ASRock 4X4-R2000M, 4X4-R2000V Single Board Computer User Manual

ASRock Industrial

4X4-R2000M, 4X4-R2000V
User Manual
Version 1.0
Published January 9, 2025

Contents

4X4-R2000M, 4X4-R2000V Single Board Computer

Version 1.0
Published January 8, 2025

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

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HIGH-DEFINITION MULTIMEDIA INTERFACE

WARNING

THIS PRODUCT CONTAINS A BUTTOON BATTERY

If swallowed, a button battery can cause serious injury or death.

Please keep batteries out of sight or reach of children.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Button Battery Safety Notice

WARNING

- INGESTION HAZARD: This product contains a button cell or coin battery.
- DEATH or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause Internal Chemical Burns in as little as 2 hours.
- KEEP new and used batteries OUT OF REACH of CHILDREN
- Seek immediate medical attention if a battery is suspected to be swallowed or inserted inside any part of the body.

– Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
– Even used batteries may cause severe injury or death.
– Call a local poison control center for treatment information.
– Battery type: CR2032
– Battery voltage: 3.3V
– Non-rechargeable batteries are not to be recharged.
– Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
– This product contains an irreplaceable battery.
– This icon indicates that a swallowed button battery can cause serious injury or death.
– Please keep batteries out of sight or reach of children.

Chapter 1 Introduction

Thank you for purchasing ASRockInd 4X4-R2000M / 4X4-R2000V motherboard, a reliable motherboard produced under ASRockInd's consistently stringent quality control. It deliversexcellent performance with robust design conforming to ASRockInd's commitment to quality and endurance.
In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 contains the configuration guide to BIOS setup.

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 ASRockInd website without further notice. ASRockIndind website:
https://www.asrockind.com/4X4-R2000M

https://www.asrockind.com/4X4-R2000V
If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.
https://www.asrockind.com/technical-support

1.1 Package Contents

ASRockInd 4X4-R2000M / 4X4-R2000V Motherboard (4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm))

Gift/Bulk Package:

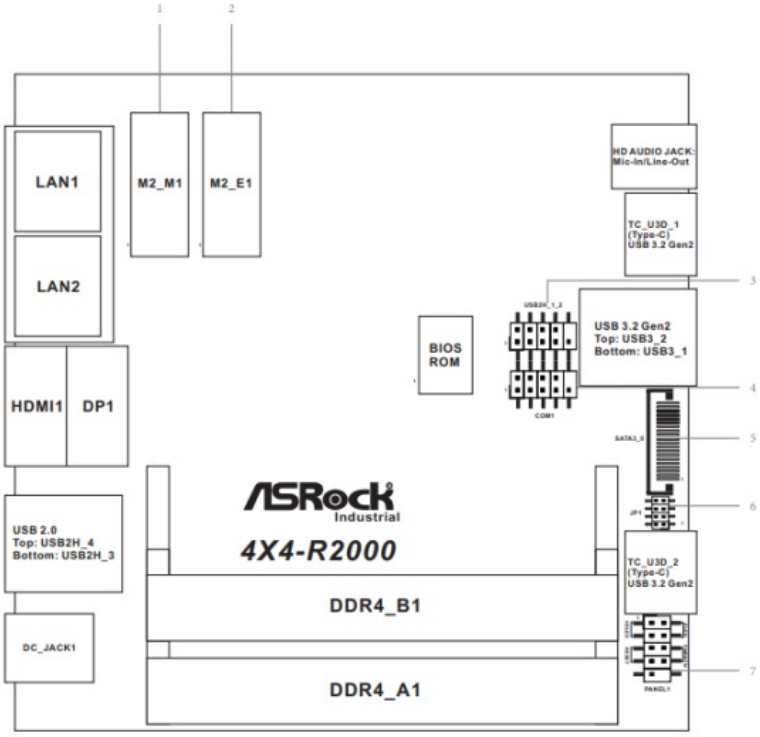
2 x SCREW M2*2, D=5
1 x COM Cable
1 x SATA Data/Power Cable
1 x NUT M2 H=5.5mm
1 x NUT M2 H=6.5mm
1 x NUT M2 H=3.35mm

1.2 Specifications

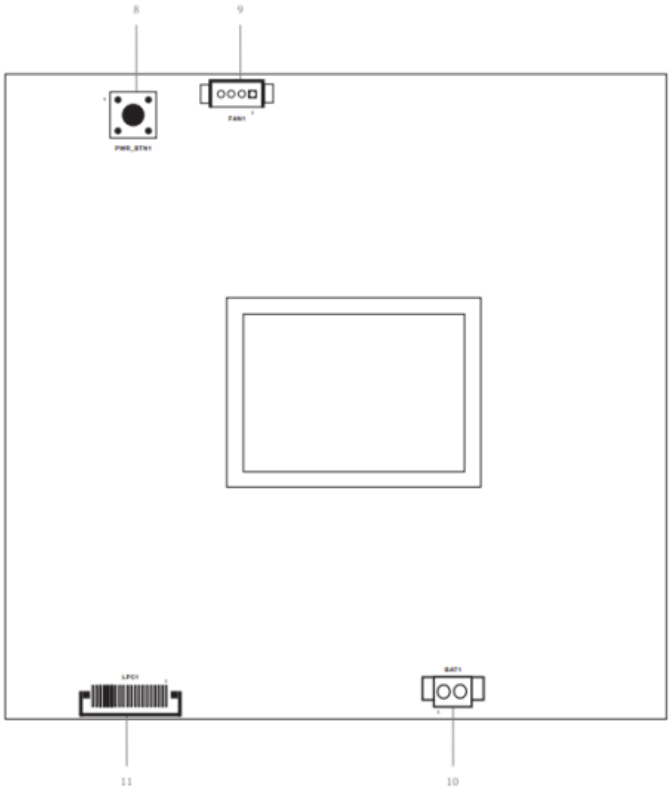
Form Factor	Dimensions	4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm)
Processor System	CPU	AMD Ryzen™ Embedded R-Series 4X4-R2000M (R2314, QC, Max Speed up to 3.5GHz) 4X4-R2000V (R2312, DC, Max Speed up to 3.5GHz)
	Chipset	SoC
	BIOS	AMI SPI 64 Mbit
Memory	Technology	4X4-R2000M: Dual Channel ECC/non-ECC DDR4 2666 MHz 4X4-R2000V: Dual Channel ECC/non-ECC DDR4 2400 MHz
	Capacity	64GB (32 GB per DIMM)
	Socket	2 x 260-pin SO-DIMM
Graphics	Controller	AMD Radeon™ Graphics
	HDMI	HDMI 2.0a Max resolution up to 4096×2160@60Hz
	DisplayPort	DisplayPort 1.2a, DP++ Max resolution up to 4096×2160@60Hz
	Multi Display	4X4-R2000M: Quad display (Included 2 output from Type-C) 4X4-R2000V: Triple Display (Included 1 output from Type-C)
Expansion Slot	M.2	1 x M.2 (Key E, 2230) with PCIe Gen3 x1, USB 2.0 for Wireless
Audio	Interface	Realtek ALC256, High Definition Audio
Ethernet	Controller/ Speed	LAN1: Realtek RTL8125BG with 10/100/1000/2500 Mbps LAN2: Realtek RTL8111H with 10/100/1000 Mbps
	Controller	2 x RJ-45
Front I/O	USB	4X4-R2000M: 2 x USB 3.2 Gen2 (Type-A) 2 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP 1.2a display output) 4X4-R2000V: 2 x USB 3.2 Gen2 (Type-A) 1 x USB 3.2 Gen2 (Type-C, 5V/3A) 1 x USB 3.2 Gen2 (Type-C, 5V/3A, Supports DP 1.2a display output)
	Audio	1 (headphone & microphone jack)

