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Motherboard

ROMED8HM3

User Manual

English



Version 1.20

Published Apr. 2026

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



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Please refer to <https://www.asrockrack.com/general/about.asp?cat=Responsibility> for information disclosure based on regulation requirements ASRock Rack is complied with.



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Chapter 1 Introduction

Thank you for purchasing ASRock Rack **ROMED8HM3** 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 information of the Support CD.



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

*Please visit the website for specific information and technical support:
<http://www.asrockrack.com/support/>*

1.1 Package Contents

- ASRock Rack ROMED8HM3 motherboard
(Half form factor: 431 mm x 165 mm)
- Quick installation guide



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

1.2 Specifications

ROMED8HM3	
Physical Status	
Form Factor	Half Width
Dimension	6.5 in x 17 in (165 mm x 431 mm)
Processor System	
CPU	AMD EPYC™ 7002 / 7001 series processor family
Socket	Single Socket SP3 (LGA 4094)
Chipset	N/A
System Memory	
Type	- Eight channel DDR4 memory technology - Supports DDR4 RDIMM, LRDIMM
DIMM Size Per DIMM	- RDIMM: 64 GB*, 32 GB, 16 GB, 8 GB - LRDIMM: 128 GB**, 64 GB*, 32 GB - NV DIMM: 32 GB*** <i>*64 GB: wait for the device to be validated</i> <i>**128 GB: wait for the device to be validated</i> <i>***Wait for the device to be validated</i>
DIMM Frequency	- RDIMM: 3200 MHz - LRDIMM: 3200 MHz - NVDIMM: 2666 MHz* <i>*Wait for the device to be validated</i>
Voltage	1.2V
Expansion Slot	
PCIe 3.0/4.0 x16	PCIe1: Gen3 / Gen4 x16 link
PCIe 3.0/4.0 x24	PCIe2: Gen3 / Gen4 x24 link
Storage	
SATA Controller	8 SATA3 (8 from 2x mini SAS HD connector, 2 for M.2 slots)
M.2 Slot	2 (2230/2242/2260/2280/22110, SATA3 x1 or PCIe Gen4 x4)
Slimline	SLIM1: PCIe Gen4 x8 SLIM2: PCIe Gen4 x8 SLIM3: PCIe Gen4 x8 SLIM4: PCIe Gen4 x8 SLIM5: PCIe Gen4 x8 SLIM6: PCIe Gen4 x8
Mezzanine	1 OCP3.0 4C+ SFF(PCIe x16)
Ethernet	
Interface	N/A
LAN	1 x RJ45 Dedicated IPMI LAN port
Management	
BMC Controller	ASPEED AST2500
Dedicated IPMI LAN	1 Realtek RTL8211E for dedicated management LAN

Features	- Watch Dog - NMI
Graphics	
Controller	ASPEED AST2500
VRAM	DDR4 512 MB
Rear Panel I/O	
VGA Port	1 (Mini DisplayPort)* <i>*Not supported for the standard Mini DisplayPort connection.</i>
USB 3.0 Port	2
LAN Port	1 (IPMI) LAN port (RJ45) LAN Ports with LED (ACT / LINK LED and SPEED LED)
UID	1
Internal Connector	
Auxiliary Panel Header	1 (includes chassis intrusion, location button & LED, front LAN LED)
Front Panel	1
TPM Header	1
IPMB Header	1
Fan Header	4 (6-pin)
USB 3.1 Gen1 Header	1 (supports 2 USB 3.1 Gen1 ports)
ATX Power	2 (8-pin)
CM SB Power	2
SATA SGPIO	2
OCulink	1
BMC SMB	1
PSU SMB	1
TR	1
NMI Button	1
COM Header	1
Speaker(4-pin)	1
ClearCMOS	1
CPU1_HSBP1	1
CM_SB_L	1
CM_SB_R	1
OH / FanFail LED	4 (only fan fail LED)
System BIOS	
Type	64MB AMI UEFI Legal BIOS
Features	- Plug and play (PnP) - ACPI 2.0 compliance wake-up events - SMBIOS 2.8 support - ASRock Rack Instant Flash

Hardware Monitor	
Temperature	- CPU temperature sensing - MB, card side temperature sensing
Fan	- Fan tachometer - CPU quiet fan (Allow chassis fan speed auto-adjust by CPU temperature.) - Fan multi-speed control
Voltage	Voltage monitoring: +12V, +5V, +3.3V, VDDCR_CPU, VDDCR_SOC, VCCM_ABCD, VCCM_EFGH, +BAT, 3VSB, 5VSB, +12V_EDGE, +3V_EDGE
Support OS	
OS	Microsoft® Windows® - Server 2016 (64 bit) - Server 2019 (64 bit) Linux® - RedHat Enterprise Linux Server 8.0 (64 bit) / 7.6 (64 bit) - CentOS 8.0 (64 bit) / 7.6 (64 bit) - SUSE SLES 15.1 (64 bit) / 12.4 (64 bit) - UBuntu 18.04.3 (64 bit) / 16.04.6 (64 bit) - CITRIX Hypervisor 8.1.0 Virtual - VMWare ESXi 6.5 u3 / 6.7 u3* <i>*Due to no embedded LAN devices on this motherboard for the VMWare installation, please use either the ASRock Rack OCP-series LAN Mezzanine cards or standard PCIe LAN cards for this OS installation.</i> <i>*Please refer to the website for the latest OS support list.</i>
Environment	
Temperature	Operating temperature: 10°C ~ 35°C Non-operating temperature: -40°C ~ 70°C



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.

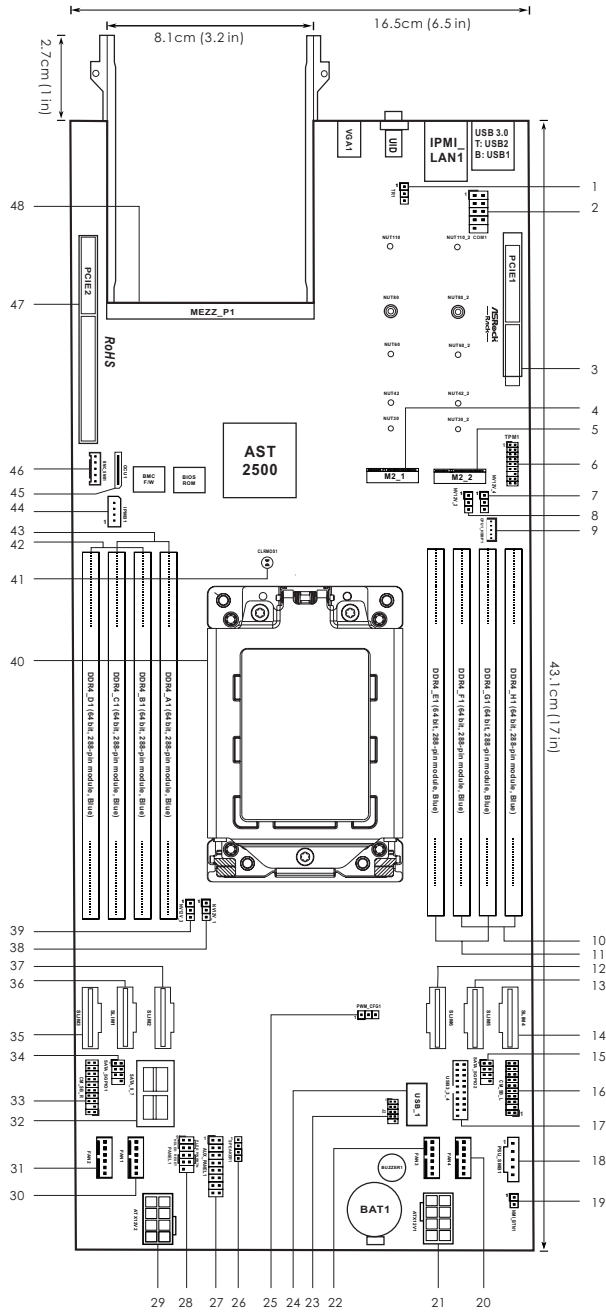


If you install Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If you install the drivers only, it will pass the WHQL tests.

