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Industry Standard, Flexible Architecture

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**STABLE**

Robust Design, Quality Parts

Stable and  
Reliable Solution

**Server/Workstation**

Motherboard

**ROMED8-2T**  
**ROMED8-NL**  
**ROMED8-2T/BCM**

**User Manual**

English



Version 1.0

Published August 2022

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- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
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# Chapter 1 Introduction

Thank you for purchasing ASRock Rack **ROMED8-2T / ROMED8-NL / ROMED8-2T/BCM** motherboard, a reliable motherboard produced under ASRock Rack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock Rack's commitment to quality and endurance.

In this manual, chapter 1 and 2 contains introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contains the configuration guide to BIOS setup and driver installation.



*Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock Rack website without further notice. You may find the latest memory and CPU support lists on ASRock Rack website as well. ASRock Rack's Website: [www.ASRockRack.com](http://www.ASRockRack.com)*

*If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.  
<http://www.asrockrack.com/support/>*

## 1.1 Package Contents

- ASRock Rack ROMED8-2T / ROMED8-NL / ROMED8-2T/BCM Motherboard  
(ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm)
- Quick Installation Guide
- 1 x I/O Shield
- 2 x Mini SAS HD to 4\*SATA Cables (60cm)
- 2 x Screws for M.2 Sockets



*If any items are missing or appear damaged, contact your authorized dealer.*

## 1.2 Specifications

| ROMED8-2T / ROMED8-NL / ROMED8-2T/BCM |                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MB Physical Status                    |                                                                                                                                                                                                                                                                                                                    |
| Form Factor                           | ATX                                                                                                                                                                                                                                                                                                                |
| Dimension                             | 12" x 9.6" (30.5 cm x 24.4 cm)                                                                                                                                                                                                                                                                                     |
| Processor System                      |                                                                                                                                                                                                                                                                                                                    |
| CPU                                   | AMD EPYC™ 7003/7002/7001 Series Processor Family<br><i>*The latest version of BIOS supports AMD EPYC™ 7003/7002 Series only.</i>                                                                                                                                                                                   |
| Socket                                | Single Socket SP3 (LGA4094)                                                                                                                                                                                                                                                                                        |
| Chipset                               | System on Chip                                                                                                                                                                                                                                                                                                     |
| System Memory                         |                                                                                                                                                                                                                                                                                                                    |
| Type                                  | - Eight Channel DDR4 memory technology (1DPC)<br>- Supports DDR4 RDIMM, LRDIMM, and NVDIMM (Jump Option)                                                                                                                                                                                                           |
| DIMM Size Per DIMM                    | - RDIMM: 64GB, 32GB, 16GB, 8GB<br>- LRDIMM: 128GB**, 64GB*, 32GB<br>- NV DIMM: 32GB<br><br><i>*64GB: wait for the device to be validated</i><br><i>**128GB: wait for the device to be validated</i>                                                                                                                |
| DIMM Frequency                        | - RDIMM: 3200MHz<br>- LRDIMM: 3200MHz*<br>- NVDIMM: 3200MHz<br><br><i>*Wait for the device to be validated</i>                                                                                                                                                                                                     |
| Voltage                               | 1.2V                                                                                                                                                                                                                                                                                                               |
| Expansion Slot                        |                                                                                                                                                                                                                                                                                                                    |
| PCIe 4.0 x 16                         | PCIE1: Gen4 x16 link<br>PCIE2: Gen4 x16 link (shared with M2_1/OCU1/OCU2/<br>SATA_4_7 by PE8_SEL/PE16_SEL jumpers)<br>PCIE3: Gen4 x16 link<br>PCIE4: Gen4 x16 link<br>PCIE5: Gen4 x16 link<br>PCIE6: Gen4 x16 link<br>PCIE7: Gen4 x16 link<br><br><i>(slot with latch, only for ROMED8-2T R1.03/ROMED8-2T/BCM)</i> |
| Storage                               |                                                                                                                                                                                                                                                                                                                    |
| SATA Controller                       | 8 x SATA3 6.0 Gb/s (from 2x mini SAS HD)                                                                                                                                                                                                                                                                           |
| M.2 Slot                              | 2 (M2_1: 2230/2242/2260/2280, SATA3/PCIE4(X4); M2_2: 2230/2242/2260/2280/22110, SATA3/PCIE4(X4))                                                                                                                                                                                                                   |
| Ethernet                              |                                                                                                                                                                                                                                                                                                                    |
| Interface                             | <b>ROMED8-2T:</b><br>10000/1000 /100 Mbps by Intel X550-AT2<br><br><b>ROMED8/BCM:</b><br>10000/1000 Mbps by BCM57416                                                                                                                                                                                               |



|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <b>ROMED8-NL:</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| LAN Controller        | <b>ROMED8-2T:</b> <ul style="list-style-type: none"> <li>- 2 x RJ45 10G base-T by Intel® X550-AT2</li> <li>- 1 x RJ45 Dedicated IPMI LAN port by RTL8211E</li> <li>- Supports Wake-On-LAN</li> <li>- Supports Energy Efficient Ethernet 802.3az</li> <li>- Supports Dual LAN with Teaming function</li> <li>- Supports PXE</li> <li>- LAN1 supports NCSI</li> </ul> <b>ROMED8-2T/BCM:</b> <ul style="list-style-type: none"> <li>- 2 x RJ45 10G base-T by Broadcom BCM57416</li> <li>- 1 x RJ45 Dedicated IPMI LAN port by RTL8211E</li> <li>- Supports Wake-On-LAN</li> <li>- Supports PXE</li> <li>- LAN1 supports NCSI</li> </ul> <b>ROMED8-NL:</b> <ul style="list-style-type: none"> <li>- 1 x RJ45 Dedicated IPMI LAN port by RTL8211E</li> </ul> |
| <b>Management</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| BMC Controller        | ASPEED AST2500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| IPMI Dedicated GLAN   | 1 x Realtek RTL8211E for dedicated management GLAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Features              | Watch Dog<br>NMI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Graphics</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Controller            | ASPEED AST2500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Rear Panel I/O</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| VGA Port              | 1 x D-Sub                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Serial port           | 1 x COM port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| USB 3.2 Gen1 Port     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| USB 3.2 Gen2 Port     | <b>ROMED8-2T:</b><br>1 (typeC)<br><br><b>ROMED8-NL / ROMED8-2T/BCM:</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| LAN Port              | <b>ROMED8-2T / ROMED8-2T/BCM:</b> <ul style="list-style-type: none"> <li>- 2+1 RJ45 Gigabit Ethernet LAN port</li> <li>- LAN Ports with LED (ACT/LINK LED and SPEED LED)</li> </ul> <b>ROMED8-NL:</b> <ul style="list-style-type: none"> <li>- 1 RJ45 Gigabit Ethernet LAN port</li> <li>- LAN Pors with LED (ACT/LINK LED and SPEED LED)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                    |
| UID                   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Internal Connector         |                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------|
| Auxiliary Panel Header     | 1 (includes chassis intrusion, location button & LED, and front LAN LED)                                     |
| System Panel               | 1 (rst, pwbtn, hddled, pwrlcd)                                                                               |
| TPM Header                 | 1                                                                                                            |
| TPM-SPI Header             | 1                                                                                                            |
| IPMB Header                | 1                                                                                                            |
| Fan Header                 | 7 Fans x 6-pin                                                                                               |
| ATX Power                  | 1 x (24-pin) + 1 x (8-pin) + 1 x (4-pin) + 1 x (6-pin)(6 pin for GPU for PCIE Slot)                          |
| USB 3.2 Gen1 Header        | 1 (supports 2 USB 3.2 Gen1 ports)                                                                            |
| USB 3.2 Gen2 Type C Header | <b>ROMED8-2T:</b><br>1 (supports 1 USB 3.2 Gen2 port)<br><br><b>ROMED8-NL / ROMED8-2T/BCM:</b><br>N/A        |
| M.2                        | 2(M2_1: 2230/2242/2260/2280, SATA3/PCIE4(X4); M2_2:2230/2242/2260/2280/22110, SATA3/PCIE4(X4))               |
| OCulink                    | 2                                                                                                            |
| BMC SMB                    | 1                                                                                                            |
| PSU SMB                    | 1                                                                                                            |
| Thermal Sensor Header      | <b>ROMED8-2T (R1.03) / ROMED8-2T/BCM :</b><br>2<br><br><b>ROMED8-2T (R1.02 and below) / ROMED8-NL :</b><br>1 |
| 80 debug port LED          | 1                                                                                                            |
| Speaker(4pin)              | 1                                                                                                            |
| ClearCMOS                  | 1                                                                                                            |
| CPU1_HSBP1                 | 1                                                                                                            |
| NMI Header                 | 1                                                                                                            |
| Standby PWR LED 5vsb       | 1 (5VSB)                                                                                                     |
| BMC heartbeat LED          | 1                                                                                                            |
| OH/FanFail LED             | 7 (only Fan Fail LED)                                                                                        |
| System BIOS                |                                                                                                              |
| BIOS Type                  | 32MB AMI UEFI Legal BIOS                                                                                     |
| BIOS Features              | Plug and Play (PnP), ACPI 6.3 Compliance Wake Up Events, SMBIOS 3.3.0, ASRock Rack Instant Flash             |

| Hardware Monitor |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature      | <ul style="list-style-type: none"> <li>- CPU Temperature Sensing</li> <li>- MB/TR1/TR2(for ROMED8-2T R1.03 and ROMED8-2T/BCM) / Card side Temperature Sensing</li> <li>- DDR4_A~DDR4_H Temperature Sensing</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Fan              | <ul style="list-style-type: none"> <li>- Fan Tachometer</li> <li>- CPU Quiet Fan (Allow CPU Fan Speed Auto-Adjust by CPU Temperature)</li> <li>- Fan Multi-Speed Control</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Voltage          | Voltage Monitoring: Vsoc,Vcpu, VCCM, VPPM, 3V/5V/12V, +BAT, 3VSB, 5VSB, 1.8V, 1.8VSB, LAN_0.83V (ROMED8-2T X550-AT2 Voltage), DVDD (ROMED8-2T/BCM Broadcom 57416 Voltage)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Support OS       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| OS               | <p>Microsoft® Windows*</p> <ul style="list-style-type: none"> <li>- Server 2016 (64 bit)</li> <li>- Server 2019 (64 bit)</li> </ul> <p>Linux*</p> <ul style="list-style-type: none"> <li>- RedHat Enterprise Linux Server 8.0 (64 bit) / 7.6 (64 bit)</li> <li>- CentOS 8.0 (64 bit) / 7.6 ( 64 bit)</li> <li>- SUSE SLES 15.1 (64 bit) / 12.4 (64 bit)</li> <li>- Ubuntu 18.04.3 (64 bit) / 16.04.6 (64 bit)</li> <li>- CITRIX Hypervisor 8.1</li> </ul> <p>Virtual</p> <ul style="list-style-type: none"> <li>- VMWare ESXi 6.5 u3 / 6.7 u3</li> <li>- vSphere 6.5 u3/ / 6.7 u3</li> </ul> <p><i>* The SUSE Enterprise Linux Server 15.1 (64 bit) / 12.4 (64 bit) system only supports UEFI BOOT.</i></p> <p><i>* Please refer to our website for the latest OS support list.</i></p> |
| Environment      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Temperature      | Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

NOTE: Please refer to our website for the latest specifications.



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the "Wake on Magic Packet from power off state" is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the "PCI Devices Power On" is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN1&2 can wake up S5 under OS.

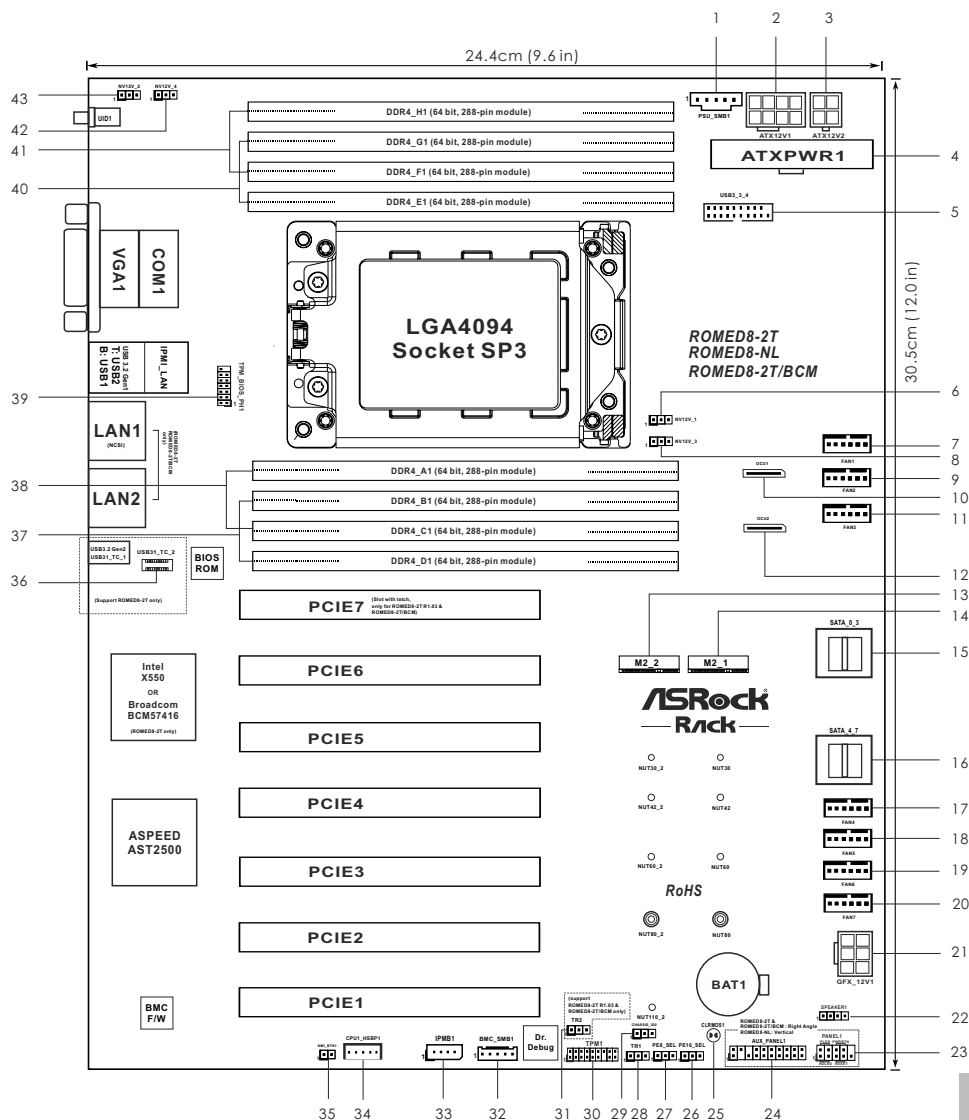


If you install Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If you install the drivers only, it will pass the WHQL tests.

