HPS-SIEU4A/
HPS-SIEUTA

Single 4th Generation AMD EPYC 8004 Processor, 1300W, 5x RJ-45, IPMI2.0 Workstation

Quick Reference Guide

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Part No. E20174AS0A0R

Document Amendment History

Revision	Date	By	Comment
1st	December 2024	Avalue	Initial Release

Declaration of Conformity

This device complies with part 15 fcc rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the fcc rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE statement

The product(s) described in this manual complies with all application European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

Copyright Notice

Acknowledgements

Intel and Pentium are trademarks of Intel Corporation.

Microsoft Windows is registered trademark of Microsoft Corp.

All other product names or trademarks are properties of their respective owners.

Disclaimer

This manual is intended to be used as a practical and informative guide only and is subject to change without notice. It does not represent a commitment on the part of Avalue. This

product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

A Message to the Customer

Avalue Customer Services

Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support and Assistance

1. Visit the Avalue website at https://www.avalue.com/ where you can find the latest information about the product.
2. Contact your distributor or our technical support team or sales representative for technical support if you need additional assistance. Please have following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

To receive the latest version of the user's manual; please visit our Web site at:
www.avalue.com

Product Warranty (Returns & Warranties policy)

1. Purpose

Avalue establishes the following maintenance specifications and operation procedures for providing the best quality of service and shortened repair time to our customers.

2. Warranty

2.1 Warranty Period

Avalue endeavors to offer customers the most comprehensive post-sales services and protection; besides offering a 2-year warranty for standard Avalue products, an extended warranty service can also be provided based on additional request from the customer. Within the warranty period, customers are entitled to receive comprehensive and prompt repair and warranty.

Standard products manufactured by Avalue are offered a 2-year warranty, from the date of delivery from Avalue. For ODM/OEM products manufactured by Avalue or PCBA with conformal coating, will follow up the define warranty of the agreement, otherwise will be offered 1-year warranty for ODM/OEM products but non-warranty for PCBA with conformal coating. For outsourcing parts kit by Avalue (ex: Motherboard, LCD touch panel, CPU, RAM, HDD) are offered a 6-month warranty, and Mobile/Tablet PC battery are offered a warranty of the half year, from the date of delivery by Avalue. Products before the mass production stage, i.e. engineering samples are not applied in this warranty or service policy. For extended warranty and cross-territory services, product defects resulting from design, production process or material are covered by the pre-set warranty period after the date of delivery from Avalue. For non-Avalue products, the product warranty and repair time shall be based on the service standards provided by the original manufacturer; in principle Avalue will provide these products a warranty service for no more than one year.

2.2 Maintenance services within the warranty period

In the case of Avalue product DOA (Defect-on-Arrival) when the customer finds any defect within 1 month after the delivery, Avalue will replace it with a new product in a soonest way. Except for custom products, once the customer is approved of a Cross-Shipment Agreement, which allows for delivery a new product to the customer before receiving the defective one, Avalue will immediately proceed with new product replacement for the said DOA case. On validation of the confirmed defect, Avalue is entitled to reserve the right whether to provide a new product for replacement. For the returned defective new product, it is necessary to verify that there shall be no bruise, alteration, scratch or marking to the appearance, and that none of the delivered accessories missing; otherwise, the customer will be requested to pay a processing fee. On the other hand, if the new product defect is resulting from incorrect configuration or erroneous use by the user instead of any problem of the hardware itself, the customer will also be requested to pay for relevant handling fees.

As for other conditions, Avalue will handle defects by way of repair. The customer will be requested to send the defective product to an Avalue authorized service center, and Avalue will return the repaired product back to the customer as soon as possible.

2.3 Ruling of an out-of-warranty defect

The following situations are not included in the warranty:

- The warranty period has expired.
- Product has been altered or its label of the serial number has been torn off.
- Product functionality issues resulting from improper use by the user, unauthorized dismantle or alteration, unfit operation environment, improper maintenance, accident or other causes. Avalue reserves the right for the ruling of the aforementioned situations.
- Product damage resulting from lightning, flood, earthquake or other calamities.
- The warranty rules of non-Avalue products and accessories shall be in accordance with standards set up by the original manufacturer. These products and accessories include RAM, HDD, FDD, CD-ROM, CPU, FAN, etc.
- Product upgrade request or test request submitted by the customer after expiration of the warranty.
- PCBA with conformal coating.
- Avalue semi-product and outsourced products without Avalue serial number.
- Products before the mass production stage, i.e. engineering samples.

3. Procedure for sending for repair

3.1 Attain a RMA number

A customer’s rejected product returned for repair shall have a RMA (Return Merchandise Authorization) number. Without a RMA number, Avalue will not provide any repair service for the rejected product, and the product will be returned to the customer at customer’s cost. Avalue will not issue any notice for the return of the product.

Each returned product for repair shall have a RMA number, which is simply the authorization of the return for repair; it is not a guarantee that the returned goods can be repaired or replaced. For applying for a RMA number, the customer may enter the eRMA webpage of Avalue https://www.avalue.com/en/member and log-in with an account number and a password authorized by Avalue. The system will then automatically issue a RMA number.

When applying for the RMA number, it is essential to fill in basic information of the customer and the product, together with detailed description of the problem encountered. If possible, avoid using ambiguous words such as “does not work” or “problematic”. Without a substantial description of the problem, it is hard to start the repair and will cause prolonged repair time. Lacking detailed statement of fault steps also makes the problem hard to be identified, sometimes resulting in second-time repairs.

In case the customer can't define the cause of problem, please contact Avalue application engineers. Sometimes when the problem can be resolved even before the customer sends back the product.
On the other hand, if the customer only returns the key parts to Avalue for repair, it is necessary that the serial number of the entire unit is given in the "Problem Description" field, so that warranty period can be ruled accordingly; or Avalue will handle the case as an Out-of- warranty case.

3.2 Return of faulty product for repair

It is recommended that the customer not to return the accessories (manual, connection cables, etc.) with the products for repair, devices such as CPU, DRAM, CF memory card, etc., shall also be removed from the faulty goods before return for repair. If these devices are relevant to described repair problems and necessary to be returned with the goods; please clearly indicate the items included in the eRMA application form. Avalue shall not be responsible for any item that is not itemized. Moreover, make sure the problem(s) are detailed in the "Problem Description" field.
In the list of delivery, the customer may fill-in a value which is lower than the actual value, to prevent customs levying a higher tax over the excessive value of the return goods. The customer shall be held responsible for extra fees caused by this. We strongly recommend that "Invoice for customs purpose only with no commercial value" be indicated on the delivery note. Also for the purpose of expedited handling, please printout the RMA number and put it in the carton, also indicate the number outside of the carton, with the recipient addressing to Avalue RMA Department.
When returning the defective product, please use an anti-static bag or ESD material to pack it properly. In case of improper packing resulting in damages in the transportation process, Avalue reserves the right to reject the un-repaired faulty good at the customer's costs. Furthermore, it is suggested that the faulty goods shall be sent via a door-to-door courier service. The customer shall be held responsible for any customs clearance fee or extra expenses if Air-Cargo is used for the delivery.
In case of a DOA situation of a new product, Avalue will be responsible for the product and the freight. If the faulty goods are within the warranty period, the sender will take responsibility for the freight. For an out-of-warranty case, the customer shall be responsible for the freight of both trips.

3.3 Maintenance Charge

Avalue will charge a moderate repair fee for the following conditions:

- The warranty period has expired.
- Product has been altered or its label of the serial number has been torn off.
- Product functionality issues resulting from improper use by the user, unauthorized dismantle or alteration, unfit operation environment, improper maintenance, accident

or other causes. Avalue reserves the right for the ruling of the aforementioned situations.

- Product damage resulting from lightning, flood, earthquake or other calamities.
- The warranty rules for non-Avalue products and accessories shall be in accordance with standards set up by the original supplier. These products and accessories include RAM, HDD, FDD, CD-ROM, CPU, FAN, etc.
- Product upgrade request or test request submitted by the customer after expiry of the warranty.
- PCBA with conformal coating.
- Avalue semi-product and outsourced products without Avalue serial number
- Products before the mass production stage, i.e. engineering samples.
- In case the products received are examined as NPF (No Problem Found) within the warranty period, the customer shall be responsible for the freight of both trips.
- Please contact your local distributor to examine in advance to prevent unnecessary freight cost.

For system failure of out-of-warranty products, Avalue will provide a quotation prior to repair service. When the customer applies for the cost, please refer to the Quotation number. In case the customer does not return the DOA product that has already been replaced by a new one, or the customer does not sign back the quotation of the out-of-warranty maintenance, Avalue reserves the right of whether or not to provide the repair service. In case the customer does not reply in 3 months, Avalue shall directly scrap or return the product back to customer at customer's cost without further notice to the customer.

3.4 Maintenance service of phased-out products

For servicing phased-out products, Avalue provides an extended period, starting the date of phase-out, as a guaranteed maintenance period of such products, for continuance of the maintenance service to meet customer's requirements. In case of unexpected factors causing Avalue to be unable to repair/replace a warranted but phased-out product, Avalue will, depending on the availability, upgrade the product (free of charge with continued warranty period as of the original product), or, give partial refund (based on the length of the remaining warranty period) to solve this kind of problem.

3.5 Maintenance Report

On completion of repair of a defective product, a Maintenance Report indicating the maintenance result and part(s) replaced (if any) will be sent to the customer together with the product. If the customer demands an additional maintenance analysis report, a service fee of various level will be charged depending on the warranty status. In case the analysis result shows that the defect attributes to Avalue's faulty design or process, the analysis fee will be exempted.

4. Service Products

Avalue provides service products to manage with different customer needs. Should you have any need, please consult to Avalue Sales Department.

Defect Analysis Report (DAR)

Avalue provides DAR (Defect Analysis Report) services aiming to elevating customer satisfaction. A DAR includes defect cause identification/verification/suggestion and improvement precautions, with instructions on correct usage for the avoidance of any reoccurrence.

Upgrade Service

Avalue is capable to provide system upgrade service for customization requirements. This upgrade service is applicable for main parts, such as CPU, memory, HDD, SSD, storage devices; also replacements motherboards of systems. Please contact Avalue sales for details to evaluate the possibility of system upgrade service and obtain information of lead time and price.

Safety Instructions

Safety Precautions

Before installing and using this device, please note the following precautions.

1. Read these safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Disconnected this equipment from any AC outlet before cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
8. Use a power cord that has been approved for using with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to

avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel. If one of the following situations arises, get the equipment checked by service personnel:

- The power cord or plug is damaged.
- Liquid has penetrated into the equipment.
- The equipment has been exposed to moisture.
- The equipment does not work well, or you cannot get it work according to the user's manual.
- The equipment has been dropped and damaged.
- The equipment has obvious signs of breakage.

14. CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

15. Equipment intended only for use in a RESTRICTED ACCESS AREA.

Explanation of Graphical Symbols

	Warning	A WARNING statement provides important information about a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Caution	A CAUTION statement provides important information about a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or in damage to the equipment or other property.
	Note	A NOTE provides additional information intended to avoid inconveniences during operation.
		Direct current.
		Alternating current
		Stand-by, Power on
		FCC Certification
		CE Certification
		Follow the national requirements for disposal of equipment.
		Stacking layer limit
		This side up

		Fragile Packaging
		Beware of water damage, moisture-proof
		Carton recyclable
		Handle with care
		Follow operating instructions of consult instructions for use.

Disposing of your old product

WARNING:
There is danger of explosion if the battery is mishandled or incorrectly replaced. Replace only with the same type of battery. Do not disassemble it or attempt to recharge it outside the system. Do not crush, puncture, dispose of in fire, short the external contacts, or expose to water or other liquids. Dispose of the battery in accordance with local regulations and instructions from your service provider.

CAUTION:
- Lithium Battery Caution: Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type. Dispose batteries according to manufacturer's instructions.
- Disposal of a BATTERY into fire or a hot oven, or mechanically crushing or cutting of a BATTERY, that can result in an EXPLOSION
- Leaving a BATTERY in an extremely high temperature surrounding environment that can result in an EXPLOSION or the leakage of flammable liquid or gas.
- A BATTERY subjected to extremely low air pressure that may result in an EXPLOSION or the leakage of flammable liquid or gas.

Mise en garde!
AVERTISSEMENT : Il existe un risque d'explosion si la batterie est mal manipulée ou remplacée de manière incorrecte. Remplacez uniquement par le même type de batterie. Ne le démontez pas et ne tentez pas de le recharger en dehors du système. Ne pas écraser, percer, jeter au feu, court-circuiter les contacts externes ou exposer à l'eau ou à d'autres liquides. Jetez la batterie conformément aux réglementations locales et aux instructions de votre fournisseur de services.

MISE EN GARDE:
- Pile au lithium Attention : Danger d'explosion si la pile n'est pas remplacée correctement. Remplacer uniquement par un type identique ou équivalent. Jetez les piles conformément aux instructions du fabricant.
- L'élimination d'une BATTERIE dans le feu ou dans un four chaud, ou l'écrasement ou le découpage mécanique d'une BATTERIE, pouvant entraîner une EXPLOSION
- Laisser une BATTERIE dans un environnement à température extrêmement élevée pouvant entraîner une EXPLOSION ou une fuite de liquide ou de gaz inflammable.
- UNE BATTERIE soumise à une pression d'air extrêmement basse pouvant entraîner une EXPLOSION ou une fuite de liquide ou de gaz inflammable.

Content

1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.
Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

Français:

Attention!

Débranchez le câble d'alimentation de votre châssis chaque fois que vous travaillez avec le matériel. Ne faites pas de connexion lorsque le système est allumé. Les composants électroniques sensibles peuvent être endommagés par les surtensions soudaines. Seule les personnels expérimentés de l'électronique peuvent ouvrir le châssis du PC.

Précaution!

Il faut toujours mettre à la masse pour éliminer l'électricité statique avant de toucher la carte CPU. Les appareils électroniques modernes sont très sensibles aux électricité statique. Pour des raisons de sécurité, utilisez un bracelet électrostatique. Placez tous les composants électroniques sur une surface antistatique ou dans un sac antistatique quand ils ne sont pas dans le châssis.
Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions

Warning!

Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.

Warning!

IT Room

Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

Warning!

RAL

The device can only be used in a fixed location such as a lab or a machine room. When you install the device, ensure that the protective earthing connection of the socket-outlet is verified by a skilled person.

Warning!

For RTC battery, current statement in the manual is acceptable.

There is danger of explosion if the battery is mishandled or incorrectly replaced. Replace only with the same type of battery. Do not disassemble it or attempt to recharge it outside the system. Do not crush, puncture, dispose of in fire, short the external contacts, or expose to water or other liquids. Dispose of the battery in accordance with local regulations and instructions from your service provider.

1.2 Packing List

Before installation, please ensure all the items listed in the following table are included in the package.

Item	Description	Q'ty
1	HPS-SIEU4A/HPS-SIEUTA barebone system - HPM-SIEUA motherboard - 1300W PSU	1
2	Front door key	2

If any of the above items is damaged or missing, contact your retailer.

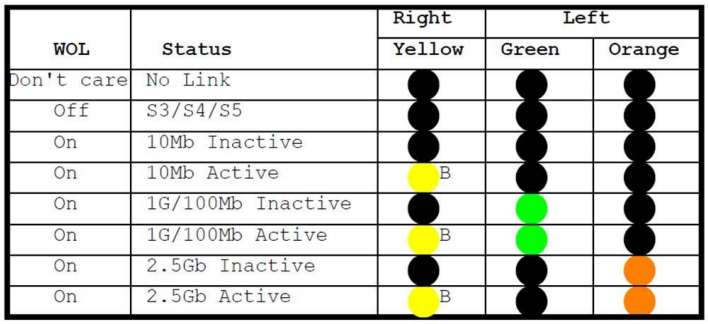
1.3 System Specifications

HPS-SIEU4A	
System Information	
Processor	Single AMD SP6 Socket supports 4th Gen. AMD EPYC 8004 Processor (Max. TDP at 225W) L10 system: 1 x AMD EPYC™ Embedded 8534P, 200W TDP
System Memory	6 x DDR5 4800/ 4400 MHz RDIMM Up to 1.5 TB L10 system: 2 x DDR5 4800 16GB 288PIN 0~95C TS2GAR80V8E, Transcend, RDIMM
BIOS Information	AMI UEFI BIOS
Watchdog Timer	System reset event 0~6553 second.
H/W Status Monitor	Temperature. Fan. Voltage. Case open. (1 x 2.5mm pitch Box Wafer, Pinrex 753-71-02TW07 or equivalent)
TPM	TPM 2.0 NuvoTon NPCT760AABYX or equivalent TCM Nationz Z32H330TC or equivalent (Optional)
SBC	HPM-SIEUA
BMC	IPMI 2.0 with AST 2600 BMC controller onboard.
Other	1 x Inlet sensor board 1 x Outlet sensor board 1 x Case open sensor
Expansion	
PCIe (Gen X)	3 x PCIe Gen5 x16 slots and 4 x PCIe Gen5 x8 slots Slot 1, PCIe 5.0 x8 Slot 2, PCIe 5.0 x16(Computing GPU – A800 40GB for L10 system) Slot 3, PCIe 5.0 x8 Slot 4, PCIe 5.0 x16(Display GPU – T400 for L10 system) Slot 5, PCIe 5.0 x8 Slot 6, PCIe 5.0 x16 Slot 7, PCIe 5.0 x8 (Slot 7 is the slot closest to CPU) system)
Storage	
M.2 (Signal)	2 x M.2 M-Key Slots to support 1 x SATA or 1 x PCIe 5.0 x4 NVMe SSD/SATA/2260/2280/22110 form factor
2.5” Drive Bay (Height)	3 x 2.5” Drive Bay L10 system: 1 x 2.5" SATA3 SSD 256GB 0~70C with DRAM ISSS31C-256GCTB5,

<table>
<tr><td></td><td>ADATA</td></tr>
<tr><td colspan="2">Front I/O</td></tr>
<tr><td>USB Port</td><td>2 x USB 3.2 Gen1 Ports</td></tr>
<tr><td>Power Button</td><td>1 x Power button</td></tr>
<tr><td>Reset Button</td><td>1 x Reset button</td></tr>
<tr><td>LED Indicator</td><td>1 x Power state
1 x Disk drive activity
1 x Network activity (LAN1)</td></tr>
<tr><td>System Fan</td><td>1 x Front FAN 4P/12V/30cm 120x120x25mm 2200rpm</td></tr>
<tr><td colspan="2">Rear I/O</td></tr>
<tr><td>USB Port</td><td>4 x USB 3.2 Gen1 Ports</td></tr>
<tr><td>COM Port</td><td>1 x RS232 Port</td></tr>
<tr><td>VGA</td><td>Display Priority: VGA
1 x VGA Port</td></tr>
<tr><td>LAN Port</td><td>5 x RJ-45 (LAN 1 port shared with IPMI 2.0)
MGMT port: Dedicated IPMI function access
LAN 1: 1GbE Ethernet port, LAN1 shares with IPMI function access
LAN 2: 2.5GbE Ethernet port
LAN 3 and 4: 2 x 10GbE Ethernet ports</td></tr>
<tr><td>AC/DC Input</td><td>1 x AC-In power connector from Power Supply ATX 1300W Delta GPS-1300CBA A36</td></tr>
<tr><td>System Fan</td><td>2 x Rear PWM FAN 4P/12V/18cm 80x80x38mm 8300rpm</td></tr>
<tr><td colspan="2">Onboard I/O</td></tr>
<tr><td>SATA Signal</td><td>1 x Mini-SAS HD 4i (For 4 xSATA or 1 x4 NVMe interface)</td></tr>
<tr><td>USB Port</td><td>2 x USB 3.1 Gen1 ports (2 x USB 3.1 Gen1 2.0mm pitch Box Header (Pinrex 52X-8020GB52 or equivalent)</td></tr>
<tr><td>COM Port</td><td>1 x RS232 ports (1 x 2.0mm pitch Box Header)
Pin definition: Follow Avalue standard.</td></tr>
<tr><td>RTC Battery</td><td>1 x Horizontal Socket Type CMOS Battery Holder with CR2450</td></tr>
<tr><td>Front Panel</td><td>1 x front panel connector (2.54 mm Pitch)
<table>
<tr><td>Pin</td><td>Function</td><td>Pin</td><td>Function</td></tr>
<tr><td>1-3</td><td>HDD LED</td><td>2-4</td><td>POWER LED</td></tr>
<tr><td>5-7</td><td>RESET BUTTON</td><td>6-8</td><td>POWER BUTTON</td></tr>
<tr><td>9-11</td><td>STATUS LED</td><td>10-12</td><td>LAN1 ACT LED</td></tr>
<tr><td>13-15</td><td>UID LED</td><td>14-16</td><td>STBY POWER LED</td></tr>
<tr><td>17-19</td><td>UID BUTTON</td><td>18-20</td><td>LAN2-X ACT LED</td></tr>
</table>
Notes: LAN2-X ACT LED, “X” means the max number of Ethernet ports.

1 x front panel connector 24-pin SSI front panel connector</td></tr>
</table>

<table>
<tr><td></td><td>
FRONTPANEL, BOX HEADER 2X12 WO/ PIN3
<table>
<tr><th>Signal</th><th>Pin</th><th>Pin</th><th>Signal</th></tr>
<tr><td>P3V3_STBY</td><td>1</td><td>2</td><td>P3V3_STBY</td></tr>
<tr><td>key</td><td>3</td><td>4</td><td>UID_LED+</td></tr>
<tr><td>PWR_LED-</td><td>5</td><td>6</td><td>UID_LED-</td></tr>
<tr><td>HDD_LED+</td><td>7</td><td>8</td><td>STATUS_LED-</td></tr>
<tr><td>HDD_LED-</td><td>9</td><td>10</td><td>STATUS_LED+</td></tr>
<tr><td>PWRON_BTN</td><td>11</td><td>12</td><td>LAN1_ACTIVE_LED+</td></tr>
<tr><td>GND</td><td>13</td><td>14</td><td>LAN1_ACTIVE_LED-</td></tr>
<tr><td>RESET_BTN</td><td>15</td><td>16</td><td>SMB_SDA</td></tr>
<tr><td>GND</td><td>17</td><td>18</td><td>SMB_SCL</td></tr>
<tr><td>UID_BTN</td><td>19</td><td>20</td><td>INTRUSION</td></tr>
<tr><td>NC</td><td>21</td><td>22</td><td>LAN2_ACTIVE_LED+</td></tr>
<tr><td>NMI_BTN</td><td>23</td><td>24</td><td>LAN2_ACTIVE_LED-</td></tr>
</table>
</td></tr>
<tr><td>CPU/System FAN</td><td>1 x 4 Pin CPU Fan Header (4 Pin PWM)
6 x 4 Pin Chassis Fan Header (4 Pin PWM, 2 for front fans and 4 for rear fans)</td></tr>
<tr><td>Other</td><td>1 x Inlet sensor onboard TI TMP75AIDGKT VSSOP-8
1 x Outlet sensor onboard TI TMP75AIDGKT VSSOP-8
1 x Inlet sensor header
1 x Outlet sensor header
(The onboard and external sensors will co-exist)</td></tr>
<tr><td colspan="2">Display</td></tr>
<tr><td>Graphic Chipset</td><td>1 x VGA port (DB15 on edge I/O)
AST2600 BMC controller</td></tr>
<tr><td>Resolution</td><td>1920x1200@60Hz 32bpp</td></tr>
<tr><td colspan="2">Ethernet</td></tr>
<tr><td>LAN Chipset</td><td>1 x Intel I210AT from P0 x2 interface
1 x Intel I226-LM from P0 x2 interface
1 x Intel X550-AT2</td></tr>
<tr><td>Data Rate Per Port</td><td>1 x 1G Base-T Ethernet Controller
1 x 2.5G Base-T Ethernet controller
1 x Dual 10G Base-T Ethernet controller</td></tr>
<tr><td>LED Indicator</td><td>1G LAN:
<table>
<tr><th rowspan="2">WOL</th><th rowspan="2">Status</th><th>Right</th><th colspan="2">Left</th></tr>
<tr><th>Yellow</th><th>Green</th><th>Orange</th></tr>
<tr><td>Don't care</td><td>No Link</td><td></td><td></td><td></td></tr>
<tr><td>Off</td><td>S3/S4/S5</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Active</td><td>B</td><td></td><td></td></tr>
</table>
2.5G LAN:</td></tr>
</table>

WOL	Status	Right	Left	
		Yellow	Green	Orange
Don't care	No Link			
Off	S3/S4/S5			
On	10Mb Inactive			
On	10Mb Active	B		
On	1G/100Mb Inactive			
On	1G/100Mb Active	B		
On	2.5Gb Inactive			
On	2.5Gb Active	B		

10G LAN:

WOL	Status	Right	Left	
		Yellow	Green	Orange
Don't care	No Link			
Off	S3/S4/S5			
On	100Mb Inactive			
On	100Mb Active	B		
On	1Gb Inactive			
On	1Gb Active	B		
On	10Gb Inactive			
On	10Gb Active	B		

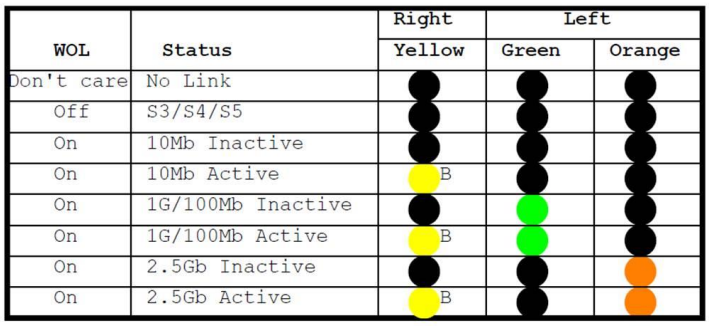
Power Requirement	
ACPI	Yes, S0 and S5
Power Mode	H/W: ATX power well design only. BMC: AT (Default)
Power Supply Unit	Delta 1300W PSU
Mechanical & Environment	
Operating Temp.	Condition 1: Temperature: 0 to 35°C (L6) Condition 2: Temperature: 0 to 35°C (L10, GPU A800 +T400) Condition 3: Temperature: 0 to TBC °C (L10 system, depends on added card spec.)
Storage Temp.	-40°C 24hrs IEC60068-2-1 Cold test Test: Ab 70˚C/ RH95% 24hrs IEC 60068-2-3 Test: CA
Operating Humidity	35°C /RH95%/24hrs IEC 60068-2-56 Test: Cb
Dimension (W*L*H)	430mm x 528mm x 174.8mm
Weight	20 kg
Vibration Test	Operational: 1. 0.25 Grms Random 2. Operation mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis 5. 30 min. per each axis 6. IEC 60068-2-64 Test: Fh

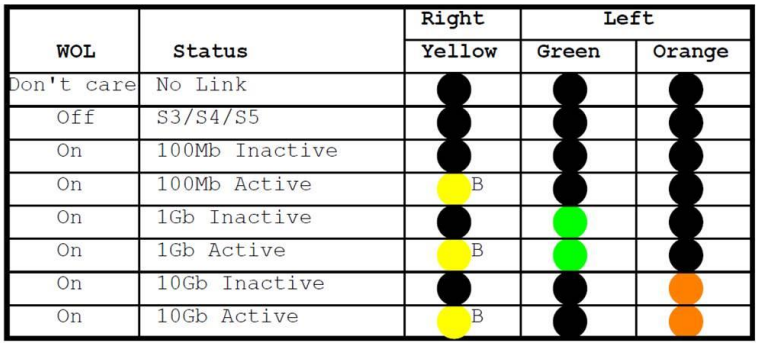
	Non-operational: 1. Test Acceleration: 0.5G 2. Test frequency: 5~500 Hz 3. Sweep: 1 Oct/ per one minute. (logarithmic) 4. Test Axis: X, Y and Z axis 5. Test time: 30 min. each axis 6. System condition: Non-Operating mode 7. Reference IEC 60068-2-6 Testing procedures Package Vibration Test: 1. PSD: 0.026G²/Hz, 2.16 Grms 2. Non-operation mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis 5. 30 min. per each axis 6. IEC 60068-2-64 Test: Fh
Shock Test	Operational: 1. Wave form: Half Sine wave 2. Acceleration Rate: 5.0G for operation mode 3. Duration Time: 11ms 4. No. of Shock: Z axis 300 times 5. Test Axis: Z axis 6. Operation mode 7. Reference IEC 60068-2-27 Testing procedures
Drop Test	Package drop test: 1. One corner, three edges, six faces 2. ISTA 2A, IEC-60068-2-32 Test: Ed
Software Support	
OS Information	Windows : Windows Server 2019 bare-metal support (KB5017379) & Hyper-V support (KB5018419) Windows Server 2022 Linux : Ubuntu 20.04/22.04 LTS or later Red Hat Enterprise Linux (RHEL) 8.2 and later