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

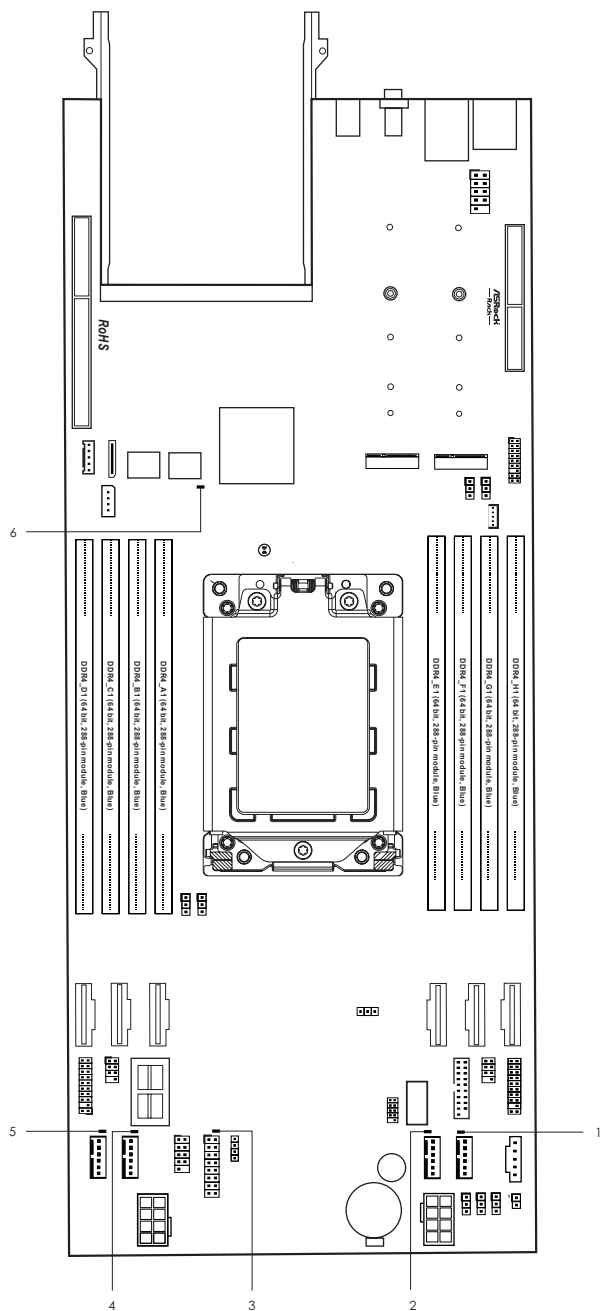


No.	Description
1	Thermal Sensor Header (TR1)
2	Serial Port Header (COM1)
3	PCI Express 4.0 x16 Slot (PCIE1)
4	M.2 Socket (M2_1) (Type 2230 / 2242 / 2260 / 2280 / 22110)
5	M.2 Socket (M2_2) (Type 2230 / 2242 / 2260 / 2280 / 22110)
6	TPM Header (TPM1)
7	NVDIMM Power Mode Jumper (NV12V_4)
8	NVDIMM Power Mode Jumper (NV12V_2)
9	Backplane PCI Express Hot-Plug Connector (CPU1_HSBP1)
10	2 x 288-pin DDR4 DIMM Slots (DDR4_F1, DDR4_H1)*
11	2 x 288-pin DDR4 DIMM Slots (DDR4_E1, DDR4_G1)*
12	Slimline NVMe x8 Connector (SLIM6)
13	Slimline NVMe x8 Connector (SLIM5)
14	Slimline NVMe x8 Connector (SLIM4)
15	SATA SGPIO Connector (SATA_SGPIO2)
16	CM Board Standby Power Header (CM_SB_L)
17	USB 3.1 Gen1 Header (USB3_3_4)
18	PSU SMBus (PSU_SMB1)
19	Non Maskable Interrupt Button (NMI_BTN1)
20	System Fan Header (FAN4)
21	ATX 12V Power Connector (ATX12V1)
22	System Fan Header (FAN3)
23	Front Panel Board Header (J2)
24	Vertical Type A USB 2.0 (USB_1)
25	PWM Configuration Header (PWM_CFG1)
26	Speaker Header (SPEAKER1)
27	Auxiliary Panel Header (AUX_PANEL1)
28	System Panel Header (PANEL1)
29	ATX 12V Power Connector (ATX12V2)
30	System Fan Header (FAN1)
31	System Fan Header (FAN2)
32	Mini SAS HD Connector (SATA_0_7)
33	CM Board Standby Power Header (CM_SB_R)
34	SATA SGPIO Connector (SATA_SGPIO1)

No.	Description
35	Slimline NVMe x8 Connector (SLIM3)
36	Slimline NVMe x8 Connector (SLIM1)
37	Slimline NVMe x8 Connector (SLIM2)
38	NVDIMM Power Mode Jumper (NV12V_1)
39	NVDIMM Power Mode Jumper (NV12V_3)
40	AMD Socket SP3 (LGA 4094) (CPU1)
41	Clear CMOS Pad (CLRMOS1)
42	2 x 288-pin DDR4 DIMM Slots (DDR4_B1, DDR4_D1)*
43	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_C1)*
44	Intelligent Platform Management Bus header (IPMB1)
45	OCuLink x4 Connector (OCU1)
46	BMC SMBus Header (BMC_SMB1)
47	PCI Express 4.0 x24 Slot (PCIE2)
48	Mezzanine Card Slot (MEZZ_P1)

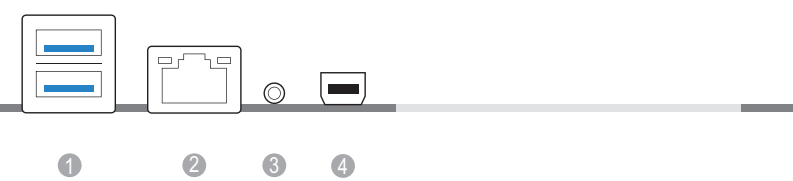
**For DIMM installation and configuration instructions, please see p.18 (Installing the Memory Modules (DIMM)) for more details.*

1.5 Onboard LED Indicators



No.	Item	Status	Description
1	FAN_LED4	Amber	FAN4 failed
2	FAN_LED3	Amber	FAN3 failed
3	SB_PWR1	Green	STB PWR ready
4	FAN_LED2	Amber	FAN1 failed
5	FAN_LED1	Amber	FAN2 failed
6	BMC_LED1	Green	BMC heartbeat LED

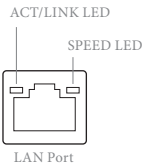
1.6 I/O Panel



No.	Description	No.	Description
1	USB 3.1 Gen1 Ports (USB3_1_2)	3	UID Switch (UID)
2	LAN RJ-45 Port (IPMI_LAN1)*	4	Mini DisplayPort (VGA1)

LAN Port LED Indications

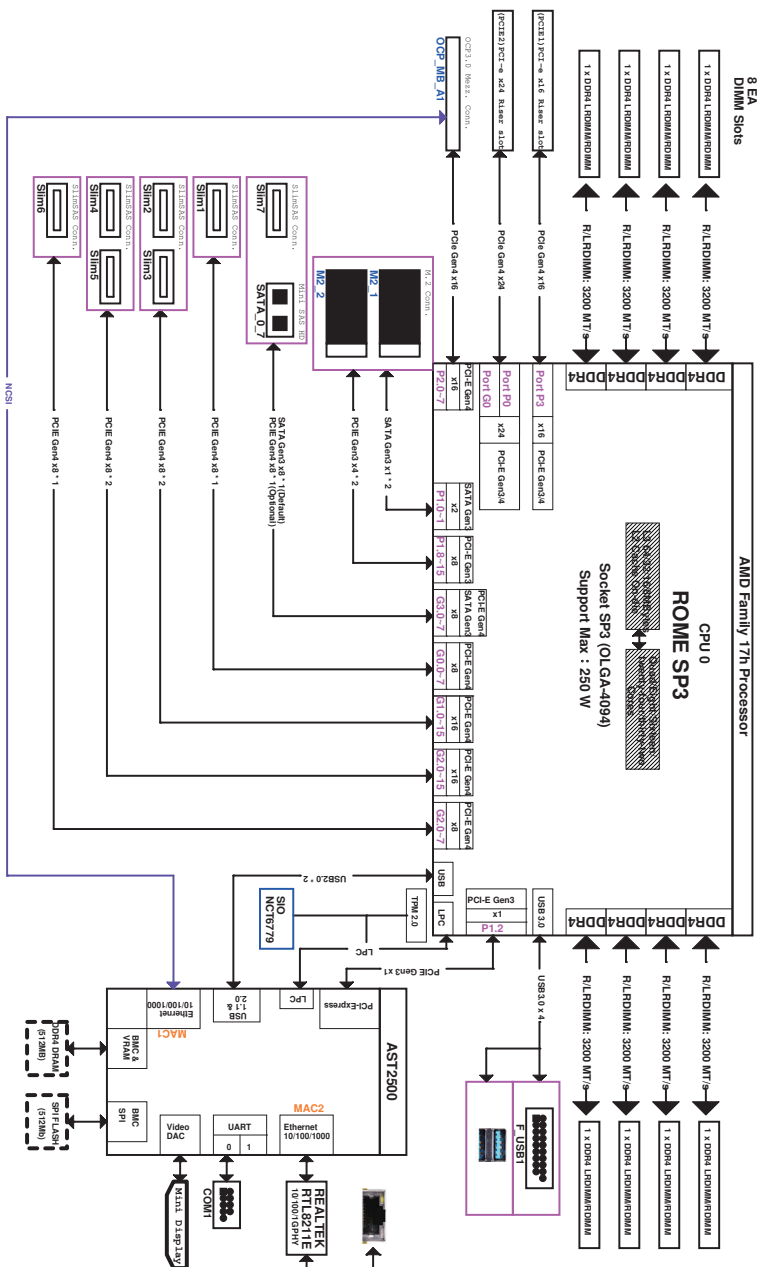
*There are two LEDs on the LAN port specified for link activity and speed. Please refer to the table below for the LAN port LED indications.