## 1.3 Unique Features

ASRock Rack Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press the <F6> key during the POST or the <F2> key to enter into the BIOS setup menu to access ASRock Rack Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.

## 1.4 Motherboard Layout

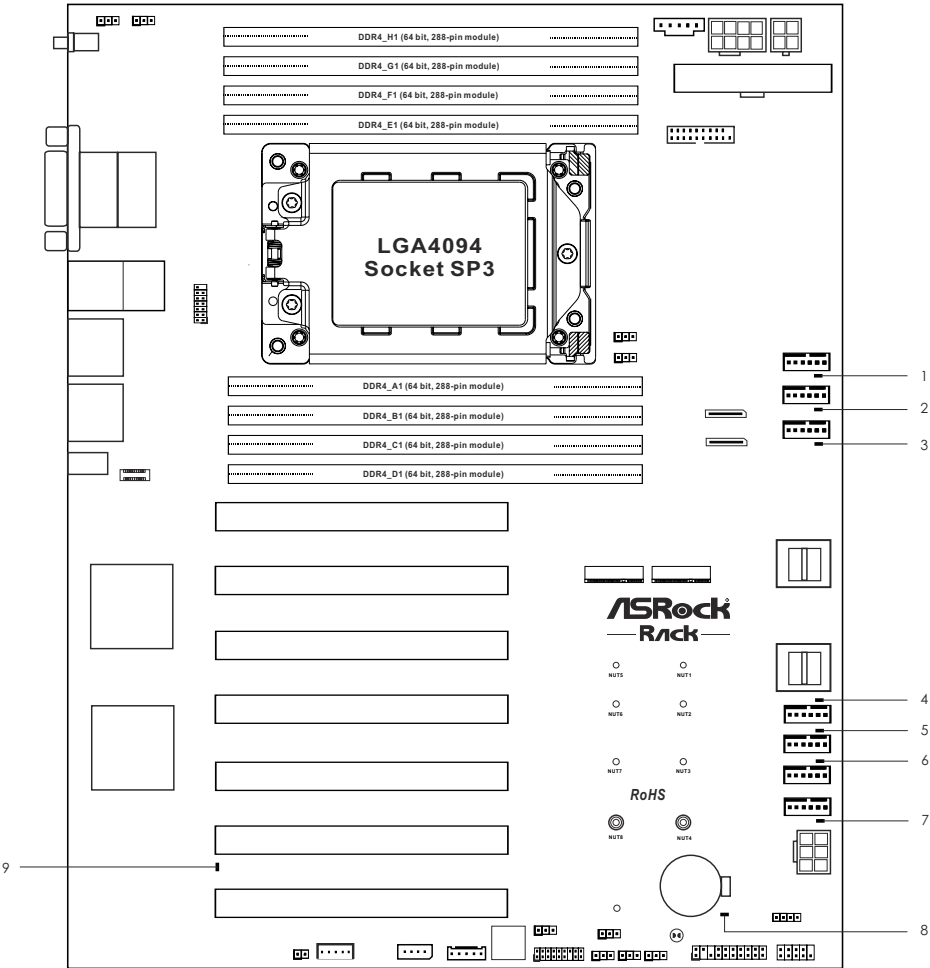


| No. | Description                                        |
|-----|----------------------------------------------------|
| 1   | PSU SMBus Header (PSU_SMB1)                        |
| 2   | ATX 12V Power Connector (ATX12V1)                  |
| 3   | ATX 12V Power Connector (ATX12V2)                  |
| 4   | ATX Power Connector (ATXPWR1)                      |
| 5   | USB 3.2 Gen1 Header (USB3_3_4)                     |
| 6   | NVDIMM Power Support Jumper (NV12V_1)              |
| 7   | System Fan Connector (FAN1)                        |
| 8   | NVDIMM Power Support Jumper (NV12V_3)              |
| 9   | System Fan Connector (FAN2)                        |
| 10  | OCuLink x4 Connector (OCU1)                        |
| 11  | System Fan Connector (FAN3)                        |
| 12  | OCuLink x4 Connector (OCU2)                        |
| 13  | M.2 Socket (M2_2) (Type 2230/2242/2260/2280/22110) |
| 14  | M.2 Socket (M2_1) (Type 2230/2242/2260/2280)       |
| 15  | Mini-SAS HD Connector (SATA_0_3)                   |
| 16  | Mini-SAS HD Connector (SATA_4_7)                   |
| 17  | System Fan Connector (FAN4)                        |
| 18  | System Fan Connector (FAN5)                        |
| 19  | System Fan Connector (FAN6)                        |
| 20  | System Fan Connector (FAN7)                        |
| 21  | Graphics 12V Power Connector (GFX_12V1)            |
| 22  | Speaker Header (SPEAKER1)                          |
| 23  | System Panel Header (PANEL1)                       |
| 24  | Auxiliary Panel Header (AUX_PANEL1)                |
| 25  | Clear CMOS Pad (CLRMOS1)                           |
| 26  | PCIe2 x16 Selection Jumper (PE16_SEL)              |
| 27  | PCIe2 x8 Selection Jumper (PE8_SEL)                |
| 28  | Thermal Sensor Header (TR1)                        |
| 29  | Chassis ID Jumper (CHASSIS_ID0)                    |
| 30  | TPM Header (TPM1)                                  |
| 31  | Thermal Sensor Header (TR2)                        |
| 32  | BMC SMBus Header (BMC_SMB1)                        |
| 33  | Intelligent Platform Management Bus Header (IPMB1) |

| No. | Description                                                             |
|-----|-------------------------------------------------------------------------|
| 34  | Backplane PCI Express Hot-Plug Connector (CPU1_HSBP1)                   |
| 35  | Non Maskable Interrupt Button (NMI_BTN1)                                |
| 36  | Front Panel Type C USB 3.2 Gen2 Header (USB31_TC_2)<br>(ROMED8-2T only) |
| 37  | 2 x 288-pin DDR4 DIMM Slots (DDR4_B1, DDR4_D1)*                         |
| 38  | 2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_C1)*                         |
| 39  | TPM-SPI Header (TPM_BIOS_PH1)                                           |
| 40  | 2 x 288-pin DDR4 DIMM Slots (DDR4_E1, DDR4_G1)*                         |
| 41  | 2 x 288-pin DDR4 DIMM Slots (DDR4_F1, DDR4_H1)*                         |
| 42  | NVDIMM Power Support Jumper (NV12V_4)                                   |
| 43  | NVDIMM Power Support Jumper (NV12V_2)                                   |

*\*For DIMM installation and configuration instructions, please see p.21 (Installation of Memory Modules (DIMM)) for more details.*

# 1.5 Onboard LED Indicators

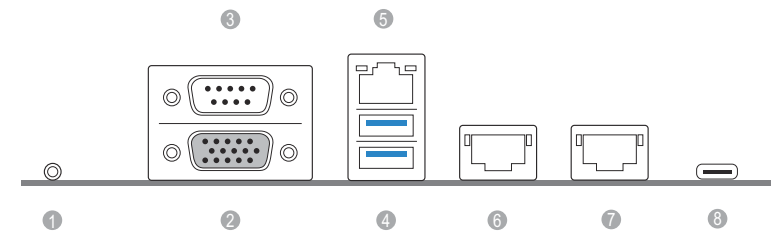




| No. | Item     | Status | Description       |
|-----|----------|--------|-------------------|
| 1   | FAN_LED1 | Amber  | FAN1 failed       |
| 2   | FAN_LED2 | Amber  | FAN2 failed       |
| 3   | FAN_LED3 | Amber  | FAN3 failed       |
| 4   | FAN_LED4 | Amber  | FAN4 failed       |
| 5   | FAN_LED5 | Amber  | FAN5 failed       |
| 6   | FAN_LED6 | Amber  | FAN6 failed       |
| 7   | FAN_LED7 | Amber  | FAN7 failed       |
| 8   | SB_PWR1  | Green  | STB PWR ready     |
| 9   | BMC_LED1 | Green  | BMC heartbeat LED |

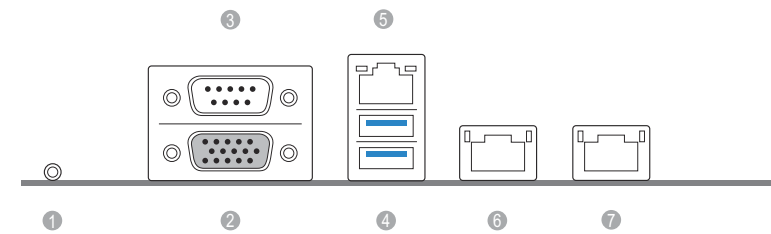
# 1.6 I/O Panel

## ROMED8-2T



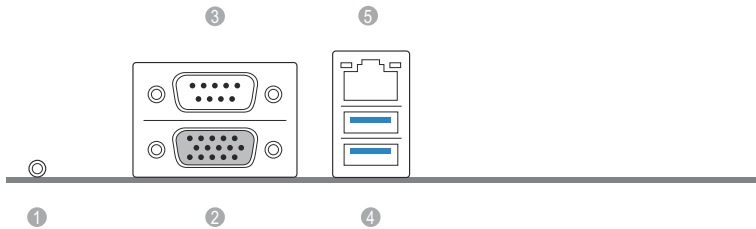
| No. | Description                   | No. | Description                    |
|-----|-------------------------------|-----|--------------------------------|
| 1   | UID Switch (UID1)             | 5   | LAN RJ-45 Port (IPMI_LAN1)*    |
| 2   | VGA Port (VGA1)               | 6   | 10G LAN RJ-45 Port (LAN1)**    |
| 3   | Serial Port (COM1)            | 7   | 10G LAN RJ-45 Port (LAN2)**    |
| 4   | USB 3.2 Gen1 Ports (USB3_1_2) | 8   | USB 3.2 Gen2 Port (USB31_TC_1) |

## ROMED8-2T/BCM



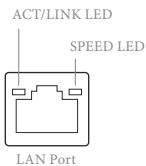
| No. | Description                   | No. | Description                 |
|-----|-------------------------------|-----|-----------------------------|
| 1   | UID Switch (UID1)             | 5   | LAN RJ-45 Port (IPMI_LAN1)* |
| 2   | VGA Port (VGA1)               | 6   | 10G LAN RJ-45 Port (LAN1)** |
| 3   | Serial Port (COM1)            | 7   | 10G LAN RJ-45 Port (LAN2)** |
| 4   | USB 3.2 Gen1 Ports (USB3_1_2) |     |                             |

ROMED8-NL



| No. | Description        | No. | Description                   |
|-----|--------------------|-----|-------------------------------|
| 1   | UID Switch (UID1)  | 4   | USB 3.2 Gen1 Ports (USB3_1_2) |
| 2   | VGA Port (VGA1)    | 5   | LAN RJ-45 Port (IPMI_LAN1)*   |
| 3   | Serial Port (COM1) |     |                               |

\*There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.

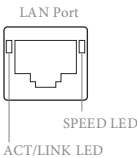


Dedicated IPMI LAN Port LED Indications

| Activity / Link LED |               | Speed LED |                               |
|---------------------|---------------|-----------|-------------------------------|
| Status              | Description   | Status    | Description                   |
| Off                 | No Link       | Off       | 10M bps connection or no link |
| Blinking Yellow     | Data Activity | Yellow    | 100M bps connection           |
| On                  | Link          | Green     | 1Gbps connection              |

**ROMED8-2T only:**

\*\*There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.

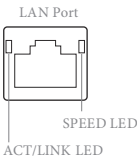


**LAN Port (LAN1, LAN2) LED Indications**

| Activity / Link LED |               | Speed LED |                               |
|---------------------|---------------|-----------|-------------------------------|
| Status              | Description   | Status    | Description                   |
| Off                 | No Link       | Off       | 100Mbps connection or no link |
| Blinking Yellow     | Data Activity | Off       | 1Gbps connection              |
| On                  | Link          | Green     | 10Gbps connection             |

**ROMED8-2T/BCM only:**

\*\*There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.