HPS-SIEUTA	
System Information	
Processor	Single AMD SP6 Socket supports 4th Gen. AMD EPYC 8004 Processor (Max. TDP at 225W) L10 system: 1 x AMD EPYC™ Embedded 8534P, 200W TDP
System Memory	6 x DDR5 4800/ 4400 MHz RDIMM Up to 1.5 TB L10 system: 2 x DDR5 4800 16GB 288PIN 0~95C TS2GAR80V8E, Transcend, RDIMM
BIOS Information	AMI UEFI BIOS
Watchdog Timer	System reset event 0~6553 second.
H/W Status Monitor	Temperature. Fan. Voltage. Case open. (1 x 2.5mm pitch Box Wafer, Pinrex 753-71-02TW07 or equivalent)
TPM	TPM 2.0 NuvoTon NPCT760AABYX or equivalent TCM Nationz Z32H330TC or equivalent (Optional)
SBC	HPM-SIEUA
BMC	IPMI 2.0 with AST 2600 BMC controller onboard.
Other	1 x Inlet sensor board 1 x Outlet sensor board 1 x Case open sensor
Expansion	
PCIe (Gen X)	3 x PCIe Gen5 x16 slots and 4 x PCIe Gen5 x8 slots Slot 1, PCIe 5.0 x8 Slot 2, PCIe 5.0 x16(Computing GPU – A800 40GB for L10 system) Slot 3, PCIe 5.0 x8 Slot 4, PCIe 5.0 x16(Display GPU – T400 for L10 system) Slot 5, PCIe 5.0 x8 Slot 6, PCIe 5.0 x16 Slot 7, PCIe 5.0 x8 (Slot 7 is the slot closest to CPU) system)
Storage	
M.2 (Signal)	2 x M.2 M-Key Slots to support 1 x SATA or 1 x PCIe 5.0 x4 NVMe SSD/SATA/2260/2280/22110 form factor
2.5” Drive Bay (Height)	3 x 2.5” Drive Bay L10 system: 1 x 2.5" SATA3 SSD 256GB 0~70C with DRAM ISSS31C-256GCTB5, ADATA

<table>
<tr><th colspan="2">Front I/O</th></tr>
<tr><td>USB Port</td><td>2 x USB 3.2 Gen1 Ports</td></tr>
<tr><td>Power Button</td><td>1 x Power button</td></tr>
<tr><td>Reset Button</td><td>1 x Reset button</td></tr>
<tr><td>LED Indicator</td><td>1 x Power state
1 x Disk drive activity
1 x Network activity (LAN1)</td></tr>
<tr><td>System Fan</td><td>1 x Front FAN 4P/12V/30cm 120x120x25mm 2200rpm</td></tr>
<tr><th colspan="2">Rear I/O</th></tr>
<tr><td>USB Port</td><td>4 x USB 3.2 Gen1 Ports</td></tr>
<tr><td>COM Port</td><td>1 x RS232 Port</td></tr>
<tr><td>VGA</td><td>Display Priority: VGA
1 x VGA Port</td></tr>
<tr><td>LAN Port</td><td>5 x RJ-45 (LAN 1 port shared with IPMI 2.0)
MGMT port: Dedicated IPMI function access
LAN 1: 1GbE Ethernet port, LAN1 shares with IPMI function access
LAN 2: 2.5GbE Ethernet port
LAN 3 and 4: 2 x 10GbE Ethernet ports</td></tr>
<tr><td>AC/DC Input</td><td>1 x AC-In power connector from Power Supply ATX 1300W Delta GPS-1300CBA A36</td></tr>
<tr><td>System Fan</td><td>2 x Rear PWM FAN 4P/12V/18cm 80x80x38mm 8300rpm</td></tr>
<tr><th colspan="2">Onboard I/O</th></tr>
<tr><td>SATA Signal</td><td>1 x Mini-SAS HD 4i (For 4 xSATA or 1 x4 NVMe interface)</td></tr>
<tr><td>USB Port</td><td>2 x USB 3.1 Gen1 ports (2 x USB 3.1 Gen1 2.0mm pitch Box Header (Pinrex 52X-8020GB52 or equivalent)</td></tr>
<tr><td>COM Port</td><td>1 x RS232 ports (1 x 2.0mm pitch Box Header)
Pin definition: Follow Avalue standard.</td></tr>
<tr><td>RTC Battery</td><td>1 x Horizontal Socket Type CMOS Battery Holder with CR2450</td></tr>
<tr><td>Front Panel</td><td>1 x front panel connector (2.54 mm Pitch)
<table>
<tr><th>Pin</th><th>Function</th><th>Pin</th><th>Function</th></tr>
<tr><td>1-3</td><td>HDD LED</td><td>2-4</td><td>POWER LED</td></tr>
<tr><td>5-7</td><td>RESET BUTTON</td><td>6-8</td><td>POWER BUTTON</td></tr>
<tr><td>9-11</td><td>STATUS LED</td><td>10-12</td><td>LAN1 ACT LED</td></tr>
<tr><td>13-15</td><td>UID LED</td><td>14-16</td><td>STBY POWER LED</td></tr>
<tr><td>17-19</td><td>UID BUTTON</td><td>18-20</td><td>LAN2-X ACT LED</td></tr>
</table>
Notes: LAN2-X ACT LED, “X” means the max number of Ethernet ports.</td></tr>
</table>

<table>
<tr><td></td><td>1 x front panel connector 24-pin SSI front panel connector
<table>
<tr><td colspan="4">FRONTPANEL, BOX HEADER 2X12 WO/ PIN3</td></tr>
<tr><th>Signal</th><th>Pin</th><th>Pin</th><th>Signal</th></tr>
<tr><td>P3V3_STBY</td><td>1</td><td>2</td><td>P3V3_STBY</td></tr>
<tr><td>key</td><td>3</td><td>4</td><td>UID_LED+</td></tr>
<tr><td>PWR_LED-</td><td>5</td><td>6</td><td>UID_LED-</td></tr>
<tr><td>HDD_LED+</td><td>7</td><td>8</td><td>STATUS_LED-</td></tr>
<tr><td>HDD_LED-</td><td>9</td><td>10</td><td>STATUS_LED+</td></tr>
<tr><td>PWRON_BTN</td><td>11</td><td>12</td><td>LAN1_ACTIVE_LED+</td></tr>
<tr><td>GND</td><td>13</td><td>14</td><td>LAN1_ACTIVE_LED-</td></tr>
<tr><td>RESET_BTN</td><td>15</td><td>16</td><td>SMB_SDA</td></tr>
<tr><td>GND</td><td>17</td><td>18</td><td>SMB_SCL</td></tr>
<tr><td>UID_BTN</td><td>19</td><td>20</td><td>INTRUSION</td></tr>
<tr><td>NC</td><td>21</td><td>22</td><td>LAN2_ACTIVE_LED+</td></tr>
<tr><td>NMI_BTN</td><td>23</td><td>24</td><td>LAN2_ACTIVE_LED-</td></tr>
</table></td></tr>
<tr><td>CPU/System FAN</td><td>1 x 4 Pin CPU Fan Header (4 Pin PWM)
6 x 4 Pin Chassis Fan Header (4 Pin PWM, 2 for front fans and 4 for rear fans)</td></tr>
<tr><td>Other</td><td>1 x Inlet sensor onboard TI TMP75AIDGKT VSSOP-8
1 x Outlet sensor onboard TI TMP75AIDGKT VSSOP-8
1 x Inlet sensor header
1 x Outlet sensor header
(The onboard and external sensors will co-exist)</td></tr>
<tr><td colspan="2">Display</td></tr>
<tr><td>Graphic Chipset</td><td>1 x VGA port (DB15 on edge I/O)
AST2600 BMC controller</td></tr>
<tr><td>Resolution</td><td>1920x1200@60Hz 32bpp</td></tr>
<tr><td colspan="2">Ethernet</td></tr>
<tr><td>LAN Chipset</td><td>1 x Intel I210AT from P0 x2 interface
1 x Intel I226-LM from P0 x2 interface
1 x Intel X550-AT2</td></tr>
<tr><td>Data Rate Per Port</td><td>1 x 1G Base-T Ethernet Controller
1 x 2.5G Base-T Ethernet controller
1 x Dual 10G Base-T Ethernet controller</td></tr>
<tr><td>LED Indicator</td><td>1G LAN:
<table>
<tr><th rowspan="2">WOL</th><th rowspan="2">Status</th><th>Right</th><th colspan="2">Left</th></tr>
<tr><th>Yellow</th><th>Green</th><th>Orange</th></tr>
<tr><td>Don't care</td><td>No Link</td><td></td><td></td><td></td></tr>
<tr><td>Off</td><td>S3/S4/S5</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Active</td><td>B</td><td></td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>2.5G LAN:
 
<table>
<tr><th rowspan="2">WOL</th><th rowspan="2">Status</th><th>Right</th><th colspan="2">Left</th></tr>
<tr><th>Yellow</th><th>Green</th><th>Orange</th></tr>
<tr><td>Don't care</td><td>No Link</td><td></td><td></td><td></td></tr>
<tr><td>Off</td><td>S3/S4/S5</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>1G/100Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>1G/100Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>2.5Gb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>2.5Gb Active</td><td>B</td><td></td><td></td></tr>
</table>

10G LAN:
 
<table>
<tr><th rowspan="2">WOL</th><th rowspan="2">Status</th><th>Right</th><th colspan="2">Left</th></tr>
<tr><th>Yellow</th><th>Green</th><th>Orange</th></tr>
<tr><td>Don't care</td><td>No Link</td><td></td><td></td><td></td></tr>
<tr><td>Off</td><td>S3/S4/S5</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>100Mb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>1Gb Active</td><td>B</td><td></td><td></td></tr>
<tr><td>On</td><td>10Gb Inactive</td><td></td><td></td><td></td></tr>
<tr><td>On</td><td>10Gb Active</td><td>B</td><td></td><td></td></tr>
</table></td></tr>
<tr><td colspan="2">Power Requirement</td></tr>
<tr><td>ACPI</td><td>Yes, S0 and S5</td></tr>
<tr><td>Power Mode</td><td>H/W: ATX power well design only.
BMC: AT (Default)</td></tr>
<tr><td>Power Supply Unit</td><td>Delta 1300W PSU</td></tr>
<tr><td colspan="2">Mechanical & Environment</td></tr>
<tr><td>Operating Temp.</td><td>Condition 1: Temperature: 0 to 35°C (L6)
Condition 2: Temperature: 0 to 35°C (L10, GPU A800 +T400)
Condition 3: Temperature: 0 to TBC °C (L10 system, depends on added card spec.)</td></tr>
<tr><td>Storage Temp.</td><td>-40°C 24hrs IEC60068-2-1 Cold test Test: Ab
70˚C/ RH95% 24hrs IEC 60068-2-3 Test: CA</td></tr>
<tr><td>Operating Humidity</td><td>35°C /RH95%/24hrs
IEC 60068-2-56 Test: Cb</td></tr>
<tr><td>Dimension (W*L*H)</td><td>430mm x 528mm x 174.8mm</td></tr>
<tr><td>Weight</td><td>20 kg</td></tr>
<tr><td>Vibration Test</td><td>Operational:
1. 0.25 Grms Random
2. Operation mode
3. Test Frequency: 5-500Hz
4. Test Axis: X, Y and Z axis</td></tr>
</table>

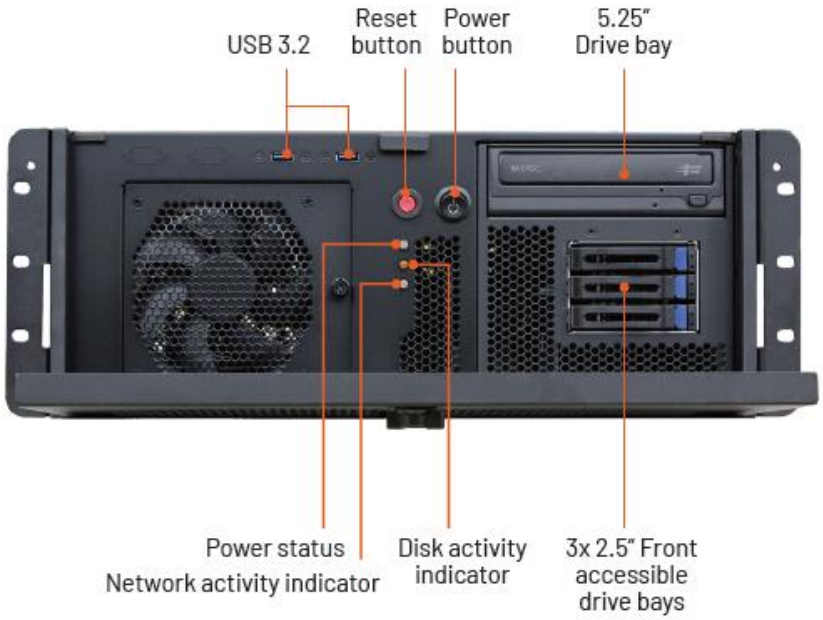
	5. 30 min. per each axis 6. IEC 60068-2-64 Test: Fh Non-operational: 1. Test Acceleration: 0.5G 2. Test frequency: 5~500 Hz 3. Sweep: 1 Oct/ per one minute. (logarithmic) 4. Test Axis: X, Y and Z axis 5. Test time: 30 min. each axis 6. System condition: Non-Operating mode 7. Reference IEC 60068-2-6 Testing procedures Package Vibration Test: 1. PSD: 0.026G²/Hz, 2.16 Grms 2. Non-operation mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis 5. 30 min. per each axis 6. IEC 60068-2-64 Test: Fh
Shock Test	Operational: 1. Wave form: Half Sine wave 2. Acceleration Rate: 5.0G for operation mode 3. Duration Time: 11ms 4. No. of Shock: Z axis 300 times 5. Test Axis: Z axis 6. Operation mode 7. Reference IEC 60068-2-27 Testing procedures
Drop Test	Package drop test: 1. One corner, three edges, six faces 2. ISTA 2A, IEC-60068-2-32 Test: Ed
Software Support	
OS Information	Windows : Windows Server 2019 bare-metal support (KB5017379) & Hyper-V support (KB5018419) Windows Server 2022 Linux : Ubuntu 20.04/22.04 LTS or later Red Hat Enterprise Linux (RHEL) 8.2 and later

Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front View

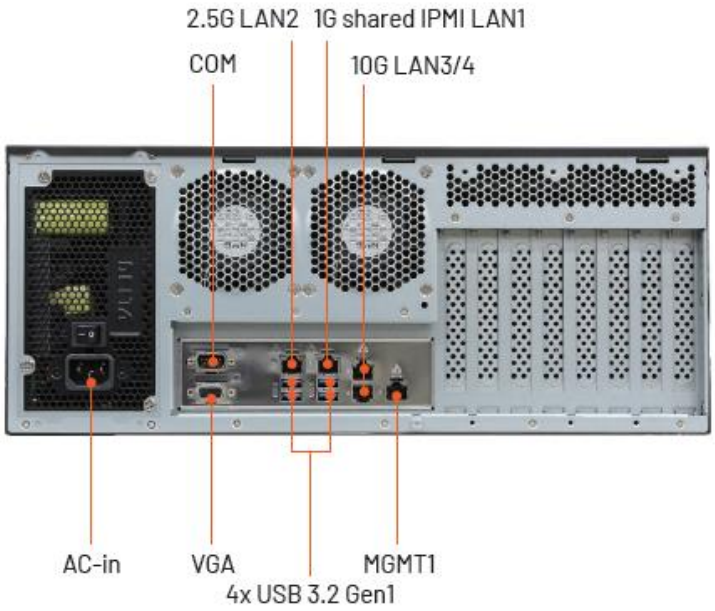
HPS-SIEU4A



HPS-SIEUTA

1.4.2 Rear View

HPS-SIEU4A



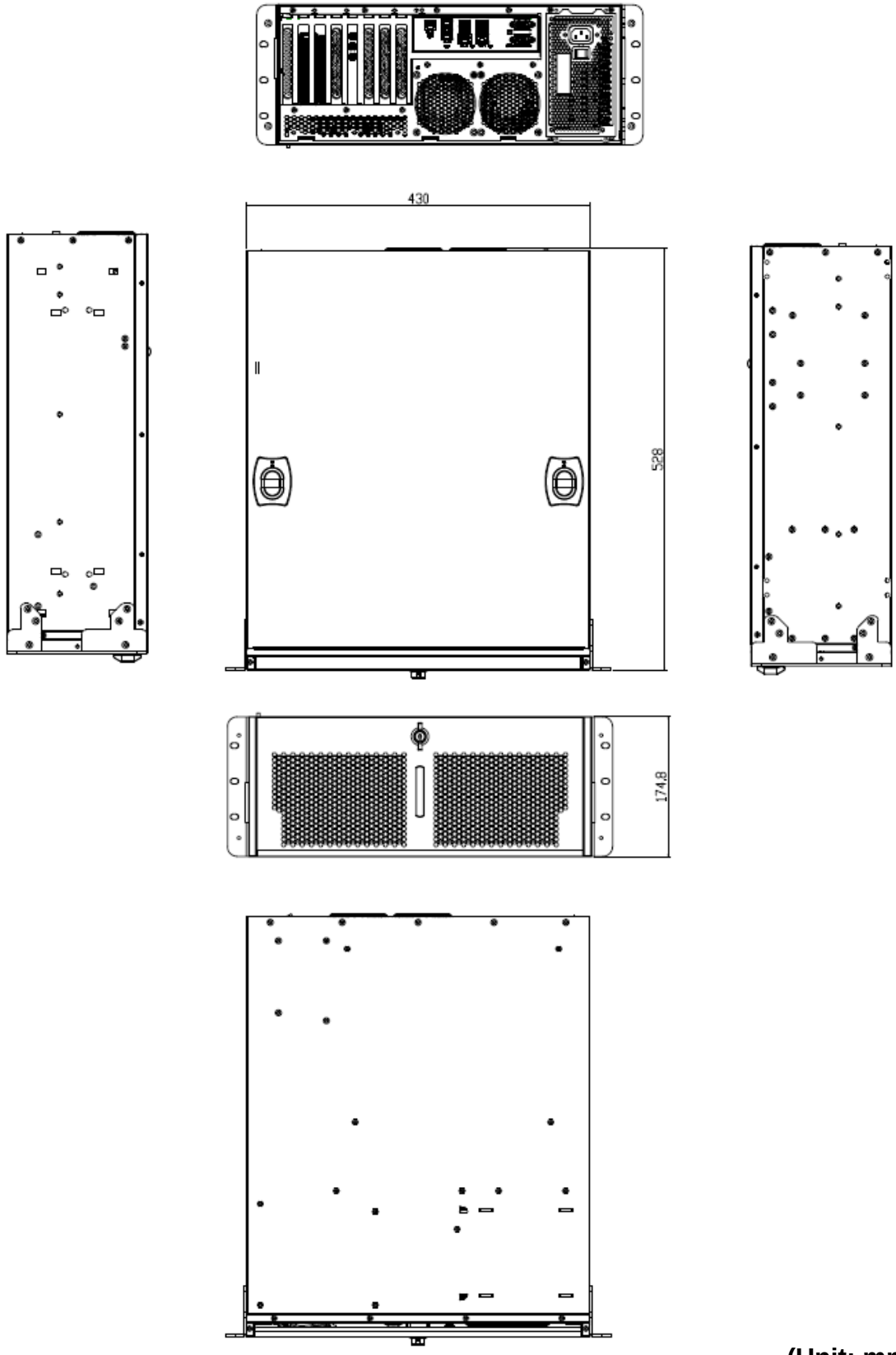
HPS-SIEUTA

Connectors

Label	Function	Note
5.25” Drive bay	5.25” Drive bay	
2.5” Front accessible drive bays	3 x 2.5” Front accessible drive bays	
Network activity indicator	Network activity indicator	
Disk activity indicator	Disk activity indicator	
Power Status	Power Status	
Reset button	Reset button	
Power button	Power button	
USB3.2	6 x USB3.2 Gen1 connector	
COM	Serial port connector	D-sub 9-pin, male
VGA	VGA connector	
LAN1~4	4 x RJ-45 Ethernet connector	
MGMT1	MGMT port	
AC-in	AC power-in connector	

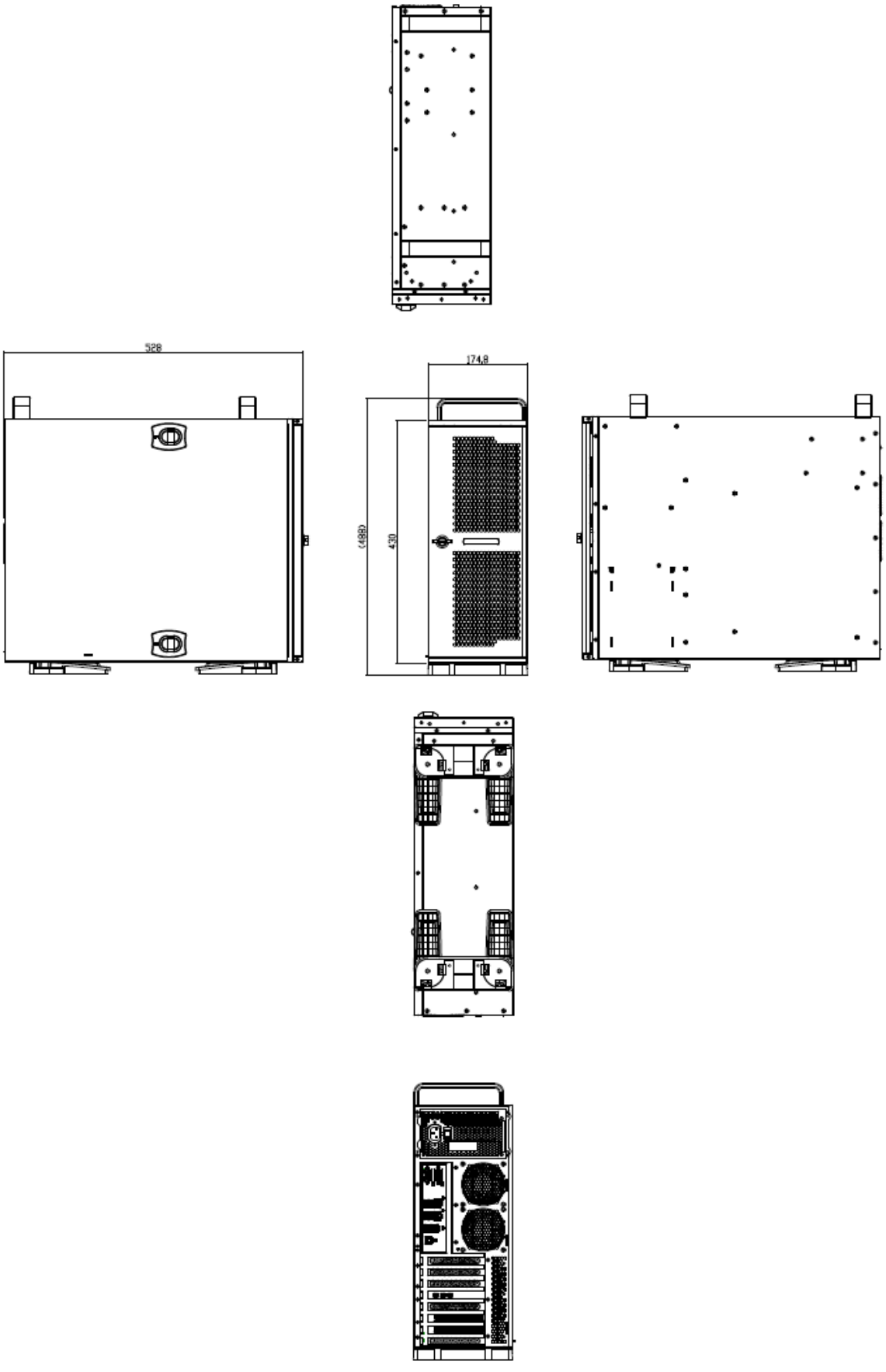
1.5 System Dimensions

1.5.1 HPS-SIEU4A



(Unit: mm)

1.5.2 HPS-SIEUTA



(Unit: mm)

1.6 Operating Principle

(a) Installation:

- Take the device and accessories from package and put in the suitable place.
- Check the packing list (accessories).
- Connect the power cord to the device.
- Put the plug of power cord into receptacle of power source.
- Press power button “Power Icon” on the device to start the device.

(b) Installation for monitor:

- Plug in the monitor cable (HDMI or DP).

(c) Installation keyboard and mouse.

- Plug in mouse and keyboard.

(d) Operation for Turn ON the system

- Turn ON the system.
- Press the power ON/OFF icon firmly to turn power ON/OFF.
- The power ON/OFF LED will turn blue to indicate power is on.
- Check with the Icon behavior for power status.

2. Hardware Configuration

Jumper and Connector Setting

For advanced information, please refer to:

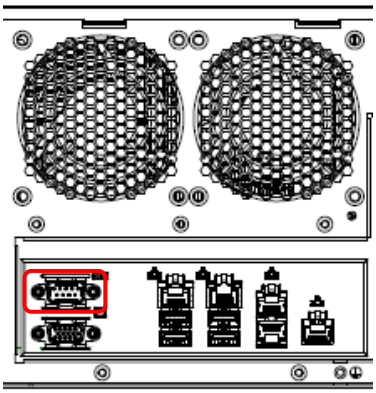
1- HPM-SIEUA included in this manual.

