 Gigabit Network Connection

Advanced	Aptio Setup – AMI	
 NIC Configuration Blink LEDs 	0	Click to configure the network device port.
UEFI Driver Adapter PBA Device Name Chip Type PCI Device ID PCI Address Link Status MAC Address Virtual MAC Address	Intel(R) PR0/1000 Open Source 9,2.06 PCI-E 106300-000 Intel(R) I350 Gigabit Network Connection Intel 1350 1521 02:00:00 [Disconnected] 18:C0:4D:0F:F6:CC 00:00:00:00:00	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Ve	rsion 2.21.1280 Copyright (C) 202:	1 AMI
Advanced	Aptio Setup – AMI	
Link Speed Wake On LAN	[Auto Negotiated] [Enabled]	Specifies the port speed used for the selected boot protocol.

Vancian 9 91 1990 Conunidat (C) 9091 ANT

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help

F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

Parameter	Description
NIC Configuration	 Press [Enter] to configure advanced items. Link Speed Allows for automatic link speed adjustment. Options available: Auto Negotiated/10 Mbps Half/10 Mbps Full/100 Mbps Half/100 Mbps Full. Default setting is Auto Negotiated. Wake On LAN Enables power on of the system via LAN. Note that configuring Wake on LAN in the operating system does not change the value of this setting, but does override the behavior of Wake on LAN in OS controlled power states. Options available: Enabled/Disabled. Default setting is Enabled.
Blink LEDs	Identifies the physical network port by blinking the associated LED. Press the numeric keys to adjust desired values.
UEFI Driver	Displays the technical specifications for the Network Interface Controller.
Adapter PBA	Displays the technical specifications for the Network Interface Controller.
Device Name	Displays the technical specifications for the Network Interface Controller.
Chip Type	Displays the technical specifications for the Network Interface Controller.
PCI Device ID	Displays the technical specifications for the Network Interface Controller.
PCI Address	Displays the technical specifications for the Network Interface Controller.
Link Status	Displays the technical specifications for the Network Interface Controller.
MAC Address	Displays the technical specifications for the Network Interface Controller.
Virtual MAC Address	Displays the technical specifications for the Network Interface Controller.

5-2-15 MAC IPv4 Network Configuration

Configured Save Changes and Exit	(Disabled)	Indicate whether network address configured successfully or not.
		<pre>**: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>

Parameter	Description
Configured ^(Note)	Options available: Enabled/Disabled. Default setting is Disabled.
Enable DHCP	Options available: Enabled/Disabled. Default setting is Enabled.
Local IP Address	Press [Enter] to configure local IP address.
Local NetMask	Press [Enter] to configure local NetMask.
Local Gateway	Press [Enter] to configure local Gateway
Local DNS Servers	Press [Enter] to configure local DNS servers
Save Changes and Exit	Press [Enter] save all configurations.

5-2-16 MAC IPv6 Network Configuration

Advanced	Aptio Setup – AMI	
Interface Name :	eth2	The 64 bit alternative
Interface Type :	Ethernet	interface ID for the
MAC address :	18-C0-4D-0F-F6-CC	device. The string is
Host addresses :		colon separated. e.g.
	FE80::1AC0:4DFF:FE0F:F6CC/64	ff:dd:88:66:cc:1:2:3
Route Table :		Caller - 20 Call - Statement - Samera - Statement - Samera - Samera - Samera - Samera - Samera - Samera - Samer
	FE80::/64 >>::	
Gateway addresses :		
DNS addresses :		
DAD Transmit Count	1	
Policy	[automatic]	
Save Changes and Exit		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>

Parameter	Description
Enter Configuration Menu	Press [Enter] for configuration of advanced items.

5-3 Chipset Setup Menu

Chipset Setup menu displays submenu options for configuring the function of the North Bridge. Select a submenu item, then press [Enter] to access the related submenu screen.