Rear I/O	HDMI	1 x HDMI 2.0a
	DisplayPort	1 x DP 1.2a
	Ethernet	1 x 1 Gigabit LAN, 1 x 2.5 Gigabit LAN
	USB	2 x USB 2.0
	DC Jack	1
Internal Connector	USB	2 x USB 2.0 (1 x 2.00mm pitch header)
	COM	1 x COM (RS-232/422/485)
Storage	M.2	1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3 x4 and SATA3 for SSD *M.2 Key M 2280 (Supported by bracket)
	SATA	1 x SATA3.0 (6.0 Gb/s)
Security	TPM	TPM 2.0 onboard IC
Watchdog Timer	Output	From Super I/O to drag RESETCON#
	Interval	256 Segments, 0, 1, 2, …255sec
Power Requirements	Input PWR	12V~24V DC-In Jack
	Power On	AT/ATX Supported – AT: Directly PWR on as power input ready – ATX: Press button to PWR on after power input ready
Environment	Operating Temperature	-20ºC ~ 70ºC
	Storage Temperature	-40°C ~ 85°C
	Operating Humidity	5% ~ 90%
	Storage Humidity	5% ~ 90%

1.3 Motherboard Layout



1. M.2 Key-M Socket (M2_M1)
2. M.2 Key-E Socket (M2_E1)
3. USB 2.0 Connector (USB2H_1_2)
4. COM Port Header (COM1) (RS-232/422/485)*
5. SATA3 Port (SATA3_0)
6. JP1
7. System Panel Header (PANEL1)

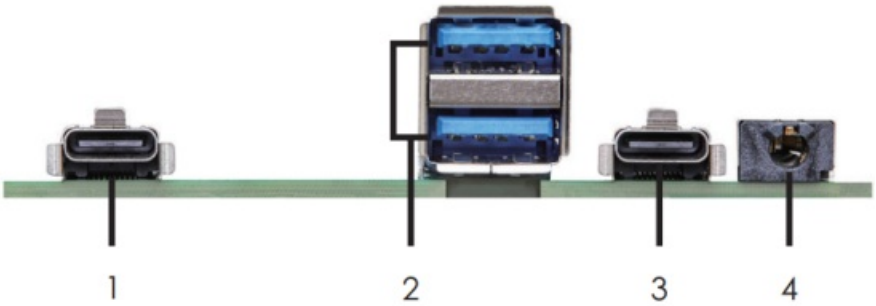


Back Side:

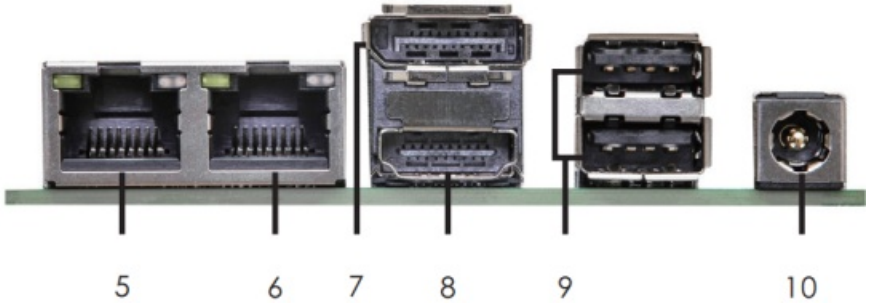
8. Power Button (PWR_BTN1)
9. Fan Connector (FAN1)

10. Battery Connector (BAT1)
11. LPC Debug Header (LPC1)

1.4 I/O Panel
Front I/O

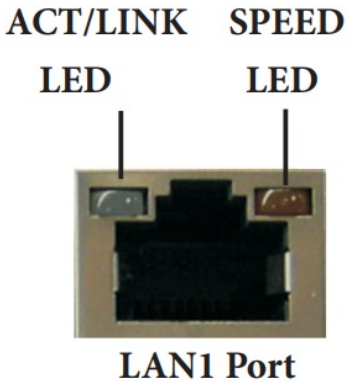


Rear I/O



1. USB 3.2 Gen2/DP Type-C Port (TC_U3D_2)*
2. USB 3.2 Gen2 Ports (USB3_1_2)
3. USB 3.2 Gen2/DP Type-C Port (TC_U3D_1)
4. HD AUDIO JACK: Mic-In/Line-Out
5. RJ-45 2.5G LAN Port (LAN1)**
6. RJ-45 1G LAN Port (LAN2)***
7. DisplayPort (DP1)
8. HDMI Port (HDMI1)
9. USB 2.0 Ports (USB2H_3_4)
10. DC-In Jack (DC_JACK1)

* 4X4-R2000V only supports USB 3.2 Gen2.
** There are two LEDs next to the LAN1 port. Please refer to the table below for the LAN1 port LED indications.
LAN1 Port LED Indications



Activity/Link LED

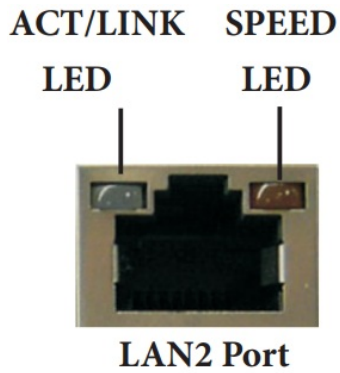
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

SPEED LED

Status	Description
Off	10Mbps/100Mbps connection
Orange	1Gbps connection
Green	2.5Gbps connection