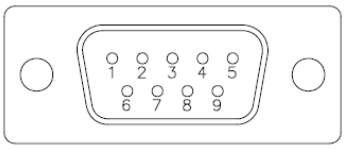
Note: If you need more information, please visit our website:

www.avalue.com

2.1 HPS-SIEU4A/HPS-SIEUTA connector mapping

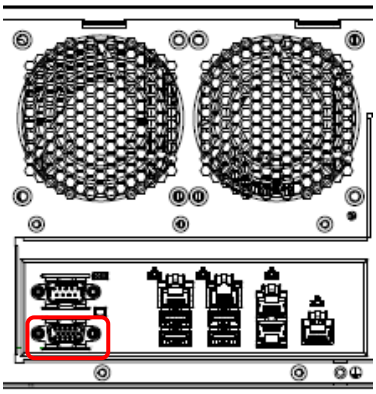
2.1.1 Serial Port connector (COM)

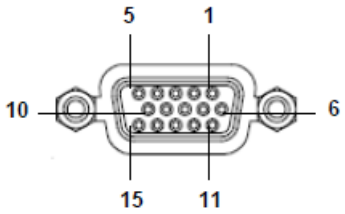




Signal	PIN	PIN	Signal
DCD#	1	6	DSR#
RXD	2	7	RTS#
TXD	3	8	CTS#
DTR#	4	9	RI#
GND	5		

2.1.2 VGA connector (VGA)





PIN	Signal	PIN	Signal	PIN	Signal
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDCDAT
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNS
5	GND	10	GND	15	DDCCLK

2.2 Powering On the System

WARNING:

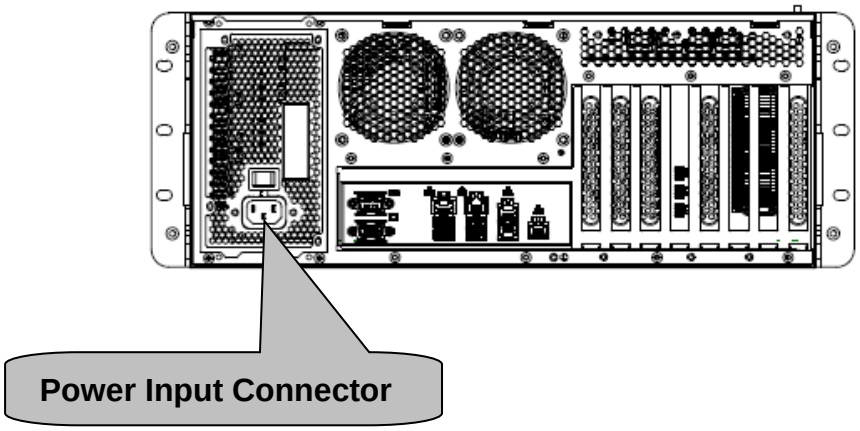
Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.

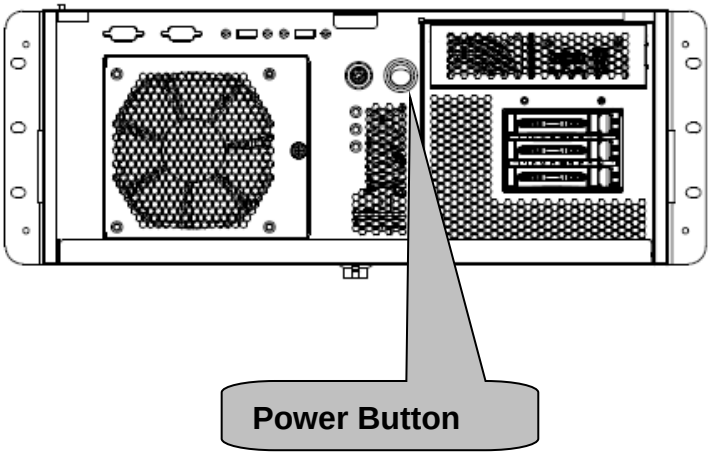
- Power on the system: press the power button for 3 seconds.
- Power off the system: press the power button for 6 seconds.
- The power of this system can be less than 250w 20A.

2.3 Connecting to Power Supply

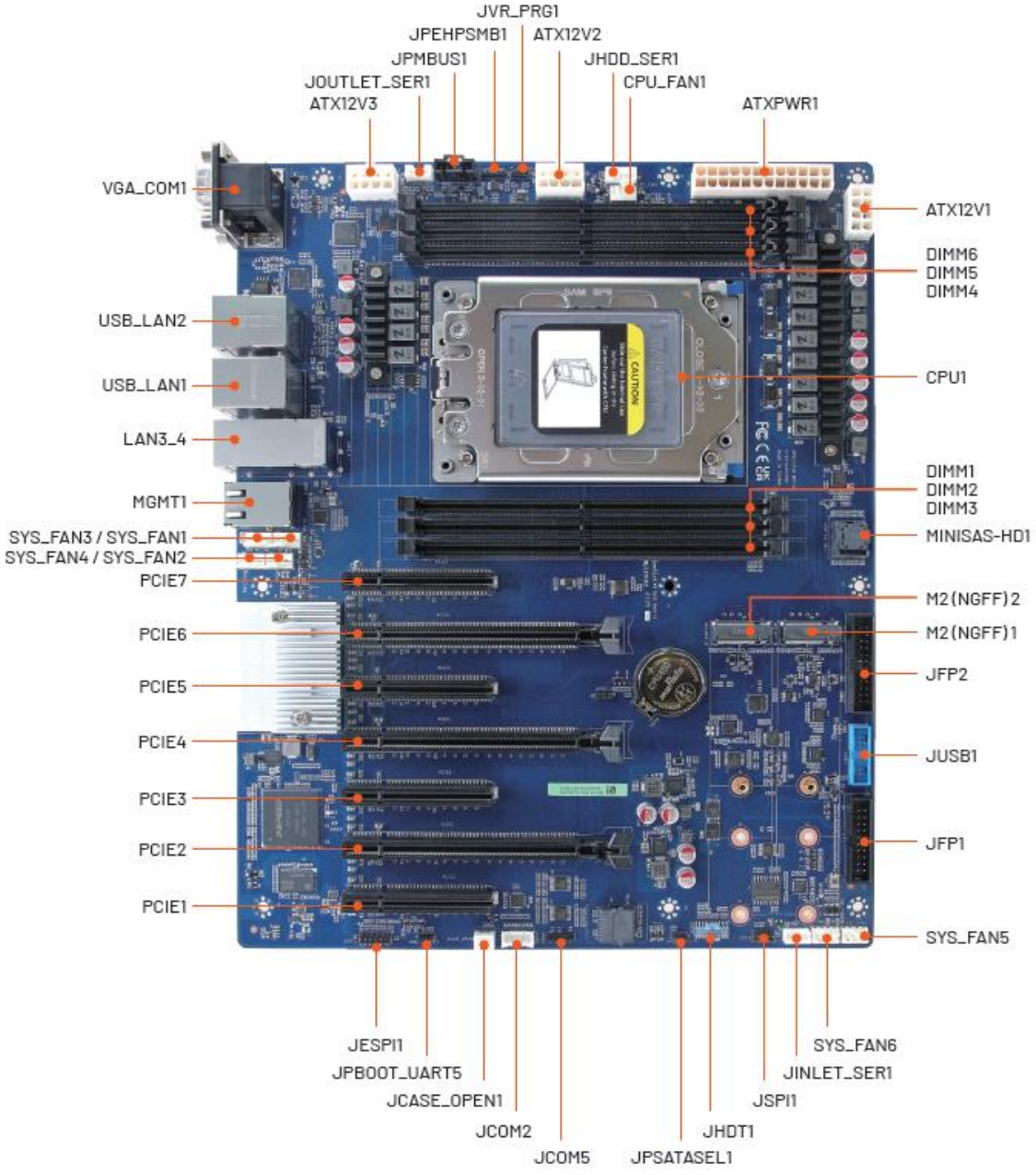
There are two power connectors on the rear panel. Power 1 connector is a DIN connector block that supports ACC On signal. Power 2 connector is a 2-pin terminal that can directly connect to a power adapter. The supported power input voltages are:

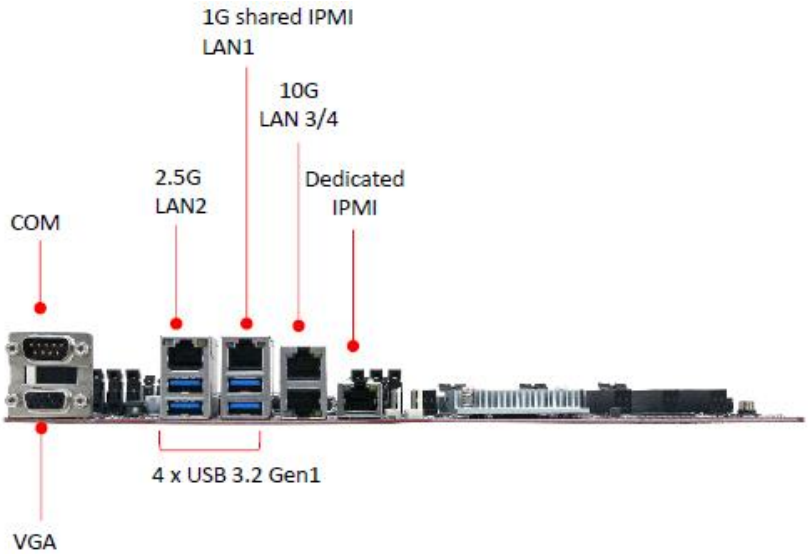
- Power 1 (DIN connector)): 12 V ~ 28 V
- Power 2 (terminal block)): 12 V ~ 28 V





2.4 HPM-SIEUA Overviews





2.5 HPM-SIEUA Jumper & Connector list

Jumpers

Label	Function	Note
JPBOOT_UART5	Boot UART5 setting	3 x 1 header, pitch 2.00mm
JPSATASEL1	SATA or PCIE select	3 x 1 header, pitch 2.00mm

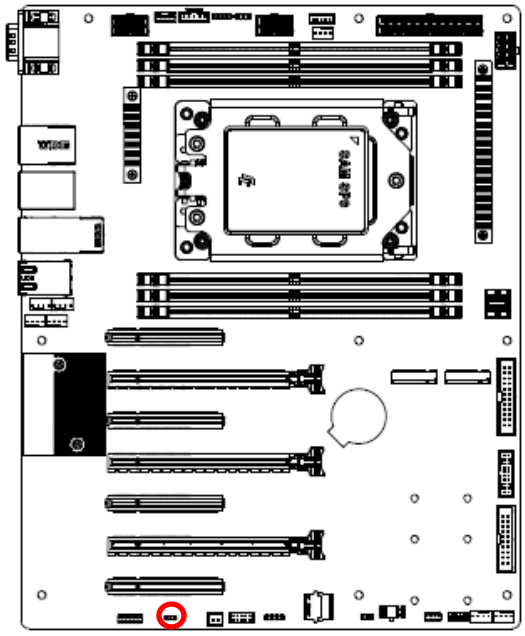
Connectors

Label	Function	Note
SYS_FAN1-6	System fan connector 1-6	4 x 1 wafer, pitch 2.54mm
CPU_FAN1	CPU fan connector 1-2	4 x 1 wafer, pitch 2.54mm
VGA_COM1	Serial port 1 connector VGA connector	
JCOM2	Serial port 2 connector	5 x 2 wafer, pitch 2.00mm
JCOM5	BMC_UART5 debug connector	4 x 1 header, pitch 2.54mm
MGMT1	MGMT port	
PCIE1	PCIe Gen5 x8	
PCIE2	PCIe Gen5 x16	
PCIE3	PCIe Gen5 x8	
PCIE4	PCIe Gen5 x16	
PCIE5	PCIe Gen5 x8	
PCIE6	PCIe Gen5 x16	
PCIE7	PCIe Gen5 x8 (The slot closest to CPU)	
JFP1	Front Panel connector 1	10 x 2 wafer, pitch 2.54mm
JFP2	Front Panel connector 2	12 x 2 wafer, pitch 2.54mm
USB_LAN1	2 x USB3.2 Gen1 connector 1 x RJ-45 Ethernet (LAN1 Share IPMI Port)	
USB_LAN2	2 x USB3.2 Gen1 connector 1 x RJ-45 Ethernet	
LAN3_4	2 x RJ-45 Ethernet	
JUSB1	USB3.2 Gen1 connector	10 x 2 wafer, pitch 2.00mm
JSPI1	SPI connector	4 x 2 header, pitch 2.00mm
JESPI1	ESPI connector	6 x 2 header, pitch 2.00mm
MINISAS-HD1	Mini-SAS HD 4i (from CPU for 4	

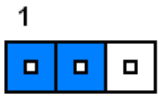
	xSATA or 1 x4 NVMe interface)	
DIMM1-6	6 x DDR5 RDIMM socket	
JVR_PRG1	SMBUS VR connector	3 x 1 header, pitch 2.54mm
JCASE_OPEN1	CASE OPEN connector	2 x 1 wafer, pitch 2.50mm
ATX12V1	ATX 12V power connector 1	4 x 2 wafer, pitch 4.20mm
ATX12V2	ATX 12V power connector 2	4 x 2 wafer, pitch 4.20mm
ATX12V3	ATX 12V power connector 3	4 x 2 wafer, pitch 4.20mm
ATXPWR1	ATX power connector	12 x 2 wafer, pitch 4.20mm
JPMBUS1	Power supply PMBus connector	5 x 1 wafer, pitch 2.54mm
JINLET_SER1	Inlet Thermal Sensor	4 x 1 wafer, pitch 2.00mm
JOUTLET_SER1	Outlet Thermal Sensor	4 x 1 wafer, pitch 2.00mm
JHDD_SER1	HDD Backplane thermal Sensor	5 x 1 wafer, pitch 2.00mm
JPEHPSMB1	CPU PCIE HP SMB connector	5 x 1 header, pitch 2.00mm
M2(NGFF)1/2	2 x M.2 M-Key PCIe 5.0 x4 NVMe SSD	
CPU1	CPU socket	

2.6 HPM-SRSUA Jumpers & Connectors settings

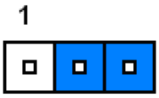
2.6.1 Boot UART5 setting (JPBOOT_UART5)



Disable*

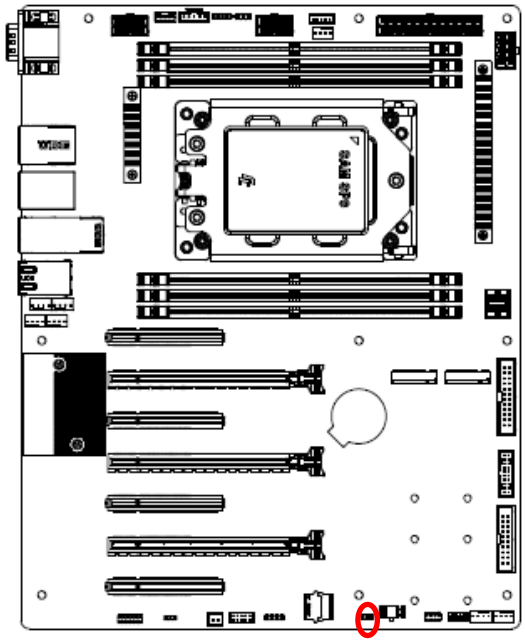


Enable BOOT FROM UART5

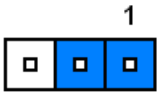


*** Default**

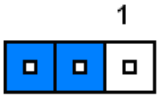
2.6.2 SATA or PCIE select (JPSATASEL)



PCIE*

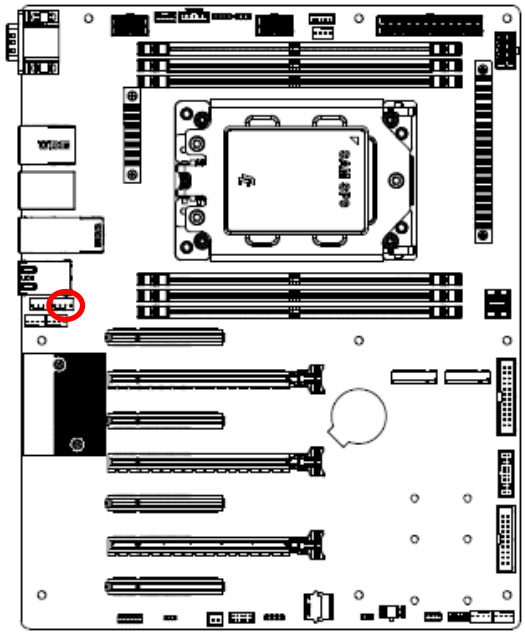


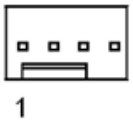
SATA



*** Default**

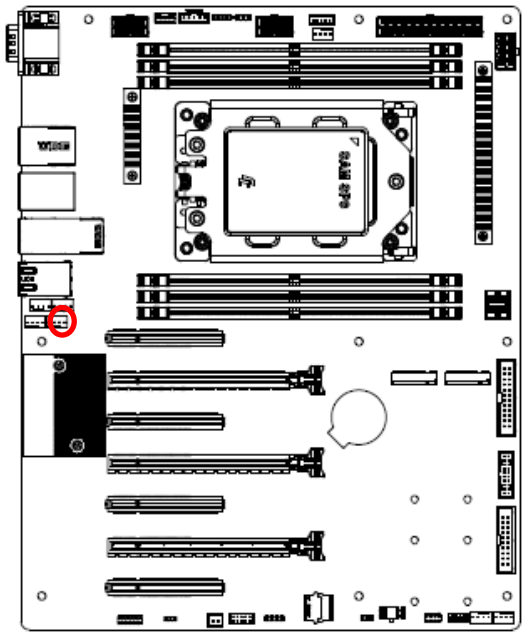
2.6.3 System fan connector 1 (SYS_FAN1)

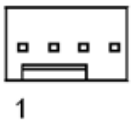




Signal	PIN
GND	1
+12V	2
FAN_TACH1	3
SYS_PWM1	4

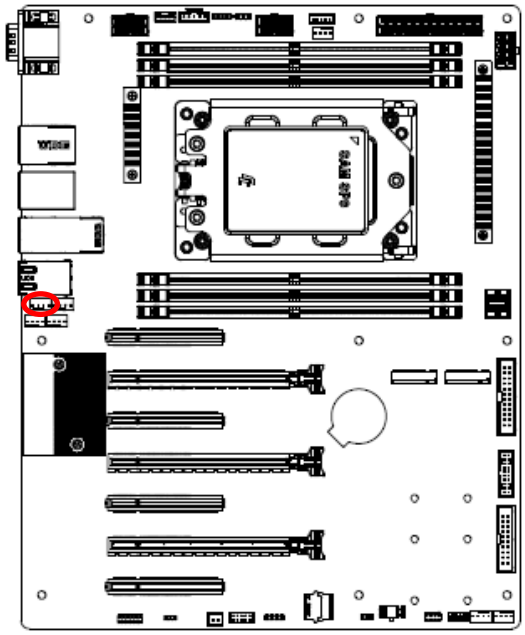
2.6.4 System fan connector 2 (SYS_FAN2)

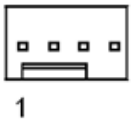




Signal	PIN
GND	1
+12V	2
FAN_TACH2	3
SYS_PWM2	4

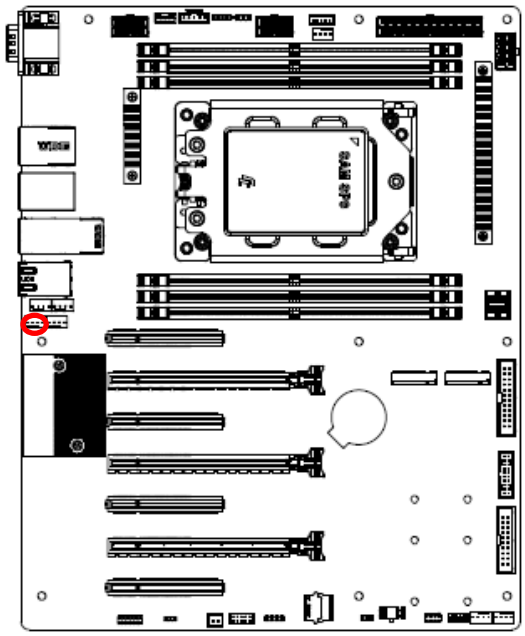
2.6.5 System fan connector 3 (SYS_FAN3)

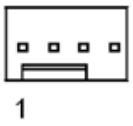




Signal	PIN
GND	1
+12V	2
FAN_TACH3	3
SYS_PWM3	4

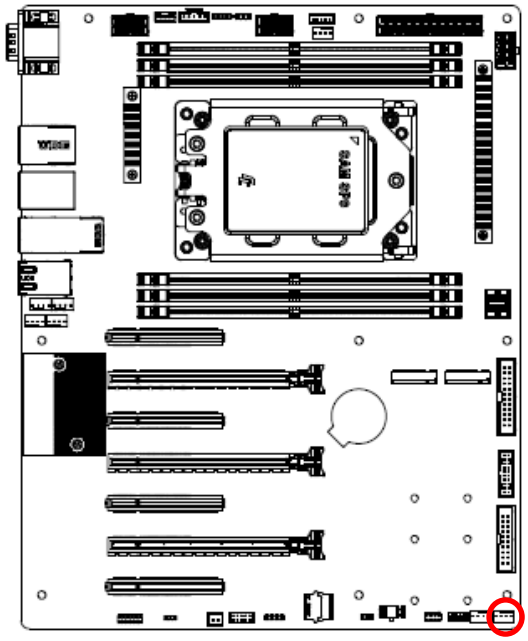
2.6.6 System fan connector 4 (SYS_FAN4)

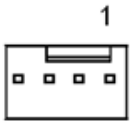




Signal	PIN
GND	1
+12V	2
FAN_TACH4	3
SYS_PWM4	4

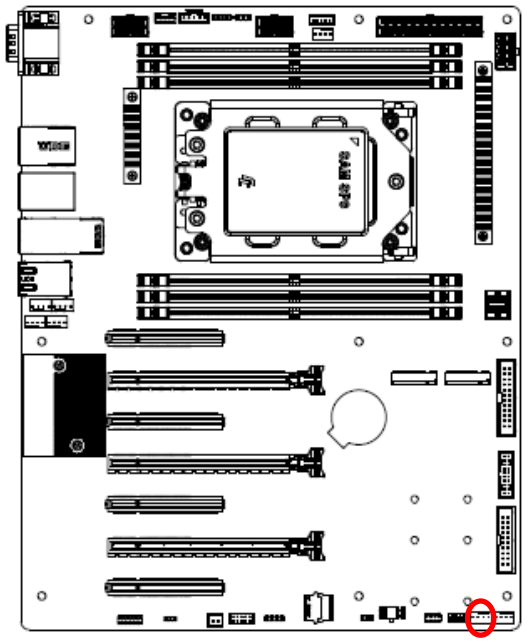
2.6.7 System fan connector 5 (SYS_FAN5)

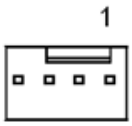




Signal	PIN
GND	1
+12V	2
FAN_TACH5	3
SYS_PWM5	4

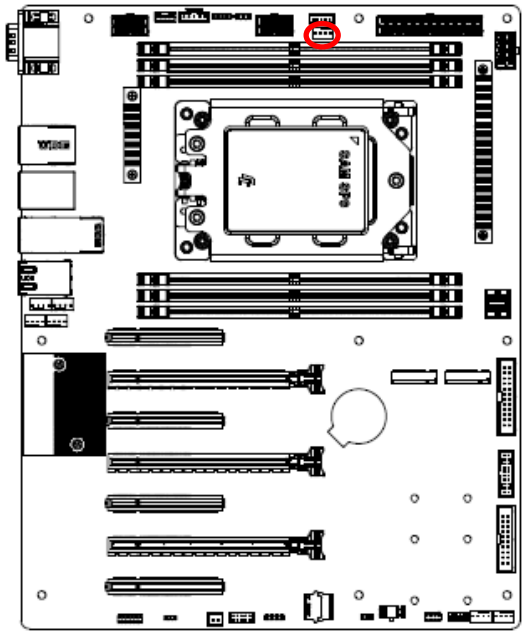
2.6.8 System fan connector 6 (SYS_FAN6)

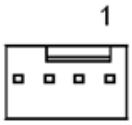




Signal	PIN
GND	1
+12V	2
FAN_TACH6	3
SYS_PWM6	4

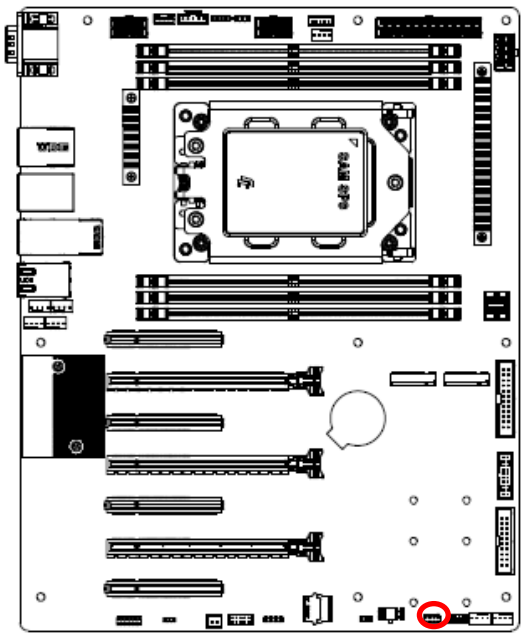
2.6.9 CPU fan connector 1 (CPU_FAN1)

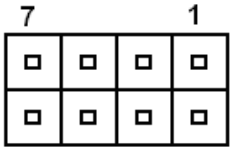




Signal	PIN
GND	1
+12V	2
FAN_TACH0	3
CPU0_PWM	4

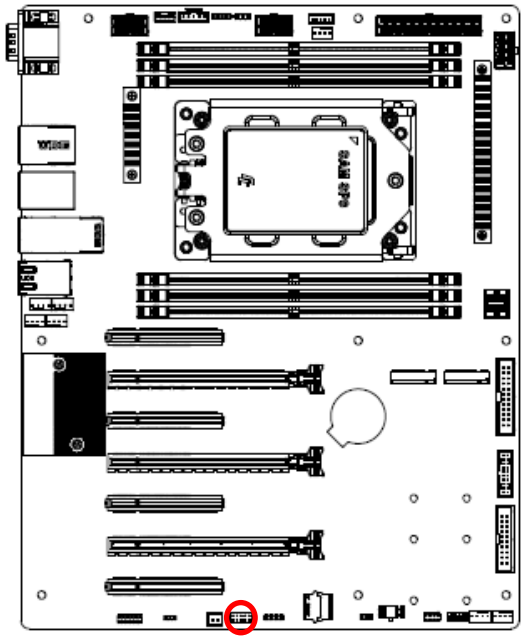
2.6.10 SPI connector (JSPI1)

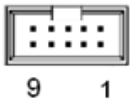




Signal	PIN	PIN	Signal
GND	2	1	+1.8VSB
SPI_CLK	4	3	SPI_CS#
SPI_MOSI	6	5	SPI_MISO
SPI_IO2	8	7	SPI_IO3

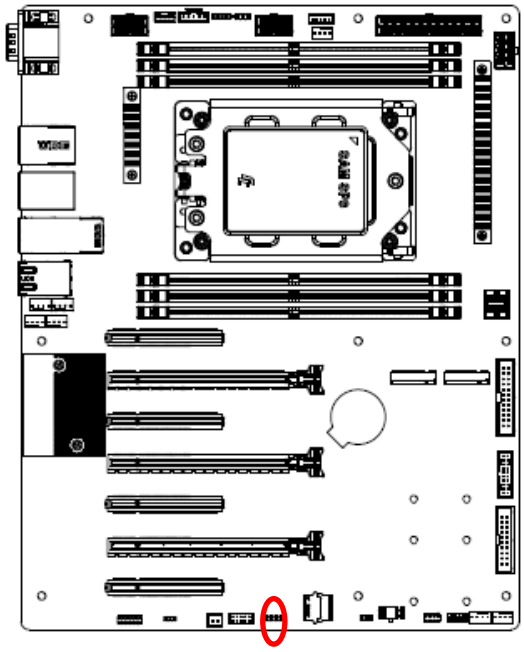
2.6.11 Serial port 2 connector (JCOM2)

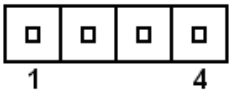




Signal	PIN	PIN	Signal
COM_RXD2	2	1	COM_DCD#2
COM_DTR#2	4	3	COM_TXD2
COM_DSR#2	6	5	GND
COM_CTS#2	8	7	COM_RTS#2
NC	10	9	COM_RI#2