Aptio Setup – AMI Main Advanced <mark>Chipset</mark> Server Mgmt Security Boot Save & Exit	
All Hovaries origonation • OPU Configuration • Memory Slot Information • RAS Configuration • FCIE Root Complex Configuration	CPU Configuration ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F3: Optimized Defaults F10: Save & Exit ESC: Exit

Parameter	Description
CPU Configuration	Press [Enter] for configuration of advanced items.
Memory Slot Configuration	Press [Enter] for configuration of advanced items.
RAS Configuration	Press [Enter] for configuration of advanced items.
PCIE Root Complex Configuration	Press [Enter] for configuration of advanced items.

5-3-1 CPU Configuration

Chipset	Aptio Setup – AMI	
CPU Configuration Number of processors enabled Enable number of cores ARM ERRATA 1542419 workaround ANC mode Near atomic	1 80 [Oefault] [Disable I-Cache coherency] [Monolithic] [Enabled]	Enable number of cores for the system.
SLC Replacement Policy L1C I/D L2C	(Enhanced Least Recently Used) Socket 0 64 KB 1 MB	++: Select Screen
SLC Warranty	32 MB 1	14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F3: Optimized Defaults F10: Save & Exit ESC: Exit

Parameter	Description
CPU Configuration	
Numbers of processor enabled	Displays the number of installed processor information.
Enable number of cores	Option: Default/2/4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/3680. Default Setting is Default .
ARM ERRATA 1542419	Option available: Disable I-Cache coherency/Software solution/Disable.
workaround	Default Setting is Disable I-Cache coherency.
ANC mode	Option available: Monolithic/Hemisphere/Quadrant.
ANG MODE	Default Setting is Monolithic.
	Enable/disable cacheable atomic instruction executed near in CPU.
Near atomic	Option available: Enabled/Disabled.
	Default Setting is Enabled.
	Option available: Enhanced Least Recently Used/Linear-Feedback Shift
SLC Replacement Policy	Register.
	Default Setting is Enhanced Least Recently Used.
L1C I/D	
L2C	Displays the technical appointient for the installed processor
SLC	Displays the technical specifications for the installed processor.
Warranty	

5-3-2 Memory Slot Information

Chipset	Aptio Setup – AMI	
Wemory Configuration Total Memory Effective Memory Memory Speed Memory Operating Speed Selection Fine Granularity Refresh (FGR) Memory RAS and Performance Configuration DIMM Information DIMM Information DIMM Information DIMM_SO_A0: 32 GB RDIMM Installed DIMM_SO_B0: Not Installed DIMM_SO_D0: Not Installed DIMM_SO_C0: Not Installed DIMM_SO_C0: Not Installed DIMM_SO_D0: Not Installed DIMM_SO_D1: Not Installed DIMM_SO_D1: Not Installed DIMM_SO_F0: Not Installed DIMM_SO_F1: Not Installed DIMM_SO_60: Not Installed DIMM_SO_60: Not Installed DIMM_SO_60: Not Installed DIMM_SO_60: Not Installed DIMM_SO_61: Not Installed	[1x]	Force specific Memory Operating Speed or use Auto setting.

Parameter	Description
Memory Configuration	
Total Memory	
Effective Memory	Displays the technical specifications for the installed DIMM.
Memory Speed	
Memory Operating Speed	Option available: Auto/2133/2400/2666/2933/3200.
Selection	Default setting: Auto.
Fine Granularity Refresh	Select DDR Fine Granularity Refresh (FGR) mode.
(FGR)	Option available: 1x/2x/4x. Default setting is 1x.
Memory RAS and	Press [Enter] for advanced configuration.
Performance Configuration	
NVDIMM -N Configuration	Press [Enter] for advanced configuration.
DIMM Information	Display installed DIMM information.