*** There are two LED next to the LAN2 port. Please refer to the table below for the LAN2 port LED indications.

LAN2 Port LED Indications



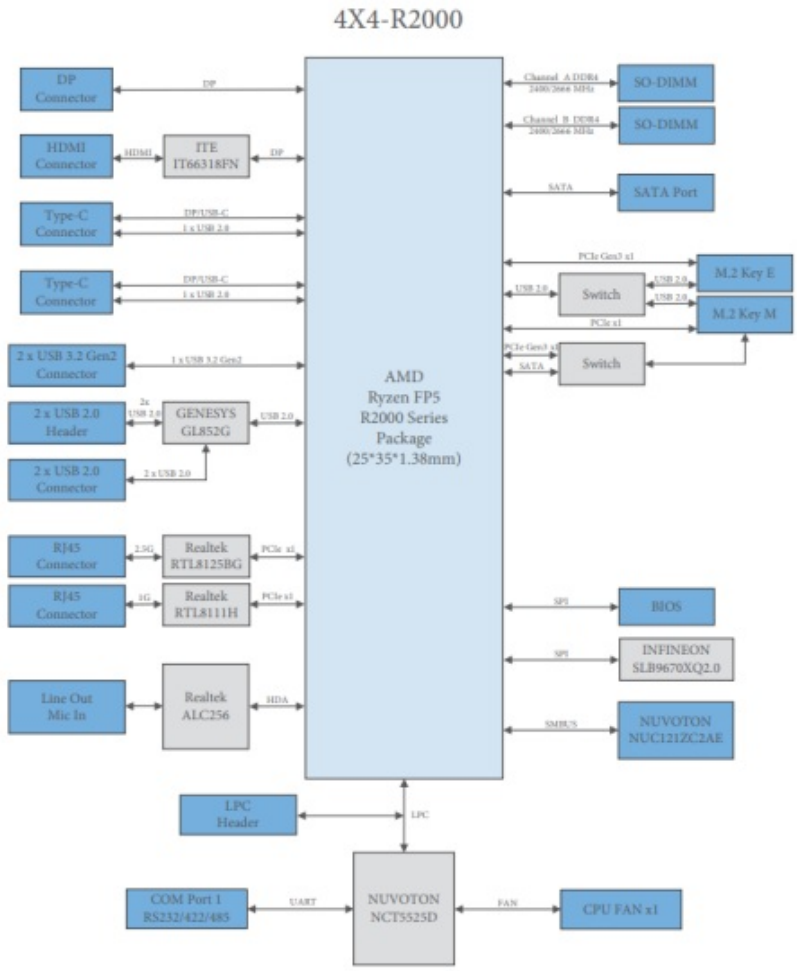
Activity/Link LED

Status	Description
Off	No Link
Blinking	Data Activity
On	Link

SPEED LED

Status	Description
Off	10Mbps connection
Orange	100Mbps connection
Green	1Gbps connection

1.5 Block Diagram



Chapter 2 Installation

This is a 4X4 (4.09-in x 4.02-in x 1.4-in, 10.4 cm x 10.2 cm x 3.6 cm) form factor 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 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 component.
2. To avoid damaging the motherboard 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 components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.
5. Heatsink (The thermal solution of whole system needs to be designed additionally.)

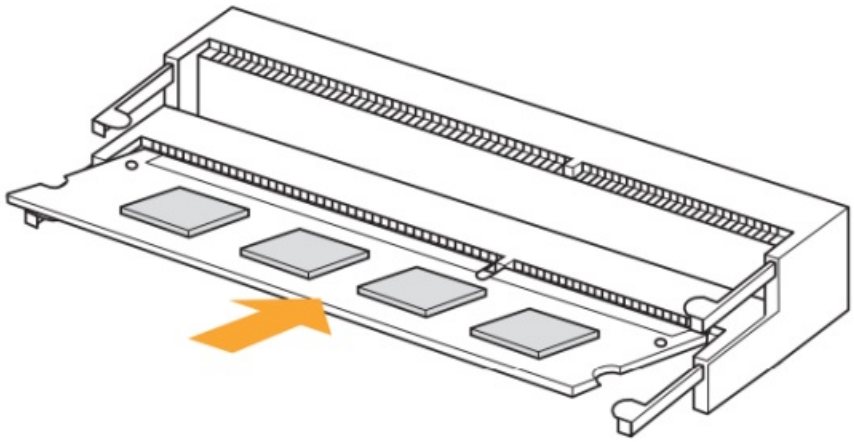
⚠ Before you install or remove any component, ensure that the power is switched off or the power cord is

detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

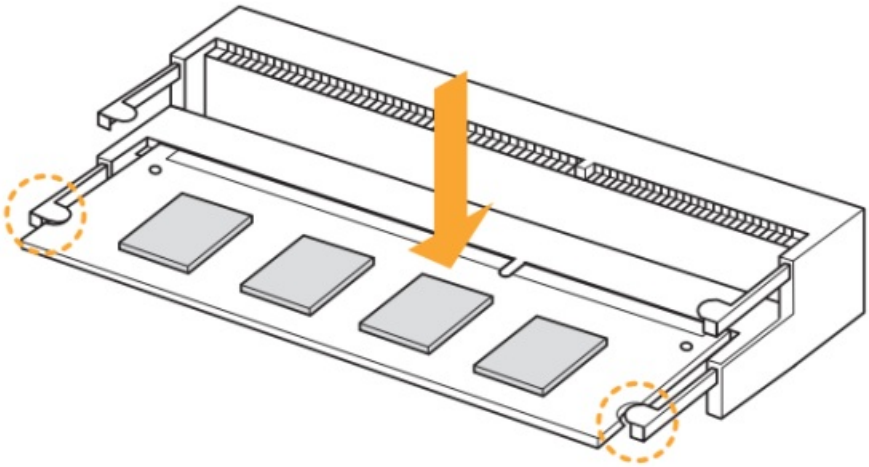
2.3 Installation of Memory Modules (SO-DIMM)

4X4-R2000M / 4X4-R2000V provides two 260-pin DDR4 (Double Data Rate 4) SO-DIMM slots, and supports Dual Channel ECC/non-ECC Memory Technology.

Step 1. Align a SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.



Step 2. Firmly insert the SO-DIMM into the slot until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.



☆ 1. For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.

2. It is unable to activate Dual Channel Memory Technology with only one memory module installed.

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

2. Please do not intermix different voltage SO-DIMMs on this motherboard.

2.4 Expansion Slots

There are two M.2 sockets on this motherboard.

M.2 sockets:

1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 for Wireless

1 x M.2 (KEY M, 2242/2260/2280) with PCIe Gen3 x4 and SATA3 for SSD

*M.2 Key M 2280 (Supported by bracket)

M.2 Key-M Socket

(M2_M1)

Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	GND	+3.3V	4

5	NA	NA	6
7	NA	NA	8
9	GND	LED#	10
11	NA	+3V	12
13	NA	+3V	14
15	GND	+3V	16
17	NA	+3V	18
19	NA	NA	20
21	GND	NA	22
23	NA	NA	24
25	NA	NA	26
27	GND	NA	28
29	NA	NA	30
31	NA	NA	32
33	GND	USB_D+	34
35	NA	USB_D-	36
37	NA	NA	38
39	GND	SMB_CLK	40
41	PERn0/SATA-B+	SMB_DATA	42
43	PERp0/SATA-B-	NA	44
45	GND	NA	46
47	PETn0/SATA-A-	NA	48
49	PETp0/SATA-A+	PERST#	50
51	GND	CLKREQ#	52
53	REFCLKn	WAKE#	54
55	REFCLKp	NA	56
57	GND	NA	58
67	NA	SUSCLK	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	GND		

M.2 Key-E Socket
(M2_E1)

Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	USB_D+	+3.3V	4
5	USB_D-	NA	6
7	GND	NA	8
9	NA	NA	10
11	NA	NA	12
13	NA	NA	14
15	NA	NA	16
17	NA	GND	18
19	NA	NA	20
21	NA	NA	22
23	NA		
		NA	32
33	GND	NA	34
35	PETp	NA	36
37	PETn	NA	38
39	GND	NA	40
41	PERp	NA	42
43	PERn	NA	44
45	GND	NA	46
47	PEFCLKp	NA	48
49	PEFCLKn	SUSCLK	50
51	GND	PERST0#	52
53	CLKREQ#	W_DISABLE1#	54
55	NA	W_DISABLE2#	56
57	GND	SMB_DATA	58
59	NA	SMB_CLK	60
61	NA	NA	62
63	GND	NA	64
65	NA	NA	66

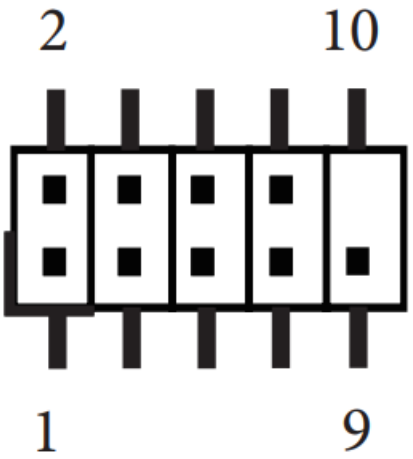
67	NA	NA	68
69	GND	NA	70
71	NA	+3.3V	72
73	NA	+3.3V	74
75	GND		

2.5 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 of the motherboard!

USB 2.0 Connector

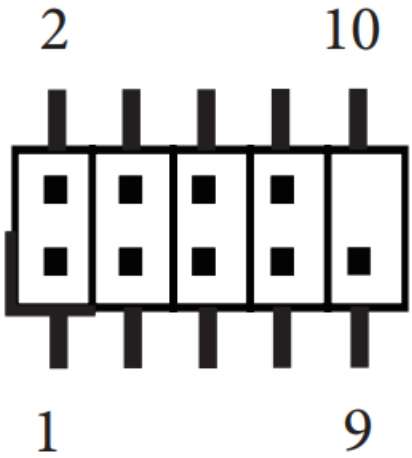
(9-pin USB2H_1_2) (see p. 4, No. 3)



Pin	Signal Name	Signal Name	Pin
1	USB_PWR	USB_PWR	2
3	-A	-B	4
5	+A	+B	6
7	GND	GND	8
9	DUMMY		10

COM Port Header (RS-232/422/485)*

(9-pin COM1) (see p. 4, No. 4)



Pin	Signal Name	Signal Name	Pin
1	DDCD#1	RRXD1	2
3	TTXD1	DDTR#1	4
5	GND	DDSR#1	6
7	RRTS#1	CCTS#1	8
9	NA		10

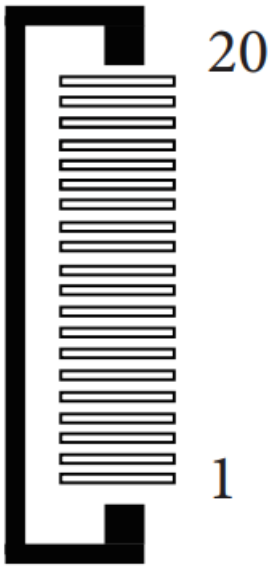
⚠ This motherboard supports RS232/422/485 on COM1 port. Please refer to the table below for the pin definition. In addition, COM1 port (RS232/422/485) can be adjusted in BIOS setup utility > Advanced Screen > Super IO Configuration. You may refer to our user manual for details.

COM1 Port Pin Definition

Pin	RS232	RS422	RS485
1	DCD	TX-	RTX-
2	RXD	TX+	RTX+
3	TXD	RX+	NA
4	DTR	RX-	NA
5	GND	GND	GND
6	DSR	NA	NA
7	RTS	NA	NA
8	CTS	NA	NA
9	NA	NA	NA

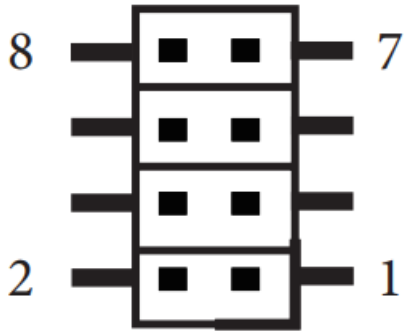
SATA3 Port

(20-pin SATA3_0) (see p. 4, No. 5)



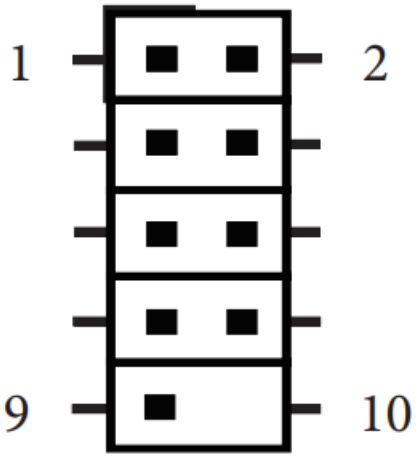
Pin	Signal Name
1	GND
2	SATA0_TXP
3	SATA0_TXN
4	GND
5	GND
6	SATA0_RXN
7	SATA0_RXP
8	GND
9	GND
10	GND
11	NA
12	+5V
13	+5V
14	+5V
15	+5V
16	+5V
17	NA
18	GND
19	GND
20	GND

JP1 Header
(8-pin JP1) (see p. 4, No. 6)



Pin	Signal Name
JP1_12	SIO AT Mode
JP1_34	CMOS Normal (Default)
JP1_46	Clear CMOS
JP1_57	Reserve for AT mode

System Panel Header
(see p. 4, No. 7) (9-pin PANEL1)



Pin	Signal Name	Signal Name	Pin
1	HDLED+	PLED+	2
3	HDLED-	PLED-	4
5	GND	PWRBTN#	6
7	RESET#	GND	8
9	DUMMY		10

This header accommodates several system front panel functions.
Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. 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 keeps blinking when the system is in S3 sleep state. 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.

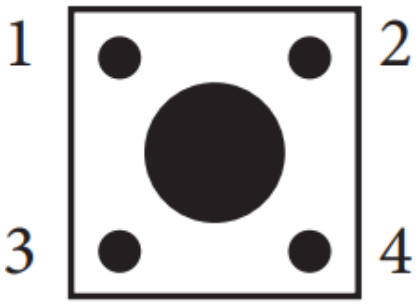
The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Backside:

Power Button

(PWR_BTN1)

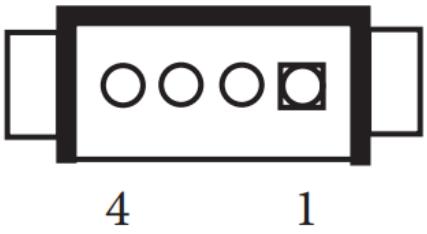
(see p. 5, No. 8)



FAN Connector

(4-pin FAN1)

(see p. 5, No. 9)