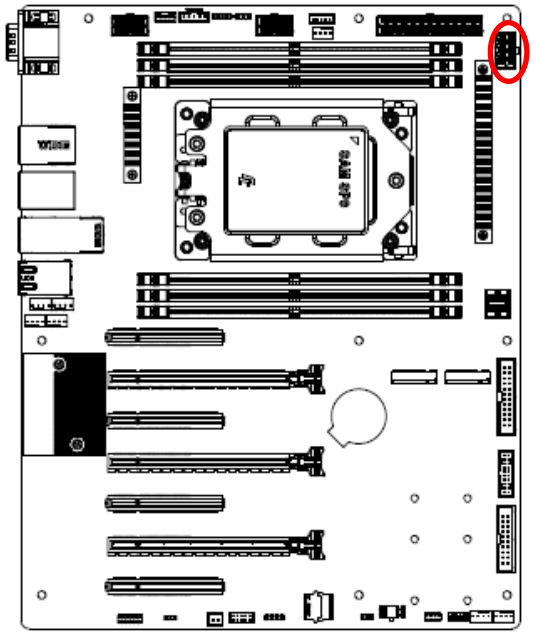
2.6.12 BMC_UART5 debug connector (JCOM5)

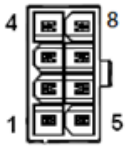




Signal	PIN
UART5_TXD	1
UART5_RXD	2
GND	3
+3.3VSB	4

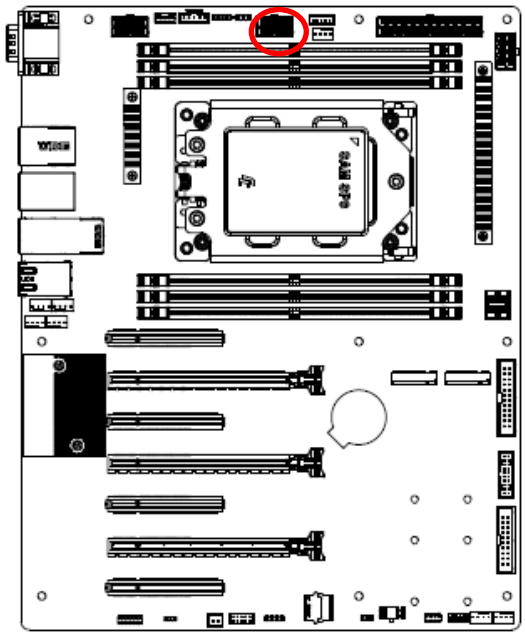
2.6.13 ATX 12V power connector 1 (ATX12V1)

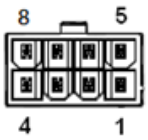




Signal	PIN	PIN	Signal
GND	4	8	+12V
GND	3	7	+12V
GND	2	6	+12V
GND	1	5	+12V

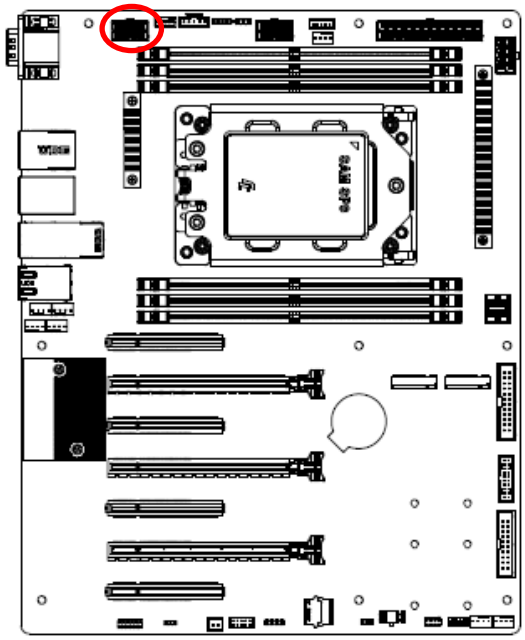
2.6.14 ATX 12V power connector 2 (ATX12V2)

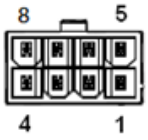




Signal	PIN	PIN	Signal
+12V	5	1	GND
+12V	6	2	GND
+12V	7	3	GND
+12V	8	4	GND

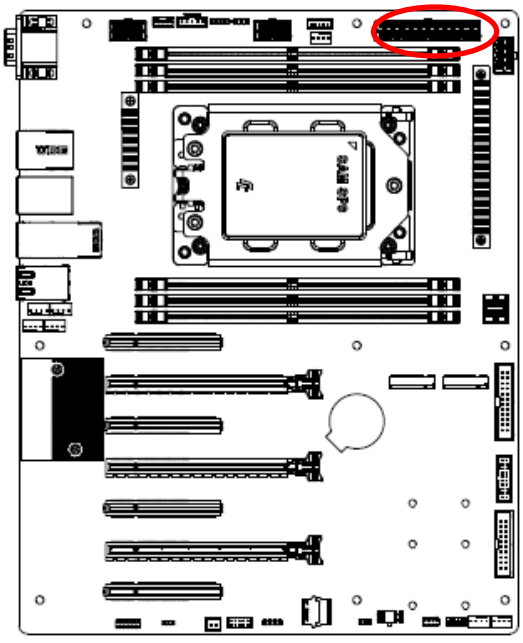
2.6.15 ATX 12V power connector 3 (ATX12V3)

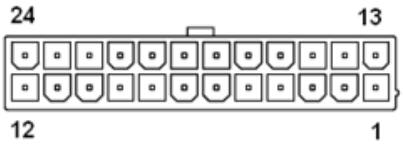




Signal	PIN	PIN	Signal
+12V	5	1	GND
+12V	6	2	GND
+12V	7	3	GND
+12V	8	4	GND

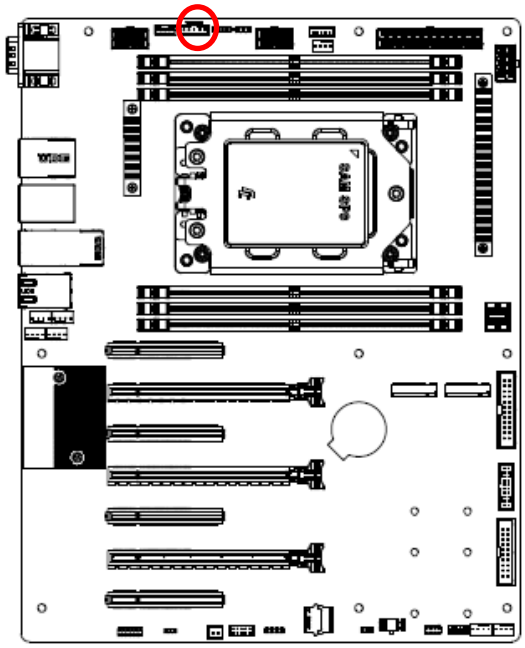
2.6.16 ATX power connector (ATXPWR1)

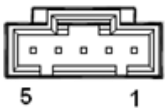




Signal	PIN	PIN	Signal
+3.3V	13	1	+3.3V
-12V	14	2	+3.3V
GND	15	3	GND
PSON#	16	4	+5V
GND	17	5	GND
GND	18	6	+5V
GND	19	7	GND
NC	20	8	PSU_PWRGD
+5V	21	9	+V5SB
+5V	22	10	+12V
+5V	23	11	+12V
GND	24	12	+3.3V

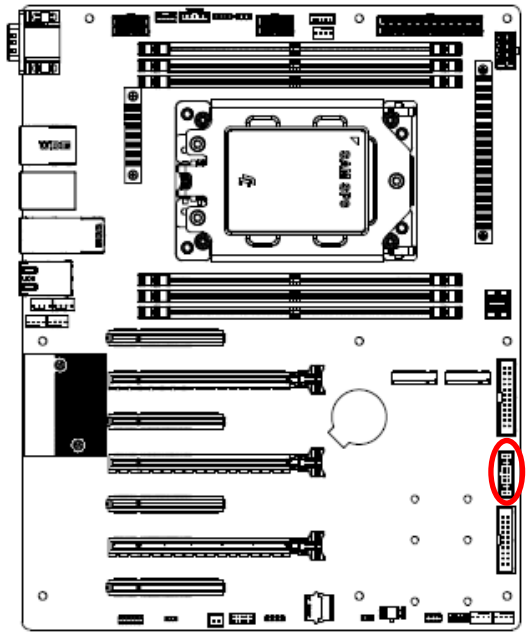
2.6.17 Power supply PMBus connector (JPMBUS1)

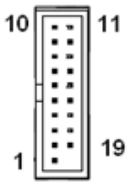




Signal	PIN
SMB_PSU_SCL	1
SMB_PSU_SDA	2
SMB_PSU_ALERT#	3
GND	4
NC	5

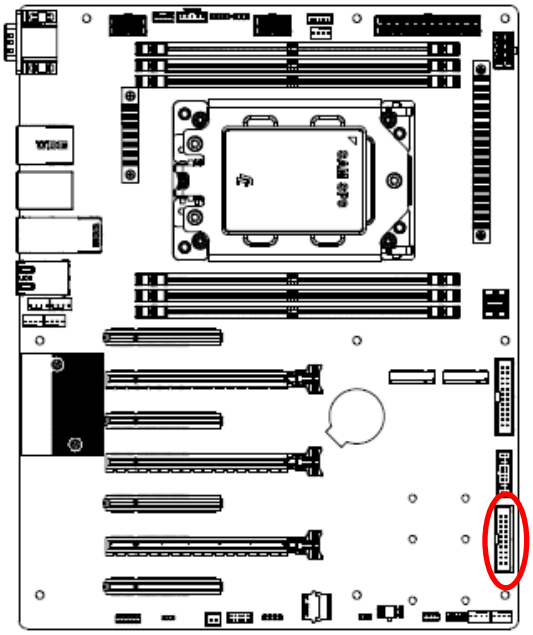
2.6.18 USB3.2 Gen1 connector (JUSB1)

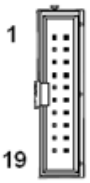




Signal	PIN	PIN	Signal
FROONTUSB3_OC1_N	10	11	P0_USB_z_PP1
P0_USB_z_PP0	9	12	P0_USB_z_PN1
P0_USB_z_PN0	8	13	GND
GND	7	14	P0_USB3_z_TP1
P0_USB3_z_TP0	6	15	P0_USB3_z_TN1
P0_USB3_z_TN0	5	16	GND
GND	4	17	P0_USB3_z_RP1
P0_USB3_z_RP0	3	18	P0_USB3_z_RN1
P0_USB3_z_RN0	2	19	+5V
+5V	1		

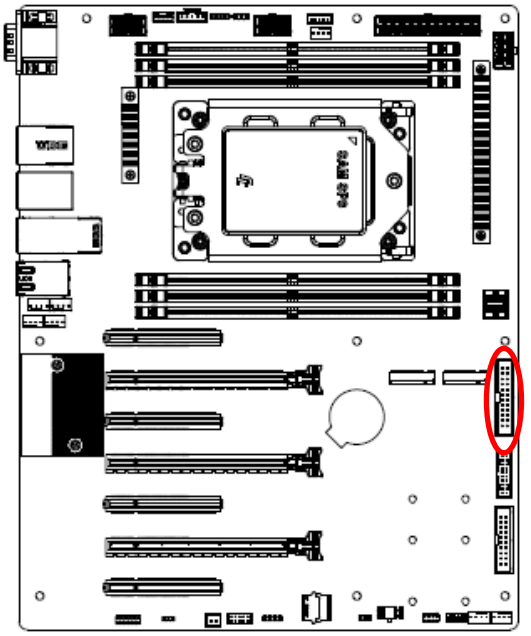
2.6.19 Front Panel connector 1 (JFP1)

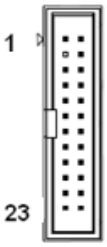




Signal	PIN	PIN	Signal
HDD_LED_P	1	2	+3.3VSB
HDD_LED#	3	4	PWR_LED#
RESET_BUTTON#	5	6	PWRON_BUTTON#
GND	7	8	GND
STATUS_LED_P	9	10	LAN1_LED_P
STATUS_LE#	11	12	LAN1_LED#
UID_LED#	13	14	SBPWRLED_P
UID_LED_P	15	16	GND
UID_BUTTON#	17	18	LAN2-X_LED_P
GND	19	20	LAN2-X_LED#

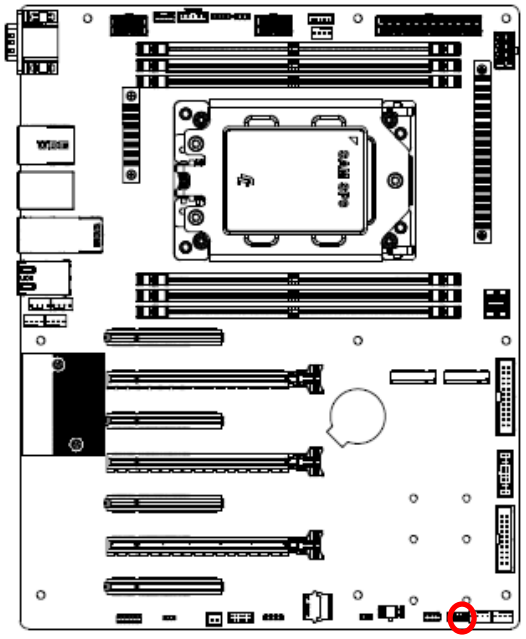
2.6.20 Front Panel connector 2 (JFP2)

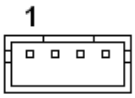




Signal	PIN	PIN	Signal
+3.3VSB	1	2	+3.3VSB
		4	UID_LED_P
PWR_LED#	5	6	UID_LED#
HDD_LED_P	7	8	STATUS_LED#
LED_HDD#	9	10	STATUS_LED_P
PWRON_BUTTON#	11	12	LAN1_LED_P
GND	13	14	LAN1_LED#
RESET_BUTTON#	15	16	SMBus_SDA
GND	17	18	SMBus_SCL
UID_BUTTON#	19	20	INTRUSION#
NC	21	22	LAN2-X_LED_P
NMI_BUTTON#	23	24	LAN2-X_LED#

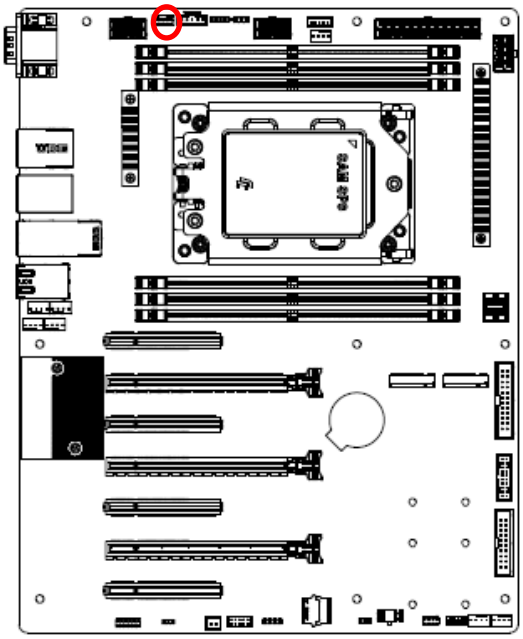
2.6.21 Inlet Thermal Sensor (JINLET_SER1)

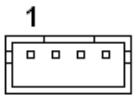




Signal	PIN
+3.3VSB	1
SMB_INLET_TEMPSENSOR_SDA	2
SMB_INLET_TEMPSENSOR_SCL	3
GND	4

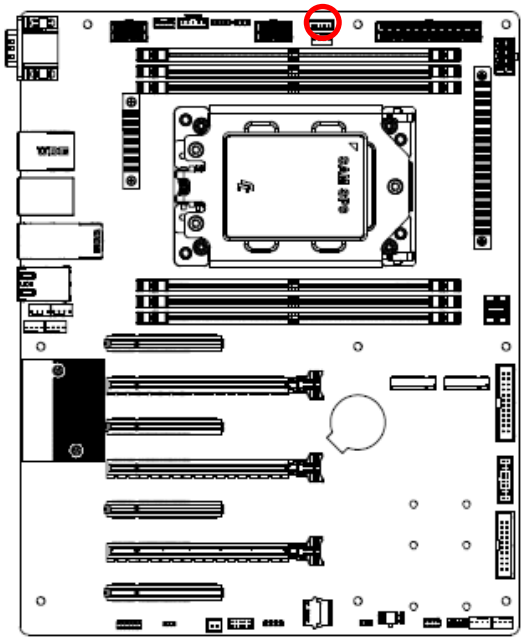
2.6.22 Outlet Thermal Sensor (JOUTLET_SER1)

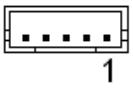




Signal	PIN
+3.3VSB	1
SMB_OUTLET_TEMPSENSOR_SDA	2
SMB_OUTLET_TEMPSENSOR_SCL	3
GND	4

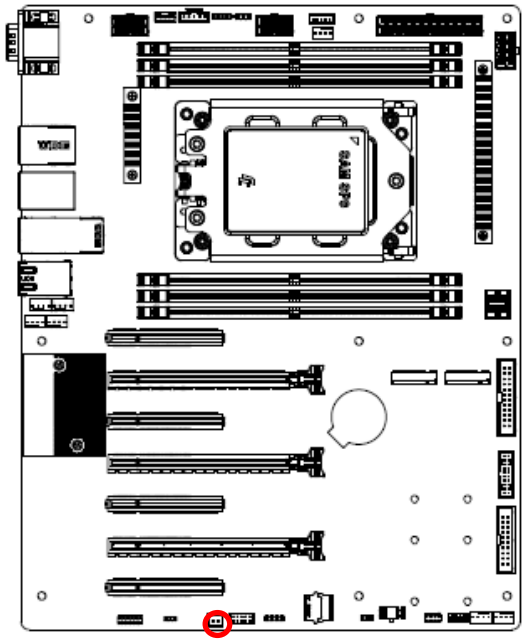
2.6.23 HDD Backplane thermal Sensor (JHDD_SER1)

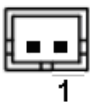




Signal	PIN
+3.3VSB	1
SMB_HDBP_TEMPSENSOR_SDA	2
SMB_HDBP_TEMPSENSOR_SCL	3
GND	4
SSD_LED_N	5

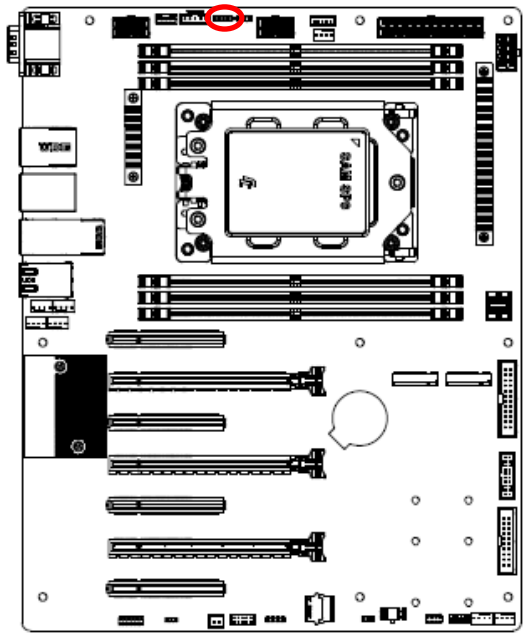
2.6.24 CASE OPEN connector (JCASE_OPEN1)

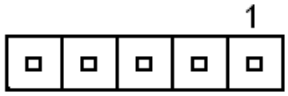




Signal	PIN
CHASSIS_INTRUSION	1
GND	2

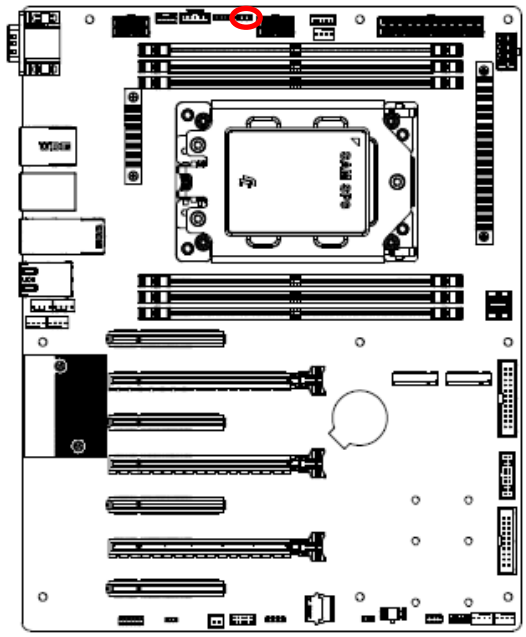
2.6.25 CPU PCIE HP SMB connector (JPEHPSMB1)

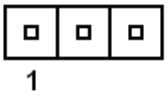




Signal	PIN
SMB_CPUHP_SCL	1
GND	2
SMB_CPUHP_SDA	3
GND	4
SMB_CPUHP_ALERT#	5

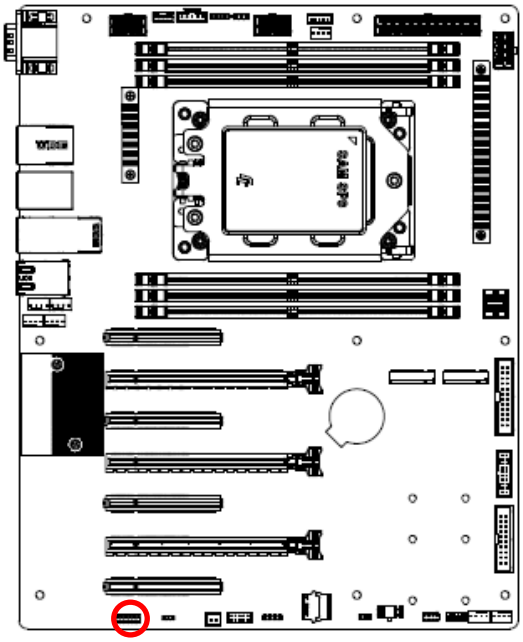
2.6.26 SMBUS VR connector (JVR_PRG1)

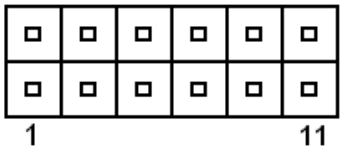




Signal	PIN
SMB_VR_SDA	1
GND	2
SMB_VR_SCL	3

2.6.27 ESPI connector (JESPI1)





Signal	PIN	PIN	Signal
ESPI_ D0	1	2	+3.3VSB
ESPI_ D1	3	4	PLTRST#
ESPI_ D2	5	6	ESPI_CS#
ESPI_ D3	7	8	ESPI_CLK
NC	9	10	GND
ESPI_RESET#	11	12	ESPI_ALERT#

2.7 Processor Installation SOP

Overview of the Processor Assembly installation procedure

The processor assembly contains the AMD CPU and CPU cooler.

- 1x AMD EPYC8004 processors
- 1x Cooler module (Avalue P/N:BCC-FAN-484-01R)

Note: Ensure your workspace is clean and organized. Gather all necessary tools and materials.

1. <u>Open the captive screw and Retention Frame.</u>

Locate the 3 screws on the socket. Refer to the socket diagram for the exact positions. (Figure 1)

A. Using the T20 screwdriver, begin with the screw labeled as "1" on the socket diagram.

B. Next, remove the screw labeled as "2".

C. Finally, remove the screw labeled as "3".

→The Retention Frame will automatically pump up. (Figure 2)

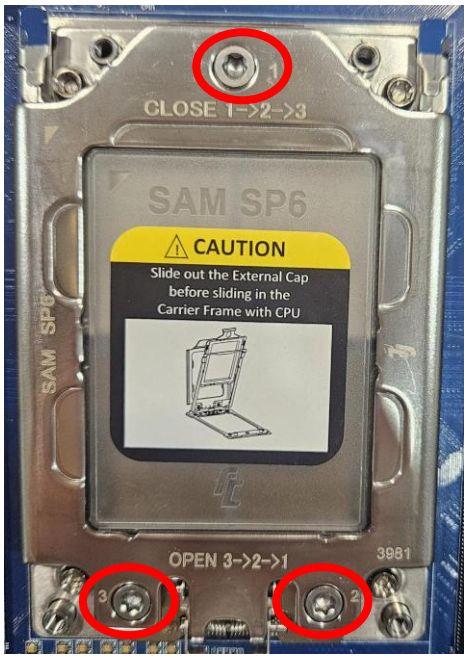


Figure 1

Figure 2

2. Bounce the Rail Frame.

A. Use your index finger on both hands placed on the Rail Frame on both sides of the metal handle. (Figure 3)

B. Then rotate the Rail frame to the fully open position. (Figure 4)

Figure 3

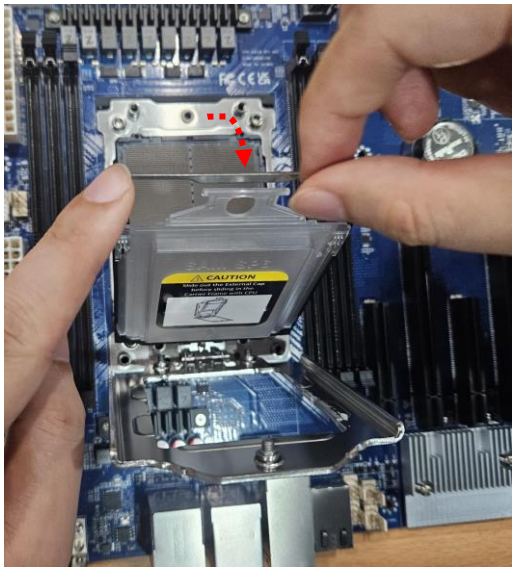


Figure 4

3. Remove the PnP Cap.

A. Use thumb and forefinger to hold the removal tap of the PnP Cap. (Figure 5.1)

B. Carefully remove the PnP Cap in a vertical motion only. (Figure 5.2)

Figure 5.1

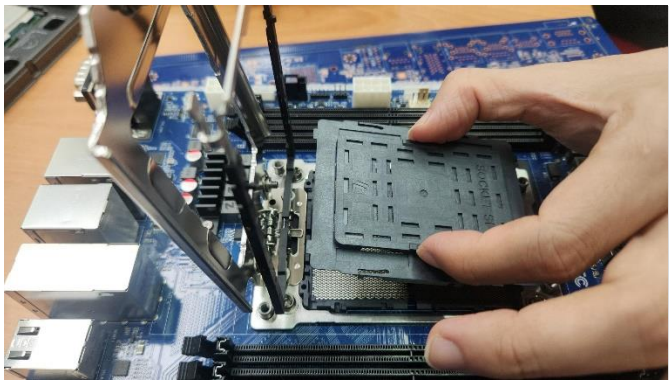


Figure 5.2

4. <u>Insert the CPU package.</u>

A. Remove the CPU protective cover. (Figure 6)

B. Insert the Carrier Frame with the CPU package into the Rail Frame slot by holding the finger grip. (Figure 7 & 7.1)

Note:

- Don't touch the CPU package pad.
- The Carrier Frame should **slide into** the Rail Frame slot when inserting the Package.

Warning!

- Ensure the Carrier Frame with the Package is securely fixed in the Rail Frame slot to prevent it from dropping.
- Ensure the carrier frame makes a slight 'click' when engaging with the rail frame. Failure to secure it may result in damage to the socket cap and contacts.

