

 SUZOHAPP

BluMax™
User Manual
Version 1.1



BluMax™ 

BY  SUZOHAPP

Contents

BOARD REVISION	4
PREFACE	5
Copyright	5
Acknowledgement	5
Warranty	5
Declaration of conformity.....	6
Technical support	6
INTRODUCTION.....	7
Product overview.....	7
Safety Precautions	8
Hardware Specification.....	9
Appearance.....	10
Front I/O	10
Rear I/O	10
Interface	10
USB 3.2 Gen1	10
DP	10
Ethernet LAN Port.....	11
Power Input	11
M.2	11
BIOS Default Setting.....	12
Main	12
Configuration	14
CPU Configuration	15
Chipset Configuration	16
Graphics Configuration	17
Power Control Configuration.....	18
PCI/PCIE Configuration	19
LAN Configuration.....	22
SATA Configuration.....	23
USB Configuration.....	24
Super I/O Configuration.....	25
H/W Monitor	27
Serial Port Console Redirection	28
Security	29
Boot	30

Save & Exit	31
MAINTENANCE.....	32
Memory installation	32
M.2 2230 and M.2 2280 card installation	33
Battery change.....	35
MOUNTING.....	36
SSD/RAM TYPES.....	37
CONNECTORS & JUMPER SETTINGS.....	38

BOARD REVISION

Revision	Date	Description
V0.0	20220330	First Release
V1.0	20230130	TPM2.0 (Optional)

PREFACE

Copyright

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The information contained within this user manual, including but not limited to any other product specification, SUZOHAPP, Inc reserves its right to modify them at any time without notice.

Acknowledgement

Intel®Core™ is the trademarks of Intel Corporation. AMI is a trademark of American Megatrends Inc. All other product names or trademarks are properties of their respective owners. All product names, logos, brands, trademarks and registered trademarks in this user's manual or the SUZOHAPP website are the property of their respective owners.

Warranty

SUZOHAPP warrants that each product failing to function properly under normal use for 12 months from the invoice date. Due to an effect in materials, workmanship or due to nonconformance upon specifications, will be repaired or exchanged at SUZOHAPP's option and expense.

For RMA and DOA goods, please contact your local SUZOHAPP representative.

Declaration of conformity

CE (European Union)



This equipment is in conformity with the requirement of the following EU legislations and harmonized standards. Product also complies with the Council directions. (EN55035, EN55032)

FCC (Federal Communications Commission Radio Frequency Interface Statement)



This device complies with part 15 FCC rules. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

Operation is subject to the following two conditions: one is the device may not cause harmful interference, and second is that the device must accept any interference received including interference that may cause undesired operation.

Technical support

SUZOHAPP is committed to providing the best support and service for our customers, which can help customer implement and use SUZOHAPP's products easily. We suggest that you download the latest documentation, utilities and drivers available for your operating system. You can contact your local sales and technical support team for further assistance.

INTRODUCTION

Product overview






BLUMAX is a new generation of Intel Comet Lake Platform, flexible and ready-to-use industrial box PC designed for a variety of applications in the industrial 4.0 world and gaming PC. You can expect scalable Comet Lake processors up to 8 cores, and common industrial features. BLUMAX with DC 12V input, 2 DP, 2 GbE LAN, 6 USB3.2 Gen1.

Safety Precautions

Warning note

This symbol indicates hazards that could lead to personal injury. There are three signal words indicating the severity of a potential injury. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

	<p>DANGER Indicates a hazard with a high-risk level. If this hazardous situation is not avoided, it will result in death or serious injury.</p> <p>WARNING Indicates a hazard with a medium risk level. If this hazardous situation is not avoided, it could result in death or serious injury.</p> <p>CAUTION Indicates a hazard with a low risk level. If this hazardous situation is not avoided, it could result in minor or moderate injury.</p>
	<p>This symbol together with the NOTE signal word alerts the reader to a situation which may cause damage or malfunction to the device, hardware/software, or surrounding property.</p>
	<p>Here you will find additional information or detailed sources of information.</p>

Hardware Specification

Model Name	BLUMAX
CPU	Intel® Core™ i3-10100TE Processor (4C/8T, 6M Cache, up to 3.6 GHz) Intel® Core™ i5-10500TE Processor (6C/12T, 12M Cache, up to 3.7 GHz) Intel® Core™ i7-10700TE Processor (8C/16T, 16M Cache, up to 4.4 GHz)
Chipset	Intel® H420E
Memory	Two 260-pin DDR4 SODIMM sockets supported Data transfer rates up to 2400/2666 MT/s 64GB* * Intel® Core i9/i7/i5 CPUs support up to 64GB (32GB per DIMM) Intel® Core i3/Pentium®/Celeron® CPUs support up to 32GB (16GB per DIMM) Vertical Type Memory Socket (Low profile)
EC	ITE IT5121
BIOS	AMI BIOS SPI flash 256 Mbit
Power Input	12V VDC
Operating Systems	Win 10 IoT & Linux
Expansion	1 x M.2 2242/2280 M Key (PCIe x4/SATA)
Ethernet	2 x Realtek RTL8119-CG
EC	ITE IT5121
TPM2.0	Nuvoton NPCT750 (Optional)
Rear I/O	
Power Input	1 x DC Jack-3 5.5x2.5mm W/Lock, DC 12V
Display Port	2 x DP1.2++ resolution up to 4096x2304@60Hz
USB	6 x USB 3.2 Gen 1 Type A port
Ethernet	2 x 10/100/1000 GbE
Audio	1 x Combo Audio Jack
Front I/O	
Serial Port	1 x RS-232
Power Button	1 x Header for remote (key-switch) power button
Mechanical & Environment	
Dimension	L x W x H: 200 x 200 x 36mm
Environment	Storage/Transport Temperature: -20 ~ 60°C Operating temperature: 0°C ~ 40°C Operation Humidity: 10% ~ 90%, non-condensing RoHS compliant
Certification	CE, FCC, UKCA class A Has passed cUL as part of a total system

Appearance

Front I/O



Rear I/O



Interface

USB 3.2 Gen1

BLUMAX core computing part provides six USB Type-A 3.2 Gen1 to connect external device such as mouse, keyboard or external storage device. Two ports are USB 3.1 utilize a blue connector.