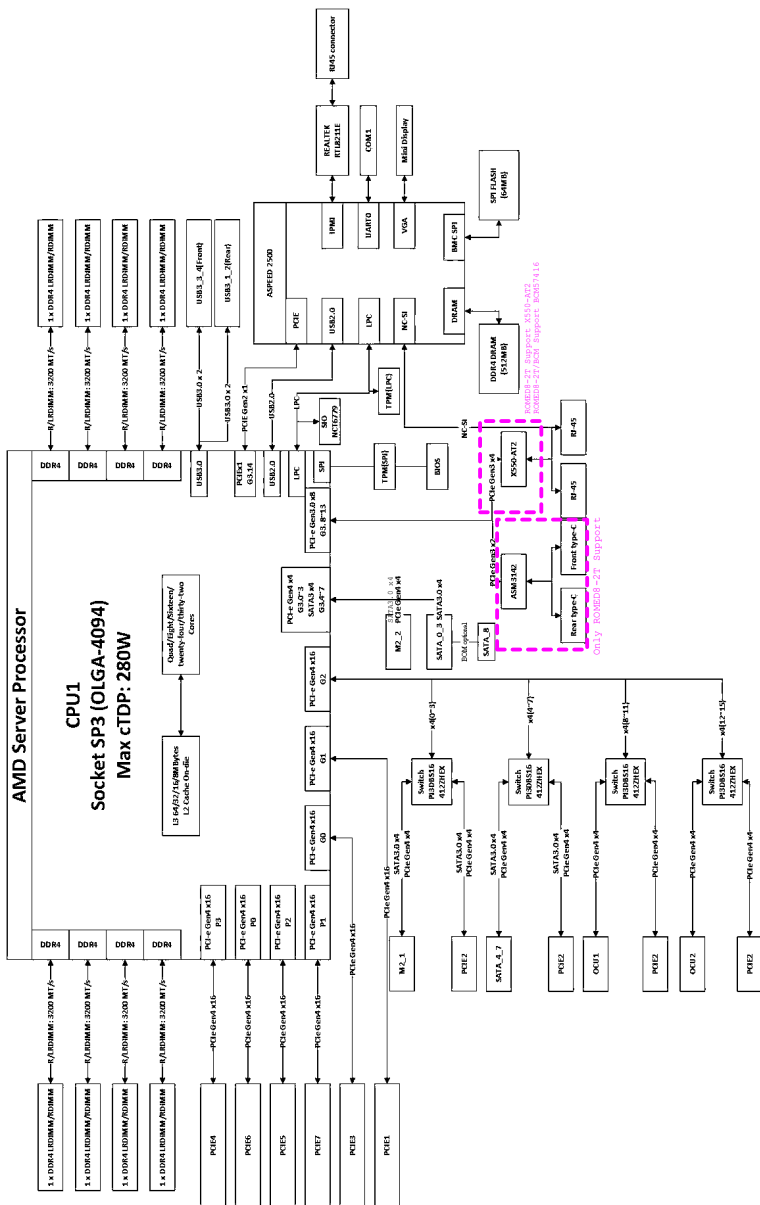


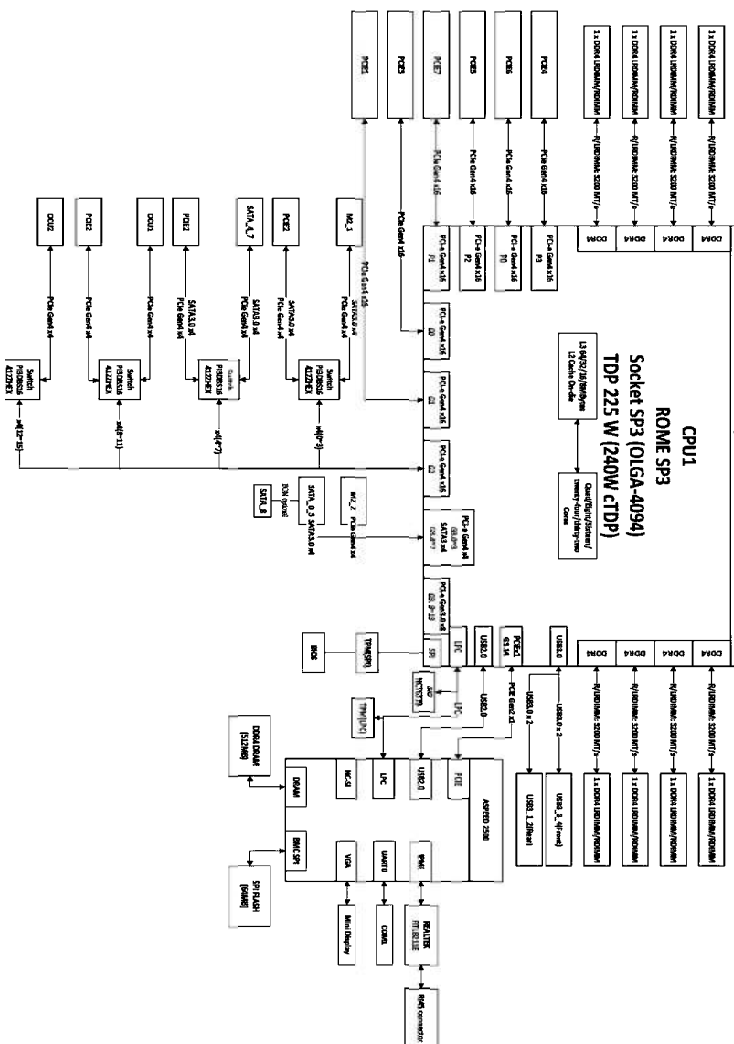
**LAN Port (LAN1, LAN2) LED Indications**

| Activity / Link LED |               | Speed LED |                               |
|---------------------|---------------|-----------|-------------------------------|
| Status              | Description   | Status    | Description                   |
| Off                 | No Link       | Off       | 100Mbps connection or no link |
| Blinking Yellow     | Data Activity | Yellow    | 1Gbps connection              |
| On                  | Link          | Green     | 10Gbps connection             |

## 1.7 Block Diagram

### ROMED8-2T / ROMED8-2T/BCM





## Chapter 2 Installation

This is an ATX form factor (12" x 9.6", 30.5 cm x 24.4 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



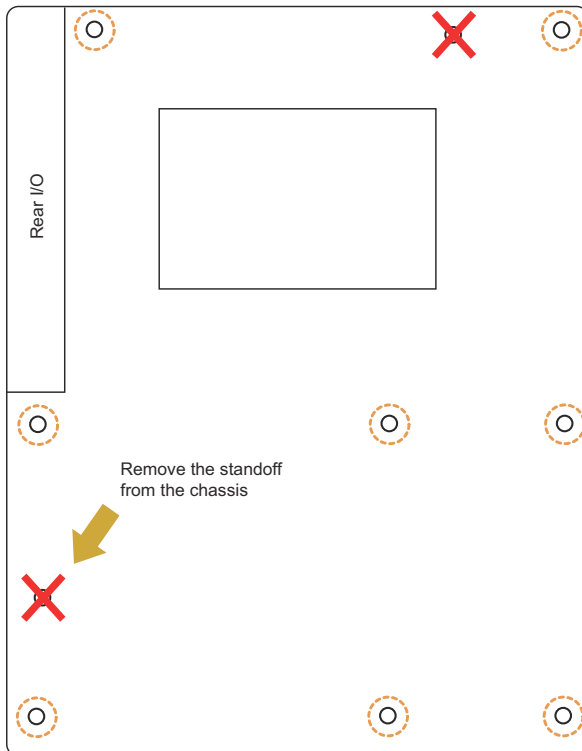
*Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.*

### 2.1 Screw Holes

Place screws into the holes indicated by circles to secure the motherboard to the chassis.



*Attention! Before installing this motherboard, be sure to unscrew and remove the standoffs at the marked location, under the motherboard, from the chassis, in order to avoid electrical short circuit and damage to your motherboard.*





*Do not over-tighten the screws! Doing so may damage the motherboard.*

## 2.2 Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any components.
2. To avoid damaging the motherboard's components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.



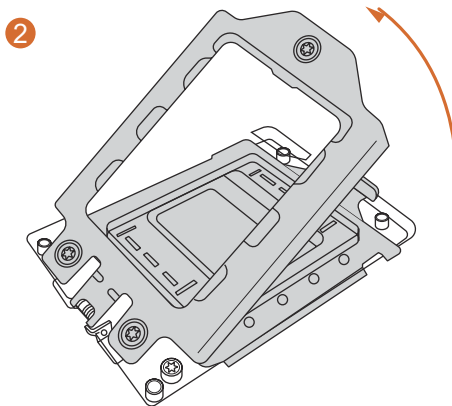
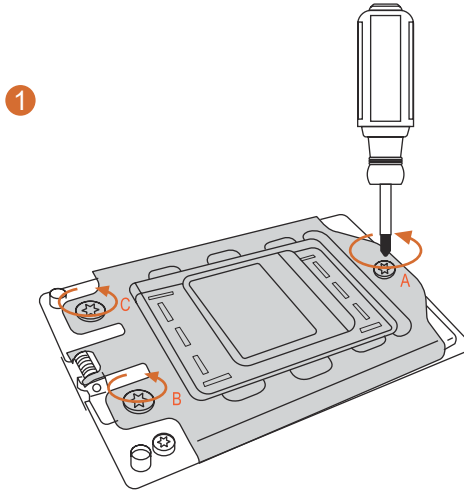
*Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.*



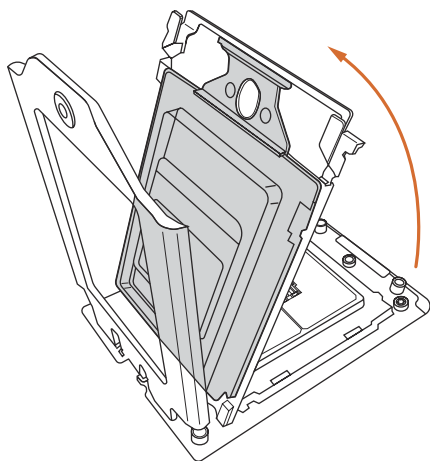
## 2.3 Installing the CPU



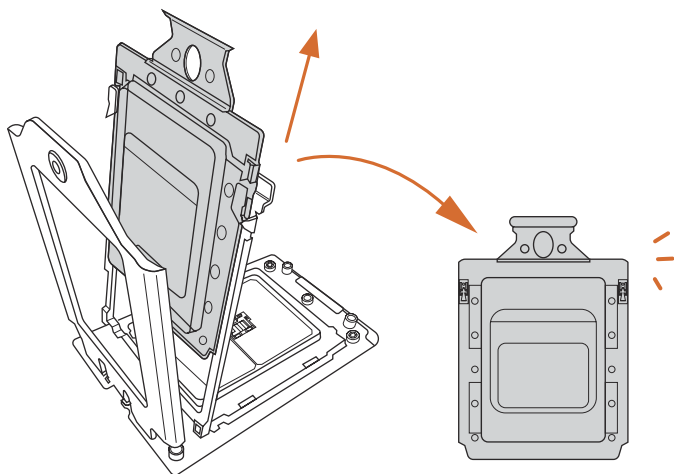
1. Before you insert the CPU into the socket, please check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power cables before installing the CPU.

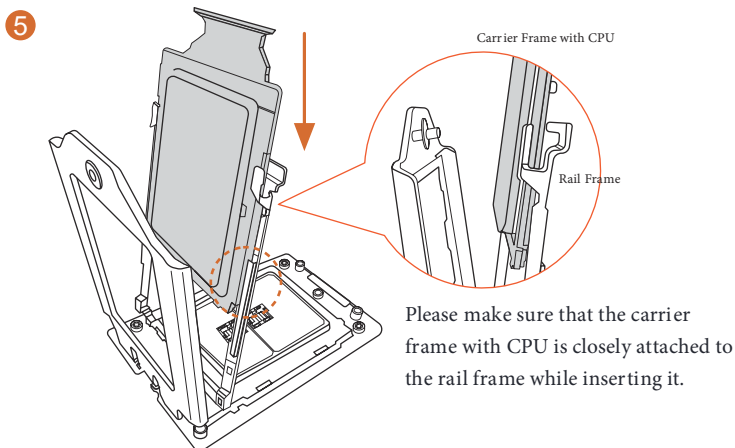


3

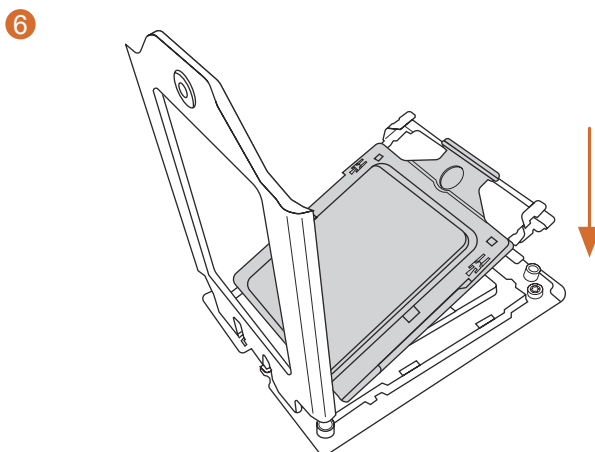


4

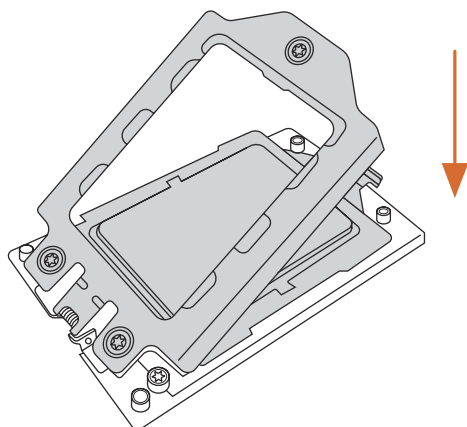




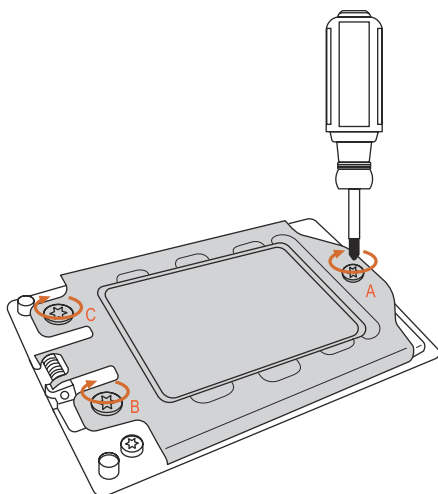
Install the carrier frame with CPU. Don't separate them.



7



8



## 2.4 Installation of Memory Modules (DIMM)

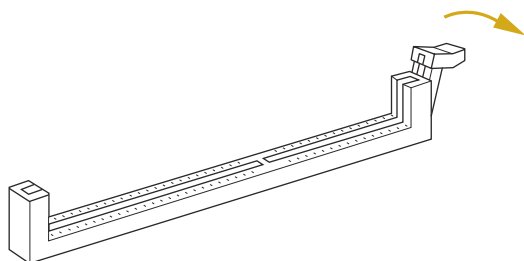
This motherboard provides eight 288-pin DDR4 (Double Data Rate 4) DIMM slots in two groups, and supports Eight Channel Memory Technology.

|         | CPU1 |    |    |    |    |    |    |    |
|---------|------|----|----|----|----|----|----|----|
|         | A1   | B1 | C1 | D1 | E1 | F1 | G1 | H1 |
| 1 DIMM  |      |    | #  |    |    |    |    |    |
| 2 DIMMS |      |    | #  | #  |    |    |    |    |
| 4 DIMMS | #    | #  |    |    |    |    | #  | #  |
| 8 DIMMS | #    | #  | #  | #  | #  | #  | #  | #  |

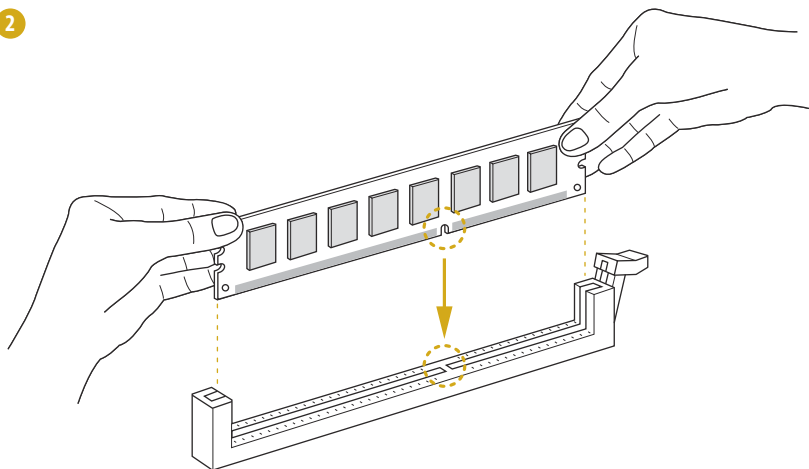


1. It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.
2. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.
3. It is unable to activate Dual Channel Memory Technology with only one or three memory module installed.
4. Some DDR4 1GB double-sided DIMMs with 16 chips may not work on this motherboard. It is not recommended to install them on this motherboard.

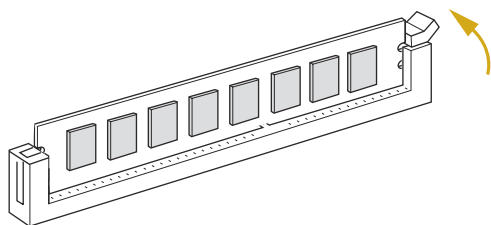
1



2



3



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

## 2.5 Expansion Slots (PCI Express Slots)

There are 7 PCI Express slots on this motherboard.