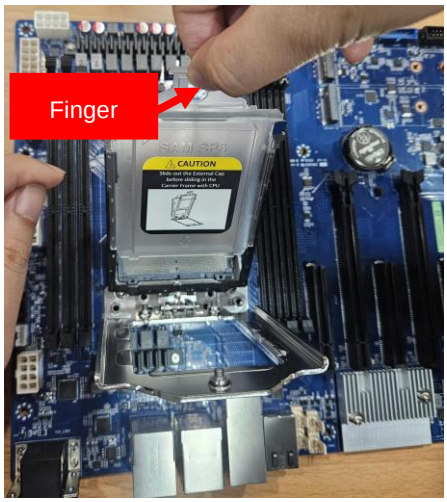


Figure 6

CPU

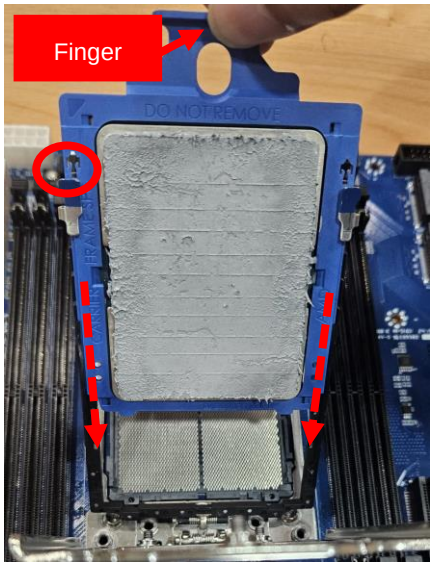


Figure 7

Figure 7.1

5. Assemble CPU package

A. Use the finger of two hands to press the Rail Frame with the CPU package on the Stiffener Frame. Slightly press down fully, it will get stuck and won't bounce back. (Figure 8)

B. Press Retention Frame and then tighten the captive screw with T20 screwdriver. (Figure 9)

Note:

➢ Tighten the screws completely in the order of 1→2→3

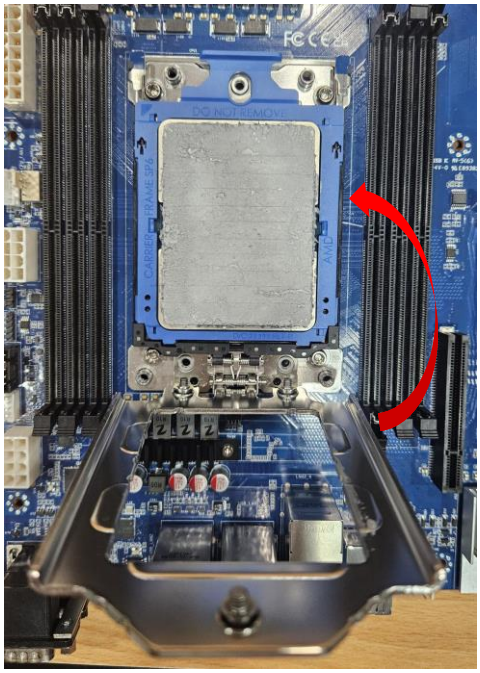


Figure 8

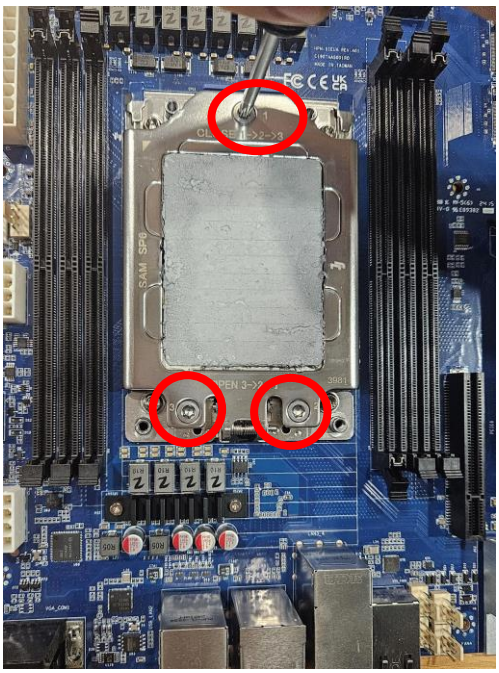


Figure 9

6. Install the CPU Cooler

A. Align the CPU Cooler with 4 nuts on the Stiffener Frame. (Figure 10)

B. Use the T20 screwdriver to tighten 4 Heatsink nuts in sequence as 1 to 4. (Figure 11)

Memo:

- For the first time securing the CPU Cooler, tighten it in sequences 1 to 4 using a screwdriver as Figure 11. Apply downward pressure for about 1–2 seconds, then stop tightening.
- Repeat the process by tightening the screws complete down in numerical order to complete the module assembly.

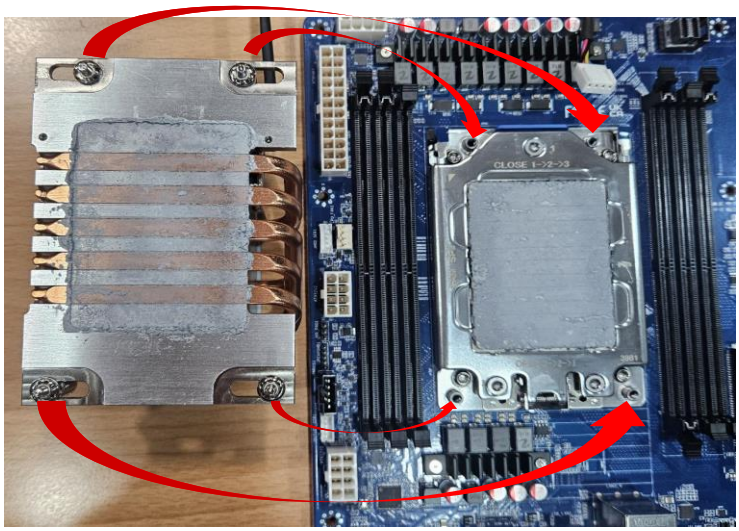


Figure 10

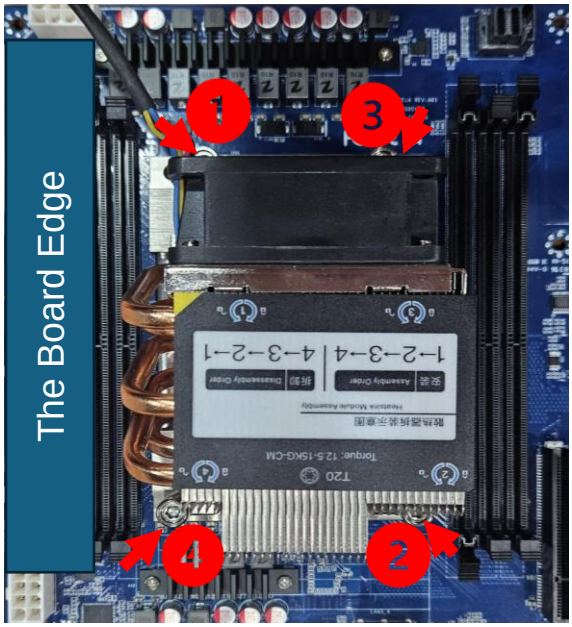
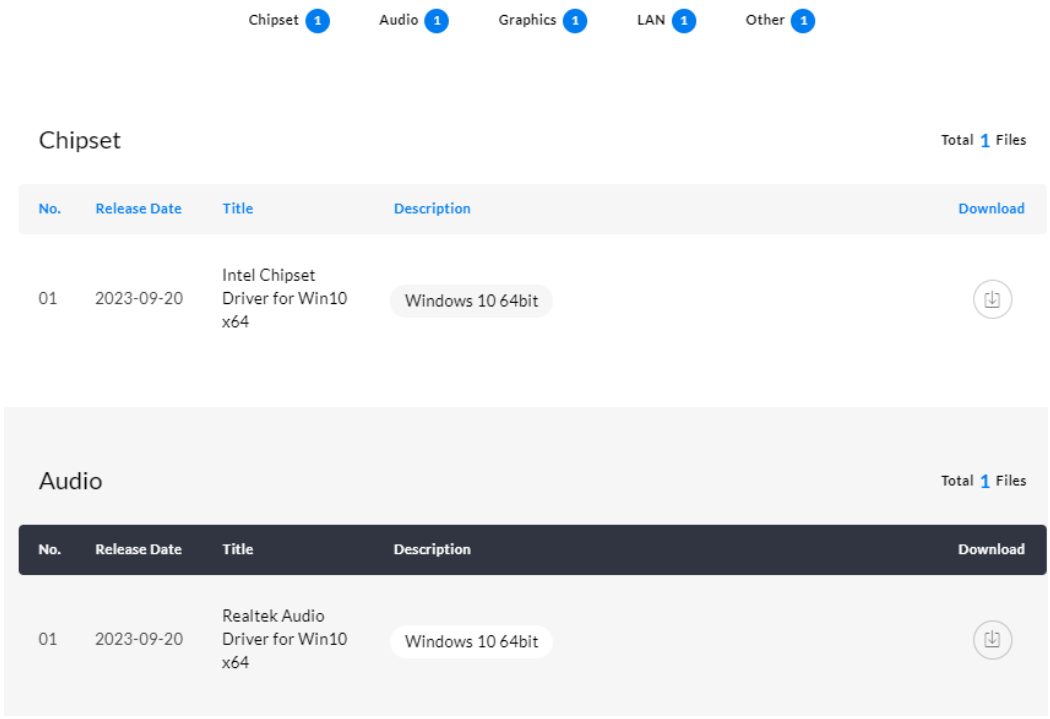


Figure 11

3. Drivers Installation

All the drivers are available on Avalue Downloads Area (https://www.avalue.com/en/support/download). Type the model name and press Enter to find all the relevant software, utilities, and documentation.



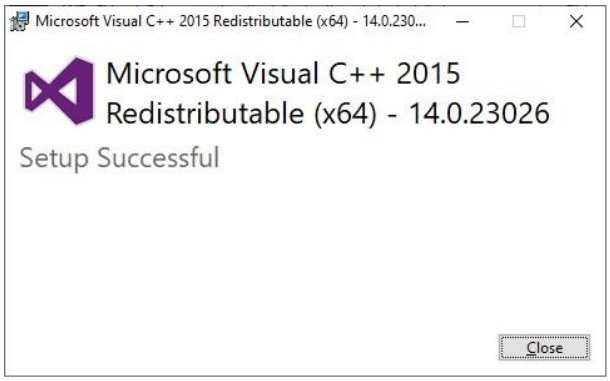
(For reference only)

Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

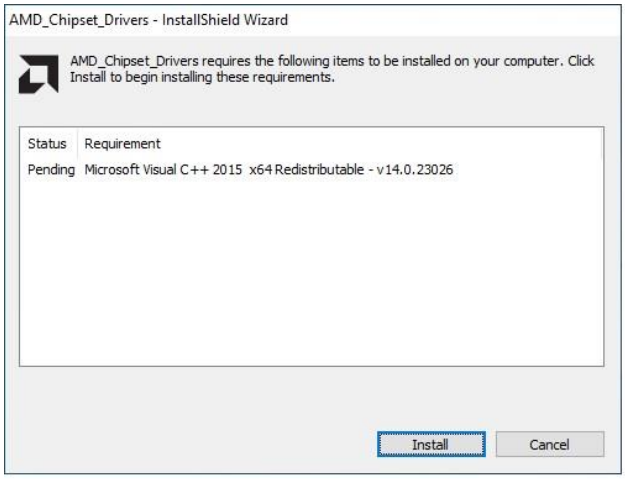
3.1 Install Chipset Driver

All drivers can be found on the Avalue Official Website:
www.avalue.com.

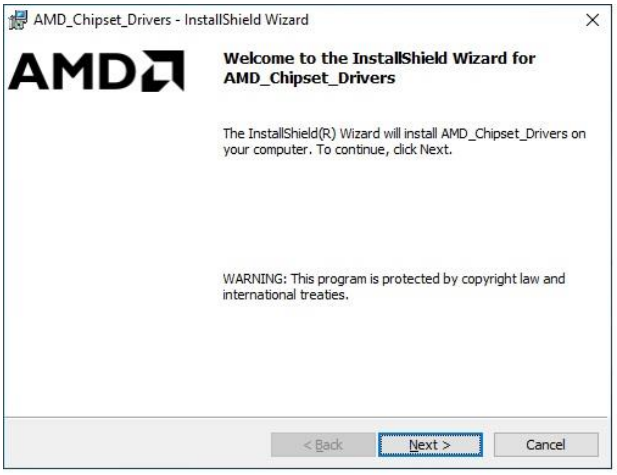
Note: The installation procedures and screen shots in this section are based on Windows Server operation system.



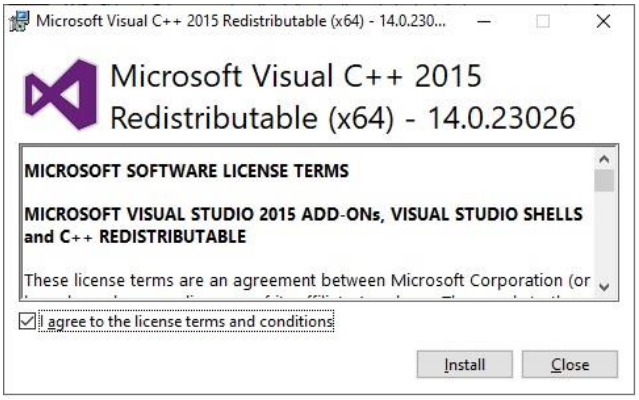
Step 3. Setup Successful.



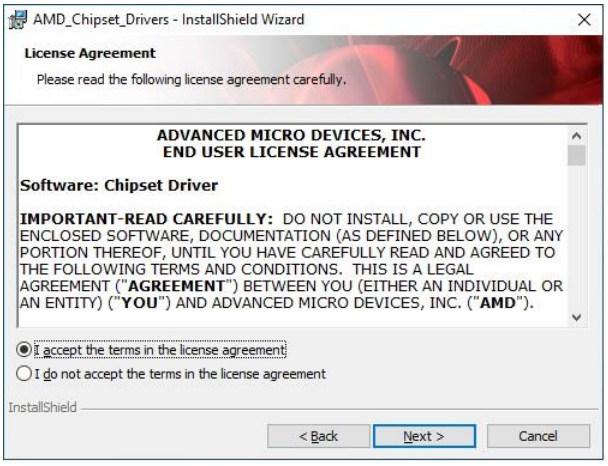
Step1. Click **Install**.



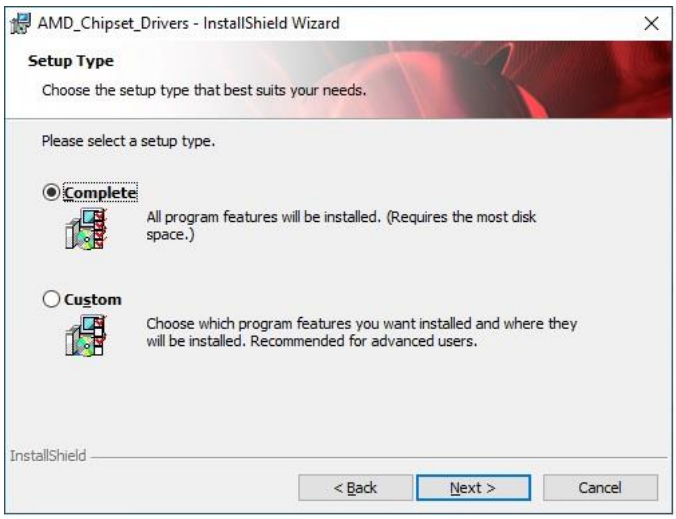
Step 4. Click **Next**.



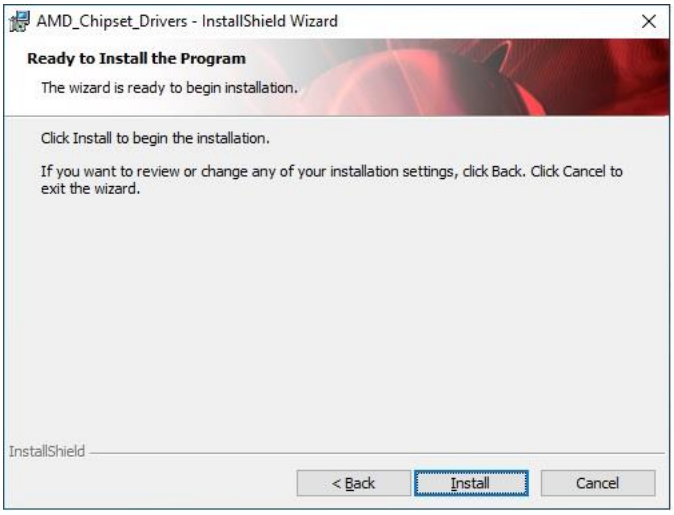
Step 2. Click **Install**.



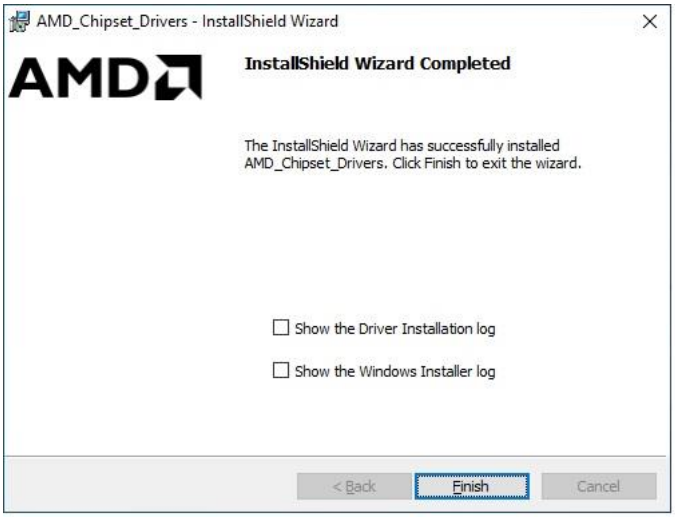
Step 5. Click **Next**.



Step 6. Click **Next**.



Step 7. Click **Install**.

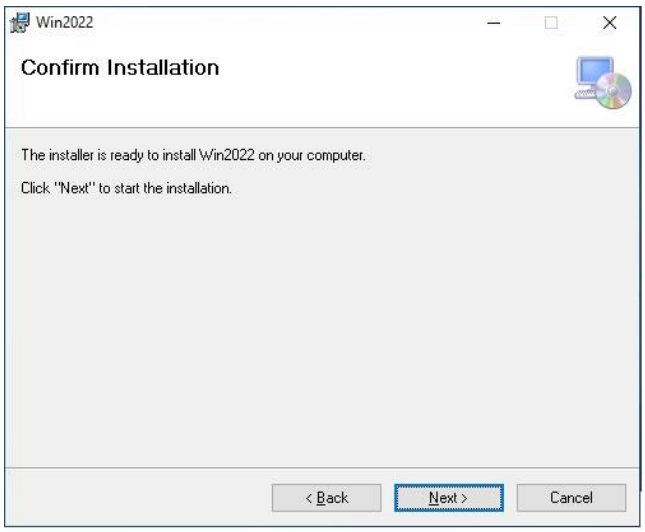


Step 8. Setup completed.

3.2 Install VGA Driver

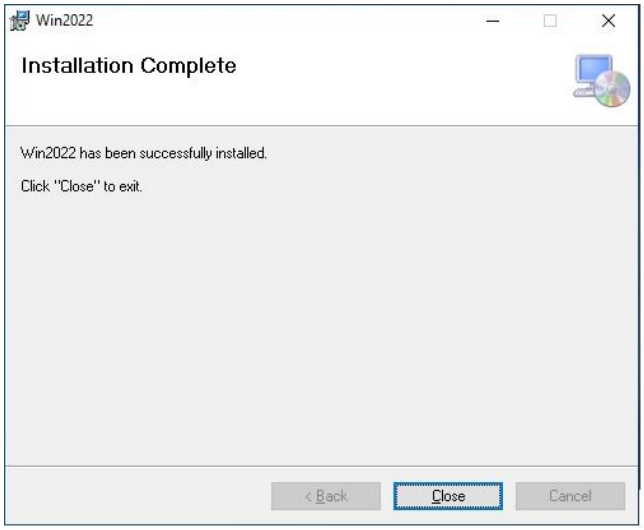
All drivers can be found on the Avalue Official Website: www.avalue.com.

Note: The installation procedures and screen shots in this section are based on Windows Server operation system.

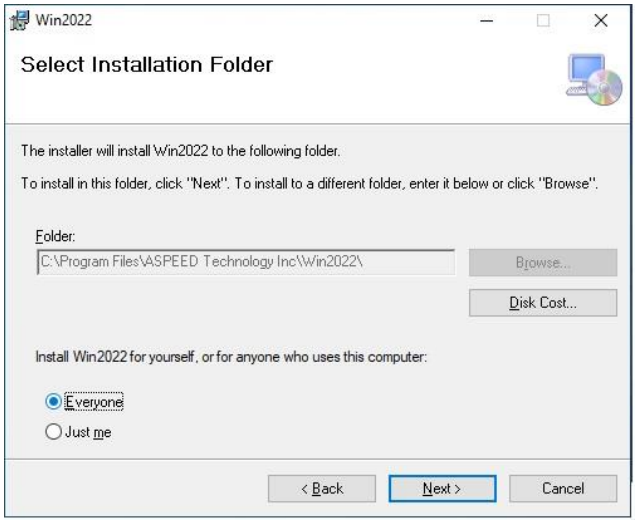


Step 3. Click **Next.**

Step 1. Click **Next** to continue installation.



Step 4. Setup completed.

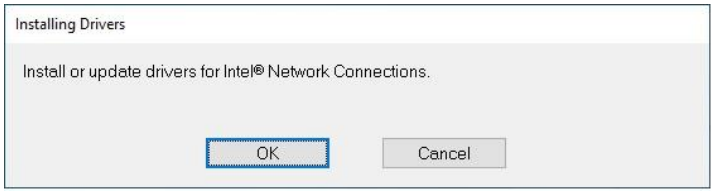


Step 2. Click **Next**.

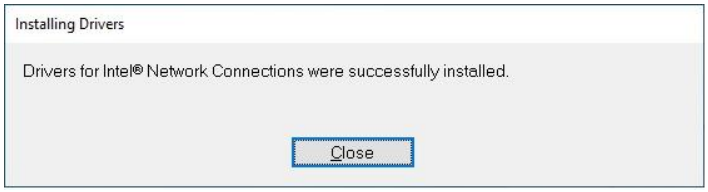
3.3 Install Ethernet Driver

All drivers can be found on the Avalue Official Website:
www.avalue.com.

Note: The installation procedures and screen shots in this section are based on Windows Server operation system.



Step 1. Click **OK** to continue installation.



Step 2. Setup completed.

4.BIOS Setup

4.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

4.2 Starting Setup

AMI BIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <ESC> or <Del> immediately after switching the system on, or
By pressing the < ESC> or <Del> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <ESC> or <Del> to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

4.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values
F3 key	Optimized defaults
F4 key	Save & Exit Setup

- **Navigating Through The Menu Bar**

  Use the left and right arrow keys to choose the menu you want to be in.

Note: Some of the navigation keys differ from one screen to another.

- **To Display a Sub Menu**

  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

4.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the <Enter> key again.

4.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

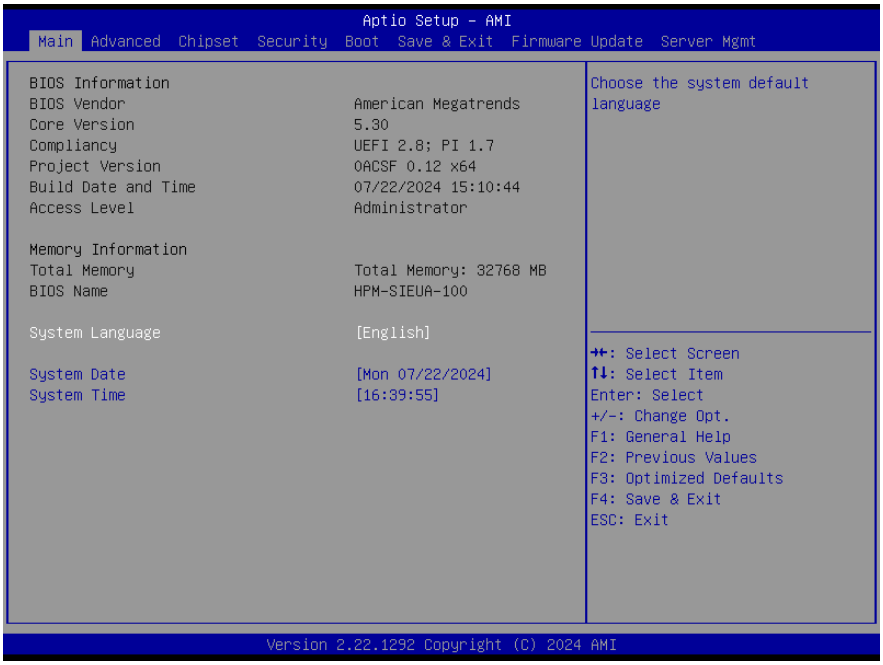
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

4.6 BIOS setup

Once you enter the Aptio Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

4.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.



4.6.1.1 System Language

This option allows choosing the system default language.

4.6.1.2 System Date

Use the system date option to set the system date. Manually enter the Month, day and year.

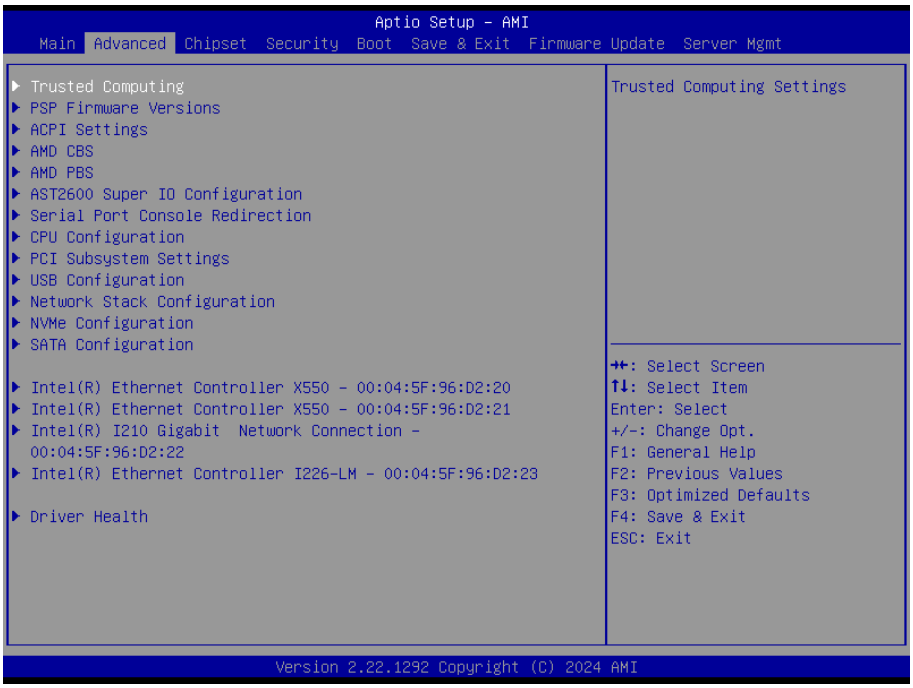
4.6.1.3 System Time

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

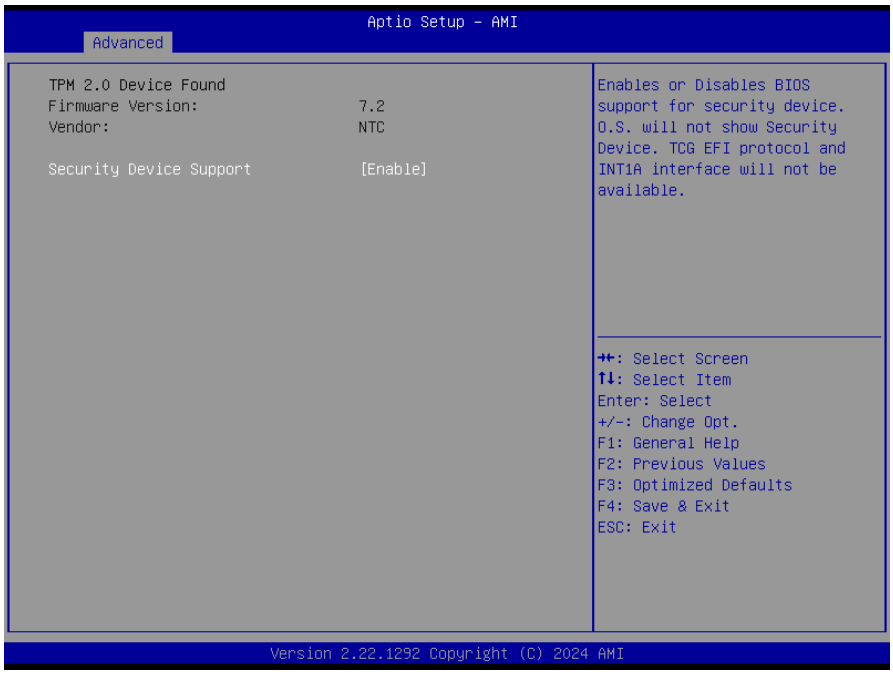
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com) to download the latest product and BIOS information.