DP


DP (Display Port): This port connects BLUMAX to external digital display with a DP1.2++ connector resolution up to 4096x2304@60Hz.

Ethernet LAN Port

BLUMAX is equipped with Realtek® RTL8119 Gigabit LAN controller, which fully compliant with 10/100/1000 Base-T Ethernet network. Two RJ45 connectors allow the computer to communicate on a 10/100/1000 Base-T Gigabit LAN Ethernet network.

Right: Speed LED		Left: Activity Link LED	
Status	Description	Status	Description
Off	10 Mbps	Off	No link
Green	100Mbps	Green	Linked
Orange	1 Gbps	Green(blink)	Data activity

Power Input


	<p>A DC Jack-3 5.5x2.5mm W/Lock is provided for connecting power to the BLUMAX.</p>
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M.2

BLUMAX support one M.2 2280 M Key (PCIe x4 & SATA) and one M.2 2230 E Key (USB2.0 only) on the main board.

BIOS Default Setting

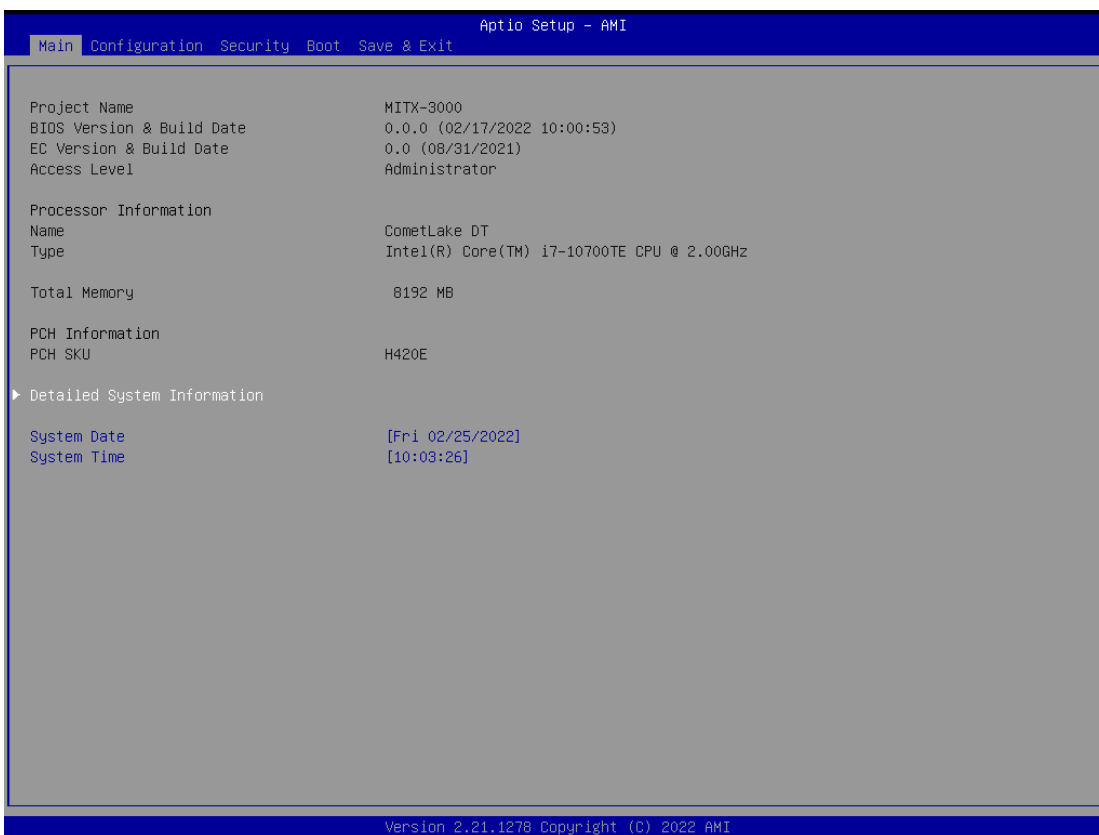
The Basic Input/Output System (BIOS) is a program that provides a basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features. The default settings that work well for most configurations, most users do not need to use the BIOS setup program.