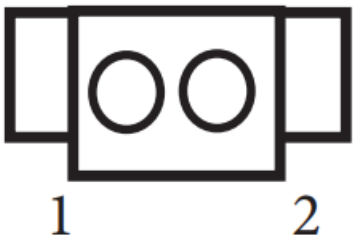


Pin	Signal Name
1	GND
2	+5V
3	FAN_SPEED
4	FAN_SPEED_CONTROL

Battery Connector

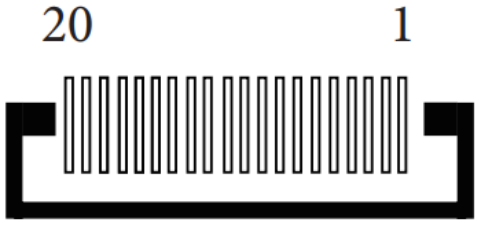
(BAT1)

(see p. 5, No. 10)



Pin	Signal Name
1	+BAT
2	GND

LPC Debug Header
(20-pin LPC1)
(see p. 5, No. 11)



Pin	Signal Name
1	GND
2	LPC_CLK
3	GND
4	LFRAME#
5	LPC_RST#
6	GND
7	+3V
8	GND
9	SMB_CLK
10	SMB_DATA
11	LAD0
12	LAD1
13	LAD2
14	LAD3
15	GND
16	+3VSB
17	GPIO_TEST#
18	S_PWRDWN#
19	SERIRQ#
20	GND

Chapter 3 UEFI SETUP UTILITY

3.1 Introduction

ASRock Industrial UEFI (Unified Extensible Firmware Interface) is a BIOS utility which offers tweak-friendly options in an advanced viewing interface. The UEFI system works with a USB mouse and offers users a faster, sleeker experience.

This BIOS utility can perform the Power-On Self-Test (POST) during system startup, record hardware parameters of the system, load operating system, and so on. The battery on the motherboard supplies the power needed to the CMOS when the system power is turned off, and the values configured in the UEFI utility are kept in the CMOS.

Please note that inadequate BIOS settings may cause system instability, mulfunction or boot failure. We strongly recommend that you do not alter the UEFI default configurations or change the settings only with the assistance of a trained service person.

If the system becomes unstable or fails to boot after you change the setting, try to clear the CMOS values and reset the board to default values. See your motherboard manual for instructions.

3.1.1 Entering BIOS Setup

You may run the UEFI Setup Utility by pressing <F2> or <Delete> right after you power on the computer; otherwise, the Power-On-Self-Test (POST) will continue with its test routines. If you wish to enter the UEFI Setup Utility after POST, restart the system by pressing <Ctl> + <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.

This setup guide explains how to use the UEFI Setup Utility to configure all the supported system. The screenshots in this manual are for reference only. UEFI Settings and options may vary owing to different BIOS release versions or CPU installed. Please refer to the actual BIOS version of the motherboard you purchased for detailed screens, settings and options.

3.1.2 UEFI Menu Bar

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

Main	For setting system time/date information
Advanced	For advanced system configurations
H/W Monitor	Displays current hardware status
Security	For security settings
Boot	For configuring boot settings and boot priority
Exit	Exit the current screen or the UEFI Setup Utility

Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions for reference purpose only, and may vary from the latest BIOS and do not exactly match what you see on your screen.

3.1.3 Navigation Keys

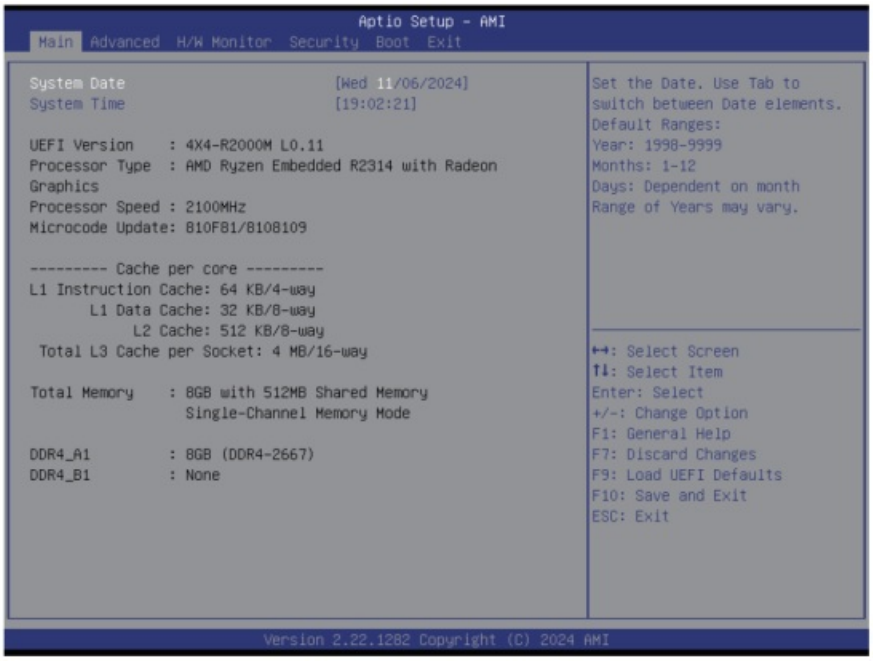
Use < ← > key or < → > key to choose among the selections on the menu bar, and use < ↑ > key or < ↓ > key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

Please check the following table for the descriptions of each navigation key.

Navigation Key(s)	Description
+ / –	To change option for the selected items
<Tab>	Switch to next function
<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 SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

3.2 Main Screen (Advanced Mode)

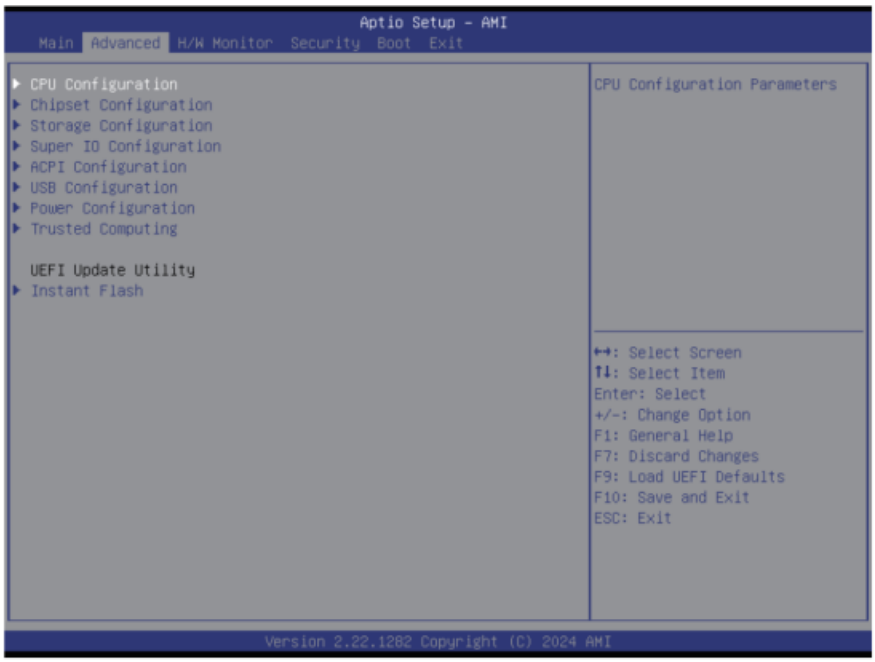
When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



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. Options may also vary depending on the features of your motherboard.