4.6.2 Advanced Menu

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.

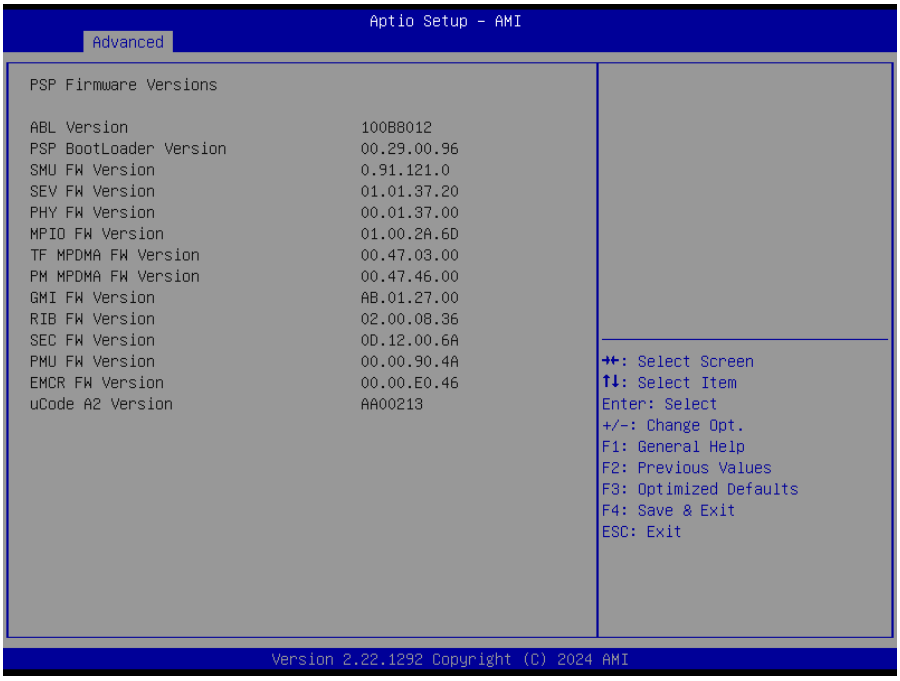


4.6.2.1 Trusted Computing

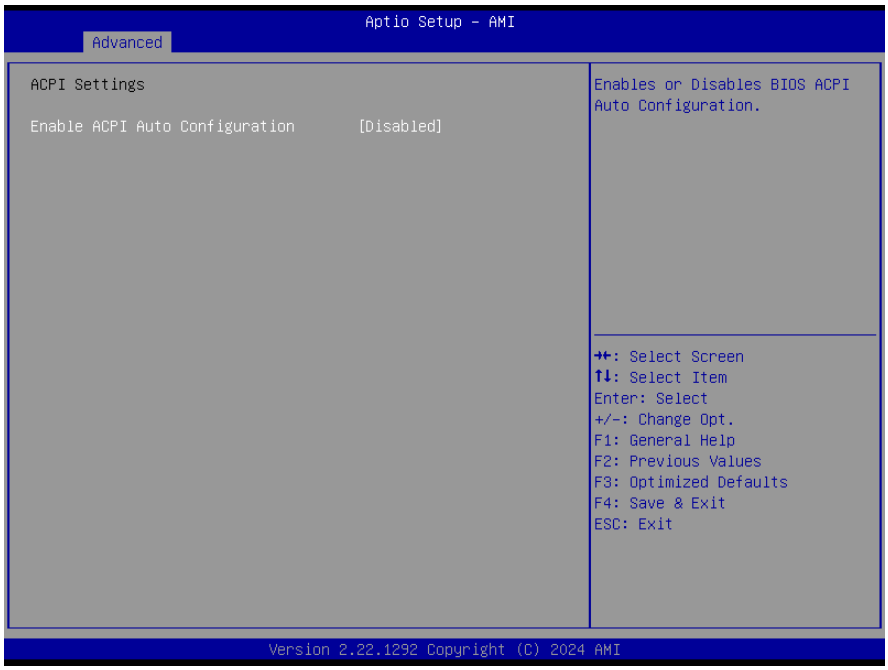


Item	Options	Description
Security Device Support	Disable, Enable**[Default]**	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

4.6.2.2 PSP Firmware Versions



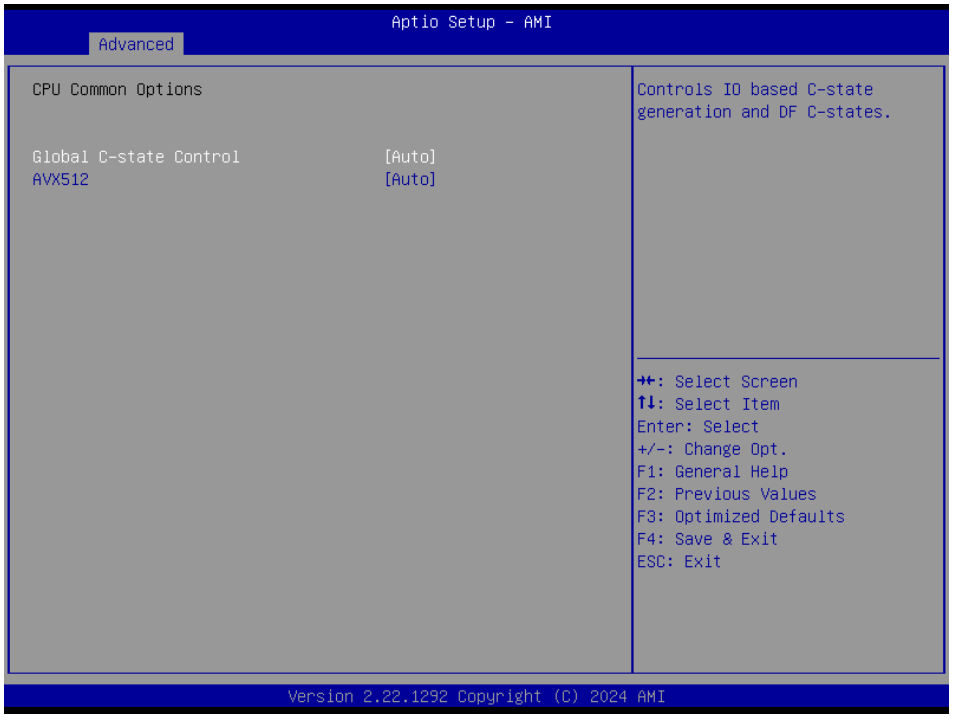
4.6.2.3 ACPI Settings



Item	Options	Description
Enable ACPI Auto Configuration	Disabled**[Default]** Enabled	Enables or Disables BIOS ACPI Auto Configuration.

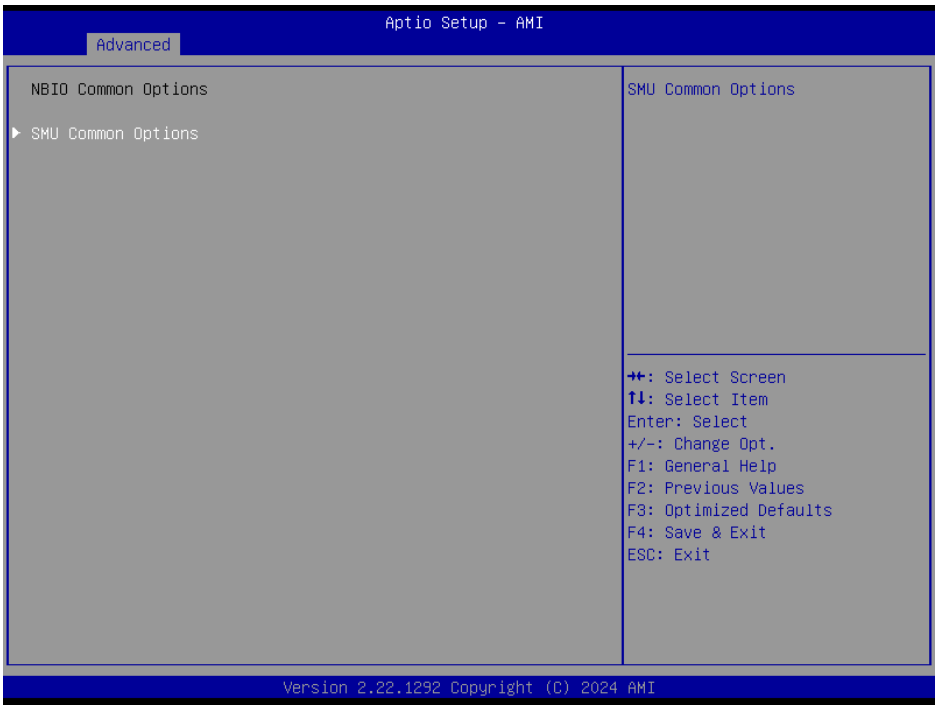
4.6.2.4 AMD CBS

4.6.2.4.1 CPU Common Options

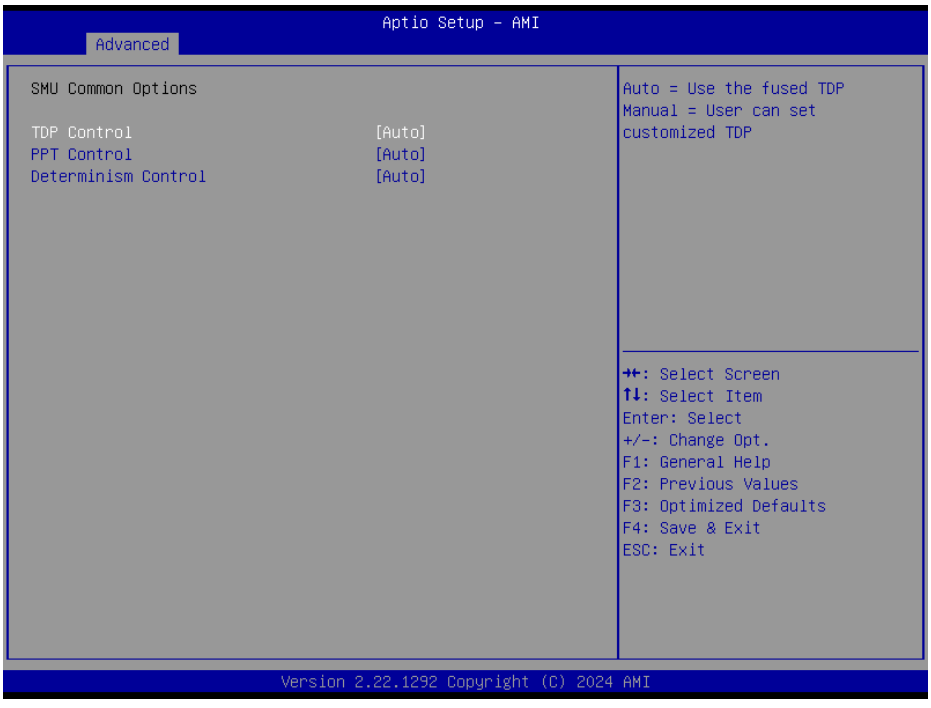


Item	Option	Description
Global C-state Control	Disabled Enabled Auto**[Default]**,	Controls IO based C-state generation and DF C-states.
AVX512	Disabled Enabled Auto**[Default]**,	Enable/Disable AVX512.

4.6.2.4.2 NBIO Common Options



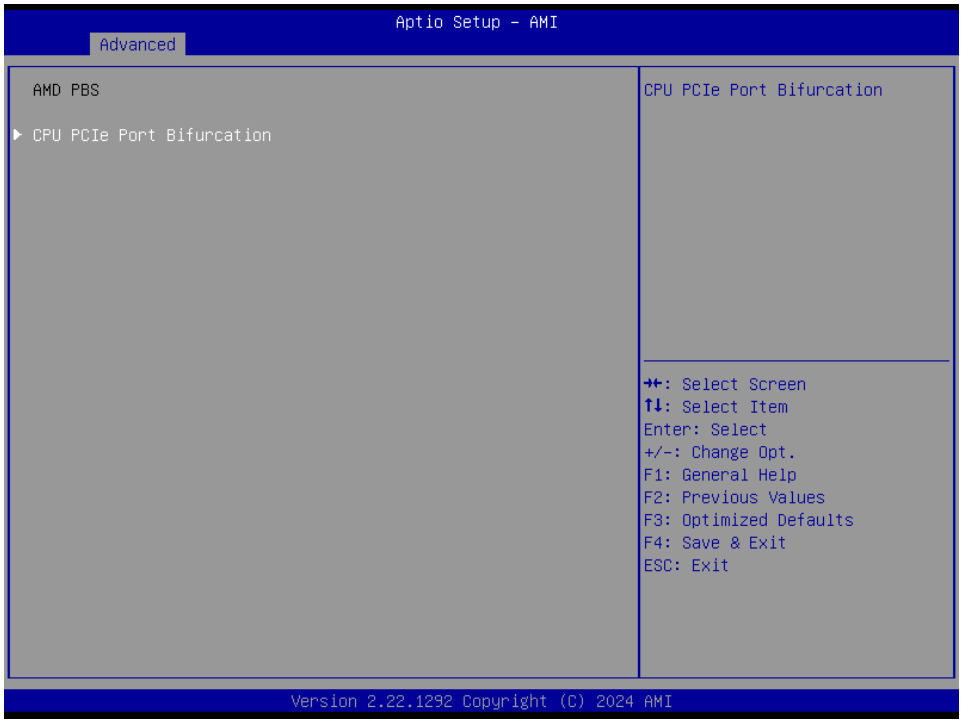
4.6.2.4.2.1 SMU Common Options



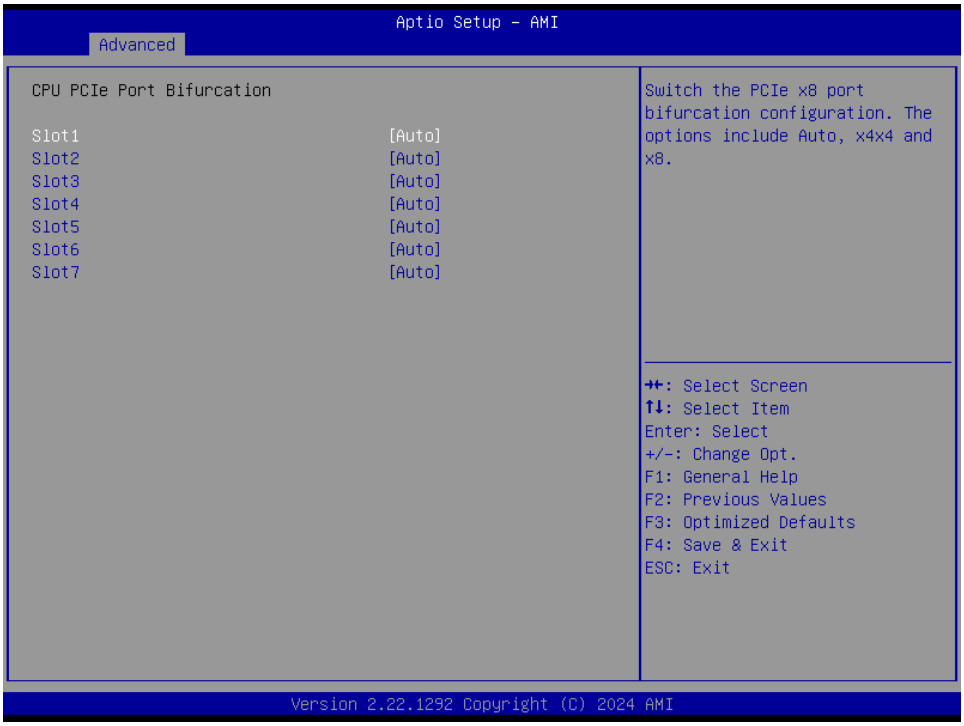
Item	Option	Description
TDP Control	Manual Auto**[Default]**,	Auto = Use the fused TDP Manual = User can set customized TDP.
PPT Control	Manual Auto**[Default]**,	Auto = Use the fused PPT Manual = User can set customized PPT.

Determinism Control	Manual Auto**[Default]**,	Auto = Use default performance determinism settings Manual = User can set custom performance determinism settings.

4.6.2.5 AMD PBS



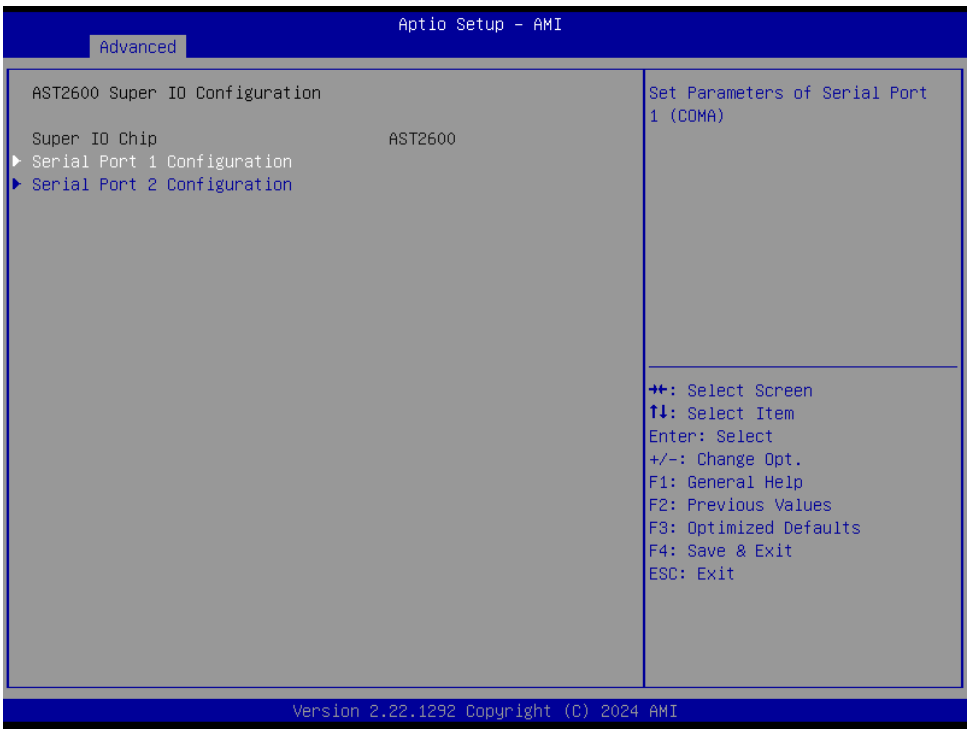
4.6.2.5.1 CPU PCIe Port Bifurcation



Item	Option	Description
Slot 1	Auto**[Default]**, x4x4	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4 and x8.

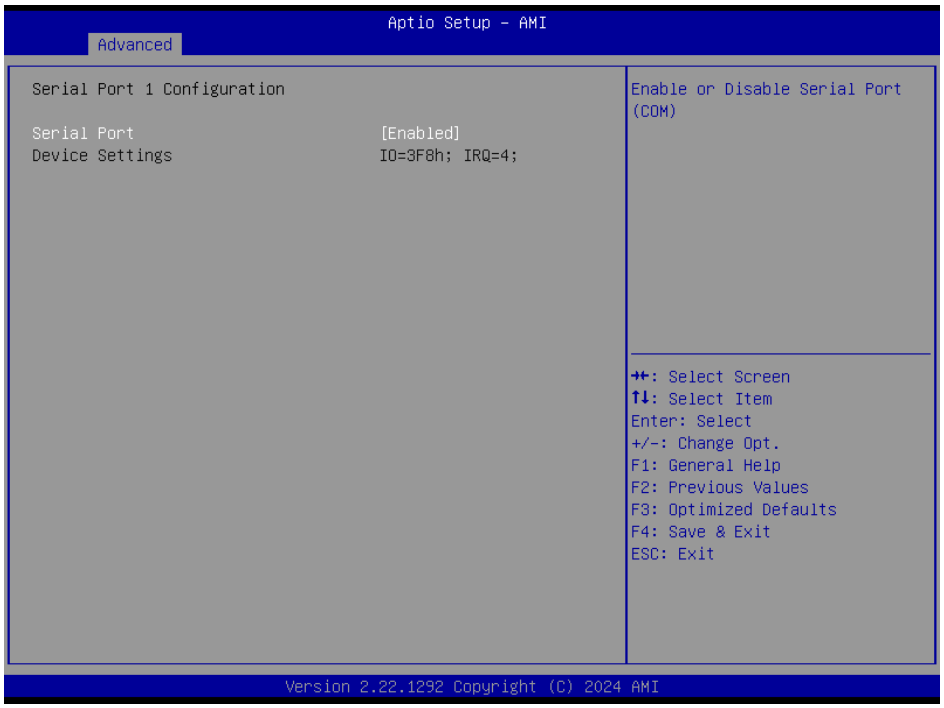
	x8	
Slot 2	Auto**[Default]**, x4x4x4x4 x4x4x8 x8x4x4 x8x8 x16	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4x4x4, x4x4x8, x8x4x4, x8x8 and x16.
Slot 3	Auto**[Default]**, x4x4 x8	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4 and x8.
Slot 4	Auto**[Default]**, x4x4x4x4 x4x4x8 x8x4x4 x8x8 x16	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4x4x4, x4x4x8, x8x4x4, x8x8 and x16.
Slot 5	Auto**[Default]**, x4x4 x8	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4 and x8.
Slot 6	Auto**[Default]**, x4x4x4x4 x4x4x8 x8x4x4 x8x8 x16	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4x4x4, x4x4x8, x8x4x4, x8x8 and x16.
Slot 7	Auto**[Default]**, x4x4 x8	Switch the PCIe x8 port bifurcation configuration. The options include Auto, x4x4 and x8.

4.6.2.6 AST2600 Super IO Configuration



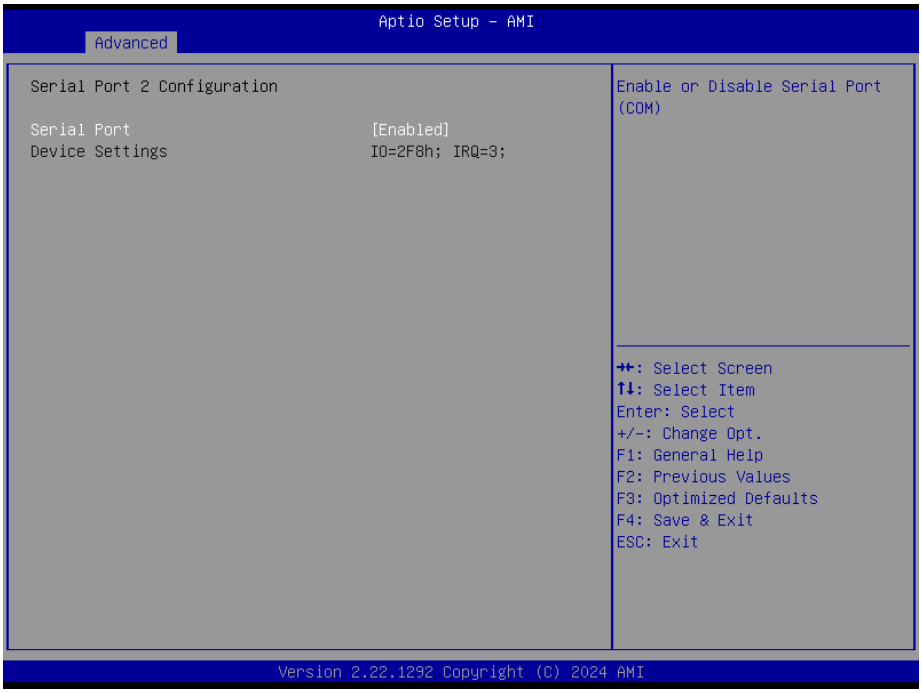
Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).

4.6.2.6.1 Serial Port 1 Configuration



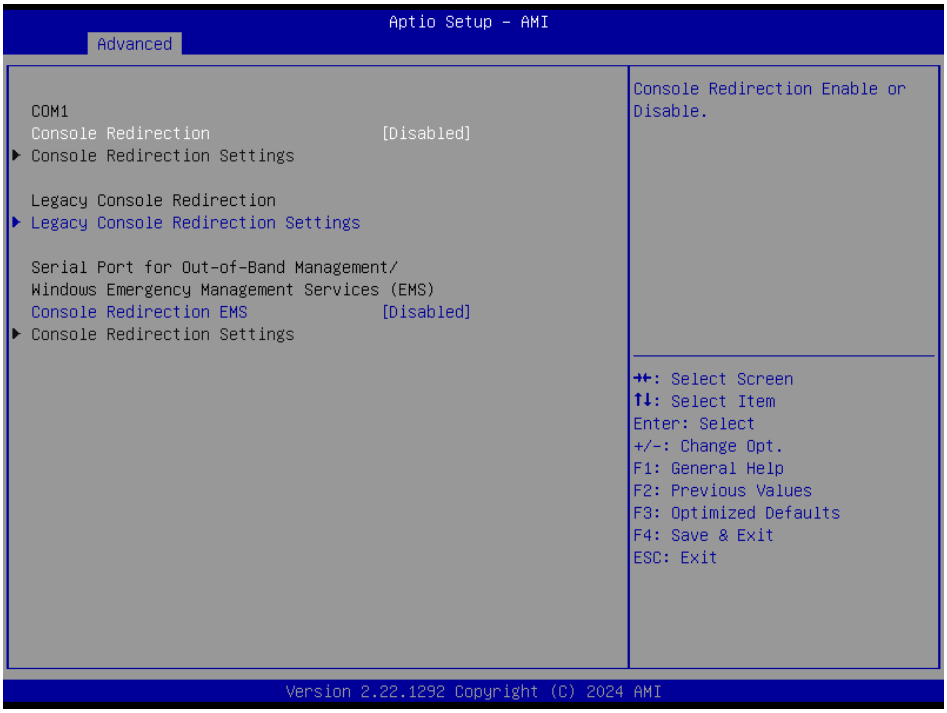
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

4.6.2.6.2 Serial Port 2 Configuration



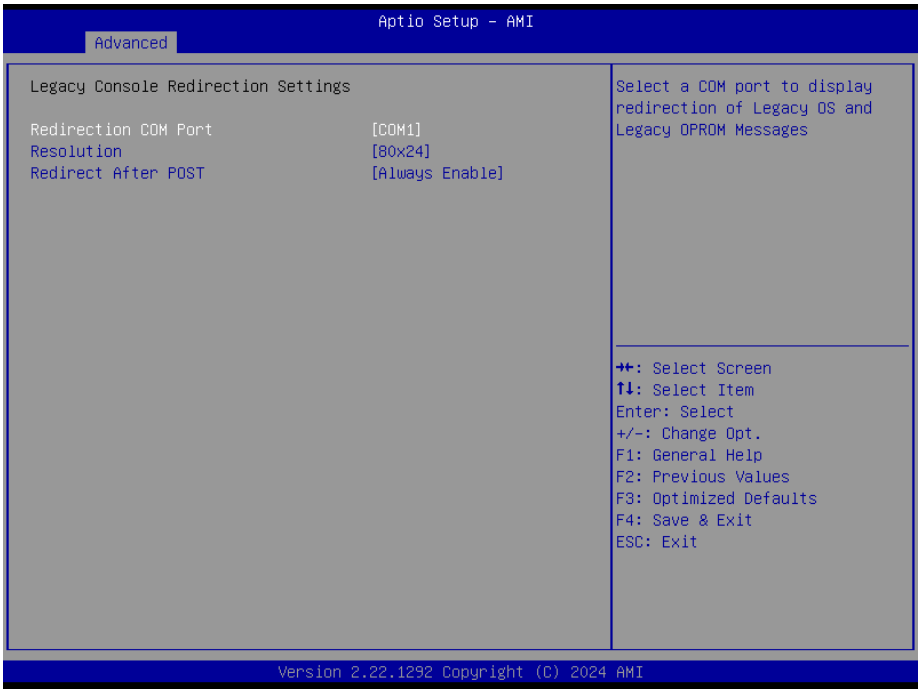
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

4.6.2.7 Serial Port Console Redirection



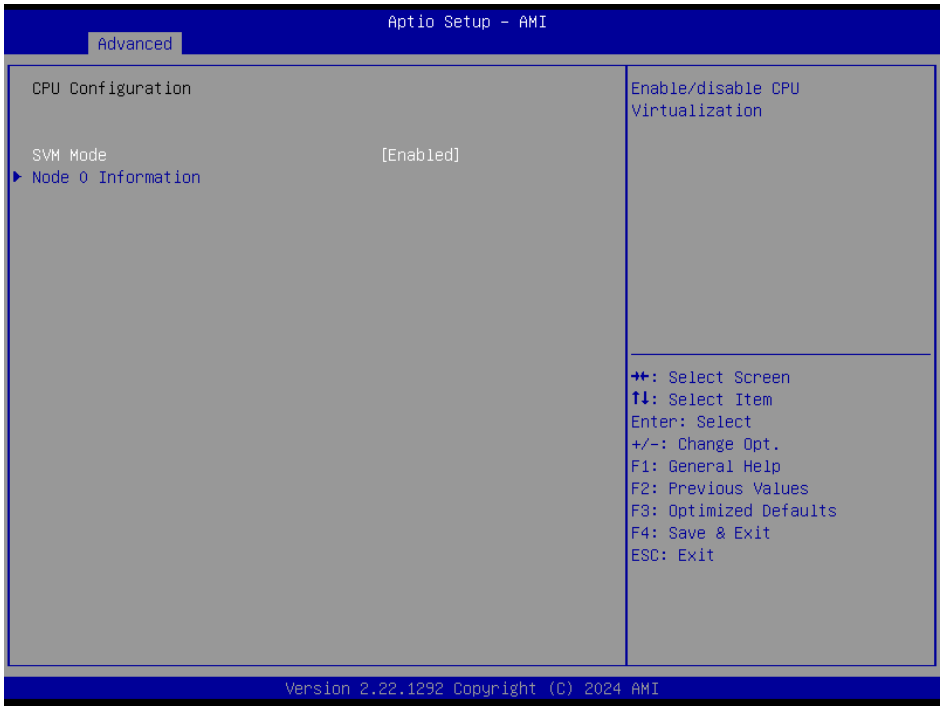
Item	Options	Description
Console Redirection	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.
Console Redirection EMS	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.