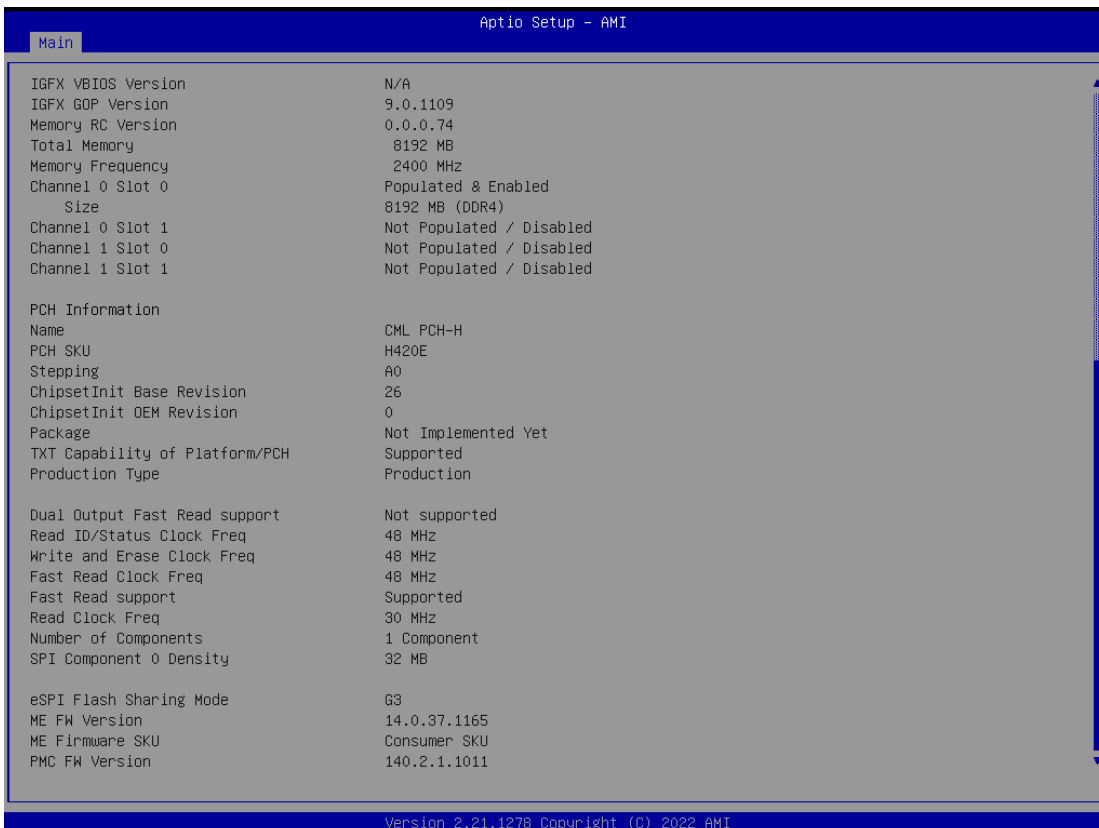
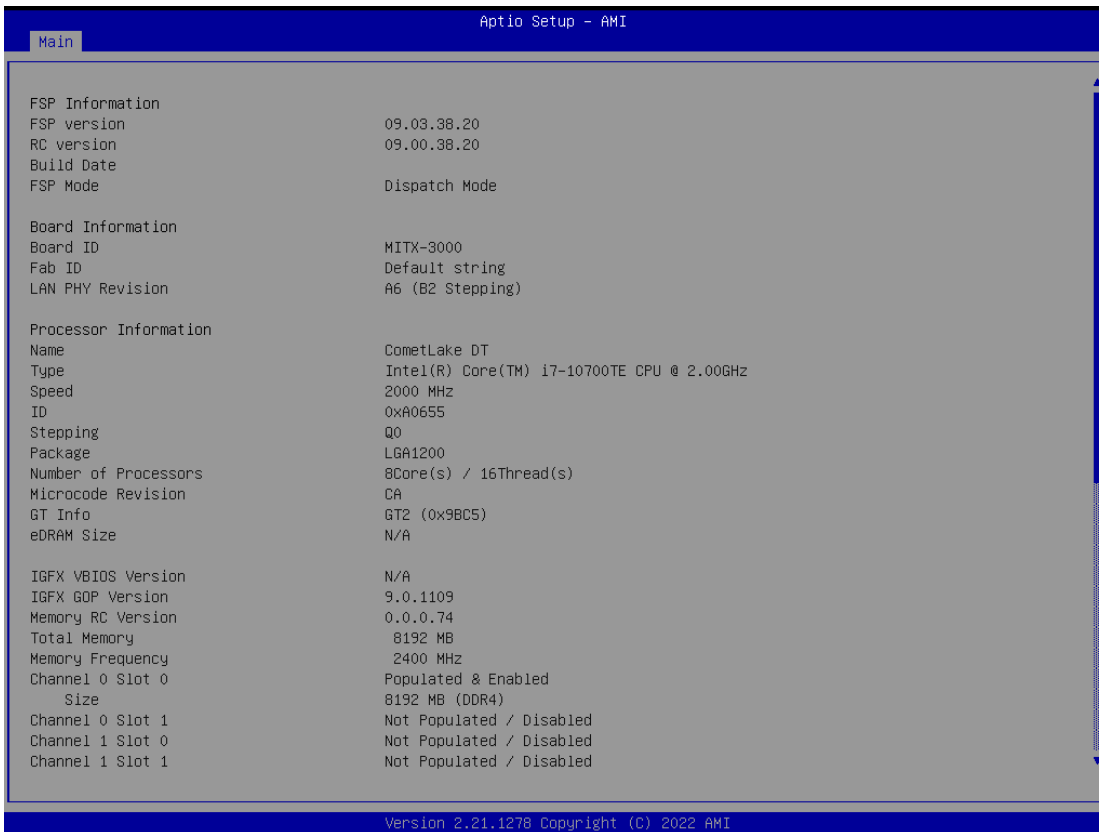
	<p>NOTE: BIOS Setting Changing BIOS settings may lead to incorrect controller behavior and possible inability to boot.</p> <p>BIOS options in the manual are for reference only and are subject to the model with different configuration. Please download the latest BIOS version on the website.</p>
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Main

To display the BIOS Main menu, press and hold the ESC key for approximately 10 seconds during power on, and keep pressed until the NumLock key lights during the boot process.

The Main menu displays the basic information about the system, including Project Name, BIOS version, CPU brand string, Memory information.