5-3-2-1 Memory RAS and Performance Configuration

Chipset	Aptio Setup – AMI	
Memory RAS and Performance Configurat ECC mode Defer uncorrectable read errors Fault handling interrupt Scrub Patrol duration (hour) Demand scrub	ion (SECDED) (Enabled) (Enabled) (24) (Disabled) (Disabled) (Disabled)	<pre>ECC mode: Disabled, SECDED or Symbol ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F3: Optimized Defaults</pre>
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Parameter	Description
Memory RAS and	
Performance Configuration	
ECC Mode	Option available: Disabled/SECDED/Symbol
LCC MODE	Default setting: SECDED.
Defer uncorrectable read	Option available: Enabled/Disabled.
errors	Default setting: Disabled.
Fault handling interrupt	Option available: Enabled/Disabled.
r ault nanuling interrupt	Default setting: Enabled.
Scrub Patrol duration (hour)	Option available: 124.
	Default setting: 24.
Demand scrub	Option available: Enabled/Disabled.
Demand Scrub	Default setting: Enabled.
Write CRC	Option available: Enabled/Disabled.
WING OILO	Default setting: Disabled.
CVE=2020-10255 mitigation	Option available: Enabled/Disabled.
0 v L-2020-10200 miligation	Default setting: Disabled.

5-3-2-2 NVDIMM-N Configuration

Chipset	Aptio Setup – AMI	
NVDIMM-N Configuration SocketO Configured Mode Mode Selection	Non-NVDIMM [Auto]	Select NVDIMM-N Mode (Non-NVDIMM/Non-Hashed/Hash ed/Auto) +*: Select Screen 11: Select Item Enter: Select Item
	10n 2.21.1280 Copyright (C)	+/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

Parameter	Description
NVDIMM-N Configuration	
Socket0 Configuration	
	Select NVDIMM-N Mode.
Mode Selection	Option available: Non-NVDIMM/Non-Hashed/Hashed/Auto.
	Default setting: Auto.

5-3-3 RAS Configuration

Chipset	Aptio Setup – AMI	
RAS Configuration Handware ElNJ DRAM EINJ No Trigger POIE AER Firmware First Processor OS-first DDR CE Threshold Processor CE Threshold DDR Link Error Threshold	[Disabled] [Disabled] [Disabled] [Disabled] 1 1 2	Enable hardware EINJ support, if disabled EINJ is software simulated
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. fl: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>

Parameter	Description
RAS Configuration	
Hardware EINJ	Option available: Enabled/Disabled.
	Default setting: Disabled.
PCIe AER Firmware First	Option available: Enabled/Disabled.
FOIE AER FIITIWAIE FIISL	Default setting: Disabled.
DDR CE Threshold	Press '+" or "-" to configure the threshold.
Processor CE Threshold	Press '+" or "-" to configure the threshold.
DDR Kink Error Threshold	Press '+" or "-" to configure the threshold.

5-3-4 PCIE Root Complex Configuration

PCIE Root Complex Configuration		Configure PCIe Lanes
PCIe Lanes Bifurcation Mode	[Default]	Bifurcation Mode
SMMU Pmu	[Disabled]	Default: Adjust according
On-board VGA	[Enabled]	to system settings. Manual: Adjust according
Root Complex # 0 (x16: OCP)		to user settings.
Root Complex # 1 (x16: PCIE_7 or U	12)	
Root Complex # 2 (x16: PCIE_6)		
Root Complex # 3 (x16: PCIE_4)		
Root Complex # 4 (1st x8: PCIE_3,		
Root Complex # 5 (1st x8: PCIE_2,		
Root Complex # 6 (1st x8: VGA/USB)		
Root Complex # 7 (1st x8: PCIE_1,	2nd x8: M2_1 and M2_2)	
		→+: Select Screen
		î↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help F3: Previous Values
		F9: Optimized Defaults
		F10: Save & Exit
		FSC: Exit
		LOU. LAIT

Parameter	Description
PCIE Root Complex	
Configuration	
PCIe Lanes Bifurcation	Option available: Manual/Default.
FCIE Lanes Diluication	Default setting: Default.
	Enable/Disable PMU feature for SMMU.
SMMU Pmu	Option available: Enabled/Disabled.
	Default setting: Disabled.
	Enable/Disable on-board VGA.
On-board VGA	Option available: Enabled/Disabled.
	Default setting: Enabled.
Root Complex_#(Note)	Press [Enter] to view advanced items.

(Note) Advance items can be configurable when PCIe Lanes Bifurcation is set to Manual.