**PCIe slot:**

- PCIE1 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.
- PCIE2 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.\*
- PCIE3 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.
- PCIE4 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.
- PCIE5 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.
- PCIE6 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.
- PCIE7 (PCIe 4.0 x16 slot, from CPU) is used for PCI Express x16 lane width cards.

*\*PCIE2 slot will be disabled or runs at x8 by jumper settings (PE8\_SEL/PE16\_SEL).*

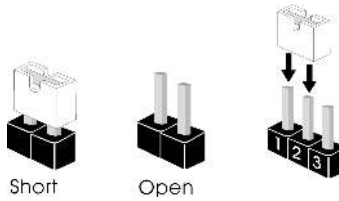
| Slot  | Generation | Mechanical | Electrical | Source |
|-------|------------|------------|------------|--------|
| PCIE7 | 4.0        | x16        | x16        | CPU    |
| PCIE6 | 4.0        | x16        | x16        | CPU    |
| PCIE5 | 4.0        | x16        | x16        | CPU    |
| PCIE4 | 4.0        | x16        | x16        | CPU    |
| PCIE3 | 4.0        | x16        | x16        | CPU    |
| PCIE2 | 4.0        | x16        | x16        | CPU    |
| PCIE1 | 4.0        | x16        | x16        | CPU    |

### Installing an expansion card

- Step 1. Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.
- Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).
- Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.
- Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
- Step 5. Fasten the card to the chassis with screws.
- Step 6. Replace the system cover.

## 2.6 Jumper Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when a jumper cap is placed on these 2 pins.



|                                                                 |                                                                                                   |                                                                                                   |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Chassis ID Jumper<br>(3-pin CHASSIS_ID0)<br>(see p.6, No. 29)   | <br><b>1_2</b>   | <br><b>2_3</b>   |
|                                                                 | Board Level SKU (Default)                                                                         | Reserved for system level use                                                                     |
| PCIE2 Selection Jumpers<br>(3-pin PE8_SEL)<br>(see p.6, No. 27) | <br><b>1_2</b>   | <br><b>1_2</b>   |
| (3-pin PE16_SEL)<br>(see p.6, No. 26)                           | <br><b>1_2</b>   | <br><b>2_3</b>   |
|                                                                 | - PCIE2 runs at x16<br>- M2_1/SATA_4_7/OCU1/<br>OCU2 Disabled<br>(Default)                        | - PCIE2 runs at x8<br>- M2_1/SATA_4_7 Enabled<br>- OCU1/OCU2 Disabled                             |
| PCIE2 Selection Jumpers<br>(3-pin PE8_SEL)<br>(see p.6, No. 27) | <br><b>2_3</b> | <br><b>2_3</b> |
| (3-pin PE16_SEL)<br>(see p.6, No. 26)                           | <br><b>1_2</b> | <br><b>2_3</b> |
|                                                                 | - PCIE2 Disabled<br>- M2_1/SATA_4_7<br>Disabled<br>- OCU1/OCU2 Enabled                            | - PCIE2 Disabled<br>- M2_1/SATA_4_7/OCU1/<br>OCU2 Enabled                                         |



NVDIMM Power Support  
Jumpers

(3-pin NV12V\_1)

(see p.6, No. 6)

(3-pin NV12V\_2)

(see p.6, No. 43)

(3-pin NV12V\_3)

(see p.6, No. 8)

(3-pin NV12V\_4)

(see p.6, No. 42)



No support for NVDIMM  
power (Default)



Support NVDIMM power

## 2.7 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header

**ROMED8-2T/**

**ROMED8-2T/BCM:**

Right Angle:

(9-pin PANEL1)

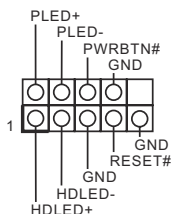
(see p.6, No. 23)

**ROMED8-NL:**

Vertical:

(9-pin PANEL1)

(see p.6, No. 23)



Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments. Particularly note the positive and negative pins before connecting the cables.



### **PWRBTN (Power Switch):**

Connect to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch.

### **RESET (Reset Switch):**

Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

### **PLED (System Power LED):**

Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S4 sleep state or powered off (S5).

### **HDLED (Hard Drive Activity LED):**

Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

## Auxiliary Panel Header

### ROMED8-2T/

### ROMED8-2T/BCM:

#### Right Angle:

(18-pin AUX PANEL1)

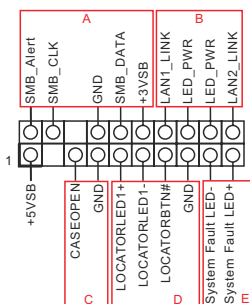
(see p.6, No. 24)

### ROMED8-NL:

#### Vertical:

(18-pin AUX PANEL1)

(see p.6, No. 24)



This header supports multiple functions on the front panel, including the front panel SMB, internet status indicator and chassis intrusion pin.



#### A. Front panel SMBus connecting pin (6-1 pin FPSMB)

This header allows you to connect SMBus (System Management Bus) equipment. It can be used for communication between peripheral equipment in the system, which has slower transmission rates, and power management equipment.

#### B. Internet status indicator (2-pin LAN1\_LED, LAN2\_LED)

These two 2-pin headers allow you to use the Gigabit internet indicator cable to connect to the LAN status indicator. When this indicator flickers, it means that the internet is properly connected.

#### C. Chassis intrusion pin (2-pin CHASSIS)

This header is provided for host computer chassis with chassis intrusion detection designs. In addition, it must also work with external detection equipment, such as a chassis intrusion detection sensor or a microswitch. When this function is activated, if any chassis component movement occurs, the sensor will immediately detect it and send a signal to this header, and the system will then record this chassis intrusion event. The default setting is set to the CASEOPEN and GND pin; this function is off.

#### D. Locator LED (4-pin LOCATOR)

This header is for the locator switch and LED on the front panel.

#### E. System Fault LED (2-pin LOCATOR)

This header is for the Fault LED on the system.

## Mini-SAS HD Connectors

(SATA\_0\_3)

(see p.6, No. 15)

(SSATA\_4\_7)

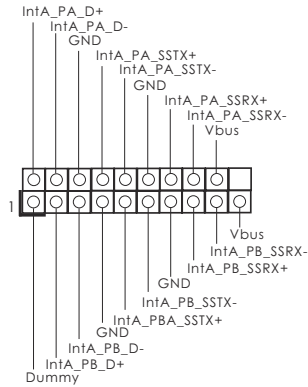
(see p.6, No. 16)



These connectors

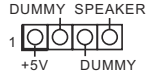
support MiniSAS-to-SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

USB 3.2 Gen1 Header  
(19-pin USB3\_3\_4)  
(see p.6, No. 5)



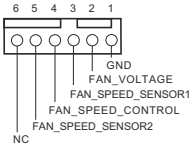
Besides two default USB 3.2 Gen1 ports on the I/O panel, there is one USB 3.2 Gen1 header on this motherboard. This USB 3.2 Gen1 header can support two USB 3.2 Gen1 ports.

Chassis Speaker Header  
(4-pin SPEAKER1)  
(see p.6, No. 22)



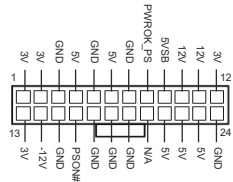
Please connect the chassis speaker to this header.

System Fan Connectors  
(6-pin FAN1)  
(see p.6, No. 7)  
(6-pin FAN2)  
(see p.6, No. 9)  
(6-pin FAN3)  
(see p.6, No. 11)  
(6-pin FAN4)  
(see p.6, No. 17)  
(6-pin FAN5)  
(see p.6, No. 18)  
(6-pin FAN6)  
(see p.6, No. 19)  
(6-pin FAN7)  
(see p.6, No. 20)



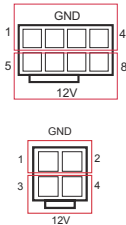
Please connect fan cables to the fan connectors and match the black wire to the ground pin. All fans support Fan Control.

ATX Power Connector  
(24-pin ATXPWR1)  
(see p.6, No. 4)



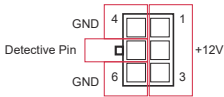
This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.

ATX 12V Power  
Connectors  
(8-pin ATX12V1)  
(see p.6, No. 2)  
(4-pin ATX12V2)  
(see p.6, No. 3)



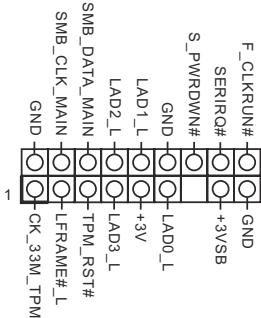
This motherboard provides  
one 8-pin and one 4-pin ATX  
12V power connectors.

Graphics 12V Power  
Connector  
(6-pin GFX\_12V1)  
(see p.6, No. 21)



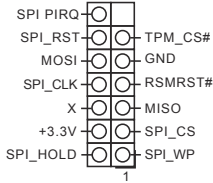
This motherboard provides  
a 6-pin Graphics 12V power  
connector.  
\* Install the PSU's power  
cable to this connector when 4  
graphics cards are installed.

TPM Header  
(17-pin TPM1)  
(see p.6, No. 30)



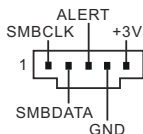
This connector supports  
Trusted Platform Module  
(TPM) system, which can  
securely store keys, digital  
certificates, passwords, and  
data. A TPM system also helps  
enhance network security,  
protects digital identities, and  
ensures platform integrity.

TPM-SPI Header  
(13-pin TPM\_BIOS\_PH1)  
(see p.6, No. 39)



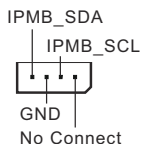
This connector supports  
Trusted Platform Module  
(TPM) system for SPI  
interface, which can securely  
store keys, digital certificates,  
passwords, and data. A TPM  
system also helps enhance  
network security, protects  
digital identities, and ensures  
platform integrity.

PSU SMBus Header  
(5-pin PSU\_SMB1)  
(see p.6, No. 1)



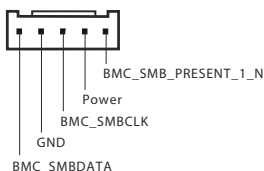
PSU SMBus monitors the status of the power supply, fan and system temperature.

Intelligent Platform  
Management Bus Header  
(4-pin IPMB1)  
(see p.6, No. 33)



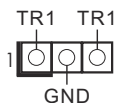
This 4-pin connector is used to provide a cabled base-board or front panel connection for value added features and 3rd-party add-in cards, such as Emergency Management cards, that provide management features using the IPMB.

Baseboard Management  
Controller SMBus Header  
(5-pin BMC\_SMB1)  
(see p.6, No. 32)



The header is used for the SM BUS devices.

Thermal Sensor Headers  
(3-pin TR1)  
(see p.6, No. 28)  
(3-pin TR2)  
(see p.6, No. 31)



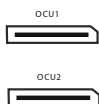
Please connect the thermal sensor cable to either pin 1-2 or pin 2-3 and the other end to the device which you wish to monitor its temperature.

Non Maskable Interrupt  
Button Header  
(NMI\_BTN1)  
(see p.6, No. 35)



Please connect a NMI device to this header.

OCuLink Connectors  
(OCU1)  
(see p.6, No. 10)  
(OCU2)  
(see p.6, No. 12)



Please connect PCIE SSDs to these connectors.

Clear CMOS Pad  
(CLRMOS1)  
(see p.6, No. 25)



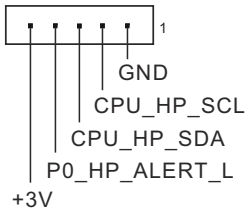
This allows you to clear the data in CMOS. To clear CMOS, take out the CMOS battery and short the Clear CMOS Pad.

Front Panel Type C USB  
3.2 Gen2 Header  
(20-pin USB31\_TC\_2)  
(see p.6, No. 36)  
*(ROMED8-2T only)*



There is one Front Panel Type C USB 3.2 Gen2 Header on this motherboard. This header is used for connecting a USB 3.2 Gen2 module for an additional USB 3.2 Gen2 port.

CPU HP-SMBus Connector  
(5-pin CPU1\_HSBP1)  
(see p.6, No. 34)



This header is used for the hot plug feature of HDDs on the backplane.

## 2.8 Dr. Debug

Dr. Debug is used to provide code information, which makes troubleshooting even easier. Please see the diagrams below for reading the Dr. Debug codes.

| Code | Description          |
|------|----------------------|
| 0x10 | PEI_CORE_STARTED     |
| 0x11 | PEI_CAR_CPU_INIT     |
| 0x15 | PEI_CAR_NB_INIT      |
| 0x19 | PEI_CAR_SB_INIT      |
| 0x31 | PEI_MEMORY_INSTALLED |
| 0x32 | PEI_CPU_INIT         |
| 0x33 | PEI_CPU_CACHE_INIT   |
| 0x34 | PEI_CPU_AP_INIT      |
| 0x35 | PEI_CPU_BSP_SELECT   |
| 0x36 | PEI_CPU_SMM_INIT     |
| 0x37 | PEI_MEM_NB_INIT      |
| 0x3B | PEI_MEM_SB_INIT      |
| 0x4F | PEI_DXE_IPL_STARTED  |
| 0x60 | DXE_CORE_STARTED     |
| 0x61 | DXE_NVRAM_INIT       |
| 0x62 | DXE_SBRUN_INIT       |



|      |                               |
|------|-------------------------------|
| 0x63 | DXE_CPU_INIT                  |
| 0x68 | DXE_NB_HB_INIT                |
| 0x69 | DXE_NB_INIT                   |
| 0x6A | DXE_NB_SMM_INIT               |
| 0x70 | DXE_SB_INIT                   |
| 0x71 | DXE_SB_SMM_INIT               |
| 0x72 | DXE_SB_DEVICES_INIT           |
| 0x78 | DXE_ACPI_INIT                 |
| 0x79 | DXE_CSM_INIT                  |
| 0x90 | DXE_BDS_STARTED               |
| 0x91 | DXE_BDS_CONNECT_DRIVERS       |
| 0x92 | DXE_PCI_BUS_BEGIN             |
| 0x93 | DXE_PCI_BUS_HPC_INIT          |
| 0x94 | DXE_PCI_BUS_ENUM              |
| 0x95 | DXE_PCI_BUS_REQUEST_RESOURCES |
| 0x96 | DXE_PCI_BUS_ASSIGN_RESOURCES  |
| 0x97 | DXE_CON_OUT_CONNECT           |
| 0x98 | DXE_CON_IN_CONNECT            |