IPMI LAN Port LED Indications

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

1.7 Block Diagram



Chapter 2 Installation

This is a half form factor (431 mm x 165 mm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



1. Ensure the motherboard battery is installed before unplugging the power cord or installing / removing the motherboard.
2. Before installing or removing any components, ensure that the power supply is 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.
3. Please avoid using push-pin type CPU coolers, as the PCB thickness may prevent proper installation. A screw-based mounting system is recommended for a secure and reliable fit.

2.1 Screw Holes

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



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

2.2 Pre-installation Precautions

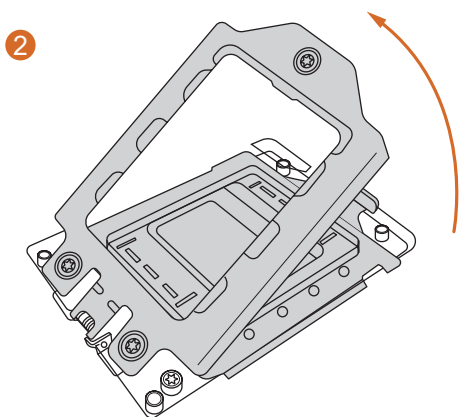
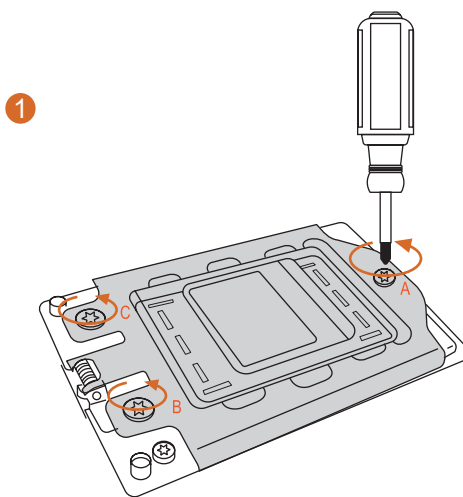
Take note of the following precautions before you install motherboard components or change any motherboard settings.

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.

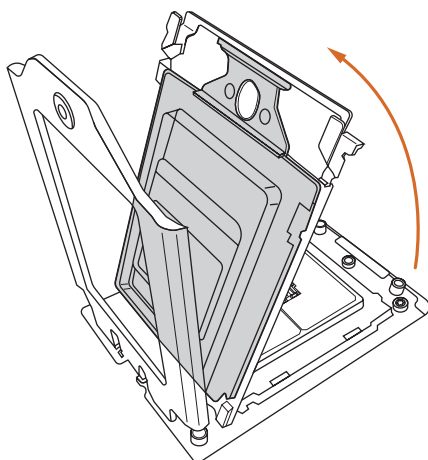
2.3 Installing the CPU



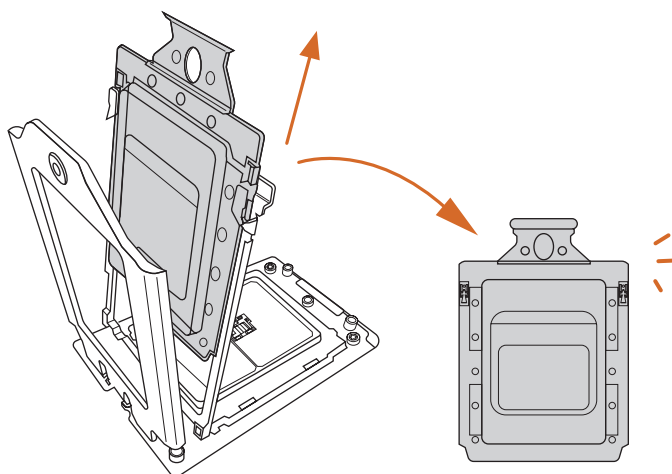
1. Before you insert the CPU into the socket, please check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all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



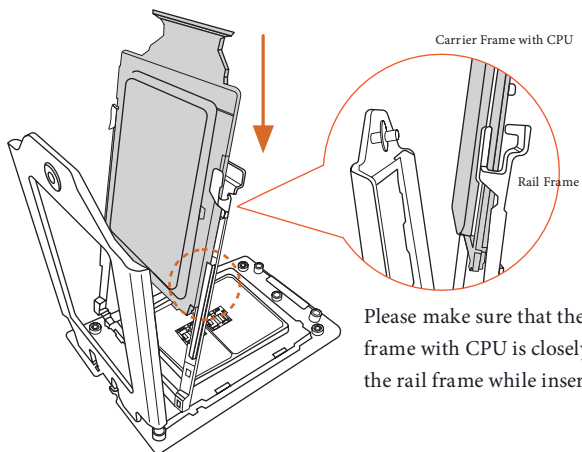
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4



5

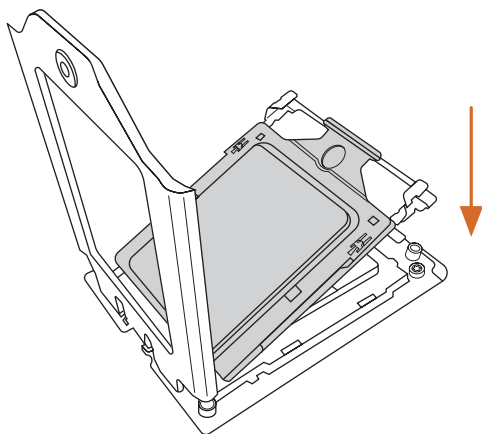


Please make sure that the carrier frame with CPU is closely attached to the rail frame while inserting it.

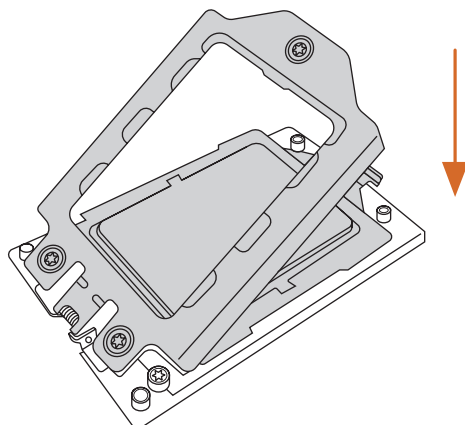


Install the carrier frame with CPU. Don't separate them.

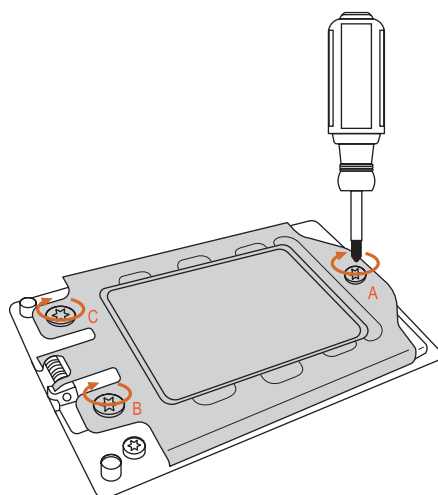
6



7



8



2.4 Installing the 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.

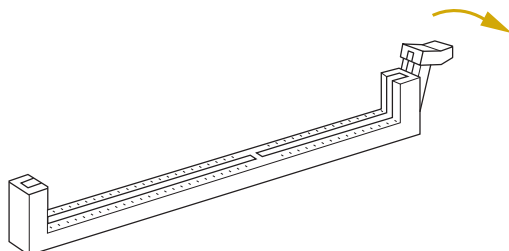
CPU1								
	A1	B1	C1	D1	E1	F1	G1	H1
1 DIMM			V					
2 DIMMS			V	V				
4 DIMMS			V	V			V	V
8 DIMMS	V	V	V	V	V	V	V	V

The symbol V indicates the slot is populated.