3.3 Advanced Screen

In this section , you may setthe configurations for the following it ems: CPU Configuration, Chipset Configuration, Storage Configuration, Super IO Configuration,ACPI Configuration, USB Configuration, Power Configuration and Trusted Computing.



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

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 Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, and then you can update your UEFI in only 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 UEFI update process completes.

3.3.1 CPU Configuration

PSS Support

Enable/disable the generation of ACPI _PPC, _PSS, and _PCT objects.

Core Performance Boost

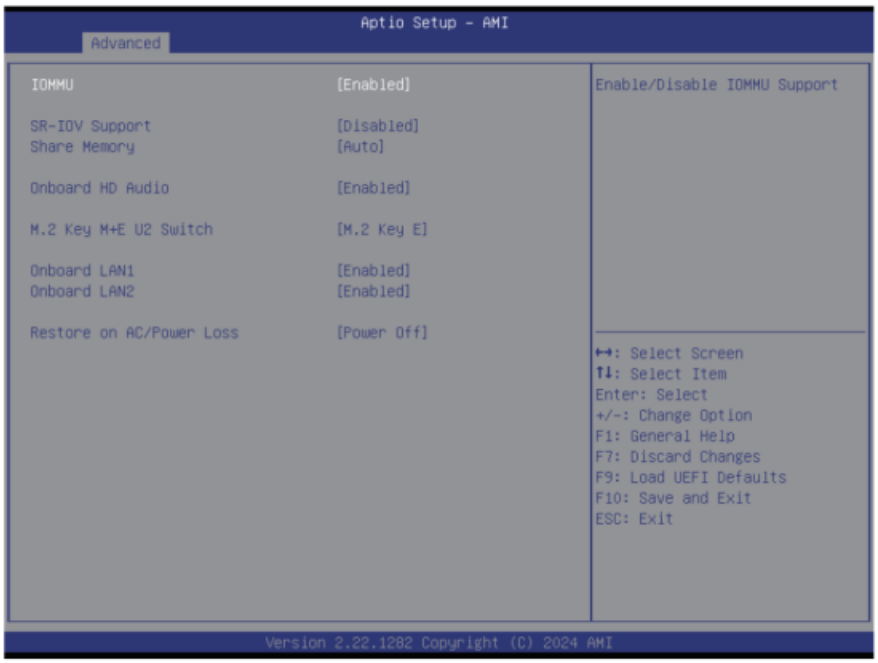
Core Performance Boost controls whether the processor transitions to a higher frequency than the processor ‘s rated speed i f t he processor has available power and is with in temperature specifications. The default value is [Enabled].

SVM Mode

When this is set to [Enabled], a VMM (Virtua l Machine Architecture) can utilize the additiona l hardware capabi lities prov ided by AMD-V. The defau lt va lue is [Enabled].

Configuration options: [Enabled] and [Disabled].

3.3.2 Chipset Configuration



IOMMU

Enable/Disable IOMMU Support.

SR-IOV Support

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

Configuration options: [Enabled] [Disabled] **Share Memory**

Sha re memor yallows you to con figure the size of memory that is allocated to the integrated graphics processor when the system boots up.

Configuration options: [Auto] [32M] [64M] [128M] [256M] [512M] Options vary depending on the memory you use on your motherboard.

Onboard HD Audio

Onboard HD Audio allows you to enable or disable the onboard HD audio controller. Set this item to [Auto] to enable the onboard HD and automatically disable it when a sound card is installed.

Configuration options: [Enabled] [Disabled] **Onboard LAN1**

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

Onboard LAN2

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

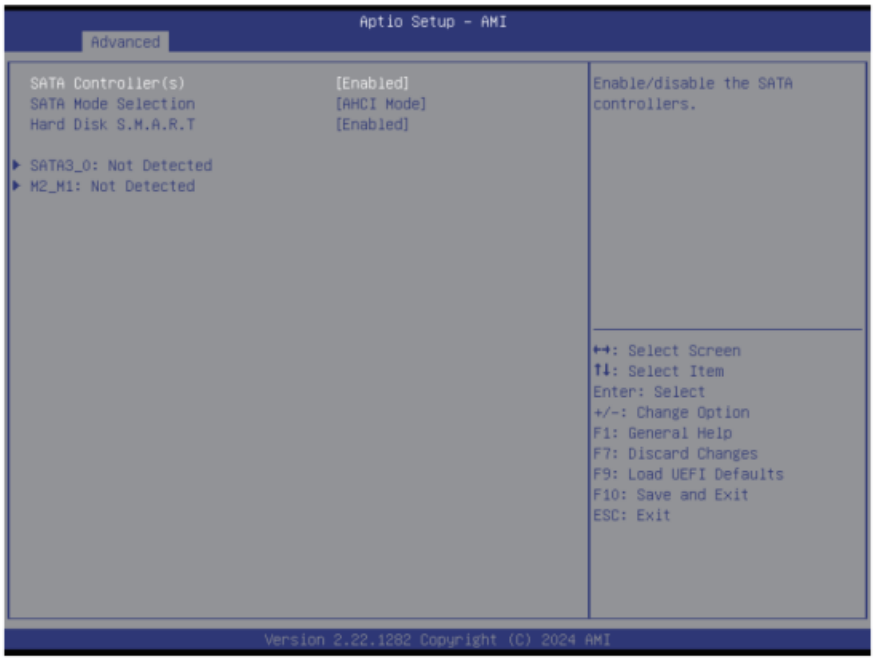
Restore on AC/Power Loss

The option allows you to select the power state after a power failure.

[Power Off] sets the power to remain off when the power recovers.

[Power On] sets the system to start to boot up when the power recovers.

3.3.3 Storage Configuration



SATA Controller(s)

The option allows you to enable or disable the SATA controllers.

Configuration options: [Enabled] [Disabled] **SATA Mode Selection**

AHCI supports new features that improve performance.

Configuration option: [AHCI] **Hard Disk S.M.A.R.T.**

S.M.A.R.T stands for Sel f-Mon itoring , Analysis , and Reporting Technology. It i s a monitoring system for computer hard disk drives to detect and repor tonvarious indicators of reliability.

Configuration options: [Enabled] [Disabled] **3.3.4 Super IO Configuration**

COM1 Configuration

Use this to set parameters of COM1.