5-4 Server Management Menu

Main Advanced Chipset Ser	Aptio Setup – AMI ver Mgmt Security Boot Sa	ave & Exit
BMC Self Test Status BMC Device ID BMC Device Revision BMC Finumare Revision IPMI Version BMC Interface(s) BMC Support > System Event Log	PASSED 32 1 12.48.02 2.0 SSIF [Enabled]	Enable/Disable interfaces to communicate with BMC
 Bmc self test log View FRU information BMC network configuration 		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

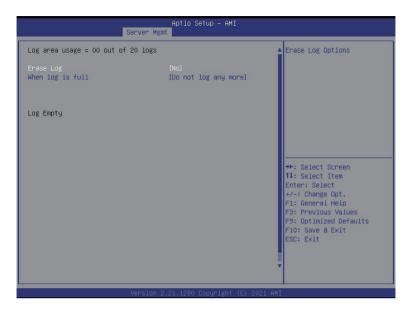
Parameter	Description
PMC Support	Enable/Disable interfaces to communicate with BMC.
BMC Support	Options available: Enabled/Disabled. Default setting is Enabled.
System Event Log	Press [Enter] to configure advanced items.
BMC self test	Press [Enter] to configure advanced items.
View FRU	Press [Enter] to view the advanced items.
Information	
BMC network	Press [Enter] to configure advanced items.
configuration	

5-4-1 System Event Log

Enabling/Disabling Options		Change this to enable or
SEL Components		disable event logging for
Erasing Settings		error/progress codes during boot.
Erasing Settings	[No]	during boot.
When SEL is Full	[No] [Do Nothing]	
WHEN SEL IS FUIL	(DO NOTHING)	
Custom EFI Logging Options		
Log EFI Status Codes	[Error code]	
NUIE: AII Values changed here d effect until computer is		++: Select Screen
		++: Select Screen
NOTE: All values changed here d effect until computer is		î↓: Select Item
		†↓: Select Item Enter: Select
		t↓: Select Item Enter: Select +/-: Change Opt.
		†↓: Select Item Enter: Select
		11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values
		t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help
		<pre>\$1: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults</pre>
		<pre>14: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit</pre>

Parameter	Description
Enabling / Disabling Options	
	Change this item to enable or disable all features of System Event
SEL Components	Logging during boot.
	Options available: Enabled/Disabled. Default setting is Enabled.
Erasing Settings	
	Choose options for erasing SEL.
Erasing SEL	Options available: No/Yes, On next reset/Yes, On every reset. Default
	setting is No .
	Choose options for reactions to a full SEL.
When SEL is Full	Options available: Do Nothing/Erase Immediately/Delete Oldest Record.
	Default setting is Do Nothing .
Custom EFI Logging Options	
	Enable/Disable the logging of EFI Status Codes (if not already converted
Log EFI Status Codes	to legacy).
LUY LI I Olalus Coues	Options available: Disabled/Both/Error code/Progress code. Default
	setting is Error code.

5-4-2 BMC self test



Parameter	Description
log area usage =00 out of 20	
logs	
Francia	Options available: No/Yes, On next reset/Yes, On every reset.
Erase Log	Default setting is No .
	Configuration for reactions to a full log.
When Log is full	Option available: Do not log any more/Clear Log.
	Default setting is Do not log any more .

5-4-3 View FRU Information

The FRU page is a simple display page for basic system ID information, as well as System product information. Items on this window are non-configurable.

	Aptio Setup – AMI	
	Server Mgmt	
FRU Information		
System Manufacturer System Product Name System Serial Number Board Manufacturer Board Product Name Board Version Board Serial Number Chassis Version Chassis Serial Number NOTE:NO FRU information f information needs to be f		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
	Version 2.22.1282 Copyright (C) 2021	AMI

5-4-4 BMC Network Configuration

BMC network configuration		Select to configure LAN channel parameters
Lan channel 1		statically or
		dynamically(by BIOS or
Station IP address	10.1.6.233	BMC). Unspecified option
Subnet mask	255.255.255.0	will not modify any BMC
Router IP address	10.1.6.253	network parameters during
Station MAC address	18-C0-4D-0F-F6-CE	BIOS phase
Real-time get BMC network address wokenkekkekkekkekkekkekkekkekkekkekkekkekk	S	++: Select Screen
		1↓: Select Item
Lan channel 1		Enter: Select
		+/-: Change Opt.
IPv6 Support	[Disabled]	F1: General Help
IPv6 Support is Disabled		F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