0x99 DXE\_SIO\_INIT

0x9A DXE\_USB\_BEGIN

0x9B DXE\_USB\_RESET

0x9C DXE\_USB\_DETECT

0x9D DXE\_USB\_ENABLE

0xA0 DXE\_IDE\_BEGIN

0xA1 DXE\_IDE\_RESET

0xA2 DXE\_IDE\_DETECT

0xA3 DXE\_IDE\_ENABLE

0xA4 DXE\_SCSI\_BEGIN

0xA5 DXE\_SCSI\_RESET

0xA6 DXE\_SCSI\_DETECT

0xA7 DXE\_SCSI\_ENABLE

0xA8 DXE\_SETUP\_VERIFYING\_PASSWORD

0xA9 DXE\_SETUP\_START

0xAB DXE\_SETUP\_INPUT\_WAIT

0xAD DXE\_READY\_TO\_BOOT

0xAE DXE\_LEGACY\_BOOT

|      |                                  |
|------|----------------------------------|
| 0xAF | DXE_EXIT_BOOT_SERVICES           |
| 0xB0 | RT_SET_VIRTUAL_ADDRESS_MAP_BEGIN |
| 0xB1 | RT_SET_VIRTUAL_ADDRESS_MAP_END   |
| 0xB2 | DXE_LEGACY_OPROM_INIT            |
| 0xB3 | DXE_RESET_SYSTEM                 |
| 0xB4 | DXE_USB_HOTPLUG                  |
| 0xB5 | DXE_PCI_BUS_HOTPLUG              |
| 0xB6 | DXE_NVRAM_CLEANUP                |
| 0xB7 | DXE_CONFIGURATION_RESET          |
| 0xF0 | PEI_RECOVERY_AUTO                |
| 0xF1 | PEI_RECOVERY_USER                |
| 0xF2 | PEI_RECOVERY_STARTED             |
| 0xF3 | PEI_RECOVERY_CAPSULE_FOUND       |
| 0xF4 | PEI_RECOVERY_CAPSULE_LOADED      |
| 0xE0 | PEI_S3_STARTED                   |
| 0xE1 | PEI_S3_BOOT_SCRIPT               |
| 0xE2 | PEI_S3_VIDEO_REPOST              |

0xE3 PEI\_S3\_OS\_WAKE

0x50 PEI\_MEMORY\_INVALID\_TYPE

0x53 PEI\_MEMORY\_NOT\_DETECTED

0x55 PEI\_MEMORY\_NOT\_INSTALLED

0x57 PEI\_CPU\_MISMATCH

0x58 PEI\_CPU\_SELF\_TEST\_FAILED

0x59 PEI\_CPU\_NO\_MICROCODE

0x5A PEI\_CPU\_ERROR

0x5B PEI\_RESET\_NOT\_AVAILABLE

0xD0 DXE\_CPU\_ERROR

0xD1 DXE\_NB\_ERROR

0xD2 DXE\_SB\_ERROR

0xD3 DXE\_ARCH\_PROTOCOL\_NOT\_AVAILABLE

0xD4 DXE\_PCI\_BUS\_OUT\_OF\_RESOURCES

0xD5 DXE\_LEGACY\_OPROM\_NO\_SPACE

0xD6 DXE\_NO\_CON\_OUT

0xD7 DXE\_NO\_CON\_IN

|      |                             |
|------|-----------------------------|
| 0xD8 | DXE_INVALID_PASSWORD        |
| 0xD9 | DXE_BOOT_OPTION_LOAD_ERROR  |
| 0xDA | DXE_BOOT_OPTION_FAILED      |
| 0xDB | DXE_FLASH_UPDATE_FAILED     |
| 0xDC | DXE_RESET_NOT_AVAILABLE     |
| 0xE8 | PEI_MEMORY_S3_RESUME_FAILED |
| 0xE9 | PEI_S3_RESUME_PPI_NOT_FOUND |
| 0xEA | PEI_S3_BOOT_SCRIPT_ERROR    |
| 0xEB | PEI_S3_OS_WAKE_ERROR        |

## 2.9 Unit Identification purpose LED/Switch

With the UID button, You are able to locate the server you're working on from behind a rack of servers.

Unit Identification  
purpose LED/Switch  
(UID1)



When the UID button on the front or rear panel is pressed, the front/rear UID blue LED indicator will be turned on. Press the UID button again to turn off the indicator.

## 2.10 Driver Installation Guide

To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from top to bottom to install those required drivers. Therefore, the drivers you install can work properly.

## 2.11 Dual LAN and Teaming Operation Guide *(ROMED8-2T only)*

Dual LAN with Teaming enabled on this motherboard allows two single connections to act as one single connection for twice the transmission bandwidth, making data transmission more effective and improving the quality of transmission of distant images. Fault tolerance on the dual LAN network prevents network downtime by transferring the workload from a failed port to a working port.



*The speed of transmission is subject to the actual network environment or status even with Teaming enabled.*

Before setting up Teaming, please make sure whether your Switch (or Router) supports Teaming (IEEE 802.3ad Link Aggregation). You can specify a preferred adapter in Intel PROSet. Under normal conditions, the Primary adapter handles all non-TCP/IP traffic. The Secondary adapter will receive fallback traffic if the primary fails. If the Preferred Primary adapter fails, but is later restored to an active status, control is automatically switched back to the Preferred Primary adapter.

### **Step 1**

From **Device Manager**, open the properties of a team.

### **Step 2**

Click the **Settings** tab.

### **Step 3**

Click the **Modify Team** button.

### **Step 4**

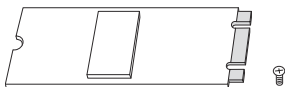
Select the adapter you want to be the primary adapter and click the **Set Primary** button.

If you do not specify a preferred primary adapter, the software will choose an adapter of the highest capability (model and speed) to act as the default primary. If a failover occurs, another adapter becomes the primary. The adapter will, however, rejoin the team as a non-primary.

## 2.12 M.2 SSD Module Installation Guide

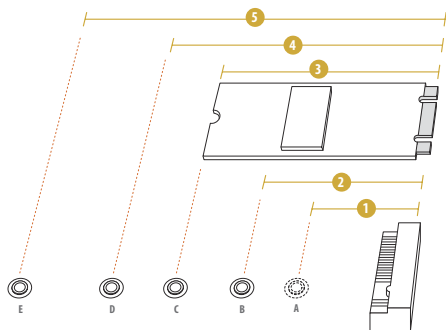
The Hyper M.2 Socket (M2\_1/M2\_2, Key M) supports a M.2 SATA3 6.0 Gb/s module or a M.2 PCI Express module up to Gen4 x4 (64 Gb/s).

### Installing the M.2 SSD Module



#### Step 1

Prepare a M.2 SSD module and the screw.



#### Step 2

Depending on the PCB type and length of your M.2 SSD module, find the corresponding nut location to be used.

#### M2\_1 :

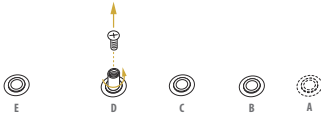
| No.          | 1        | 2         | 3        | 4         |
|--------------|----------|-----------|----------|-----------|
| Nut Location | A        | B         | C        | D         |
| PCB Length   | 3cm      | 4.2cm     | 6cm      | 8cm       |
| Module Type  | Type2230 | Type 2242 | Type2260 | Type 2280 |

#### M2\_2 :

| No.          | 1        | 2         | 3        | 4         | 5          |
|--------------|----------|-----------|----------|-----------|------------|
| Nut Location | A        | B         | C        | D         | E          |
| PCB Length   | 3cm      | 4.2cm     | 6cm      | 8cm       | 11cm       |
| Module Type  | Type2230 | Type 2242 | Type2260 | Type 2280 | Type 22110 |



### Step 3



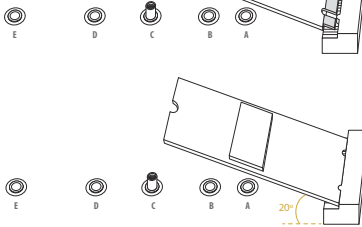
Move the standoff based on the module type and length. The standoff is placed at the nut location D by default. Skip Step 3 and 4 and go straight to Step 5 if you are going to use the default nut. Otherwise, release the standoff by hand.

### Step 4



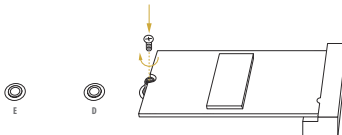
Peel off the yellow protective film on the nut to be used. Hand tighten the standoff into the desired nut location on the motherboard.

### Step 5



Gently insert the M.2 SSD module into the M.2 slot. Please be aware that the M.2 SSD module only fits in one orientation.

### Step 6



Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

For the latest updates of M.2 SSD module support list, please visit our website for details:  
<http://www.asrockrack.com>

# Chapter 3 UEFI Setup Utility

## 3.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY; otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctrl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.



*Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.*

### 3.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

| Item        | Description                                                                 |
|-------------|-----------------------------------------------------------------------------|
| Main        | To set up the system time/date information                                  |
| Advanced    | To set up the advanced UEFI features                                        |
| Server Mgmt | To manage the server                                                        |
| Security    | To set up the security features                                             |
| Boot        | To set up the default system device to locate and load the Operating System |
| Event Logs  | For event log configuration                                                 |
| Exit        | To exit the current screen or the UEFI SETUP UTILITY                        |

Use <←→> key or <→> key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

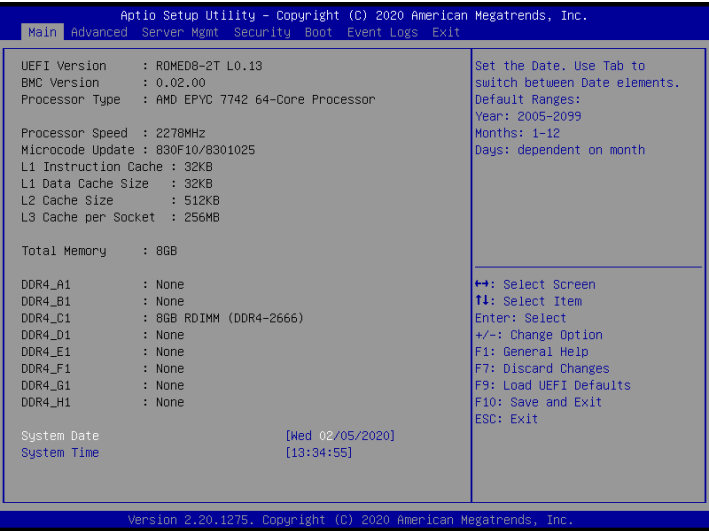
### 3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

| Navigation Key(s) | Function Description                               |
|-------------------|----------------------------------------------------|
| ← / →             | Moves cursor left or right to select Screens       |
| ↑ / ↓             | Moves cursor up or down to select items            |
| + / -             | To change option for the selected items            |
| <Tab>             | Switch to next function                            |
| <Enter>           | To bring up the selected screen                    |
| <PGUP>            | Go to the previous page                            |
| <PGDN>            | Go to the next page                                |
| <HOME>            | Go to the top of the screen                        |
| <END>             | Go to the bottom of the screen                     |
| <F1>              | To display the General Help Screen                 |
| <F7>              | Discard changes and exit the UEFI SETUP UTILITY    |
| <F9>              | Load optimal default values for all the settings   |
| <F10>             | Save changes and exit the UEFI SETUP UTILITY       |
| <F12>             | Print screen                                       |
| <ESC>             | Jump to the Exit Screen or exit the current screen |

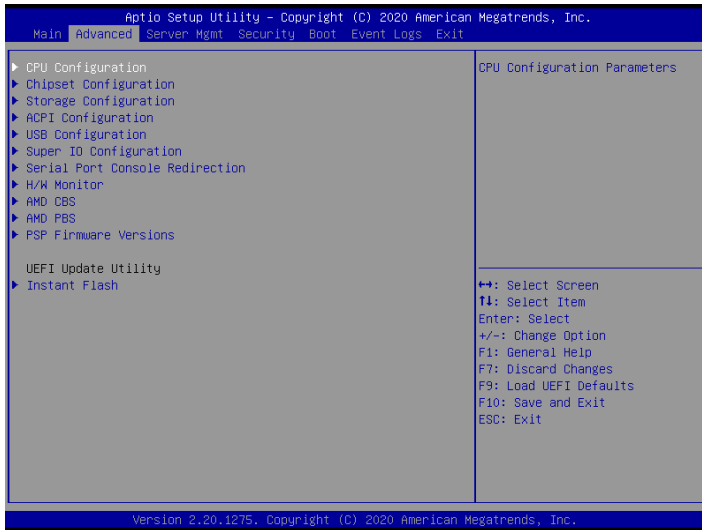
### 3.2 Main Screen

Once you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview. The Main screen provides system overview information and allows you to set the system time and date.



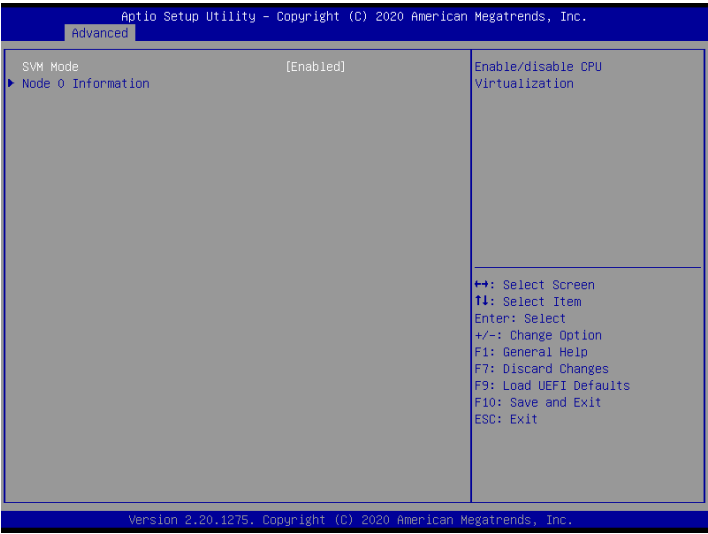
### 3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, ACPI Configuration, USB Configuration, Super IO Configuration, Serial Port Console Redirection, H/W Monitor, AMD CBS, AMD PBS, PSP Firmware Versions and Instant Flash.