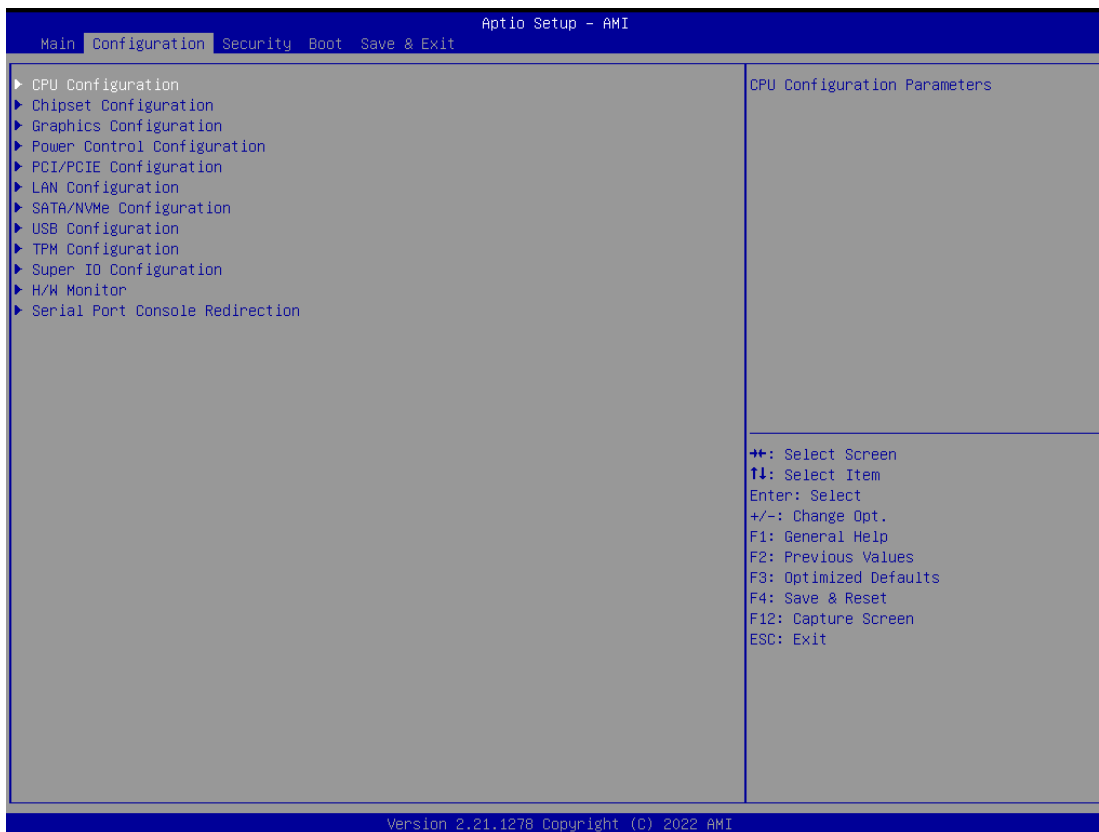


Configuration	Description
System Date	This is current date setting
System Time	This is the current time setting. The time is maintained by the battery when the device is turned off.

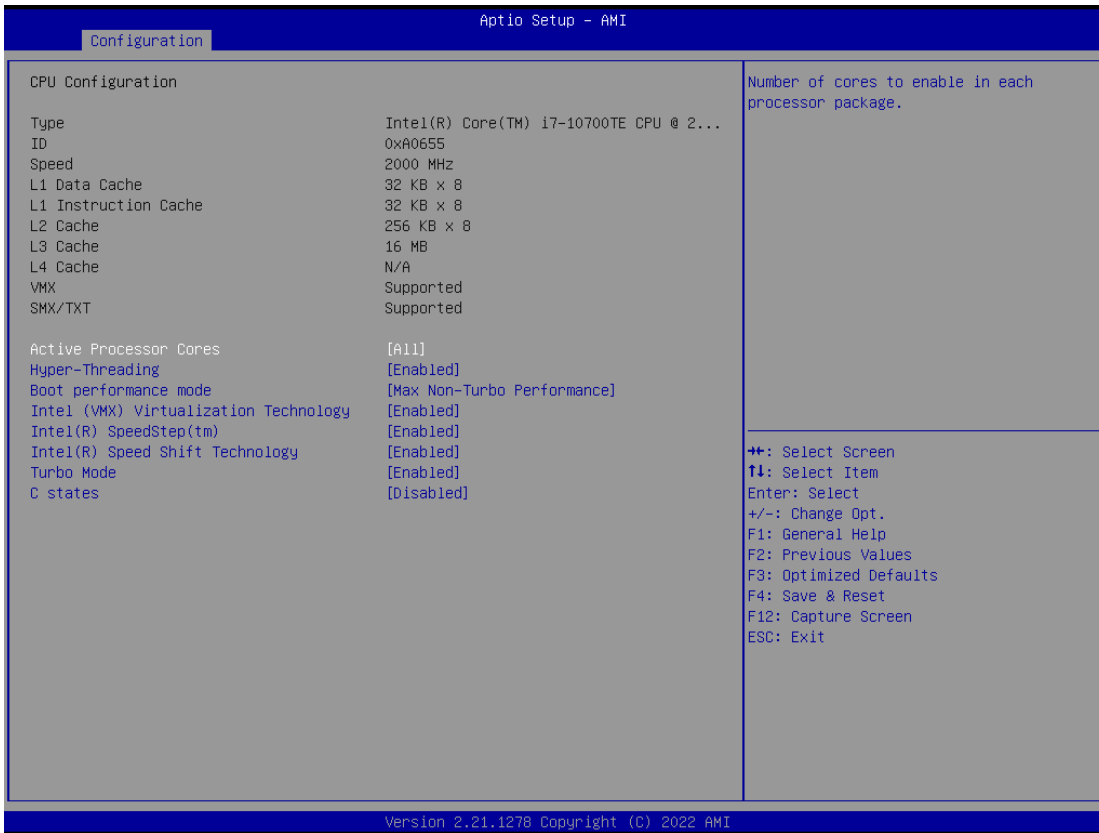
Configuration

Detail system configuration information, user can change configuration parameters in configuration, include CPU, Chipset, LAN, Graphics, PCI/PCIE, USB, Power Control, TPM, Super I/O, and H/W monitor.