4.6.2.7.1 Legacy Console Redirection Settings



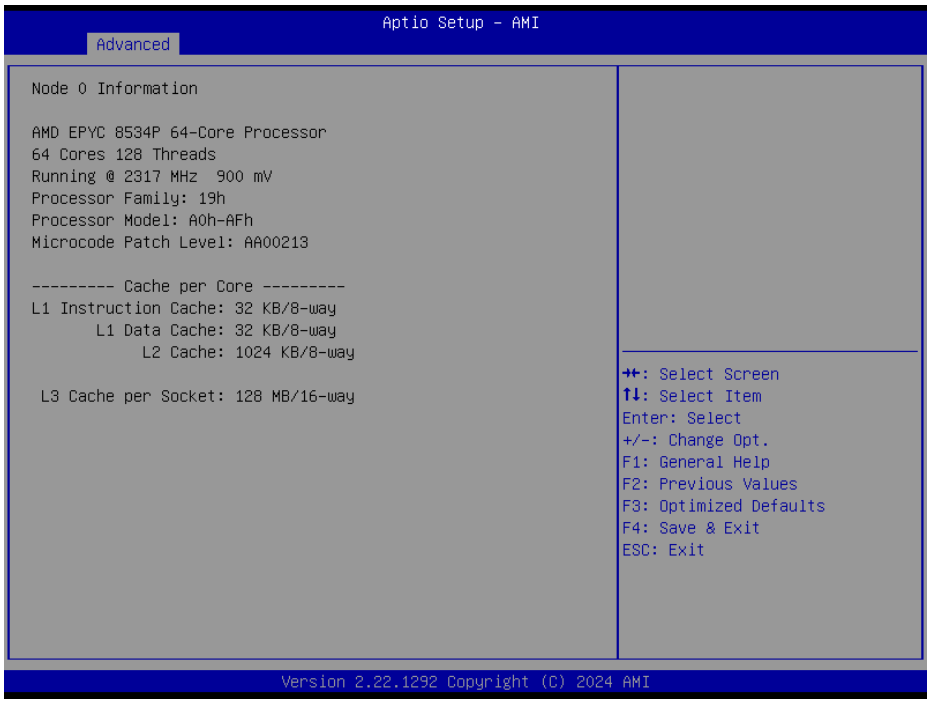
Item	Option	Description
Redirection COM Port	COM1**[Default]**	Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.
Resolution	80x24**[Default]** 80x25	On Legacy OS, the Number of Rows and Columns supported redirection.
Redirect After POST	Always Enable**[Default]** BootLoader	When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable.

4.6.2.8 CPU Configuration

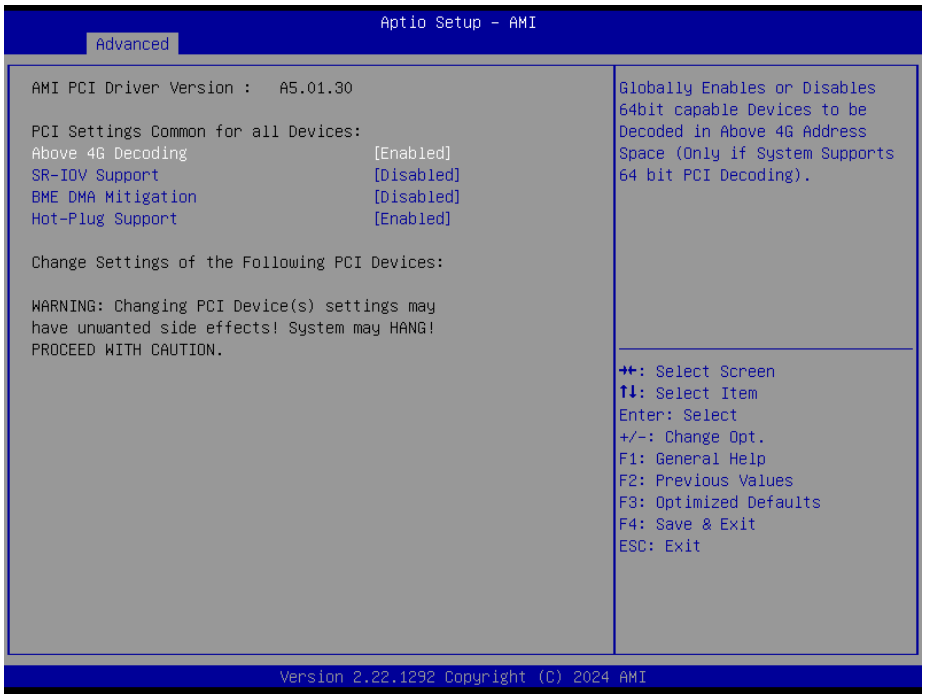


Item	Options	Description
SVM Mode	Disabled Enabled**[Default]**,	Enable/disable CPU Virtualization

4.6.2.8.1 Node 0 Information



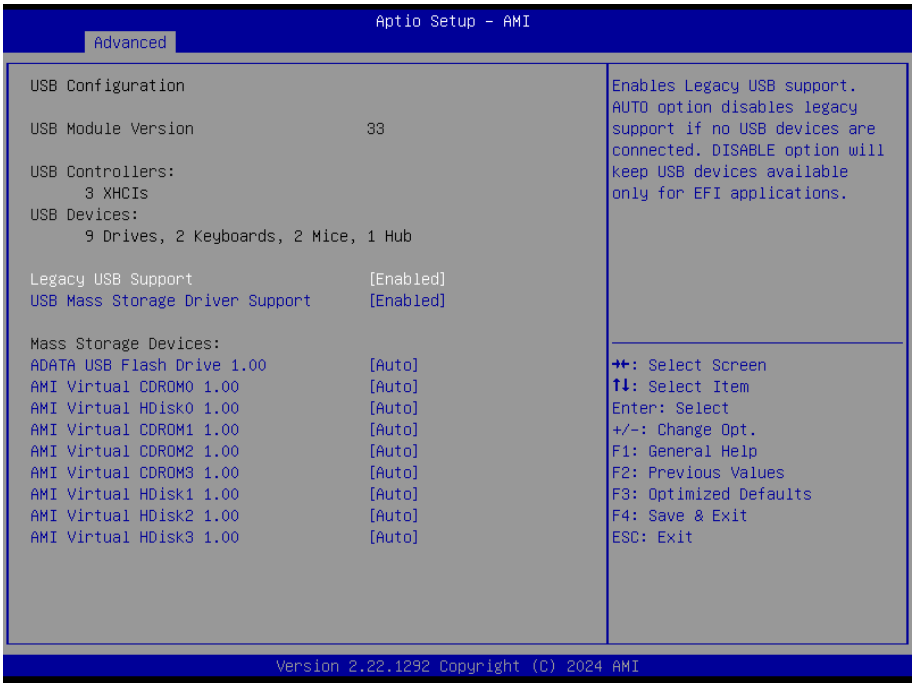
4.6.2.9 PCI Subsystem Settings



Item	Options	Description
Above 4G Decoding	Disabled Enabled**[Default]**,	Globally Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).
SR-IOV Support	Disabled**[Default]** Enabled,	If System has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization Support.
BME DMA Mitigation	Disabled**[Default]** Enabled,	Re-enable Bus Master Attribute disabled during Pci enumeration for PCI Bridges after SMM Locked.
Hot-Plug Support	Disabled Enabled**[Default]**,	Globally Enables or Disables Hot-Plug support for the entire System has Hot-Plug capable Slots and this option set to Enabled, it provides a Setup screen for selecting PCI resource padding for Hot-Plug.

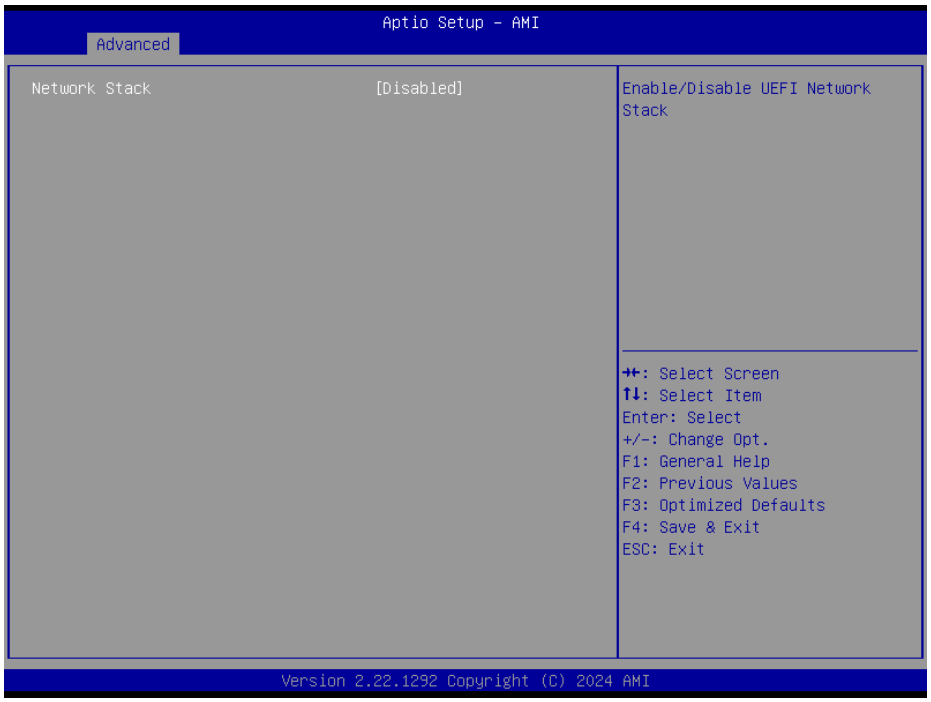
4.6.2.10 USB Configuration

The USB Configuration menu helps read USB information and configures USB settings.



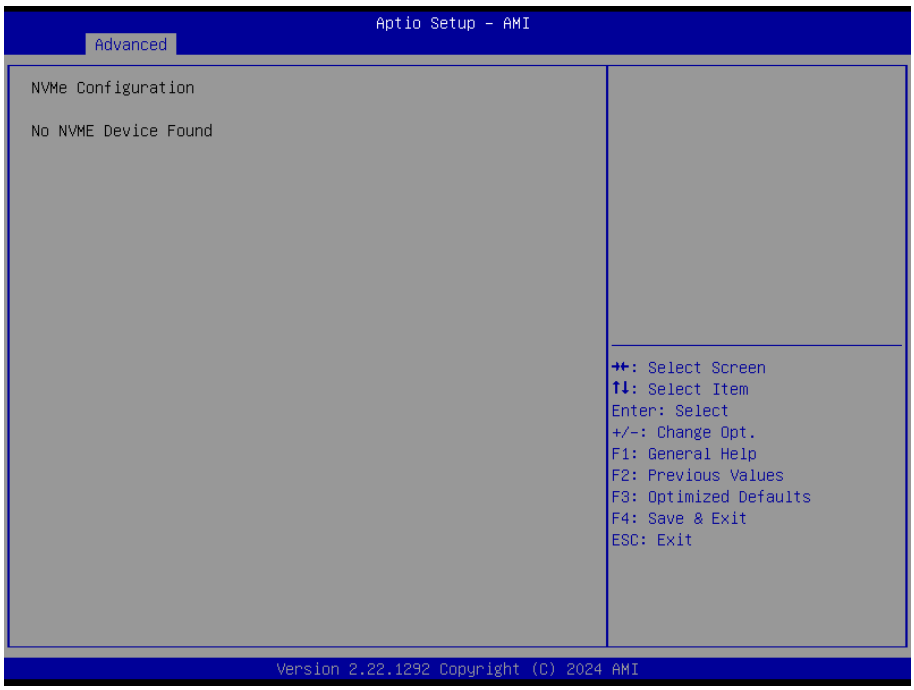
Item	Options	Description
Legacy USB Support	Enabled**[Default]**, Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
USB Mass Storage Driver Support	Disabled Enabled**[Default]**,	Enable/Disable USB Mass Storage Driver Support.
Mass Storage Devices	Auto**[Default]** Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

4.6.2.11 Network Stack Configuration

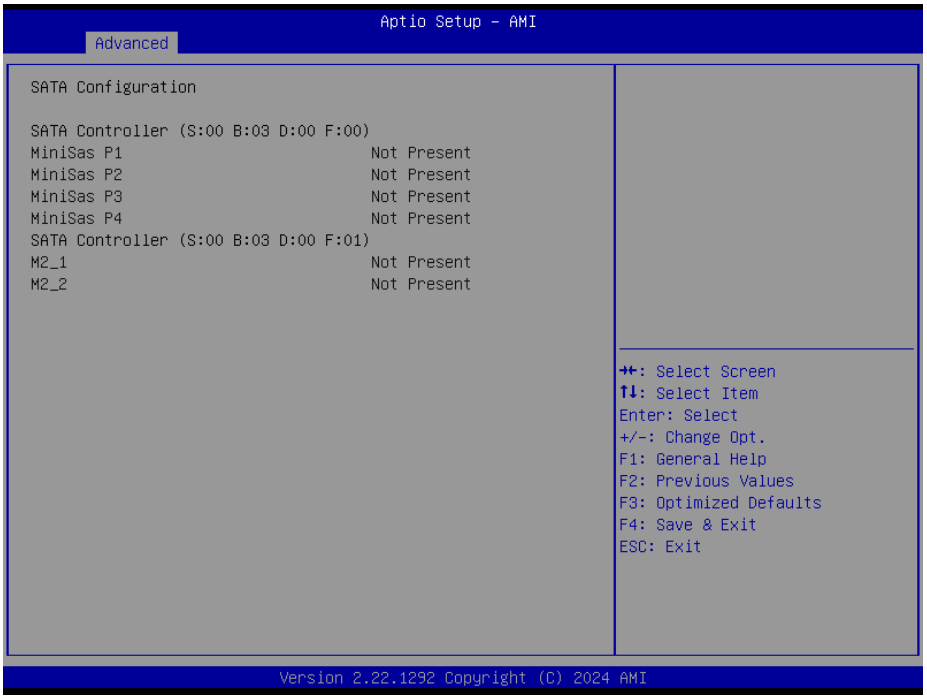


Item	Option	Description
Network stack	Enabled Disabled**[Default]**	Enable/Disable UEFI Network Stack.

4.6.2.12 NVMe Configuration



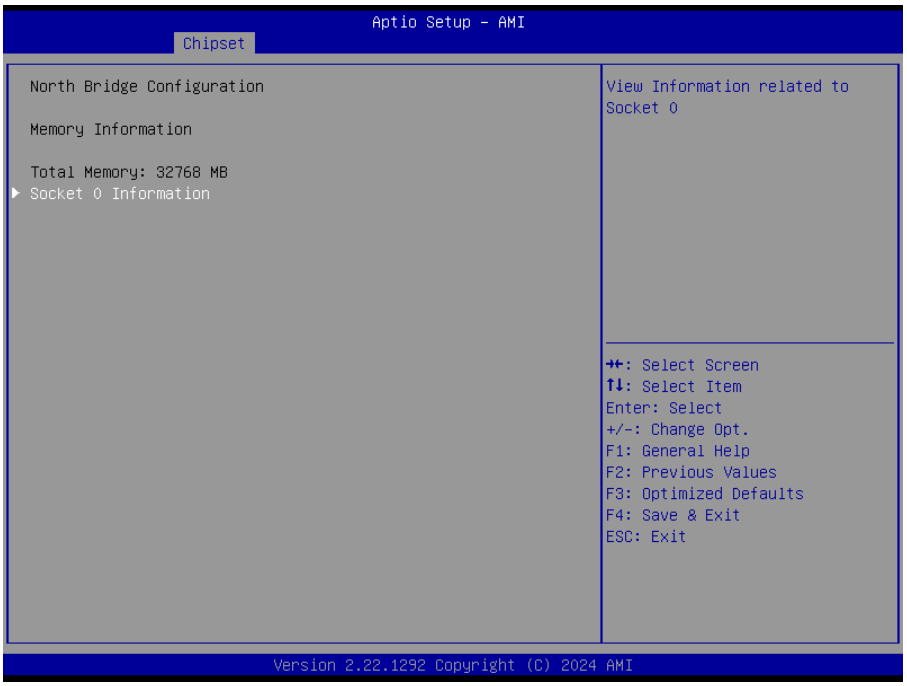
4.6.2.13 SATA Configuration



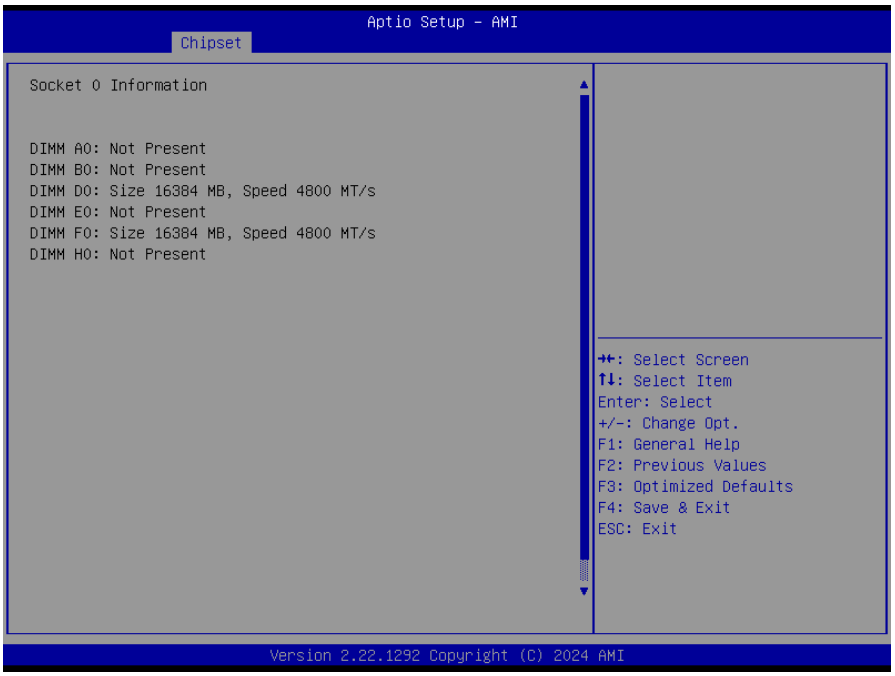
4.6.3 Chipset

Item	Option	Description
PCIe Compliance Mode	Off**[Default]** On	PCIe Link Compliance Mode.

4.6.3.1 North Bridge



4.6.3.1.1 Socket 0 Information



4.6.4 Security

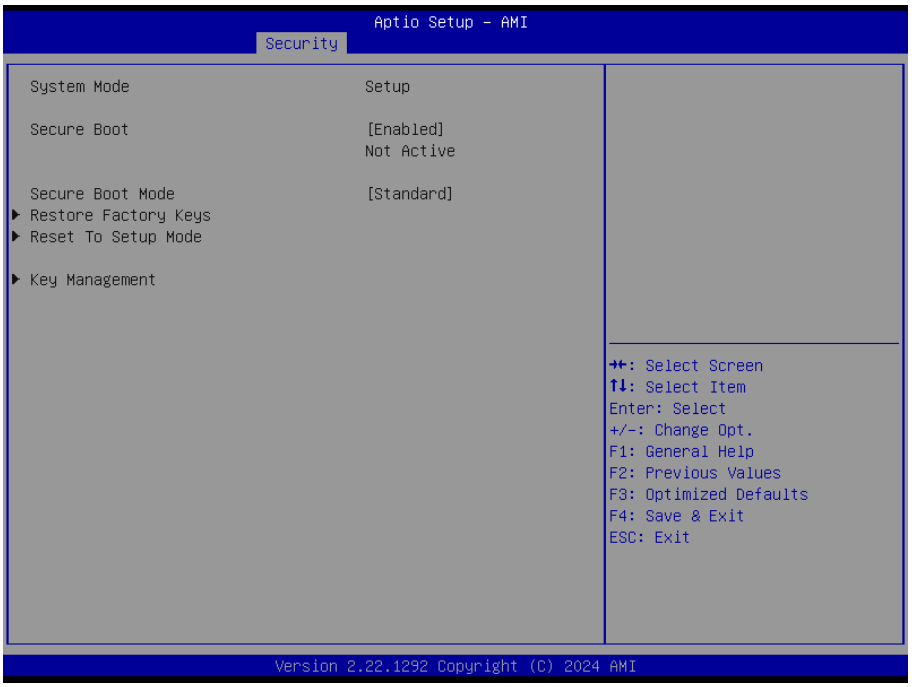
- **Administrator Password**

Set setup Administrator Password

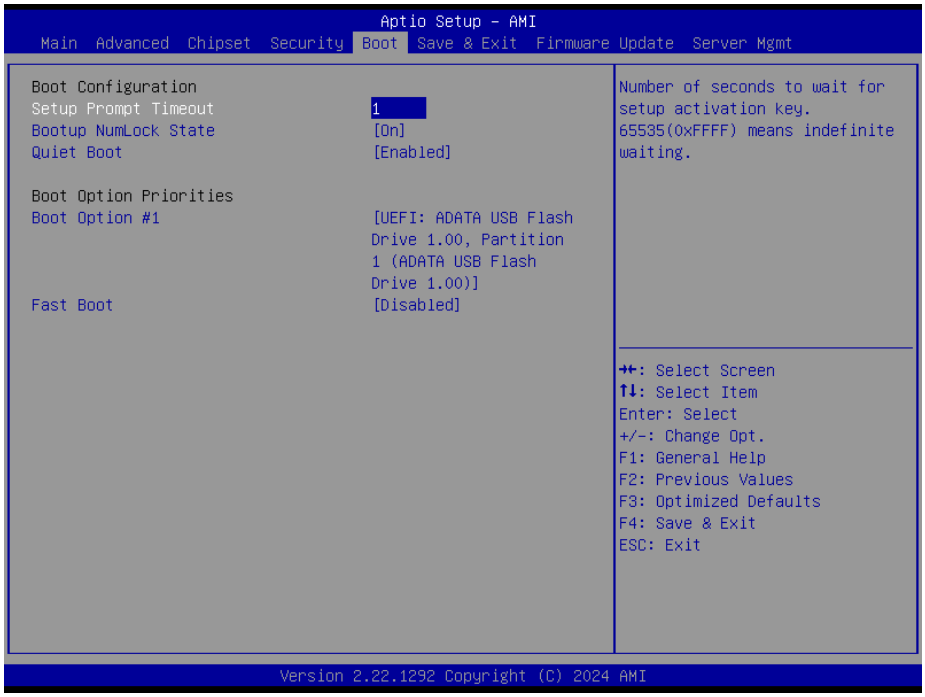
- **User Password**

Set User Password

4.6.4.1 Secure Boot

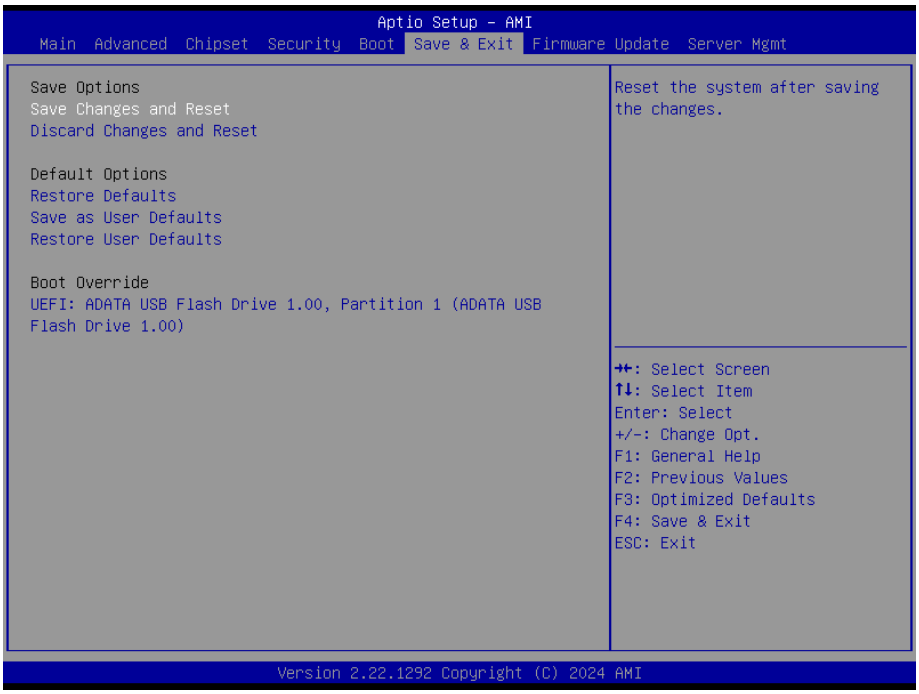


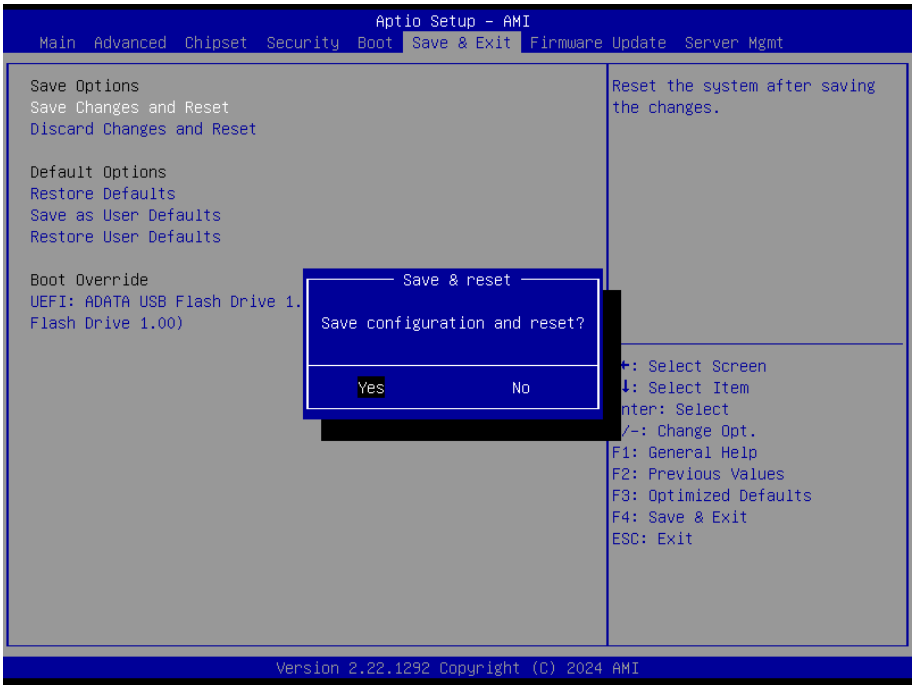
4.6.5 Boot



Item	Option	Description
Setup Prompt Timeout	1~ 65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the keyboard NumLock state
Quiet Boot	Disabled**[Default]** Enabled	Enables or disables Quiet Boot option
Boot Option #1	Set the system boot order.	
Fast Boot	Disabled**[Default]** Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

4.6.6 Save and Exit





4.6.6.1 Save Changes and Reset

Reset the system after saving the changes.