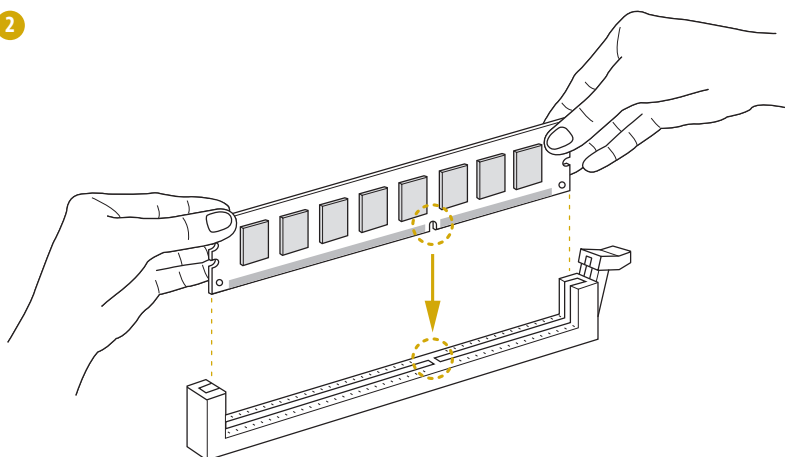


1. It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.
2. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.
3. It is unable to activate Dual 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.

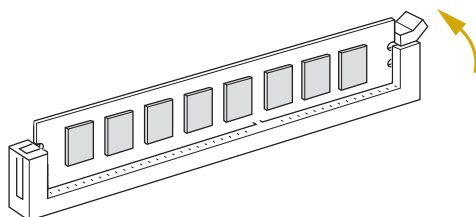
1



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 2 PCI Express slots on this motherboard.

PCIE slots:

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 x24 lane width cards.

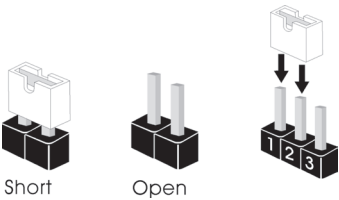
Slot	Generation	Mechanical	Electrical	Source
PCIE1	4.0	x16	x16	CPU1
PCIE2	4.0	x24	x24	CPU1

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 on the chassis. Keep the screw for later use.
- Step 4. Install the PCIE card to the riser card.
- Step 5. Align the riser-card assembly connector with the slot on the system board. Press firmly until the riser-card assembly is completely seated on the slot.
- Step 6. Fasten the card to the chassis with the screw.
- Step 7. 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.



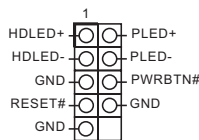
NVDIMM Power Support Jumpers	1_2 	2_3
(3-pin NV12V_1) (see p.6, No. 38)	No support for NVDIMM power (Default)	Support NVDIMM power
(3-pin NV12V_2) (see p.6, No. 8)		
(3-pin NV12V_3) (see p.6, No. 39)		
(3-pin NV12V_4) (see p.6, No. 7)		

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
(9-pin PANEL1)
(see p.6, No. 28)



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):

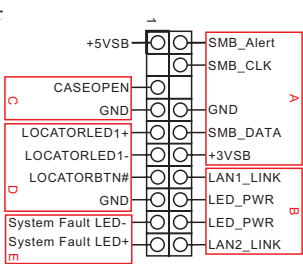
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S4 sleep state or powered off (S5).

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
(18-pin AUX PANEL1)
(see p.6, No. 27)

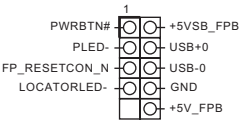


This header supports multiple functions on the front panel, including the front panel SMB, internet status indicator and chassis intrusion pin.



- 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 SYSTEM STATUS)**
This header is for the Fault LED on the system.

Front Panel Board Header
(9-pin J2)
(see p.6, No. 23)



Connect this header to the Front Panel Board on the system.

Mini SAS HD Connector
(SATA_0_7)
(see p.6, No. 32)



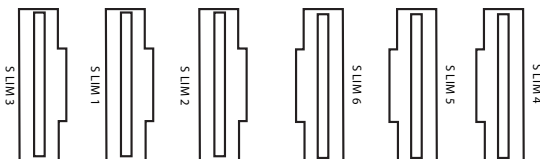
This Mini SAS HD connector supports SAS/SATA data cables for internal storage devices. The current SAS3/SATA3 interface allows up to 12.0 Gb/s data transfer rate. For connecting SAS HDDs, please contact SAS data cable dealers.

OCuLink Connector
(OCU1)
(see p.6, No. 45)



Please connect PCIE SSDs to the connector.

SLIMLINE NVMe x8
Connectors
(SLIM1)
(see p.6, No. 36)
(SLIM2)
(see p.6, No. 37)
(SLIM3)
(see p.6, No. 35)
(SLIM4)
(see p.6, No. 14)
(SLIM5)
(see p.6, No. 13)
(SLIM6)
(see p.6, No. 12)

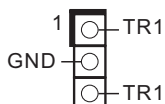


These connectors are used for the NVME PCIE devices.

USB 2.0 Connector
(USB_1)
(see p.6, No. 24)

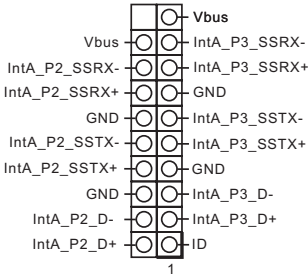


Thermal Sensor Header
(3-pin TR1)
(see p.6, No. 1)



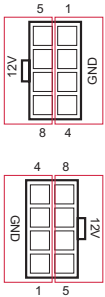
Please connect the thermal sensor cable to either pin 1-2 or pin 2-3 and the other end to the device which you wish to monitor its temperature.

USB 3.1 Gen1 Header
(19-pin USB3_3_4)
(see p.6, No. 17)



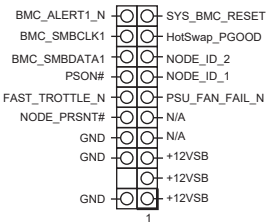
Besides two default USB 3.0 ports on the I/O panel, there is one USB 3.0 header on this motherboard. This USB 3.0 header can support two USB 3.0 ports.

ATX 12V Power
Connectors
(8-pin ATX12V1)
(see p.6, No. 21)
(8-pin ATX12V2)
(see p.6, No. 29)



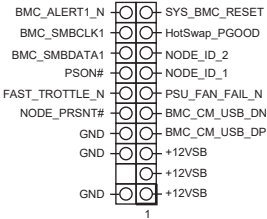
This motherboard provides two 8-pin ATX 12V power connectors.

CM Board Standby Power
Headers
(19-pin CM_SB_L)
(see p.6, No. 16)

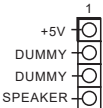


Connect this 19-pin header to the PSU for +12VSB and PSON PWROK.

(19-pin CM_SB_R)
(see p.6, No. 33)



Chassis Speaker Header
(4-pin SPEAKER1)
(see p.6, No. 26)



Please connect the chassis speaker to this header.

System Fan Headers

(6-pin FAN1)

(see p.6, No. 30)

(6-pin FAN2)

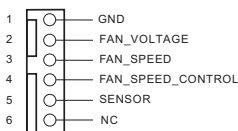
(see p.6, No. 31)

(6-pin FAN3)

(see p.6, No. 22)

(6-pin FAN4)

(see p.6, No. 20)



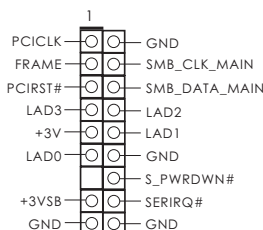
This motherboard provides four 6-Pin CPU fan (Quiet Fan) headers. Connect a 3-Pin CPU fan, please connect it to Pin 1-3. The fan max. current is 5A and the max. power is 60 Watts.