*Setting wrong values in this section may cause the system to malfunction.*

### 3.3.1 CPU Configuration



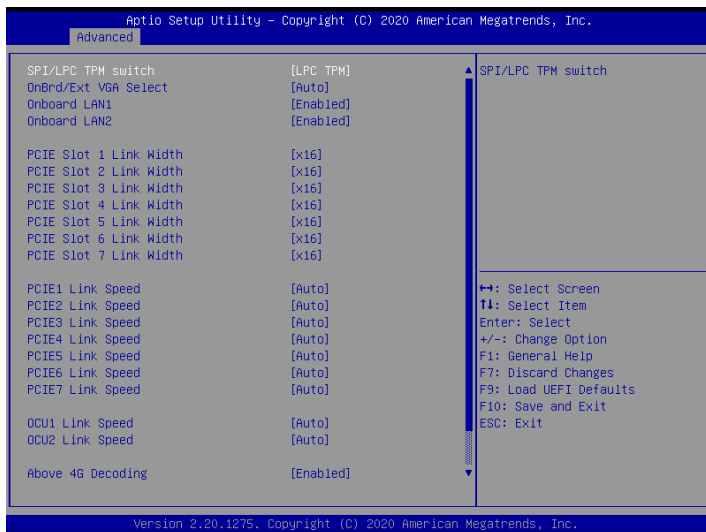
#### SVM Mode

Enable or disable CPU Virtualization.

#### Node 0 Information

View Memory Information related to Node 0.

## 3.3.2 Chipset Configuration



### SPI/LPC TPM Switch

Use this item to switch SPI/LPC TPM.

### OnBrd/Ext VGA Select

Select between onboard or external VGA support.

### Onboard LAN1 *(ROMED8-2T only)*

This allows you to enable or disable the Onboard LAN1 feature.

### Onboard LAN2 *(ROMED8-2T only)*

This allows you to enable or disable the Onboard LAN2 feature.

### PCIE Slot 1 Link Width

This allows you to select PCIE1 Link Width. The default value is [x16].

### PCIE Slot 2 Link Width

This allows you to select PCIE2 Link Width. The default value is [x16].

### PCIE Slot 3 Link Width

This allows you to select PCIE3 Link Width. The default value is [x16].

## PCIE Slot 4 Link Width

This allows you to select PCIE4 Link Width. The default value is [x16].

## PCIE Slot 5 Link Width

This allows you to select PCIE5 Link Width. The default value is [x16].

## PCIE Slot 6 Link Width

This allows you to select PCIE6 Link Width. The default value is [x16].

## PCIE Slot 7 Link Width

This allows you to select PCIE7 Link Width. The default value is [x16].

## PCIE1 Link Speed

This allows you to select PCIE1 Link Speed. The default value is [Auto].

## PCIE2 Link Speed

This allows you to select PCIE2 Link Speed. The default value is [Auto].

## PCIE3 Link Speed

This allows you to select PCIE3 Link Speed. The default value is [Auto].

## PCIE4 Link Speed

This allows you to select PCIE4 Link Speed. The default value is [Auto].

## PCIE5 Link Speed

This allows you to select PCIE5 Link Speed. The default value is [Auto].

## PCIE6 Link Speed

This allows you to select PCIE6 Link Speed. The default value is [Auto].

## PCIE7 Link Speed

This allows you to select PCIE7 Link Speed. The default value is [Auto].

## OCU1 Link Speed

This allows you to select OCU1 Link Speed. The default value is [Auto].

## OCU2 Link Speed

This allows you to select OCU2 Link Speed. The default value is [Auto].

## Above 4G Decoding

Enable or disable 64bit capable Devices to be decoded in Above 4G Address Space (only if the system supports 64 bit PCI decoding)



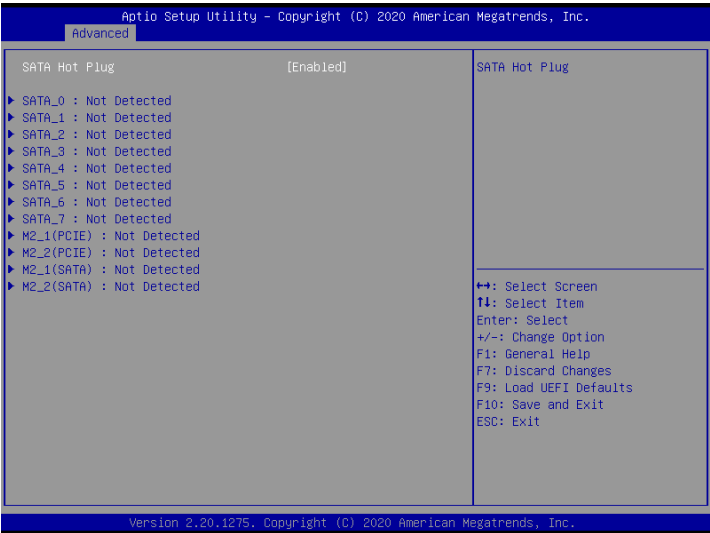
## SR-IOV Support

If system has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization Support.

## Restore AC Power Loss

This allows you to set the power state after a power failure. If [Power Off] is selected, the power will remain off when the power recovers. If [Power On] is selected, the system will start to boot up when the power recovers.

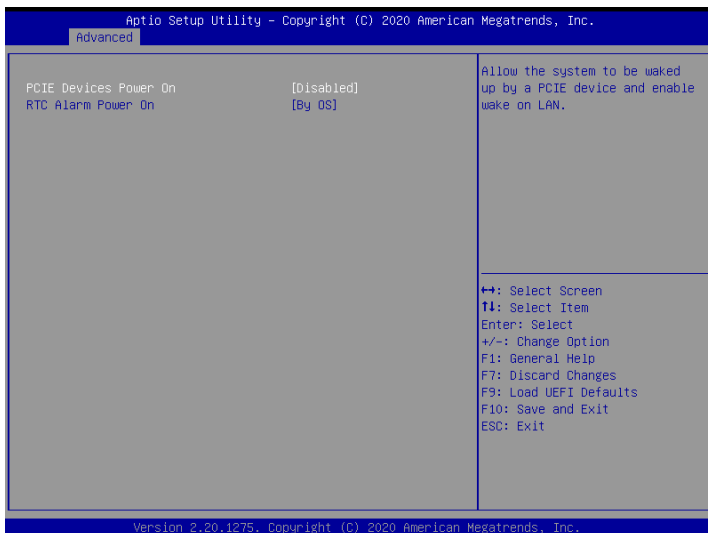
### 3.3.3 Storage Configuration



#### SATA Hot Plug

Enable/disable the SATA Hot Plug Function.

### 3.3.4 ACPI Configuration



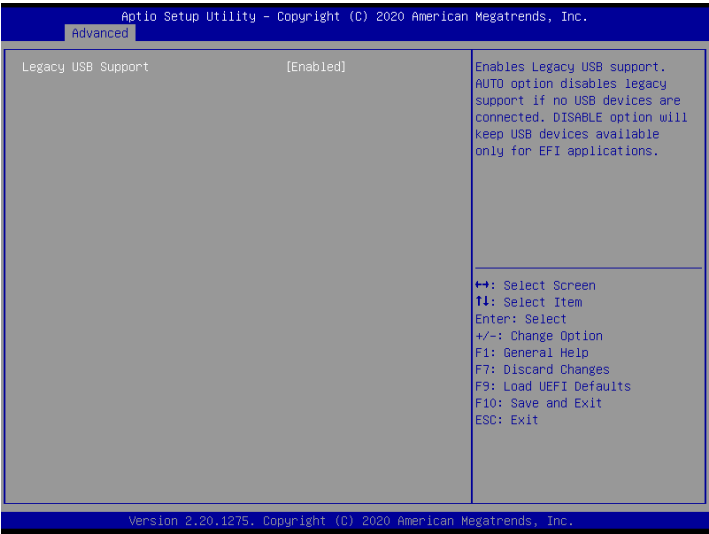
#### PCIE Devices Power On

Allow the system to be waked up by a PCIE device and enable wake on LAN.

#### RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

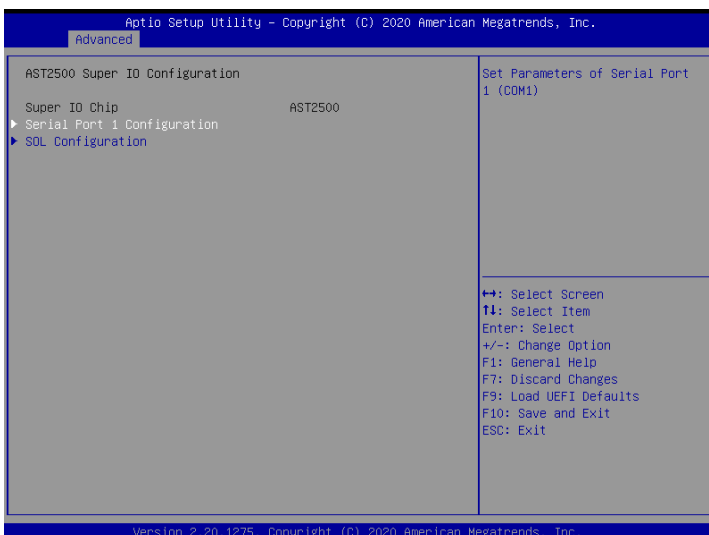
### 3.3.5 USB Configuration



#### Legacy USB Support

Use this option to enable or disable legacy support for USB devices. The default value is [Enabled].

### 3.3.6 Super IO Configuration



#### Serial Port 1 Configuration

Use this item to set parameters of Serial Port 1 (COM1).

#### Serial Port

Use this item to enable or disable the serial port.

#### Change Settings

Use this item to select an optimal setting for Super IO device.

#### SOL Configuration

Use this item to set parameters of SOL.

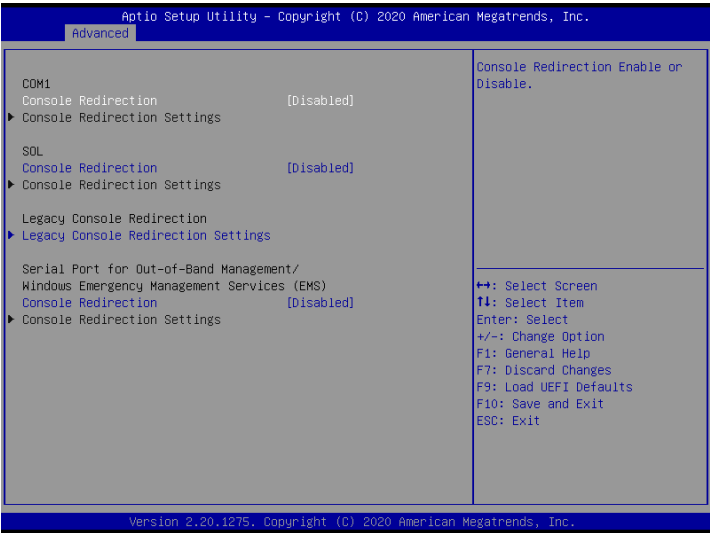
#### SOL Port

Use this item to set parameters of SOL.

#### Change Settings

Use this item to select an optimal setting for Super IO device.

### 3.3.7 Serial Port Console Redirection



#### COM1 / SOL

#### Console Redirection

Use this option to enable or disable Console Redirection. If this item is set to Enabled, you can select a COM Port to be used for Console Redirection.

#### Console Redirection Settings

Use this option to configure Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information. Both computers should have the same or compatible settings.

#### Terminal Type

Use this item to select the preferred terminal emulation type for out-of-band management. It is recommended to select [VT-UTF8].

| Option  | Description                                                     |
|---------|-----------------------------------------------------------------|
| VT100   | ASCII character set                                             |
| VT100+  | Extended VT100 that supports color and function keys            |
| VT-UTF8 | UTF8 encoding is used to map Unicode chars onto 1 or more bytes |
| ANSI    | Extended ASCII character set                                    |

### **Bits Per Second**

Use this item to select the serial port transmission speed. The speed used in the host computer and the client computer must be the same. Long or noisy lines may require lower transmission speed. The options include [9600], [19200], [38400], [57600] and [115200].

### **Data Bits**

Use this item to set the data transmission size. The options include [7] and [8] (Bits).

### **Parity**

Use this item to select the parity bit. The options include [None], [Even], [Odd], [Mark] and [Space].

### **Stop Bits**

The item indicates the end of a serial data packet. The standard setting is [1] Stop Bit. Select [2] Stop Bits for slower devices.

### **Flow Control**

Use this item to set the flow control to prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to restart the flow. Hardware flow uses two wires to send start/stop signals. The options include [None] and [Hardware RTS/CTS].

### **VT-UTF8 Combo Key Support**

Use this item to enable or disable the VT-UTF8 Combo Key Support for ANSI/VT100 terminals.

### **Recorder Mode**

Use this item to enable or disable Recorder Mode to capture terminal data and send it as text messages.

### **Resolution 100x31**

Use this item to enable or disable extended terminal resolution support.

### **Putty Keypad**

Use this item to select Function Key and Keypad on Putty.

## **Legacy Console Redirection**

### **Legacy Console Redirection Settings**

Use this option to configure Legacy Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information.

### **Redirection COM Port**

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

### **Resolution**

On Legacy OS, the Number of Rows and Columns supported redirection.

### Redirect After POST

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.

### Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

#### Console Redirection

Use this option to enable or disable Console Redirection. If this item is set to Enabled, you can select a COM Port to be used for Console Redirection.

#### Console Redirection Settings

Use this option to configure Console Redirection Settings, and specify how your computer and the host computer to which you are connected exchange information.

#### Out-of-Band Mgmt Port

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

#### Terminal Type

Use this item to select the preferred terminal emulation type for out-of-band management. It is recommended to select [VT-UTF8].

| Option  | Description                                                     |
|---------|-----------------------------------------------------------------|
| VT100   | ASCII character set                                             |
| VT100+  | Extended VT100 that supports color and function keys            |
| VT-UTF8 | UTF8 encoding is used to map Unicode chars onto 1 or more bytes |
| ANSI    | Extended ASCII character set                                    |

#### Bits Per Second

Use this item to select the serial port transmission speed. The speed used in the host computer and the client computer must be the same. Long or noisy lines may require lower transmission speed. The options include [9600], [19200], [57600] and [115200].

#### Flow Control

Use this item to set the flow control to prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to restart the flow. Hardware flow uses two wires to send start/stop signals. The options include [None], [Hardware RTS/CTS], and [Software Xon/Xoff].

#### Data Bits

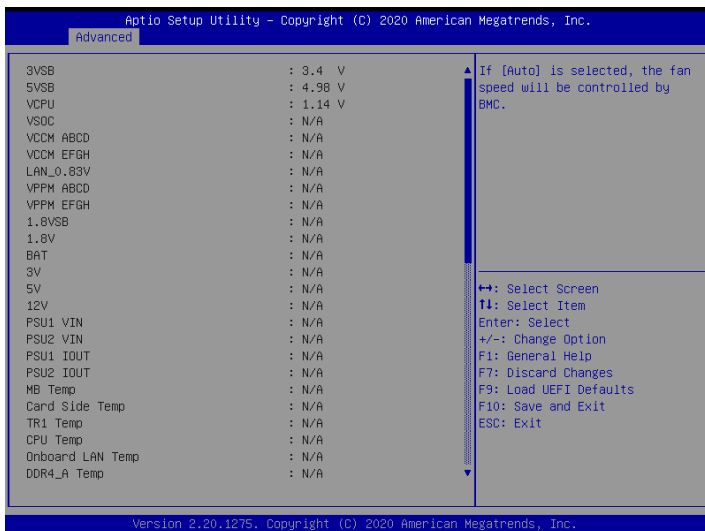
#### Parity

#### Stop Bits



### 3.3.8 H/W Monitor

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



#### Fan Control

If [Auto] is selected, the fan speed will be controlled by BMC.