Parameter	Description
BMC network configuration	
Lan Channel 1	
Configuration Address source	Select to configure LAN channel parameters statically or dynamically (DHCP). Do nothing option will not modify any BMC network parameters during BIOS phase. Options available: Unspecified/Static/DynamicBmcDhcp. Default setting is DynamicBmcDhcp .
Station IP address	Displays IP Address information.
Subnet mask	Displays Subnet Mask information. Please note that the IP address must be in three digitals, for example, 192.168.000.001.
Router IP address	Displays the Router IP Address information.
Station MAC address	Displays the MAC Address information.
Real-time get BMC network address	Press [Enter] to synchronize the BMC network address
IPV6 Support ^(Note)	Option available: Enabled/Disabled. Default Setting is Disabled .

(Note) Advance items can be configurable when IPV6 Support is set to Enabled.

5-5 Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.

Main Advanced Chipset	Aptio Setup – AM Server Mgmt <mark>Security</mark> Boot	
Password Description		Set Administrator Password
If ONLY the Administrator then this only limits acc only asked for when enter. If ONLY the User's password boot or enter Setup. In St have Administrator rights The password length must k in the following range:	ess to Setup and is ong Setup. d is set, then this i must be entered to stup the User will me	
Minimum length Maximum length	3 20	
Administrator Password User Password		↔: Select Screen 11: Select Item Enter: Select +/-: Change Oct.
▶ Secure Boot		F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

There are two types of passwords that you can set:

- Administrator Password
 - Entering this password will allow the user to access and change all settings in the Setup Utility.
- User Password

Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

Parameter	Description
Administrator Password	Press [Enter] to configure the administrator password.
User Password	Press [Enter] to configure the user password.
Secure Boot	Press [Enter] to configure advanced items.

5-5-1 Secure Boot

System Mode	User	Secure Boot feature is Active if Secure Boot is
		Enabled,
	Not Active	Platform Key(PK) is enrolled and the System is
Secure Boot Mode	[Custom]	in User mode.
Restore Factory Keys		The mode change requires
Reset To Setup Mode		platform reset
Key Management		
		↔+: Select Screen
		†↓: Select Item
		Enter: Select
		+/-: Change Opt. F1: General Help
		F3: Previous Values
		F9: Optimized Defaults
		F10: Save & Exit
		ESC: Exit

Parameter	Description
System Mode	Displays the system is in User mode or Setup mode.
Secure Boot Mode ^(Note)	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates. This way, the system knows all the files being loaded before Windows loads and gets to the login screen have not been tampered with. When set to Standard, it will automatically load the Secure Boot keys form the BIOS databases. When set to Custom, you can customize the Secure Boot settings and manually load its keys from the BIOS database. Options available: Standard/Custom. Default setting is Custom.

Parameter	Description
	Press [Enter] to configure advanced items.
	Please note that this item is configurable when Secure Boot Mode is set
	to Custom.
	Provision Factory Defaults
	 Allows to provision factory default Secure Boot keys when system is in Setup Mode.
	 Options available: Enabled/Disabled. Default setting is Disabled.
	 Install Factory Default Keys Installs all factory default keys. It will force the system in User Mode. Options available: Yes/No.
	Enroll Efi Image
	 Press [Enter] to enroll SHA256 hash of the binary into Authorized Signature Database (db).
	Save all Secure Boot variables
	 Press [Enter] to save all Secure Boot Keys and Key variables.
	Secure Boot variable
	 Displays the current status of the variables used for secure boot. Platform Key (PK)
	 Displays the current status of the Platform Key (PK).
	 Press [Enter] to configure a new PK.
	 Options available: Set New.
	Key Exchange Keys (KEK)
Key Management	 Displays the current status of the Key Exchange Key Database (KEK). Press [Enter] to configure a new KEK or load additional KEK from
	storage devices.
	 Options available: Set New/Append. Authorized Signatures (DB)
	Authorized Signatures (DB) Displays the surgest status of the Authorized Signature Database
	 Displays the current status of the Authorized Signature Database. Press [Enter] to configure a new DB or load additional DB from storage devices
	devices.
	 Options available: Set New/Append. Forbidden Signatures (DBX)
	 Displays the current status of the Forbidden Signature Database.
	- Press [Enter] to configure a new dbx or load additional dbx from
	storage devices.
	 Options available: Set New/Append. Authorized Time Stamps (DBT)
	Authorized TimeStamps (DBT) Displaye the surrant status of the Authorized TimeStamps Database
	 Displays the current status of the Authorized TimeStamps Database. Press [Enter] to configure a new DBT or load additional DBT from
	storage devices.
	 Options available: Set New/Append.