	<p>Caution: Setting incorrect or conflicting values in configuration may cause system malfunction.</p>
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CPU Configuration

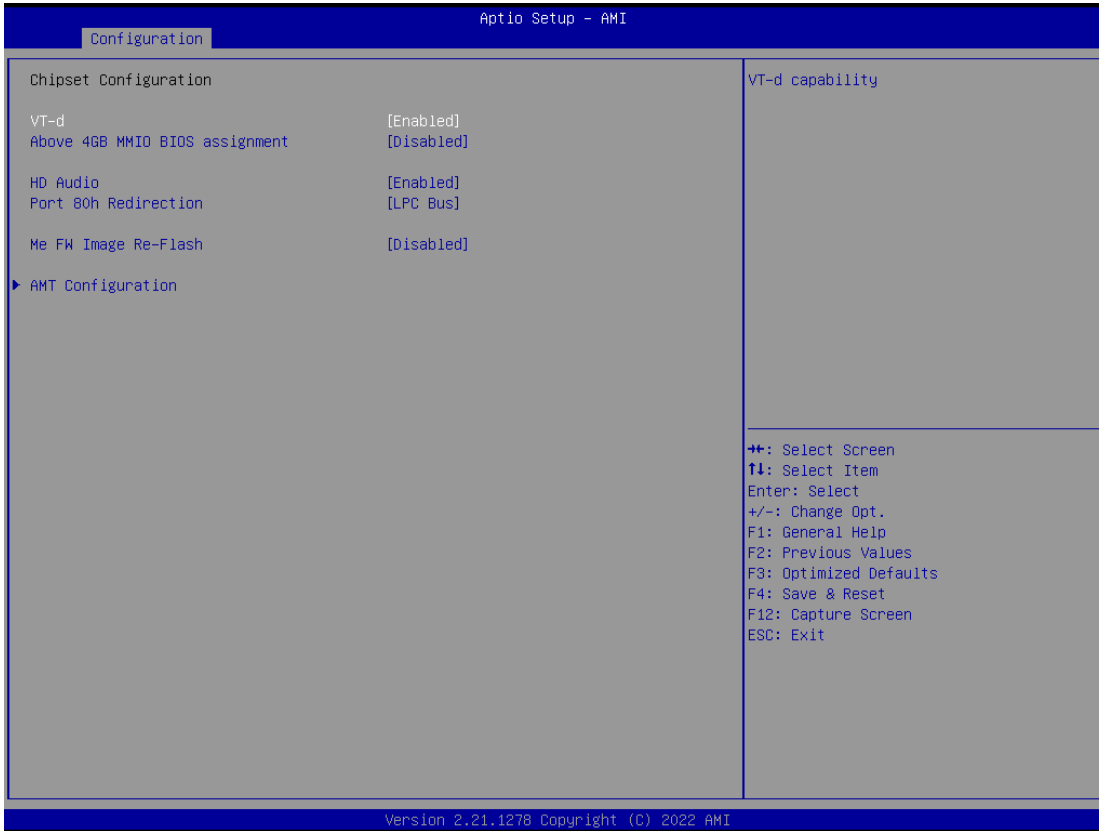


User

User can change CPU configuration parameters.

Configuration	Description
Active Processor Cores	Number of cores to enable in each processor
Hyper-Threading	Enable/Disable Hyper-Threading
Boot performance mode	Select the performance state that the BIOS will set before OS handoff, with options: Max Non-Turbo performance/Max Battery/Turbo Performance
Intel Virtualization technology	When enable, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology
Intel SpeedStep	Enable/Disable Intel SpeedStep
Turbo Mode	Enable/Disable Turbo mode
C states	Enable/Disable C states