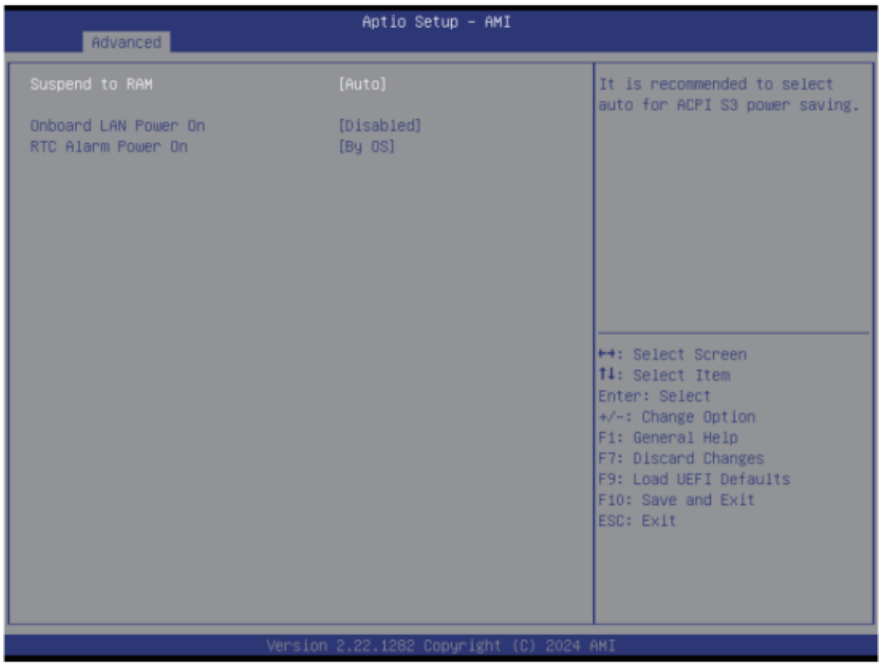
Type Select

Use this to select COM1 port type: [RS232], [RS422] or [RS485].

WDT Timeout Reset

Use this to set the Watch Dog Timer.

3.3.5 ACPI Configuration



Suspend to RAM

Suspend to RAM allows you to select [Disabled] for ACPI su spend type S1. It is recommended to select [Auto] for ACPI S3 power saving.

Configuration options: [Auto] [Disabled] **Onboard LAN Power On**

Use this item to enable or disable onboard LAN to turn on the system from the power-soft off mode.

RTC Alarm Power On

RTC Alarm Power On allows the system to be waked up by the real time clock alarm. Set it to ByOS to let it be handled by your operating system.

Configuration options: [Enabled] [Disabled] [By OS] **3.3.6 USB Configuration**

USB Power Control

Use this option to control USB power.

3.3.7 Power Configuration

OCP Function

Enabled to set adapter over current protect.

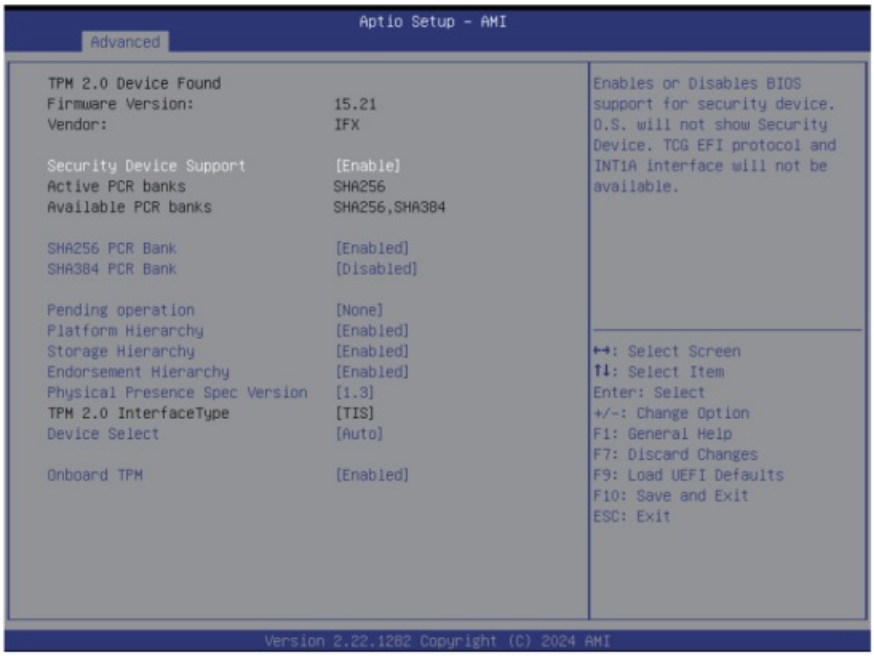
OCP Setting

Use this to select [+19V/150W], [+19V/120W], [+19V/90W].

The default is [+19V/90W].

This item only appears when you plug in +19V power adapter.

3.3.8 Trusted Computing



NOTE: Options vary depending on the version of your connected TPM module.

Security Device Support

Security Device Support allows you to enable or disable BIOS support for security device.

O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Configuration options: [Enabled] [Disabled] **Active PCR banks**

This item displays active PCR Banks.

Available PCR Banks

This item displays available PCR Banks.

SHA256 PCR Bank

SHA256 PCR Bank allows you to enable or disable SHA256 PCR Bank.

Configuration options: [Enabled] [Disabled] **SHA384 PCR Bank**

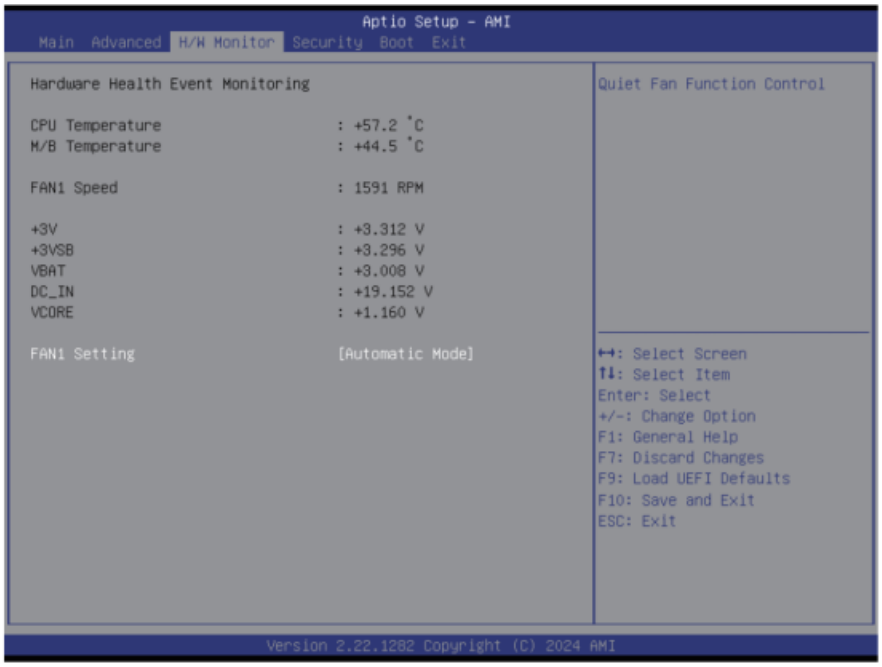
SHA384 PCR Bank allows you to enable or disable SHA384 PCR Bank.