If [Manual] is selected, configure the items below.

#### Watch Dog Timer

This allows you to enable or disable the Watch Dog Timer. The default value is [Disabled].

#### FAN 1

This allows you to set the fan 1's speed. The default value is [Smart Fan].

#### FAN 2

This allows you to set the fan 2's speed. The default value is [Smart Fan].

#### FAN 3

This allows you to set the fan 3's speed. The default value is [Smart Fan].

#### FAN 4

This allows you to set the fan 4's speed. The default value is [Smart Fan].

## **FAN 5**

This allows you to set the fan 5's speed. The default value is [Smart Fan].

## **FAN 6**

This allows you to set the fan 6's speed. The default value is [Smart Fan].

## **FAN 7**

This allows you to set the fan 7's speed. The default value is [Smart Fan].

## **Smart Fan Control**

This allows you to set the Smart fan's level speed.

### **Smart Fan Duty Control**

Smart Fan Duty x (x means 1 to 11 stage)

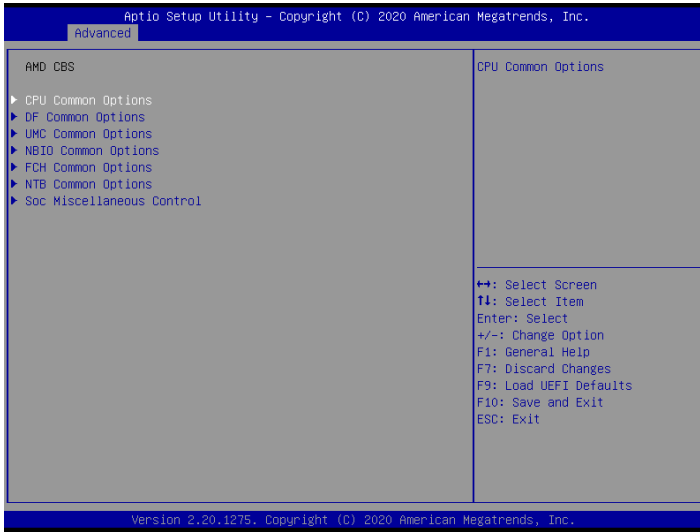
This allows you to set duty cycle for each stage.

### **Smart Fan Temp Control**

Smart Fan Temp x (x means 1 to 11 stage)

This allows you to set temperature for each stage.

### 3.3.9 AMD CBS



#### CPU Common Options

Use this item to configure CPU Common options.

#### DF Common Options

Use this item to configure DF Common options.

#### UMC Common Options

Use this item to configure UMC Common options.

#### NBIO Common Options

Use this item to configure NBIO Common options.

#### FCH Common Options

Use this item to configure FCH Common options.

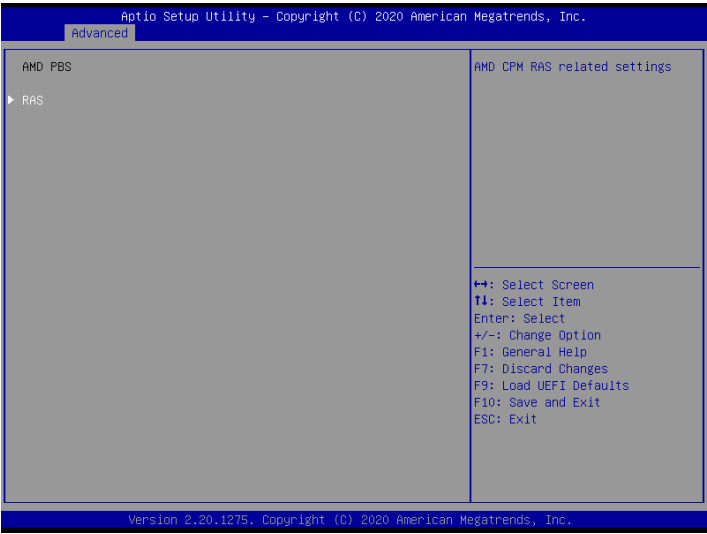
#### NTB Common Options

Use this item to configure NTB Common options.

#### Soc Miscellaneous Control

Use this item to configure Soc Miscellaneous Control options.

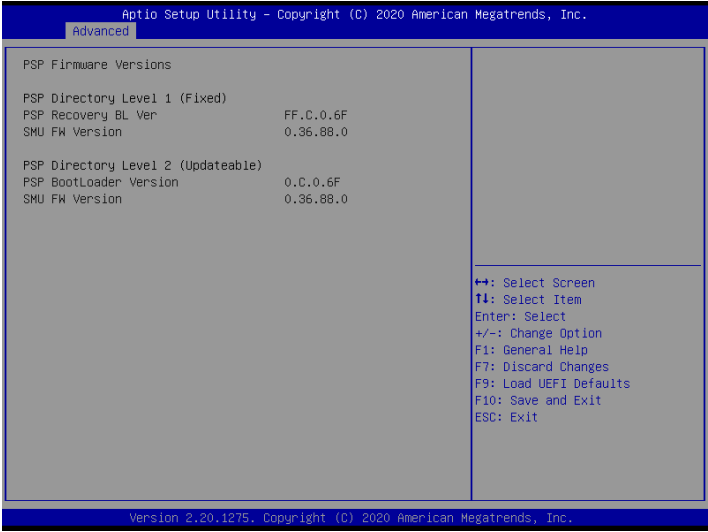
### 3.3.10 AMD PBS



#### RAS

Use this item to configure AMD CPM RAS related settings.

### 3.3.11 PSP Firmware Versions

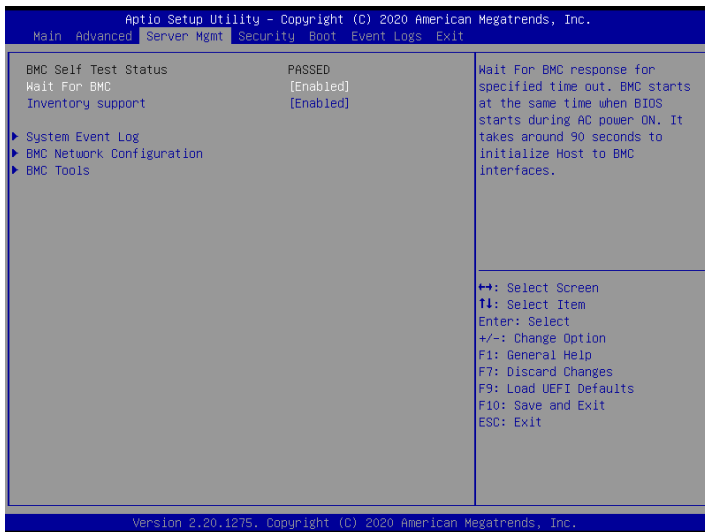


The PSP Firmware Versions displays the version information of PSP Recovery BL, PSP BootLoader, SMU FW, ABL, APCB, APDB, and APPB.

### 3.3.12 Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows<sup>®</sup>. Just save the new UEFI file to your USB flash drive, floppy disk or hard drive and launch this tool, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after the UEFI update process is completed.

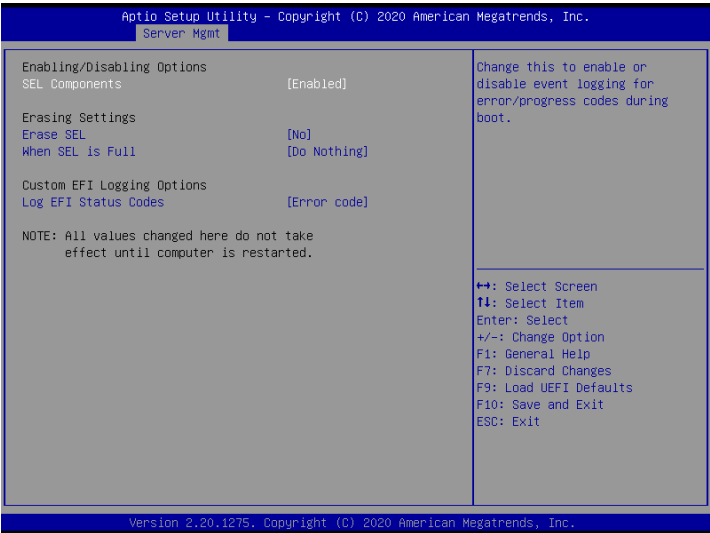
## 3.4 Server Mgmt



### Wait For BMC

Wait For BMC response for specified time out. BMC starts at the same time when BIOS starts during AC power ON. It takes around 90 seconds to initialize Host to BMC interfaces.

### 3.4.1 System Event Log



#### SEL Components

Change this to enable or disable event logging for error/progress codes during boot.

#### Erase SEL

Use this to choose options for erasing SEL.

#### When SEL is Full

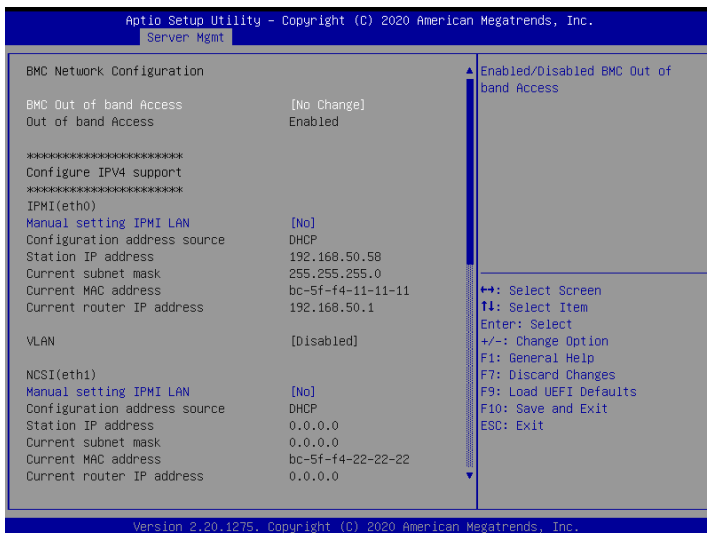
Use this to choose options for reactions to a full SEL.

#### Log EFI Status Codes

Use this item to disable the logging of EFI Status Codes or log only error code or only progress code or both.



## 3.4.2 BMC Network Configuration



### Lan Channel (Failover)

### Manual Setting IPMI LAN

If [No] is selected, the IP address is assigned by DHCP. If you prefer using a static IP address, toggle to [Yes], and the changes take effect after the system reboots. The default value is [No].

### Configuration Address Source

Select to configure BMC network parameters statically or dynamically (by BIOS or BMC). Configuration options: [Static] and [DHCP].

**Static:** Manually enter the IP Address, Subnet Mask and Gateway Address in the BIOS for BMC LAN channel configuration.

**DHCP:** IP address, Subnet Mask and Gateway Address are automatically assigned by the network's DHCP server.



When [DHCP] or [Static] is selected, do NOT modify the BMC network settings on the IPMI web page.



*The default login information for the IPMI web interface is:*

*Username: admin*

*Password: admin*

*For more instructions on how to set up remote control environment and use the IPMI management platform, please refer to the IPMI Configuration User Guide or go to the Support website at: <http://www.asrockrack.com/support/ipmi.asp>*

## 3.4.2 BMC Tools

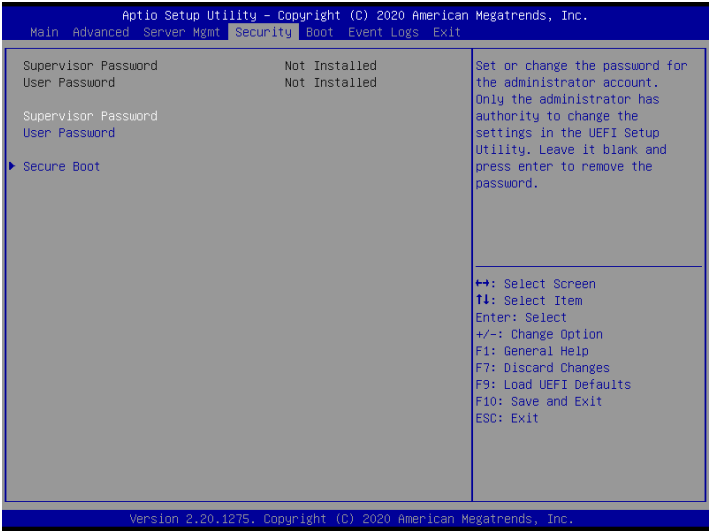


### Load BMC Default Settings

Use this item to Load BMC Default Settings.

### 3.5 Security

In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.



#### Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

#### User Password

Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

#### Secure Boot

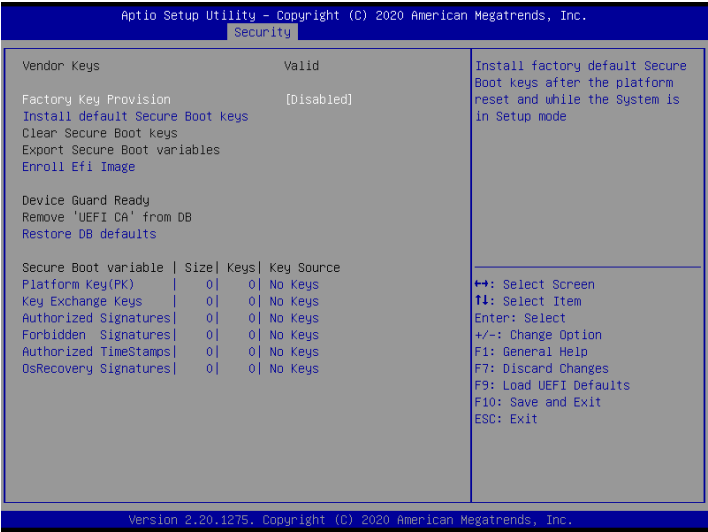
Use this to enable or disable Secure Boot Control. The default value is [Disabled]. Enable to support Windows Server 2012 R2 or later versions Secure Boot.

#### Secure Boot Mode

Secure Boot mode selector: Standard/Custom. In Custom mode Secure Boot Variables can be configured without authentication.

### 3.5.1 Key Management

In this section, expert users can modify Secure Boot Policy variables without full authentication.



#### Factory Key Provision

Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode.

#### Install Default Secure Boot Keys

Please install default secure boot keys if it's the first time you use secure boot.

#### Enroll Efi Image

Allow the image to run in Secure Boot mode. Enroll SHA256 hash of the binary into Authorized Signature Database (db).