**For more details, please refer to the Cooler QVL list on the ASRock Rack website.*

TPM Header

(17-pin TPM1)

(see p.6, No. 6)

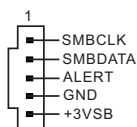


This connector supports Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

PSU SMBus

(PSU_SMB1)

(see p.6, No. 18)



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

Non Maskable Interrupt

Button Header

(NMI_BTN1)

(see p.6, No. 19)



Please connect a NMI device to this header.

Serial General Purpose

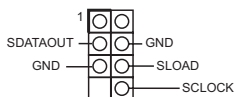
Input / Output Headers

(7-pin SATA_SGPIO1)

(see p.6, No. 34)

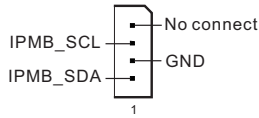
(7-pin SATA_SGPIO2)

(see p.6, No. 15)



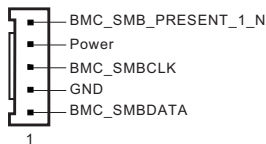
The headers support Serial Link interface for onboard SATA connections.

Intelligent Platform
Management Bus header
(4-pin IPMB1)
(see p.6, No. 44)



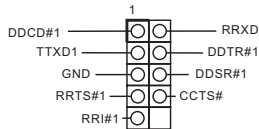
This 4-pin connector is used to provide a cabled base-board or front panel connection for value added features and 3rd-party add-in cards, such as Emergency Management cards, that provide management features using the IPMB.

Baseboard Management
Controller SMBus Header
(5-pin BMC_SMB1)
(see p.6, No. 46)



This header is used for the SMBUS devices.

Serial Port Header
(9-pin COM1)
(see p.6, No. 2)



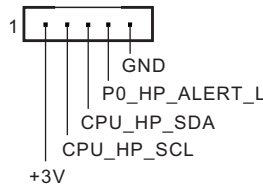
This COM1 header supports a serial port module.

PWM Configuration
Header
(3-pin PWM_CFG1)
(see p.6, No. 25)



This header is used for PWM configurations.

Backplane PCI Express
Hot-Plug Connector
(5-pin CPU1_HSBP1)
(see p.6, No. 9)



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

Clear CMOS Pad
(CLRMOS1)
(see p.6, No. 41)



CLRMOS1 allows you to clear the data in CMOS. To clear CMOS, take out the CMOS battery and short the Clear CMOS Pad.

2.8 Unit Identification purpose LED/Switch

Use the UID button to locate the server working on behind a rack of servers.

Unit Identification
purpose LED/Switch
(UID)

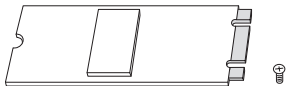


When the UID button on the front or rear panel is pressed, the front/rear UID blue LED indicator will be turned on. Press the UID button again to turn off the indicator.

2.9 M.2_SSD Module Installation Guide

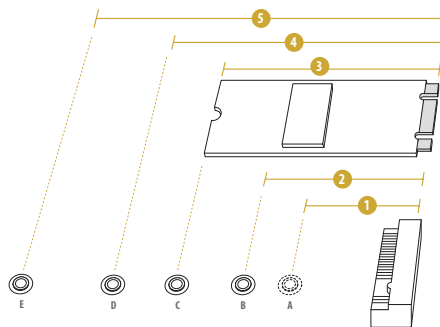
The M.2 Socket (M2_1 / M2_2, Key M) supports a M.2 SATA3 6.0 Gb/s module or a M.2 PCI Express module up to Gen4 x4.

Installing the M.2_SSD Module



Step 1

Prepare a M.2_SSD module and the screw.



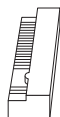
Step 2

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

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



Step 3



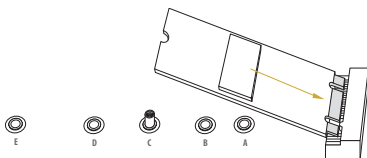
Move the standoff based on the module type and length. The standoff is placed at the nut location D by default. Skip Step 3 and 4 and go straight to Step 5 if you are going to use the default nut. Otherwise, release the standoff by hand.



Step 4

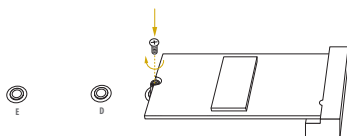
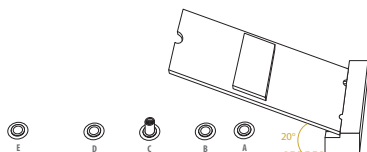


Peel off the yellow protective film on the nut to be used. Hand tighten the standoff into the desired nut location on the motherboard.



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.

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 during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY; otherwise, POST will continue with its test routines.

Restart the system by pressing <Ctrl> + <Alt> + <Delete> to enter the UEFI SETUP UTILITY after POST, or by pressing the reset button on the system chassis. This allows user to 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.

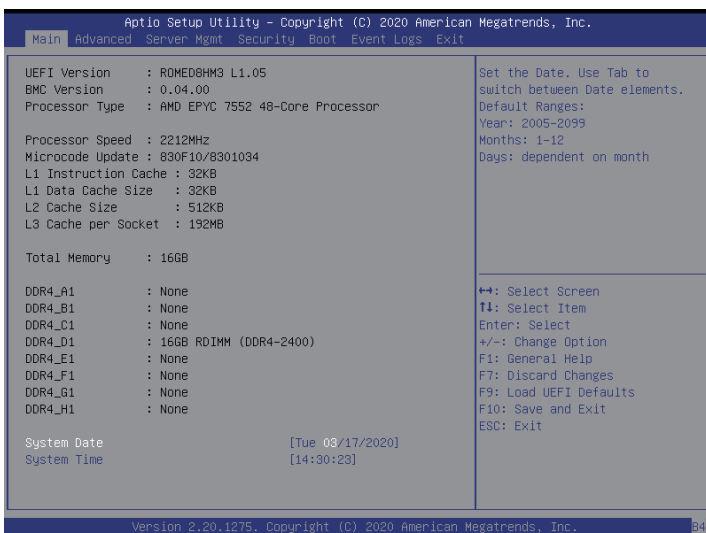
3.1.2 Navigation Keys

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

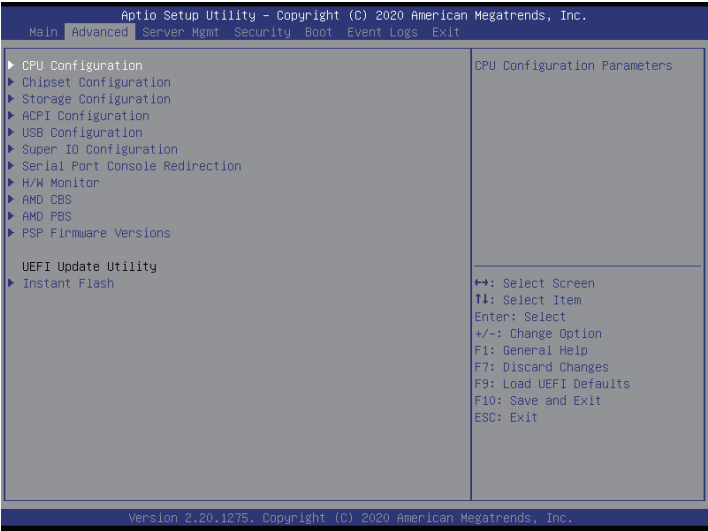
3.2 Main Screen

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



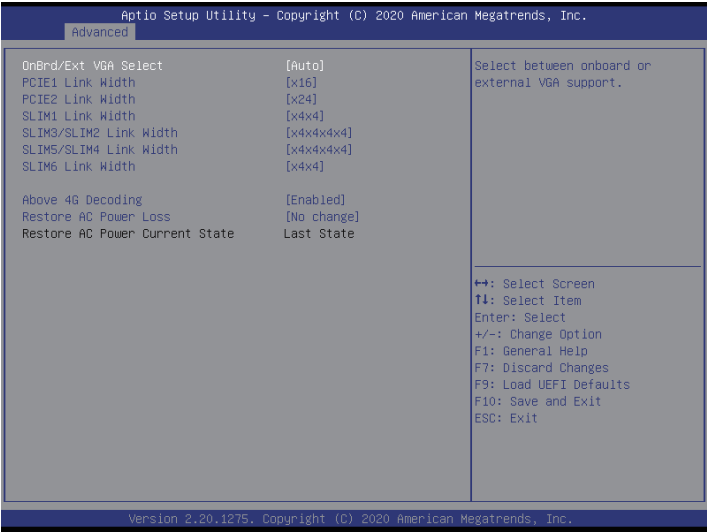
SVM Mode

Enable or disable CPU Virtualization.