Configuration options: [Enabled] [Disabled] **Pending Operation**

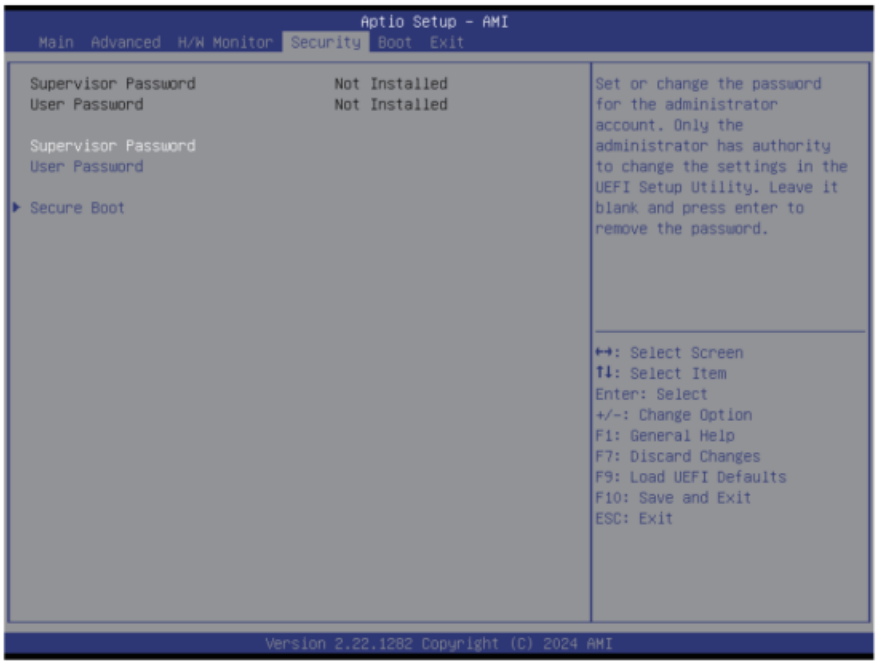
Pending Operation allows you to schedule an Operation for the Security Device.

NOTE: Your computer will reboot during restart in order to change State of the Device.

Configuration options: [None] [TPM Clear] **Platform Hierarchy**
This item allows you to enable or disable Platform Hierarchy.
Configuration options: [Enabled] [Disabled] **Storage Hierarchy**
This item allows you to enable or disable Storage Hierarchy.
Configuration options: [Enabled] [Disabled] **Endorsement Hierarchy**
This item allows you to enable or disable Endorsement Hierarchy.
Configuration options: [Enabled] [Disabled] **Physical Presence Spec Version**
Select this item to tell OS to support PPI spec version 1.2 or 1.3. Please note that some HCK tests might not support version 1.3.
Configuration options: [1.2] [1. 3] **TPM 2.0 InterfaceType**
This item allows you to view the Communication Interface to TPM 2.0 Device: CRB or ITS.
Device Select
This item allows you to select the TPM device to be supported.
[TPM 1.2] restricts support to TPM 1.2 devices.
[TPM 2.0] restricts support to TPM 2.0 devices.
[Auto] supports both TPM 1.2 and TPM 2.0 devices with the defau lt set to TPM 2.0 devices. If TPM 2.0 devices are not found, TPM 1.2 devices will be enumerated.
Onboard TPM
Enable/disable Intel PTT in ME. Disable this option to use discrete TPM Module.
3.4 Hardware Health Event Monitoring Screen
This section allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, fan speed, and the critical voltage.



NOTE: Options vary depending on the features of your motherboard.
Fan1 Setting
This item allows you to select a fan mode for Fan 1. The default value is [Automatic Mode].
Configuration options: [Full On] [Manual] [Automatic Mode] **3.5 Security Screen**
In this section you may set or change the supervisor/user password for the system. You may also clear the user password.



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

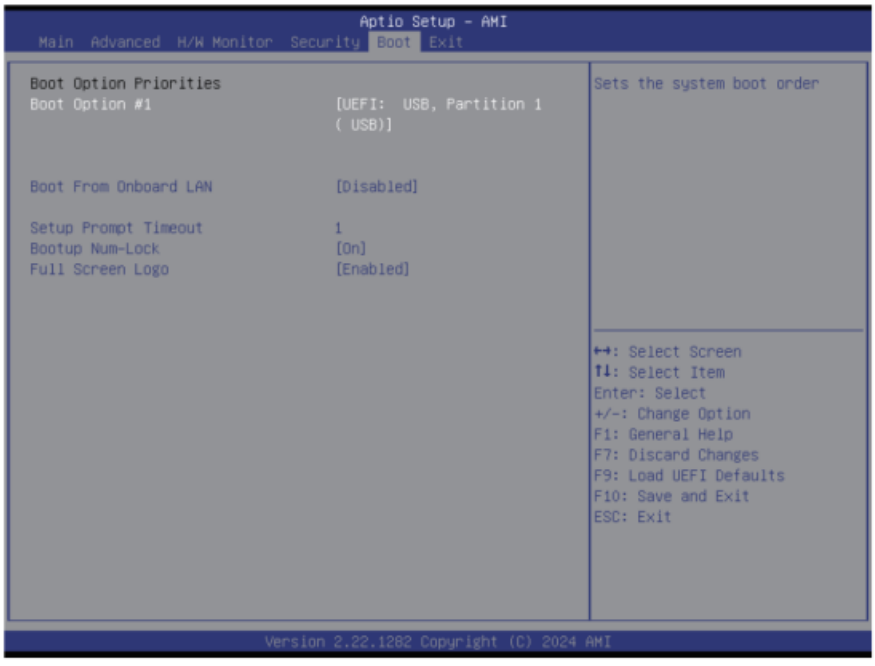
Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Press [Enter] to configure the Secure Boot Settings. The feature protects the system from unauthorized access and malwares during POST.

3.6 Boot Screen

This section displays the available devices on your system for you to configure the boot settings and the boot priority.



Boot Option #1

The item allows you to set the system boot order.

Boot From Onboard LAN

The item allows the system to be waked up by the onboard LAN.

Configuration options: [Enabled] [Disabled] **Setup Prompt Timeout**

The item allows you to configures the number of seconds to wait for the UEFI setup utility.

Configuration options: [1] – [65535] **Bootup Num-Lock**

The item allows you to select whether Num Lock should be turned on or off when the system boots up.

Configuration options: [On] [Off] **Full Screen Logo**

[Enabled] Select this item to display the boot logo.

[Disabled] Select this item to show normal POST messages.

3.7 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

The item allows you to load UEFI default values for all options. The F9 key can be used for this operation.

Launch EFI Shell from filesystem device

The item allows you to copy shellx64.efi to the root directory to launch EFI Shell.

ASRock Industrial

Documents / Resources

	ASRock 4X4-R2000M, 4X4-R2000V Single Board Computer [pdf] User Manual 4X4-R2000M, 4X4-R2000V, 4X4-R2000M 4X4-R2000V Single Board Computer, 4X4-R2000M 4X4-R2000V, Single Board Computer, Board Computer, Computer, Board

References

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- asrockind.com/4X4-R2000M
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- asrockind.com/technical-support
- User Manual