#### Restore DB defaults

Restore DB variable to factory defaults.

#### Platform Key(PK)

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

a) EFI\_SIGNATURE\_LIST

b) EFI\_CERT\_X509 (DER encoded)

c) EFI\_CERT\_RSA2048 (bin)

d) EFI\_CERT\_SHA256, 384, 512

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

## Key Exchange Keys

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

a) EFI\_SIGNATURE\_LIST

b) EFI\_CERT\_X509 (DER encoded)

c) EFI\_CERT\_RSA2048 (bin)

d) EFI\_CERT\_SHA256, 384, 512

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

## Authorized Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

a) EFI\_SIGNATURE\_LIST

b) EFI\_CERT\_X509 (DER encoded)

c) EFI\_CERT\_RSA2048 (bin)

d) EFI\_CERT\_SHA256, 384, 512

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

## Forbidden Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

- a) EFI\_SIGNATURE\_LIST
- b) EFI\_CERT\_X509 (DER encoded)
- c) EFI\_CERT\_RSA2048 (bin)
- d) EFI\_CERT\_SHA256, 384, 512

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

## Authorized TimeStamps

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

- a) EFI\_SIGNATURE\_LIST
- b) EFI\_CERT\_X509 (DER encoded)
- c) EFI\_CERT\_RSA2048 (bin)
- d) EFI\_CERT\_SHA256, 384, 512

2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

## OsRecovery Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

- a) EFI\_SIGNATURE\_LIST
- b) EFI\_CERT\_X509 (DER encoded)
- c) EFI\_CERT\_RSA2048 (bin)
- d) EFI\_CERT\_SHA256, 384, 512

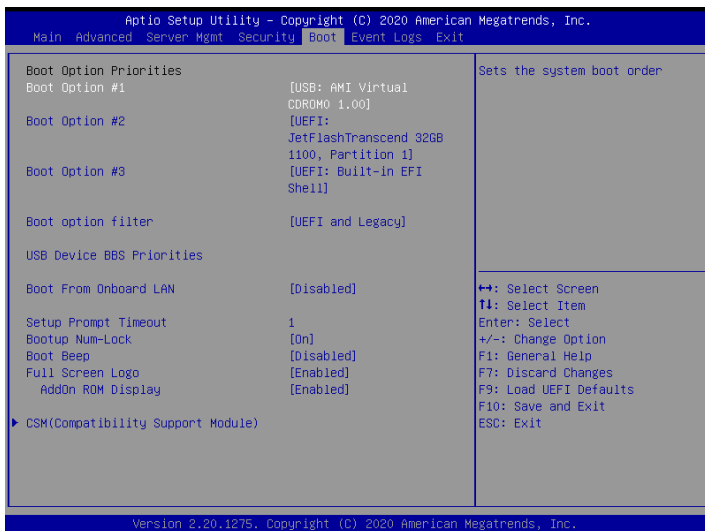
2. Authenticated UEFI Variable

3. EFI PE/COFF Image(SHA256)

Key Source: Default, External, Mixed, Test

### 3.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



### Boot Option #1

Use this item to set the system boot order.

## Boot Option #2

Use this item to set the system boot order.

### Boot Option #3

Use this item to set the system boot order.

## Boot Option Filter

This option controls Legacy/UEFI ROMs priority.

## USB Device BBS Priorities

Use this item to set the boot priorities for USB devices.

## Boot From Onboard LAN

Use this item to enable or disable the Boot From Onboard LAN feature.



## Setup Prompt Timeout

Configure the number of seconds to wait for the UEFI setup utility.

## Bootup Num-Lock

If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

## Boot Beep

Select whether the Boot Beep should be turned on or off when the system boots up. Please note that a buzzer is needed.

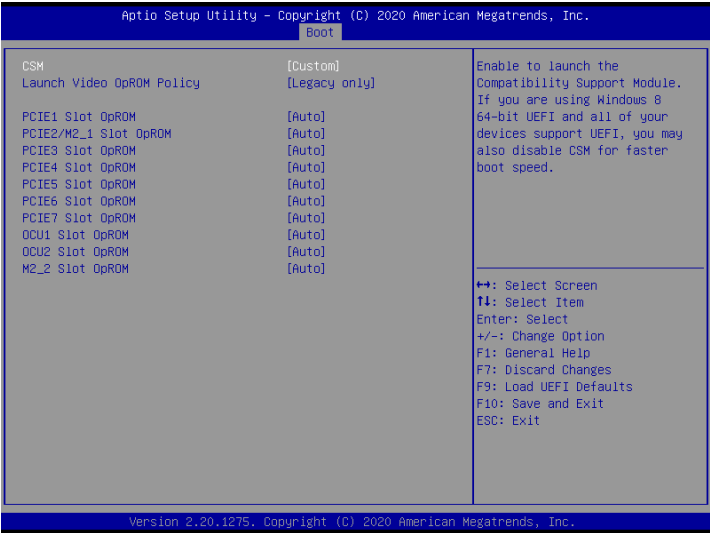
## Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

## AddOn ROM Display

Use this option to adjust AddOn ROM Display. If you enable the option “Full Screen Logo” but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled].

### 3.6.1 CSM Parameters



#### CSM

Enable to launch the Compatibility Support Module. Please do not disable unless you're running a WHCK test. If you are using Windows Server 2012 R2 or later versions 64-bit UEFI and all of your devices support UEFI, you may also disable CSM for faster boot speed.

#### Launch Video OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Select Do not launch to not execute both legacy and UEFI option ROM.

#### PCIE1 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

#### PCIE2/M2\_1 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### PCIE3 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### PCIE4 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### PCIE5 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### PCIE6 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### PCIE7 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### OCU1 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

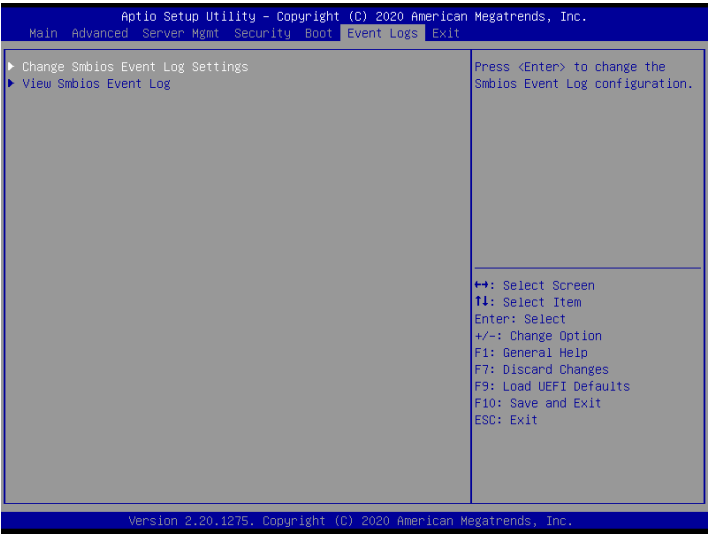
### OCU2 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### M2\_2 Slot OpROM

Use this item to select slot storage and Network Option ROM policy. In Auto option, the default is Disabled with NVMe device, but it is Legacy with other devices. (This item can't select Video Option ROM policy.)

### 3.7 Event Logs



#### Change Smbios Event Log Settings

This allows you to configure the Smbios Event Log Settings.

When entering the item, you will see the followings:

#### Smbios Event Log

Use this item to enable or disable all features of the SMBIOS Event Logging during system boot.

#### Erase Event Log

The options include [No], [Yes, Next reset] and [Yes, Every reset]. If Yes is selected, all logged events will be erased.

#### When Log is Full

Use this item to choose options for reactions to a full Smbios Event Log. The options include [Do Nothing] and [Erase Immediately].

#### Log System Boot Event

Choose option to enable/disable logging of System boot event.

#### MECI (Multiple Event Count Increment)

Use this item to enter the increment value for the multiple event counter. The valid range is from 1 to 255.

#### METW (Multiple Event Time Window)

Use this item to specify the number of minutes which must pass between duplicate log

entries which utilize a multiple-event counter. The value ranges from 0 to 99 minutes.

### **Log EFI Status Code**

Enable or disable the logging of EFI Status Codes as OEM reserved type E0 (if not already converted to legacy).

### **Convert EFI Status Codes to Standard Smbios Type**

Enable or disable the converting of EFI Status Codes to Standard Smbios Types (Not all may be translated).

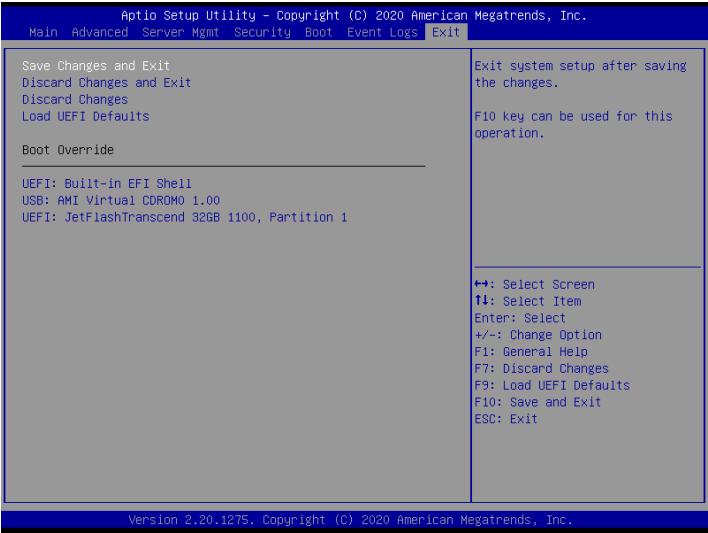
### **View Smbios Event Log**

Press <Enter> to view the Smbios Event Log records.



*All values changed here do not take effect until computer is restarted.*

### 3.8 Exit Screen



#### Save Changes and Exit

When you select this option, the following message “Save configuration changes and exit setup?” will pop-out. Press <F10> key or select [Yes] to save the changes and exit the UEFI SETUP UTILITY.

#### Discard Changes and Exit

When you select this option, the following message “Discard changes and exit setup?” will pop-out. Press <ESC> key or select [Yes] to exit the UEFI SETUP UTILITY without saving any changes.

#### Discard Changes

When you select this option, the following message “Discard changes?” will pop-out. Press <F7> key or select [Yes] to discard all changes.

#### Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

#### Boot Override

These items displays the available devices. Select an item to start booting from the selected device.

## Chapter 4 Software Support

After all the hardware has been installed, we suggest you go to our official website at <http://www.ASRockRack.com> and make sure if there are any new updates of the BIOS / BMC firmware for your motherboard.

### 4.1 Download and Install Operating System

This motherboard supports various Microsoft® Windows® Server / Linux compliant operating systems. Please download the operating system from your OS manufacturer. Please refer to your OS documentation for more instructions.

*\*Please download the Intel® SATA Floppy Image driver from the ASRock Rack's website ([www.asrockrack.com](http://www.asrockrack.com)) to your USB drive while installing OS in SATA RAID mode.*

### 4.2 Download and Install Software Drivers

This motherboard supports various Microsoft® Windows® compliant drivers. Please download the required drivers from our website at <http://www.ASRockRack.com>.

To download necessary drivers, go to the product page, click on the "Download" tab, choose the operating system you use, and select the driver you need to be downloaded.

### 4.3 Contact Information

If you need to contact ASRock Rack or want to know more about ASRock Rack, welcome to visit ASRock Rack's website at <http://www.ASRockRack.com>; or you may contact your dealer for further information.

# Chapter 5 Troubleshooting

## 5.1 Troubleshooting Procedures

Follow the procedures below to troubleshoot your system.



*Always unplug the power cord before adding, removing or changing any hardware components. Failure to do so may cause physical injuries to you and damages to motherboard components.*

1. Disconnect the power cable and check whether the PWR LED is off.
2. Unplug all cables, connectors and remove all add-on cards from the motherboard.  
Make sure that the jumpers are set to default settings.
3. Confirm that there are no short circuits between the motherboard and the chassis.
4. Install a CPU and fan on the motherboard, then connect the chassis speaker and power LED.

### **If there is no power...**

1. Confirm that there are no short circuits between the motherboard and the chassis.
2. Make sure that the jumpers are set to default settings.
3. Check the settings of the 115V/230V switch on the power supply.
4. Verify if the battery on the motherboard provides ~3VDC. Install a new battery if it does not.

### **If there is no video...**

1. Try replugging the monitor cables and power cord.
2. Check for memory errors.

### **If there are memory errors...**

1. Verify that the DIMM modules are properly seated in the slots.
2. Use recommended DDR4 R/LRDIMMs.
3. If you have installed more than one DIMM modules, they should be identical with the same brand, speed, size and chip-type.
4. Try inserting different DIMM modules into different slots to identify faulty ones.
5. Check the settings of the 115V/230V switch on the power supply.



### **Unable to save system setup configurations...**

1. Verify if the battery on the motherboard provides ~3VDC. Install a new battery if it does not.
2. Confirm whether your power supply provides adequate and stable power.

### **Other problems...**

1. Try searching keywords related to your problem on ASRock Rack's FAQ page:  
<http://www.asrockrack.com/support>

## 5.2 Technical Support Procedures

If you have tried the troubleshooting procedures mentioned above and the problems are still unsolved, please contact ASRock Rack's technical support with the following information:

1. Your contact information
2. Model name, BIOS version and problem type.
3. System configuration.
4. Problem description.

You may contact ASRock Rack's technical support at:  
<http://www.asrockrack.com/support/tsd.asp>

## 5.3 Returning Merchandise for Service

For warranty service, the receipt or a copy of your invoice marked with the date of purchase is required. By calling your vendor or going to our RMA website (<http://event.asrockrack.com/tsd.asp>) you may obtain a Returned Merchandise Authorization (RMA) number.

The RMA number should be displayed on the outside of the shipping carton which is mailed prepaid or hand-carried when you return the motherboard to the manufacturer. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

This warranty does not cover damages incurred in shipping or from failure due to alteration, misuse, abuse or improper maintenance of products.

Contact your distributor first for any product related problems during the warranty period.

## **Contact Information**

If you need to contact ASRock Rack or want to know more about ASRock Rack, you're welcome to visit ASRock Rack's website at <http://www.asrockrack.com>; or you may contact your dealer for further information. For technical questions, please submit a support request form at <https://event.asrockrack.com/tsd.asp>

### **ASRock Rack Incorporation**

e-mail: [ASRockRack\\_sales@asrockrack.com](mailto:ASRockRack_sales@asrockrack.com)

### **ASRock Rack EUROPE B.V.**

Bijsterhuizen 11-11

6546 AR Nijmegen

The Netherlands

Phone: +31-24-345-44-33

### **ASRock Rack America, Inc.**

13848 Magnolia Ave, Chino, CA91710 U.S.A.

Phone: +1-909-590-8308

Fax: +1-909-590-1026