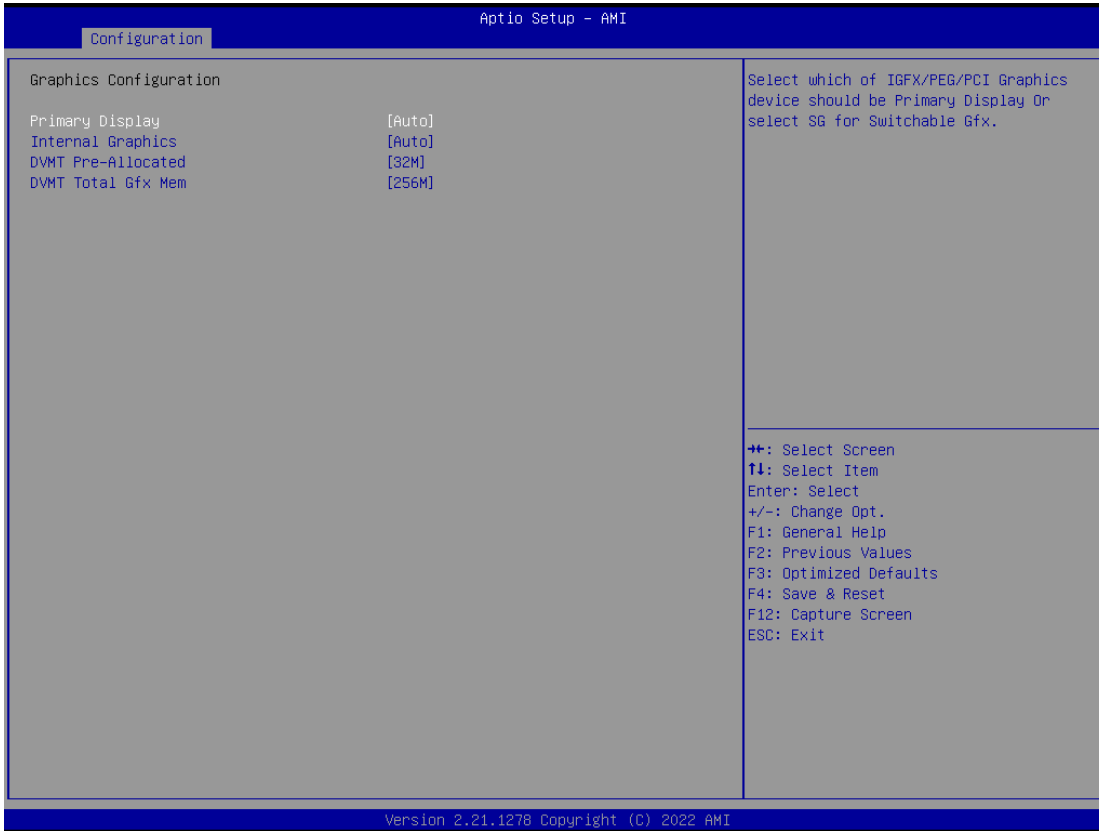
Chipset Configuration



Configuration Chipset feature

Configuration	Description
VT-d	Enable/Disable VT-d support
Above 4GB MMIO BIOS	Enable/Disable Above 4GB MMIO BIOS Support
HD-Audio	Enable/Disable HD-Audio support
Port 80h Redirection	Control where the Port 80h cycles are sent
ME FW Image Re-Flash	Enable/Disable ME FW Image Re-Flash
AMT Configuration	Configure Intel(R) Active Management Technology Parameters

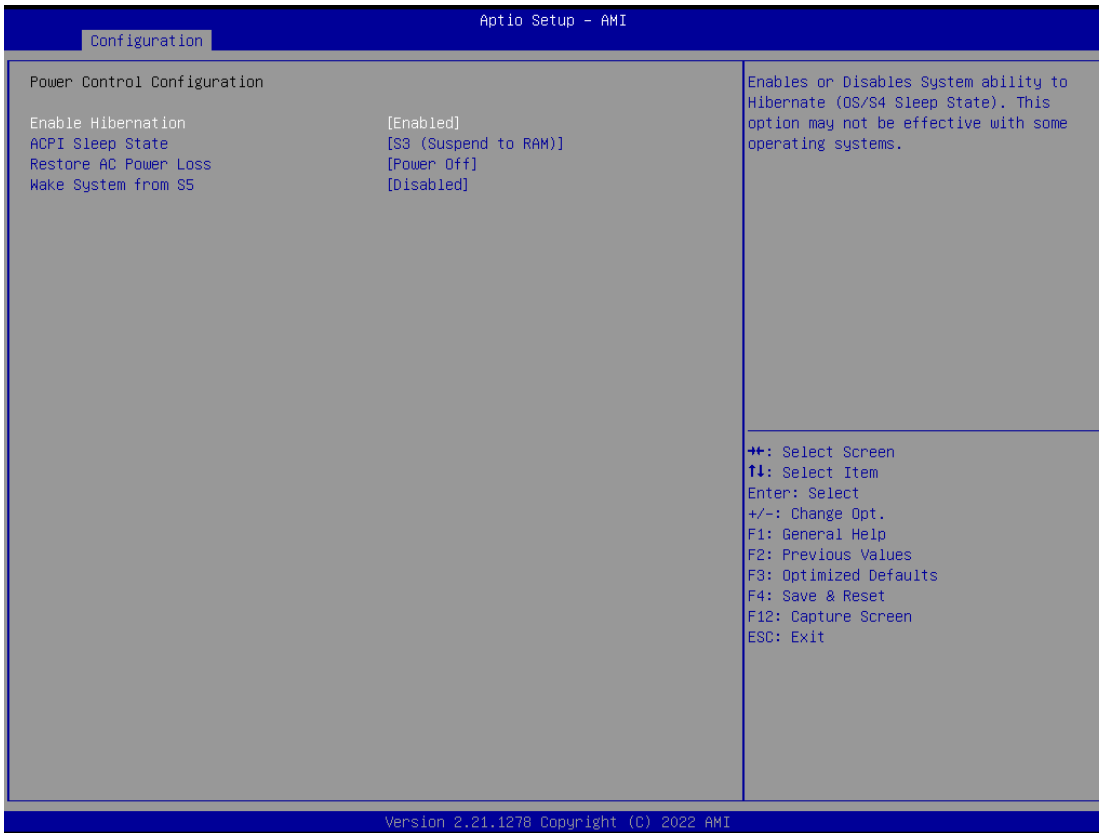
Graphics Configuration



Configuration graphics settings.

Configuration	Description
Primary Display	Use this item to select Primary Display
Internal Graphics	Use this item to select Internal Graphics
DVMT Pre-Allocated	Select DVMT Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device
DVMT Total Gfx Mem	Select DVMT Total Graphic Memory size used by the Internal Graphics Device

Power Control Configuration



System power control configuration parameters.