Node 0 Information

View Memory Information related to Node 0.

3.3.2 Chipset Configuration



OnBrd/Ext VGA Select

Select between onboard or external VGA support.

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].

SLIM1 Link Width

This allows you to select SLIM1 Link Width. The default value is [x4x4].

SLIM3/SLIM2 Link Width

This allows you to select SLIM3/SLIM2 Link Width. The default value is [x4x4].

SLIM5/SLIM4 Link Width

This allows you to select SLIM5/SLIM4 Link Width. The default value is [x4x4].

SLIM6 Link Width

This allows you to select SLIM6 Link Width. The default value is [x4x4].

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).

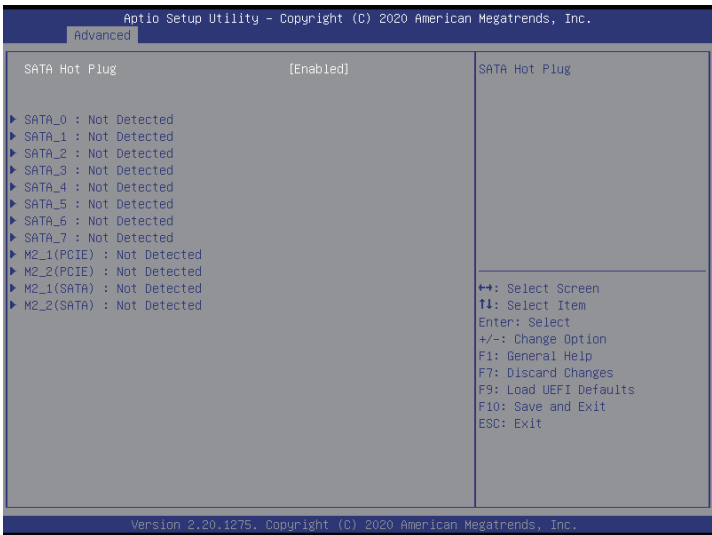
Restore AC Power Loss

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.

Restore AC Power Current State

This allows you to restore AC Power Current State.

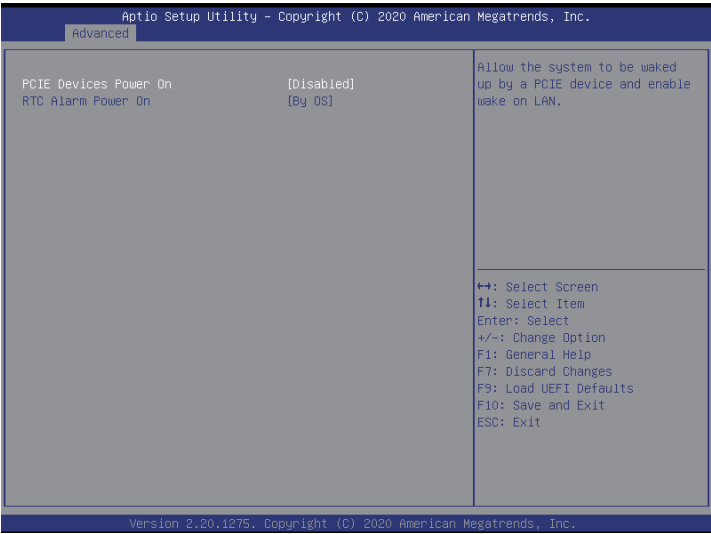
3.3.3 Storage Configuration



SATA Hot Plug

Enable/disable the SATA Hot Plug Function.

3.3.4 ACPI Configuration



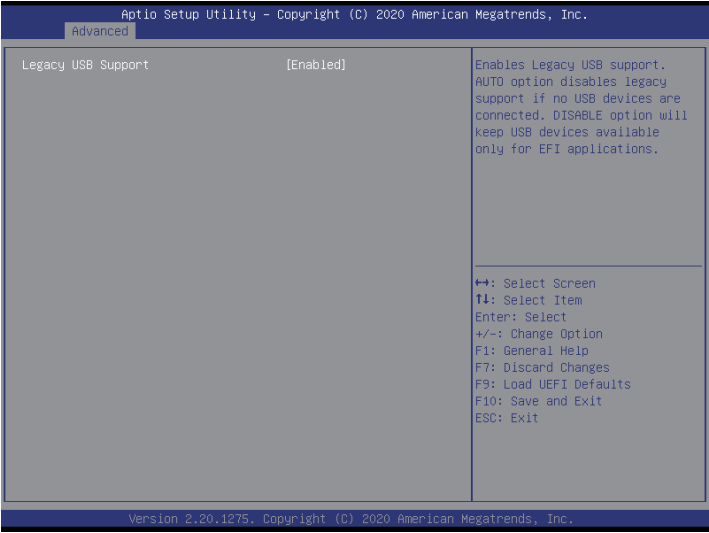
PCIE Devices Power On

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.

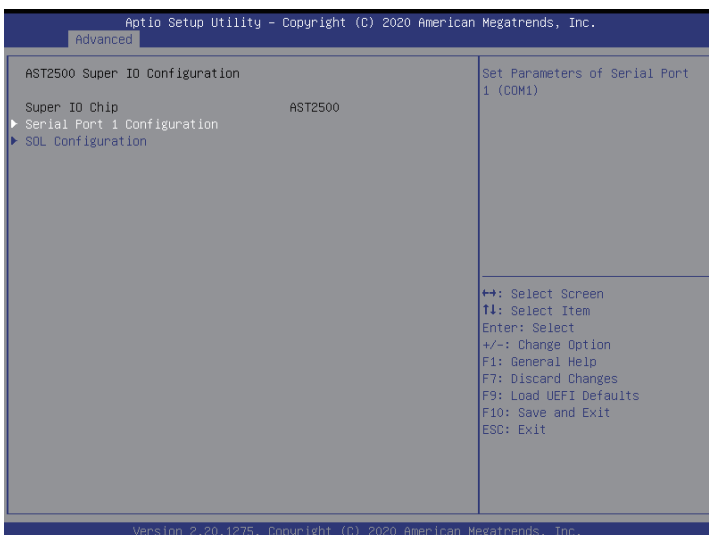
3.3.5 USB Configuration



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.

Serial Port Address

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

SOL Configuration

Use this item to set parameters of SOL.

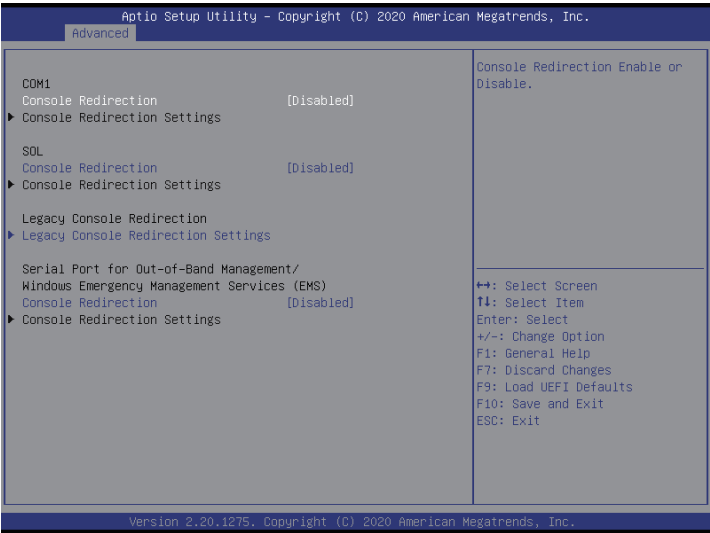
SOL Port

Use this item to set parameters of SOL.

Serial Port Address

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].