4.6.6.2 Discard Changes and Reset

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and reboots the controller.

4.6.6.3 Restore Defaults

This option restores all BIOS settings to the factory default. This option is useful if the controller exhibits unpredictable behavior due to an incorrect or inappropriate BIOS setting.

4.6.6.4 Save as User Defaults

This option saves a copy of the current BIOS settings as the User Defaults. This option is useful for preserving custom BIOS setup configurations.

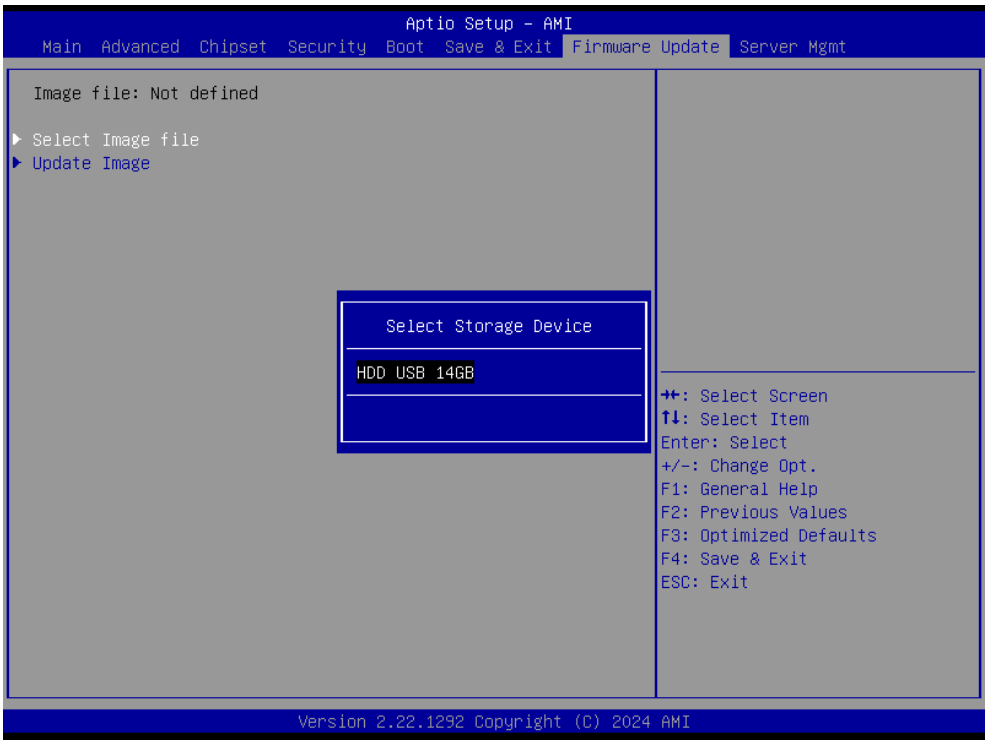
4.6.6.5 Restore User Defaults

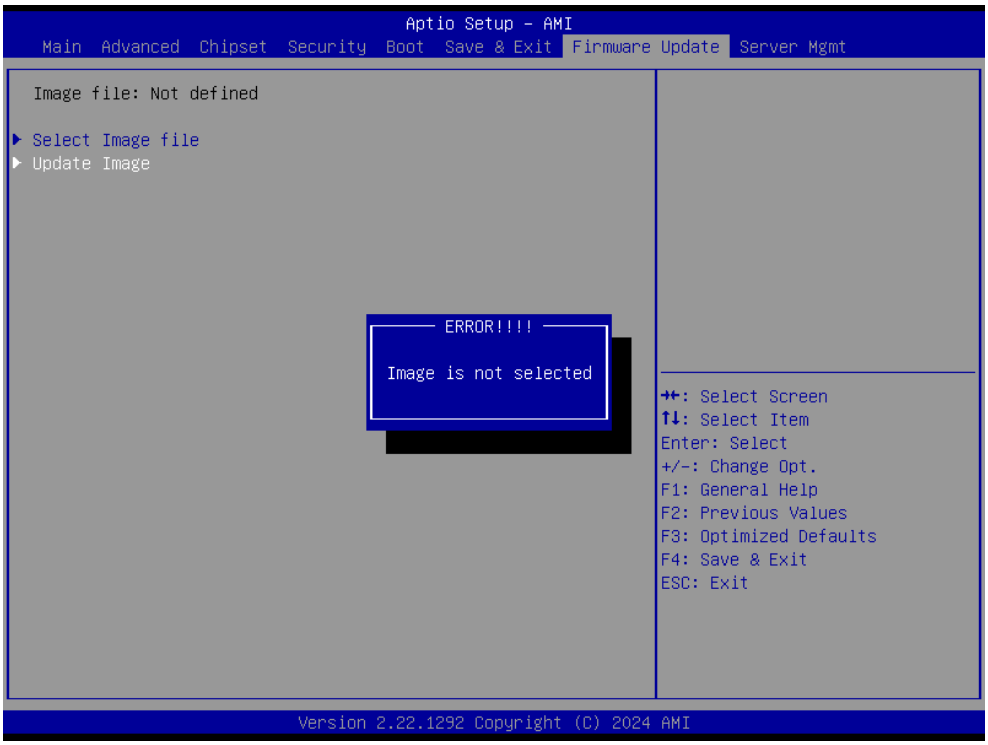
This option restores all BIOS settings to the user defaults. This option is useful for restoring previously preserved custom BIOS setup configurations.

4.6.6.6 Launch EFI Shell from filesystem device

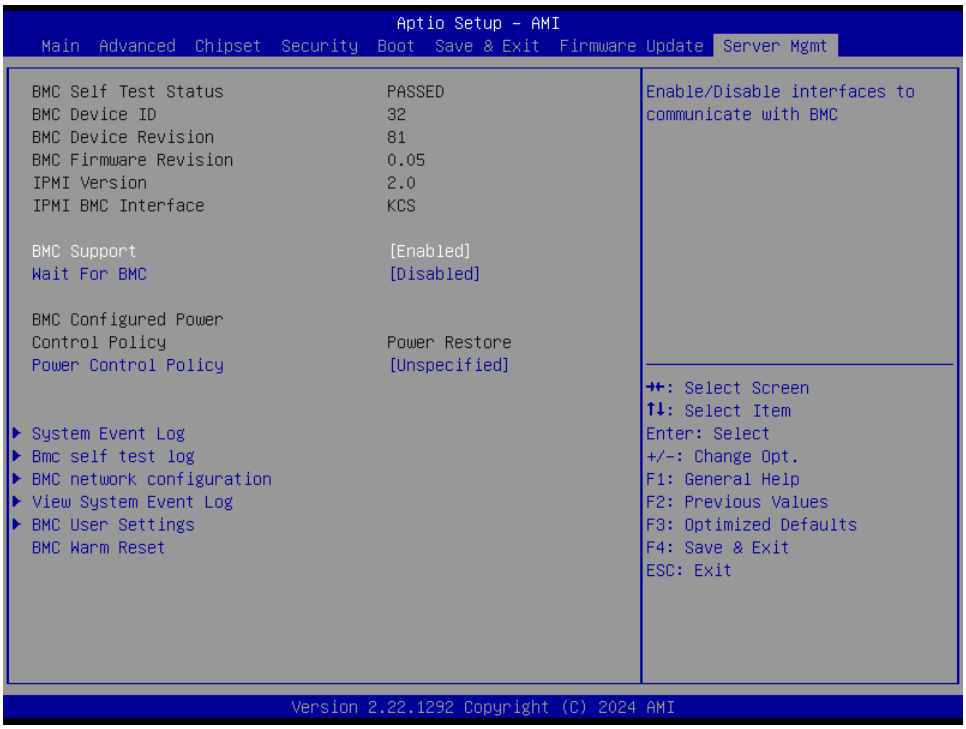
Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

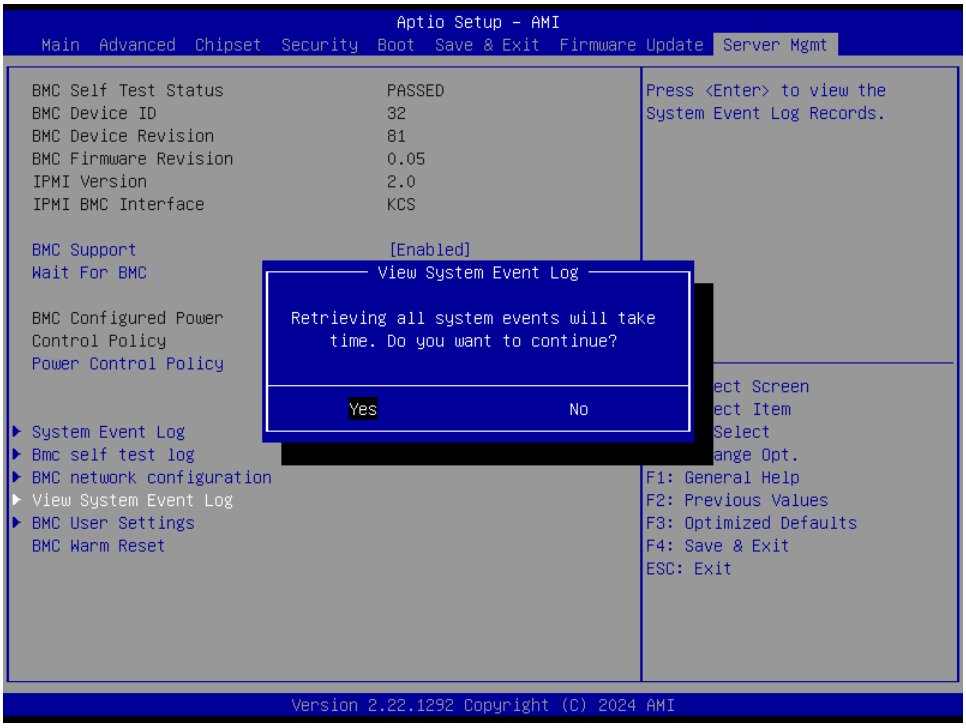
4.6.7 Firmware Update


Aptio Setup – AMI
Main Advanced Chipset Security Boot Save & Exit Firmware Update Server Mgmt
Image file: Not defined
Select Image file
Update Image
Select Storage Device
HDD USB 14GB
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1292 Copyright (C) 2024 AMI


Aptio Setup – AMI
Main Advanced Chipset Security Boot Save & Exit Firmware Update Server Mgmt
Image file: Not defined
Select Image file
Update Image
ERROR!!!!
Image is not selected
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1292 Copyright (C) 2024 AMI

4.6.8 Server Mgmt

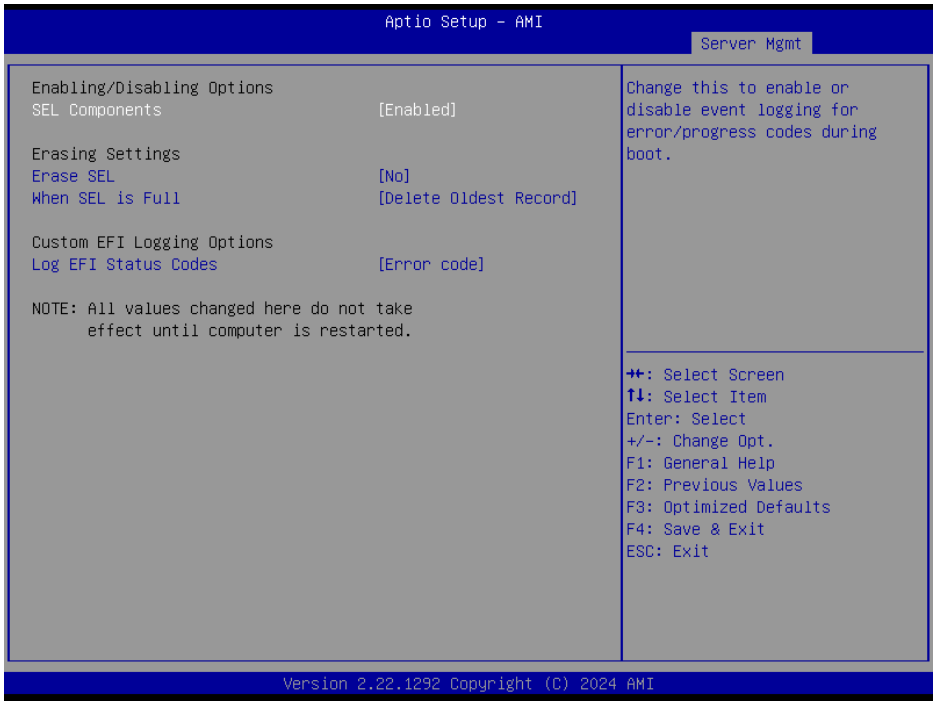




Item	Options	Description
BMC Support	Enabled**[Default]** Disabled	Enable/Disable interfaces to communicate with BMC.
Wait For BMC	Enabled Disabled**[Default]**	Wait For BMC response for specified time out. BMC starts at the same time when BIOS starts during AC power ON. It takes around 30 seconds to initialize Host to BMC interfaces.

Power Control Policy	Do Not PowerUp Last Power State Power Restore Unspecified**[Default]**	Configure how the system should respond if AC Power is lost, Reset not required as selected Power policy will be set in BMC when policy is saved.

4.6.8.1 System Event Log

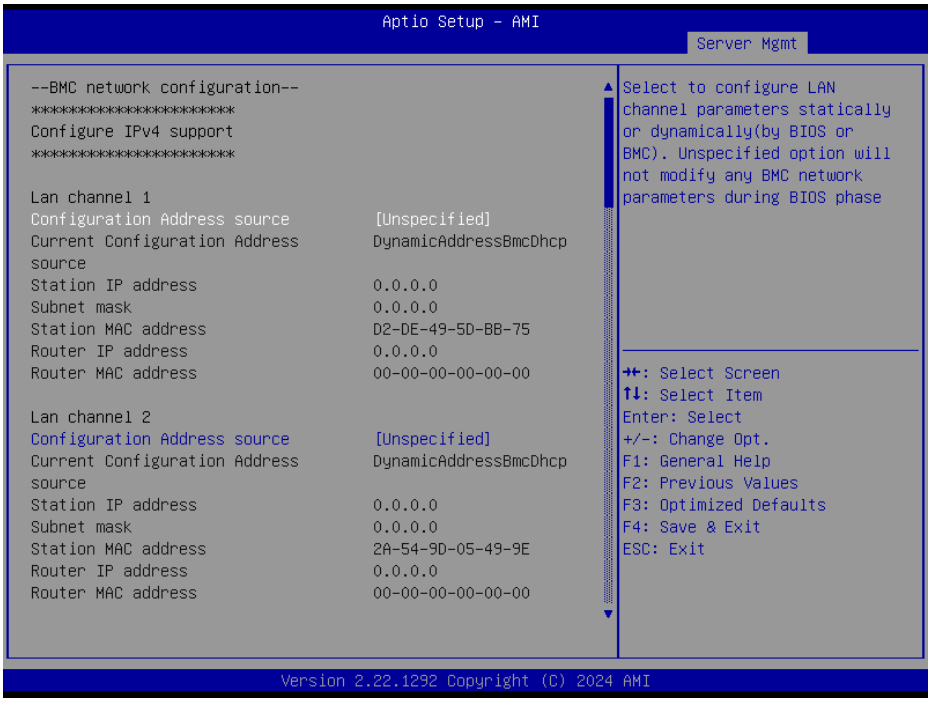


Item	Option	Description
SEL Components	Enabled**[Default]** Disabled	Change this to enable or disable event logging for error/progress codes during boot.
Erase SEL	No**[Default]** Yes, On next reset Yes, On every reset	Choose options for erasing SEL.
When SEL is Full	Do Nothing Erase Immediately Delete Oldest Record**[Default]**	Choose options for reactions to a full SEL.
Log EFI Status Codes	Disabled Both Error code**[Default]** Progress code	Disable the logging of EFI Status Codes or log only error code or only progress code or both.

4.6.8.2 Bmc self test log

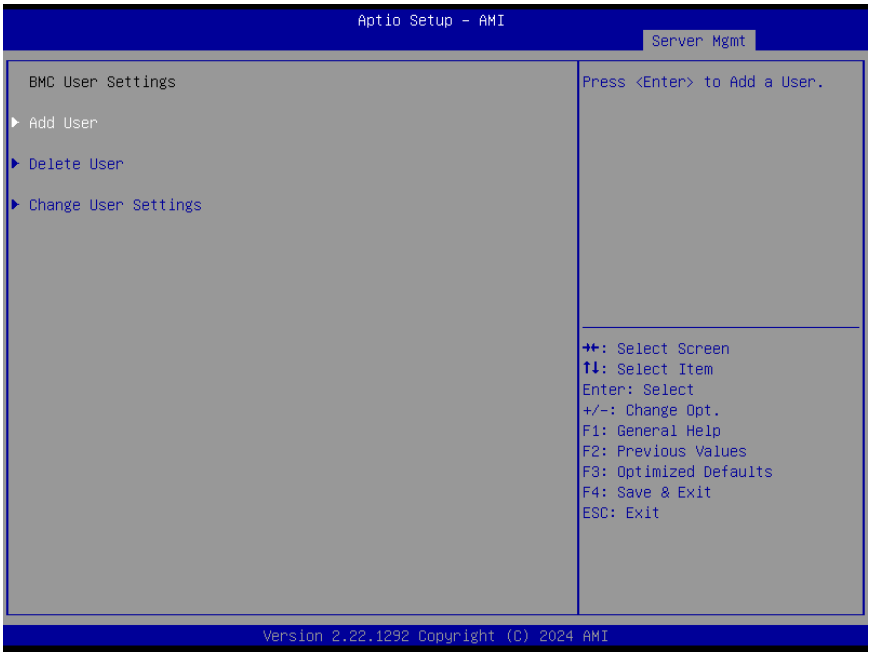
Item	Option	Description
Erase Log	Yes, On every reset**[Default]** No	Erase Log Options.
When log is full	Clear Log**[Default]** Do not log any more	Select the action to be taken when log is full.

4.6.8.3 BMC network configuration

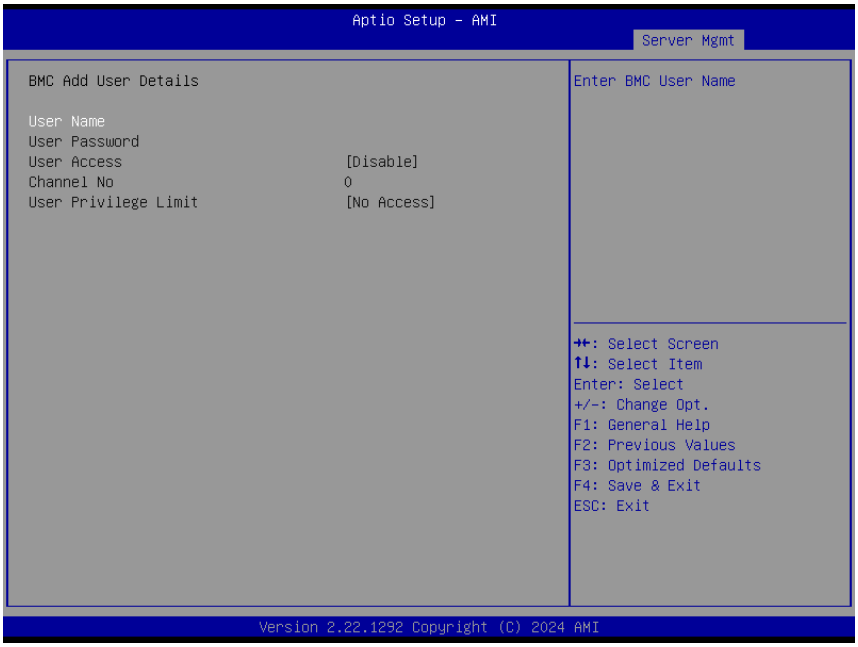


Item	Option	Description
Configuration Address source	Unspecified**[Default]** Static DynamicBmcDhcp DynamicBmcNonDhcp	Select configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.
Configuration Address source	Unspecified**[Default]** Static DynamicBmcDhcp	Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.

4.6.8.4 BMC User Settings



4.6.8.4.1 BMC Add User Details

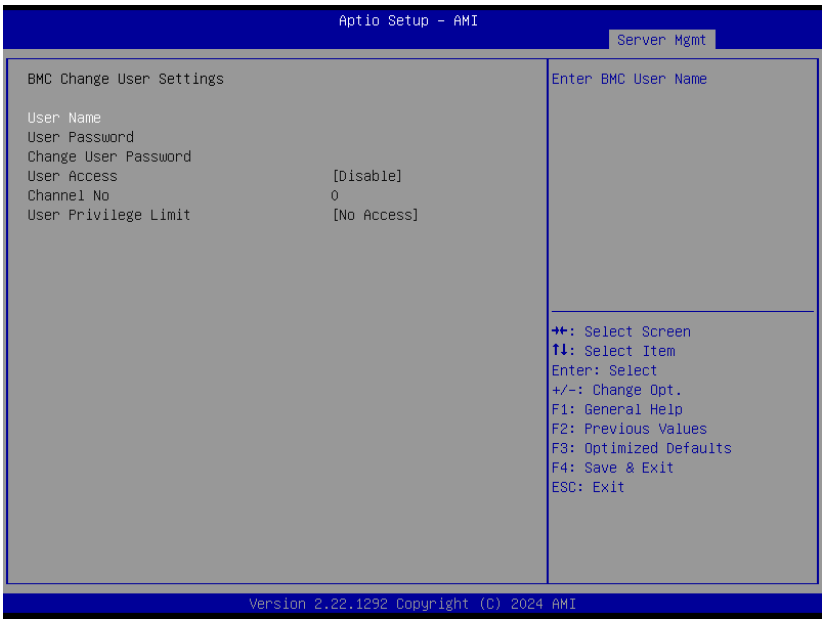


Item	Description
User Name	Enter BMC User Name.

4.6.8.4.2 BMC Delete User Details

Item	Description
User Name	Enter BMC User Name.

4.6.8.4.3 BMC Change User Settings



Item	Description
User Name	Enter BMC User Name.

5. Maintenance & Troubleshooting

System Maintenance Introduction

If the components of the product fail they must be replaced.

Please contact the system reseller or vendor to purchase the replacement parts. Please follow the safety precautions outlined in the sections that follow

General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

1. Follow the electrostatic precautions outlined below whenever the device is opened.
2. Make sure the power is turned off and the power cord is disconnected whenever the product is being installed, moved or modified.
3. To prevent the risk of electric shock, make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the AC outlet. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
4. Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire and/or an electrical shock. Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
5. Electric shocks can occur if the product chassis is opened when it is running. To avoid risk of electric shock, this device must only be connected to a supply mains with protective earth.
6. Do not drop or insert any objects into the ventilation openings of the product.
7. If considerable amounts of dust, water, or fluids enter the device, turn off the power supply immediately, unplug the power cord, and contact your dealer or the nearest service center.
8. This equipment is not suitable for use in locations where children are likely to be present.

Anti-Static Precautions

WARNING:
Failure to take ESD precautions during the installation of the product may result in permanent damage to the product and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the product. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the product is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- Wear an anti-static wristband: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- Self-grounding: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- Use an anti-static pad: When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- Only handle the edges of the electrical component. When handling the electrical component, hold the electrical component by its edges. Please ensure the following safety precautions are adhered to at all times.

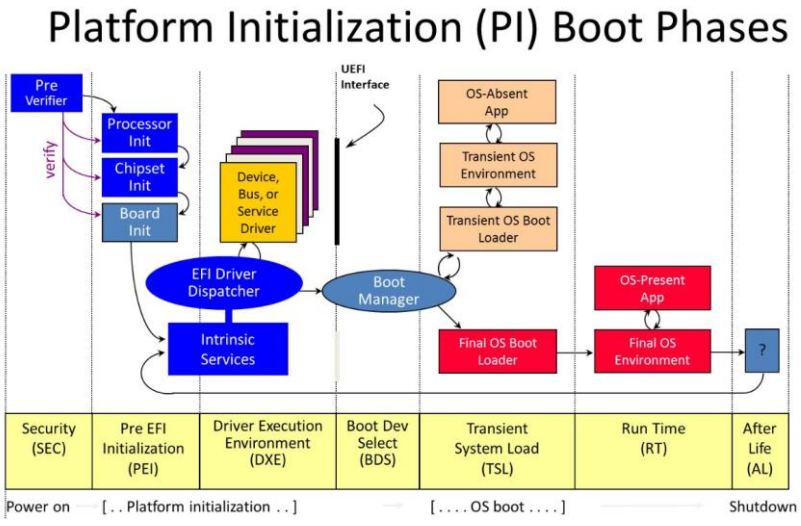
Basic Troubleshooting

PEI Beep Codes

# of Beeps	Description
1	Memory not Installed
2	Recovery started
3	Typically for development use. The beep code is generated when DXEIPL PPI or DXE Core is not found.
4	Recovery failed
4	S3 Resume failed
7	Typically for development use. The beep code is generated when platform cannot be reset because reset PPI is not available.

DXE Beep Codes

# of Beeps	Description
1	Invalid password
4	Typically for development use. The beep code is generated when some of the Architectural Protocols are not available.
5	No Console Input or Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Typically for development use. The beep code is generated when platform cannot be reset because reset protocol is not available.
8	Platform PCI resource requirements cannot be met



https://uefi.org/specs/PI/1.8/V2_Overview.html