Configuration	Description
Enable Hibernation	Enable/Disable System ability to hibernate (OS/S4 Sleep State). This option may be not effective on some OS's.
ACPI Sleep State	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed
Restore AC Power Loss	Specify what state to go to when power is reapplied after a power failure (G3 state)
Wake System from S5	Enable/Disable system wake from S5

PCI/PCIE Configuration

Aptio Setup - AMI

Configuration

<p>PCI/PCIE Configuration</p> <p>PEG Port Lane Width [1x16]</p> <p>▶ PEG Port Configuration</p> <p>PCI Express Root Port 1 Not present in this SKU</p> <p>PCI Express Root Port 2 Not present in this SKU</p> <p>PCI Express Root Port 3 Not present in this SKU</p> <p>PCI Express Root Port 4 Not present in this SKU</p> <p>▶ PCI Express Root Port 5</p> <p>PCI Express Root Port 9 Not present in this SKU</p> <p>PCI Express Root Port 10 Not present in this SKU</p> <p>▶ PCI Express Root Port 11</p> <p>▶ PCI Express Root Port 12</p> <p>PCI Express Root Port 13 Not present in this SKU</p> <p>PCI Express Root Port 14 Not present in this SKU</p> <p>PCI Express Root Port 15 Not present in this SKU</p> <p>PCI Express Root Port 16 Not present in this SKU</p> <p>PCI Express Root Port 17 Not present in this SKU</p> <p>PCI Express Root Port 18 Not present in this SKU</p> <p>PCI