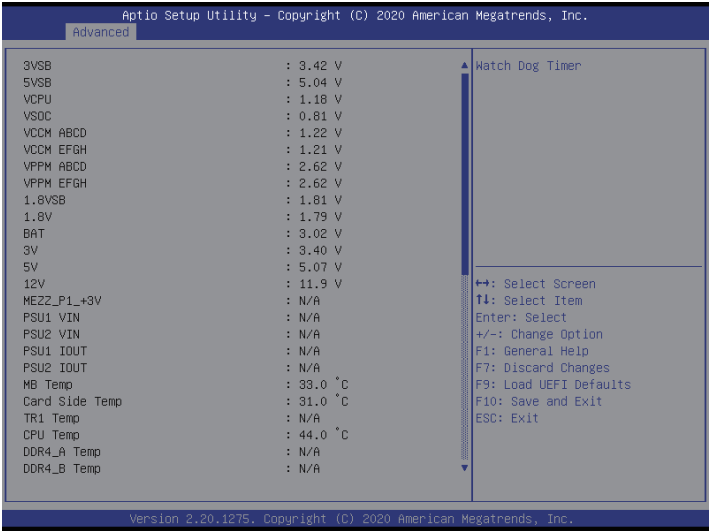
Data Bits

Parity

Stop Bits

3.3.8 H/W Monitor

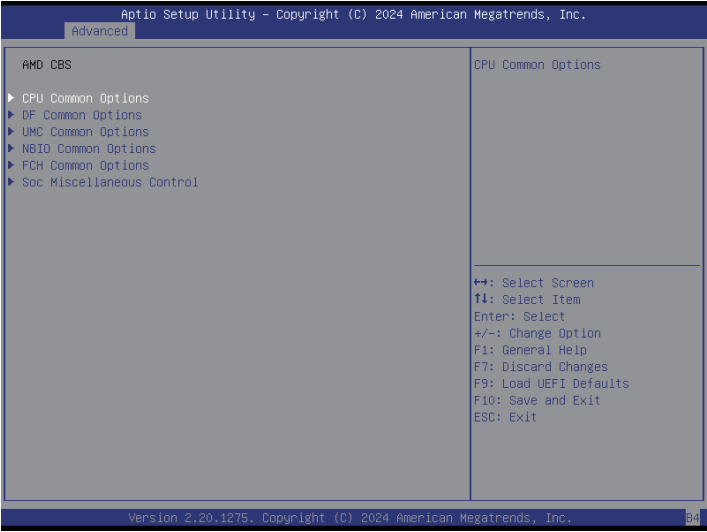
In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



Watch Dog Timer

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

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.

Soc Miscellaneous Control

Use this item to configure Soc Miscellaneous Control options.

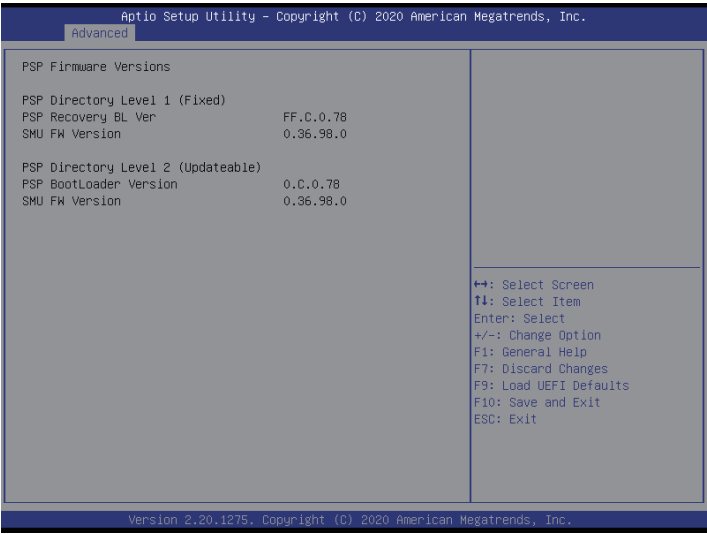
3.3.10 AMD PBS



RAS

Use this item to configure AMD CPM RAS related settings.

3.3.11 PSP Firmware Versions

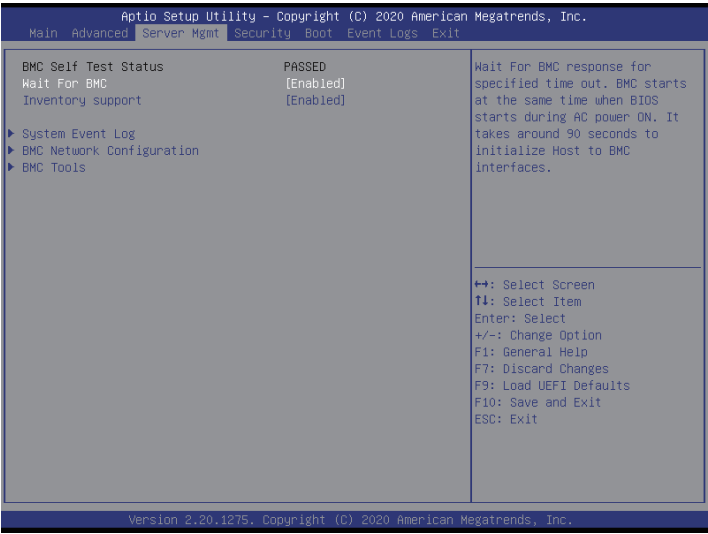


The PSP Firmware Versions displays the version information of PSP Recovery BL, PSP BootLoader, SMU FW, ABL, APCB, APDB, and APPB.

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[®]. 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.

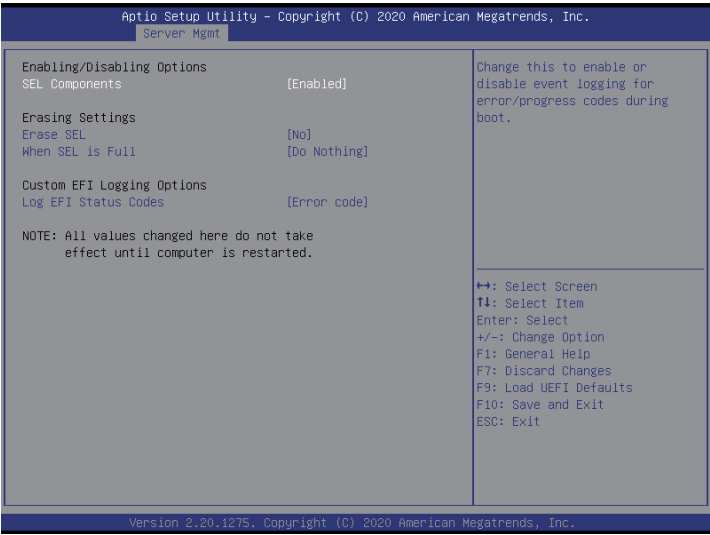
3.4 Server Mgmt



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.

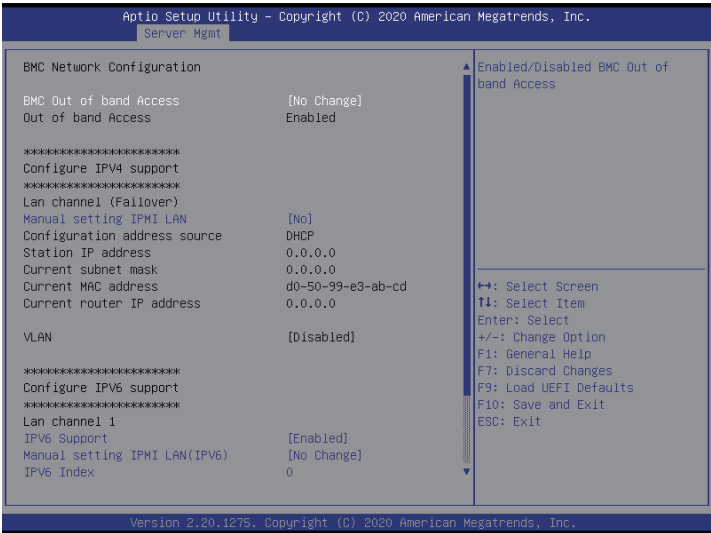
When SEL is Full

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



BMC Out of Band Access

Use this item to enable or disable BMC Out of Band Access.

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.