5-6 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the legacy drive(s) specified is not bootable.

Boot Configuration Setup Promot Timeout Bootup NumLock State Quiet Boot	5 [On] [Enabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Dump full Setup Data Dump non-default Setup Data Restore Setup Data		
New UEFI OS Boot Option Policy	[Place First]	
FIXED BOOT ORDER Priorities Boot Option #1 Boot Option #2	(Hard Disk) [Network:UEFI: PXE IPv4 QLogic Network 00:06:15:F0:02:46]	++: Select Screen 14: Select Item Enter: Select
Boot Option #3 Boot Option #4 Boot Option #5	(D2/VD) [USB Device] [UEFI AP:UEFI: Built-in EFI Shell]	+/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit
 UEFI NETWORK Drive BBS Priorities UEFI Application Boot Priorities 		ESC: Exit

Parameter	Description
Boot Configuration	
Cotus Dromat Timoout	Number of seconds to wait for setup activation key. 65535 (0xFFFF)
Setup Prompt Timeout	means indefinite waiting. Press the numeric keys to input the desired values.
Bootup NumLock State	Enable/Disable the Bootup NumLock function.
	Options available: On/Off. Default setting is On .
Quiet Boot	Enable/Disable showing the logo during POST.
	Options available: Enabled/Disabled. Default setting is Enabled.
Boot mode select	Selects the boot mode.
	Options available: LEGACY/UEFI. Default setting is UEFI.

Parameter	Description
Dump full Setup Data	
Dump non-default Setup Data	
Restore Setup Date	
New UEFI OS Boot Option Policy	Option available: Default/Place First/Place Last. Default setting is Place First /.
FIXED BOOT ORDER Priorities	
Boot Option #1 / #2 / #3 / #4 / #5	Press [Enter] to configure the boot priority. By default, the server searches for boot devices in the following sequence: 1. Hard drive. 2. CD-COM/DVD drive. 3. USB device. 4. Network. 5. UEFI.
UEFI Network Drive BBS Priorities	Press [Enter] to configure the boot priority.
UEFI Application Boot Priorities	Press [Enter] to configure the boot priority.

5-7 Save & Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.

Aptio Setup — AMI Main Advanced Chipset Server Mgmt Security Boot <mark>Save & Exit</mark>	
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes Save Changes Discard Changes	Exit system setup after saving the changes.
Boot Override UEFI: PXE IPV4 QLogic Network 00:0E:1E:F0:02:4C UEFI: PXE IPV4 QLogic Network 00:0E:1E:F0:02:4D UEFI: PXE IPV4 Intel(R) Network 18:C0:4D:0F:F6:CC UEFI: PXE IPV4 Intel(R) Network 18:C0:4D:0F:F6:CD UEFI: Built-in EFI Shell	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>

Parameter	Description
Save Options	
Save Changes and Exit	Saves changes made and closes the BIOS setup.
	Options available: Yes/No.
Discard Changes and Exit	Discards changes made and exits the BIOS setup.
Distard Onanges and Exit	Options available: Yes/No.
Save Changes	Save changes done so far to any of the setup options.
Save Changes	Options available: Yes/No.
Default Options	
Restore Defaults	Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly. Options available: Yes/No.
Boot Override	Press [Enter] to configure the device as the boot-up drive.

5-8 BIOS POST Beep code (AMI standard)

5-8-1 PEI Beep Codes

# of Beeps	Description
1	Memory not Installed.
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called
	twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

5-8-2 DXE Beep Codes

# of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met