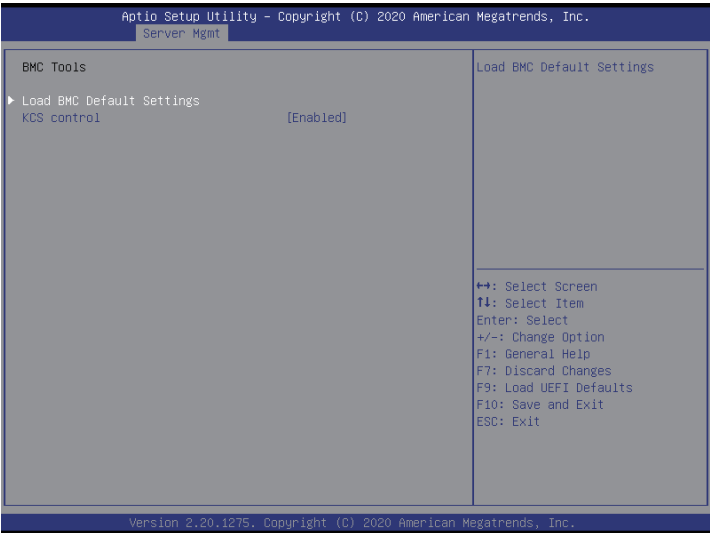
The default login information for the IPMI web interface is:

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/faq.asp>

3.4.3 BMC Tools



Load BMC Default Settings

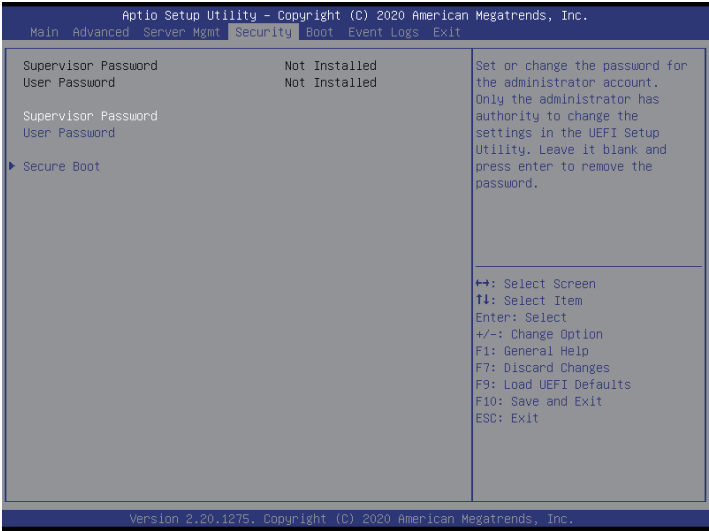
Use this item to Load BMC Default Settings.

KCS Control

Use this item to configure KCS 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

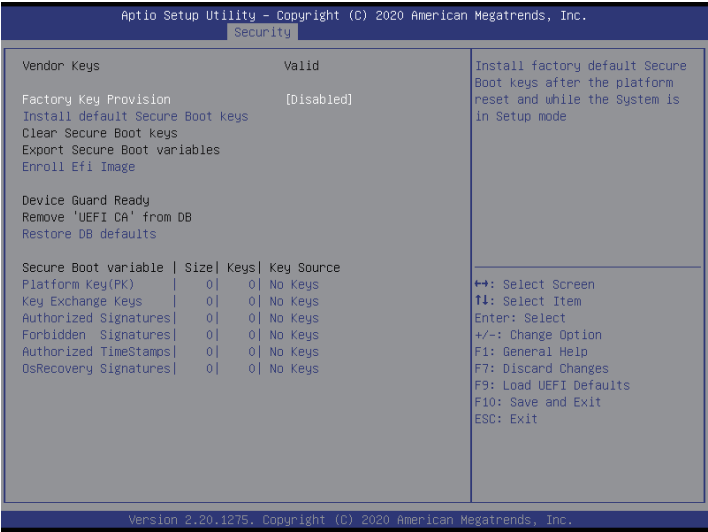
Use this to enable or disable Secure Boot Control. The default value is [Disabled]. Enable to support Windows Server 2012 R2 or later versions Secure Boot.

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 Filter

This option controls Legacy/UEFI ROMs priority.

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.

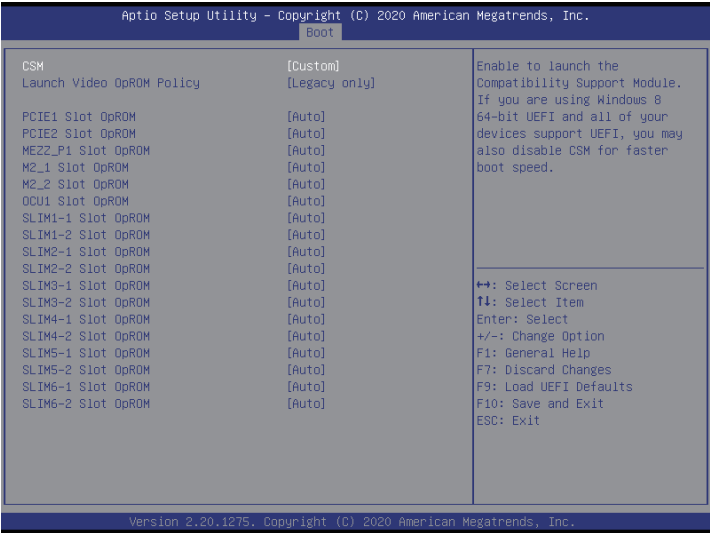
Full Screen Logo

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 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.)

MEZZ_P1 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_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.)

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.)

SLIM1-1 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.)

SLIM1-2 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.)

SLIM2-1 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.)

SLIM2-2 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.)

SLIM3-1 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.)

SLIM3-2 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.)

SLIM4-1 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.)

SLIM4-2 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.)

SLIM5-1 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.)

SLIM5-2 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.)

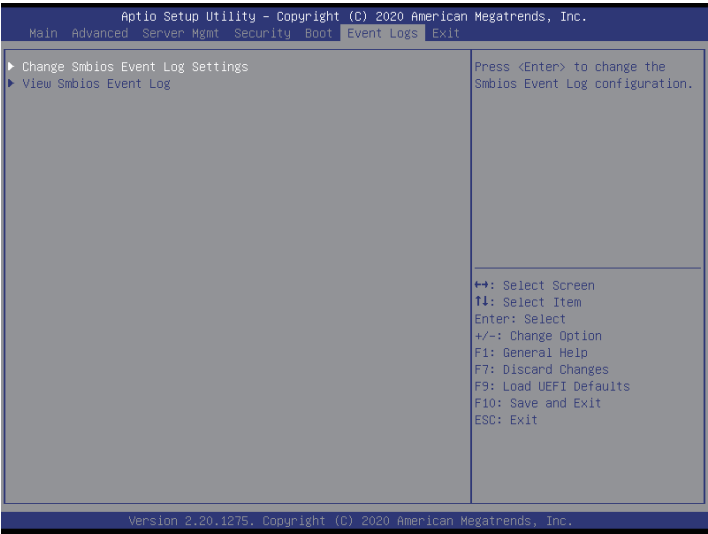
SLIM6-1 Slot OpROM

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.)

SLIM6-2 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).

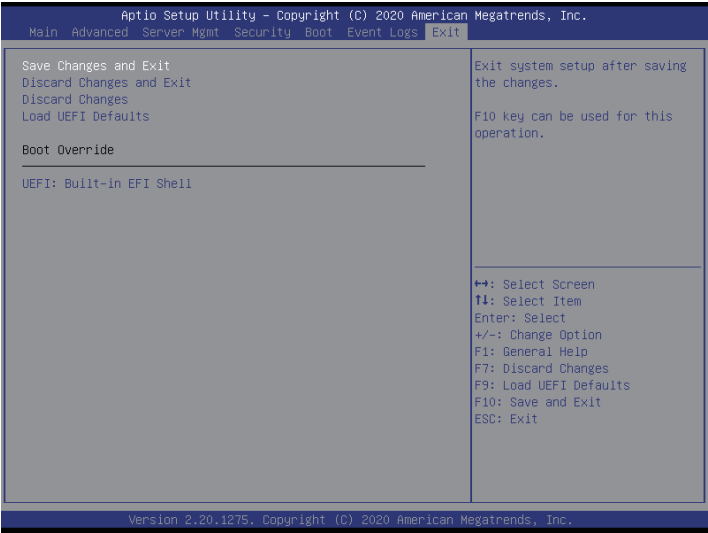
View Smbios Event Log

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® Rapid Storage Technology driver from the ASRock Rack's website (www.asrockrack.com) to the 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 the product page, click on the "Download" tab, choose the operating system you use, and select the driver you need to be downloaded.

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.

Appendix TPM Module Support List

This motherboard supports the following TPMs (Trusted Platform Module).

TPM Module	Version	Type	Brand	P/N
TPM-S	TPM 1.2	17PIN	Nuvoton	80-CXG2C0-1B12
TPM2-S	TPM 2.0	17PIN	Nuvoton	80-CXG5H0-1A21
TPM2-SLI	TPM 2.0	13PIN	Infineon	80-SC01T0-1A02

**Please refer to our website for the latest support list.*

Contact Information

If it needs 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 contact the dealer for further information. For technical questions, please submit a support request form at <https://event.asrockrack.com/tsd.asp>

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