Express Root Port 19 Not present in this SKU</p> <p>PCI Express Root Port 20 Not present in this SKU</p> <p>PCI Express Root Port 21 Not present in this SKU</p> <p>PCI Express Root Port 22 Not present in this SKU</p> <p>PCI Express Root Port 23 Not present in this SKU</p> <p>PCI Express Root Port 24 Not present in this SKU</p>	<p>Set PEG port lane width.</p> <hr/> <p> ++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset F12: Capture Screen ESC: Exit </p>
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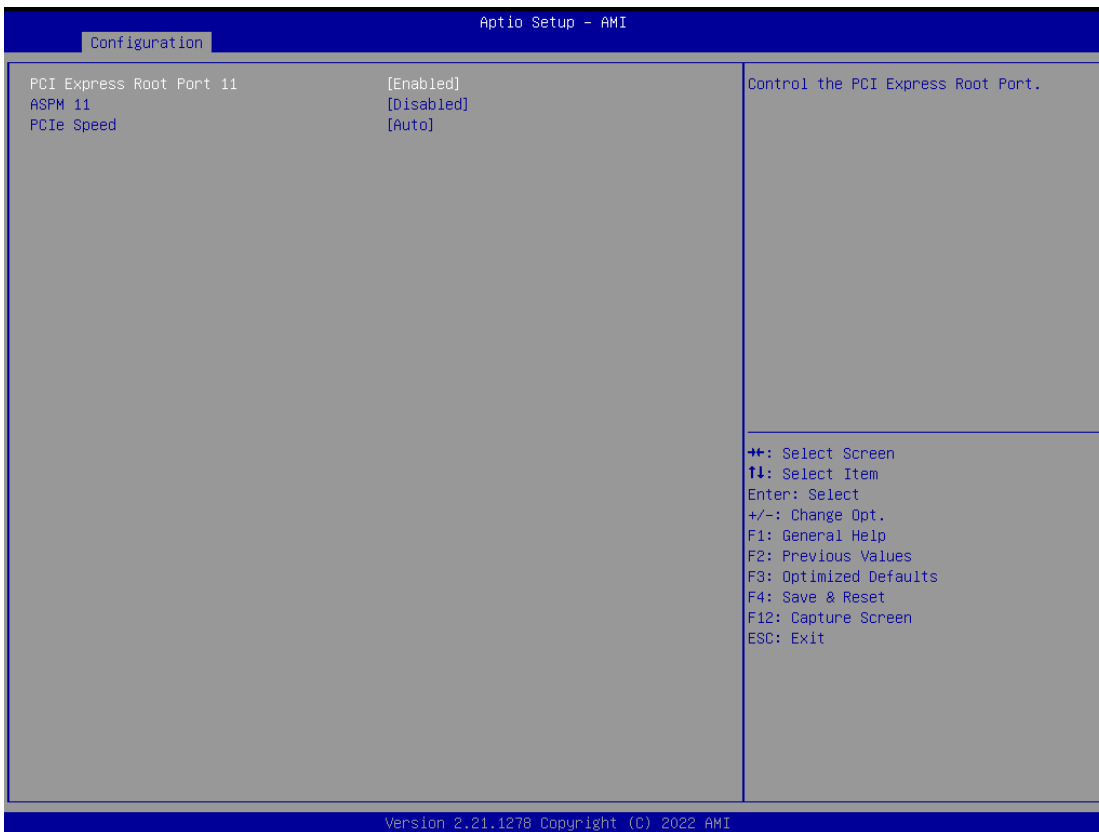
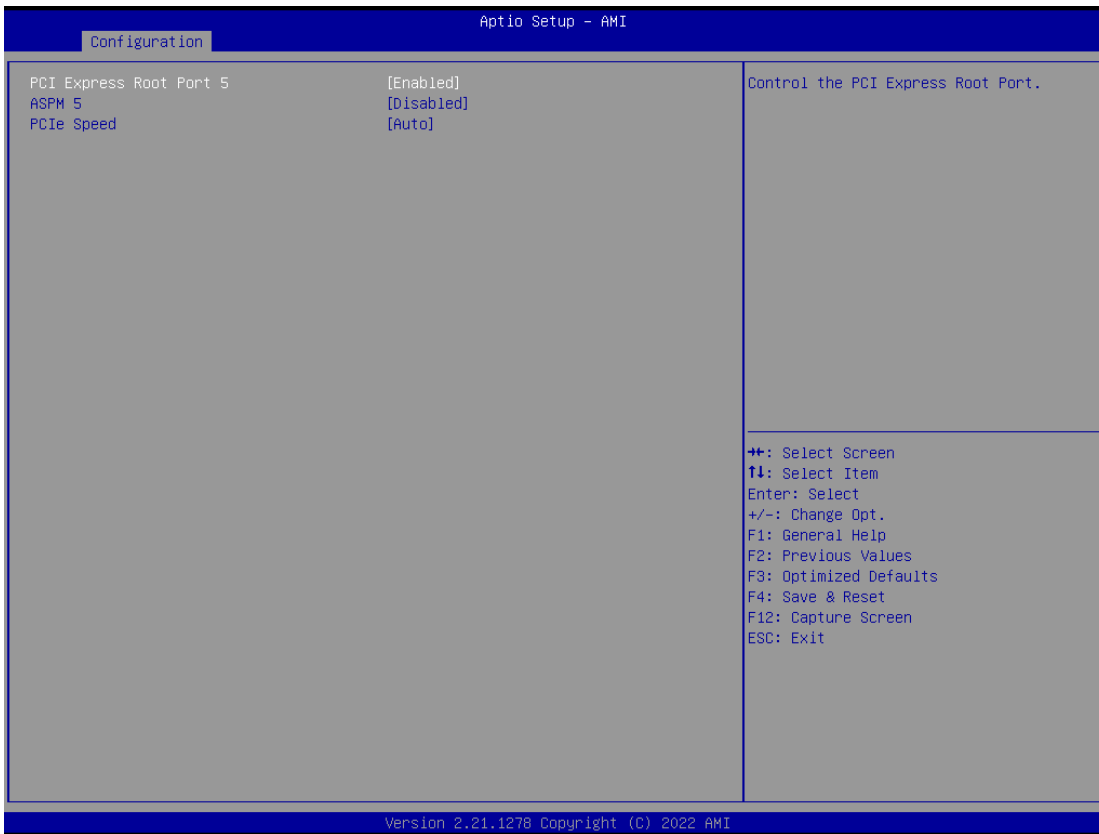
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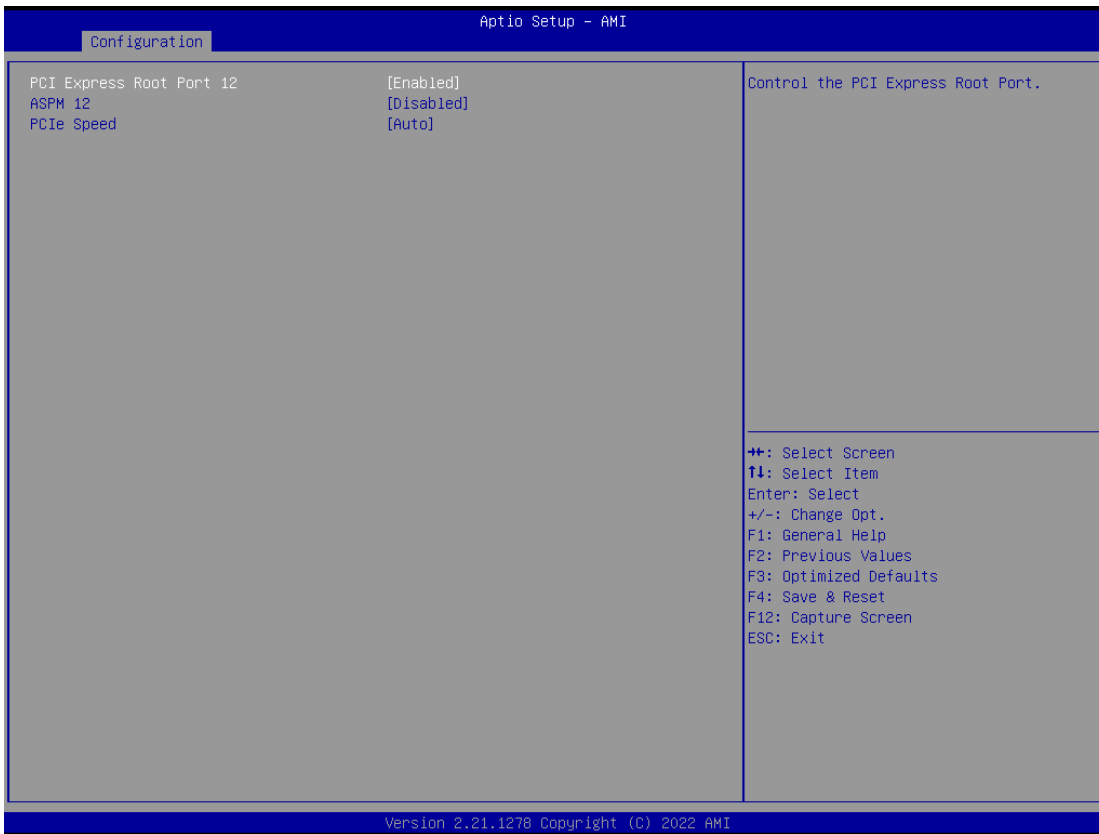
Aptio Setup - AMI

Configuration

<p>PEG Port Configuration</p> <p>PEG 0:1:0 Not Present</p> <p>Enable Root Port [Auto]</p> <p>Max Link Speed [Auto]</p> <p>Max Link Width [Auto]</p> <p>PEG 0:1:1 Not Present</p> <p>Enable Root Port [Auto]</p> <p>Max Link Speed [Auto]</p> <p>Max Link Width [Auto]</p> <p>PEG 0:1:2 Not Present</p> <p>Enable Root Port [Auto]</p> <p>Max Link Speed [Auto]</p> <p>Max Link Width [Auto]</p>	<p>Enable or Disable the Root Port</p> <hr/> <p> ++: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset F12: Capture Screen ESC: Exit </p>
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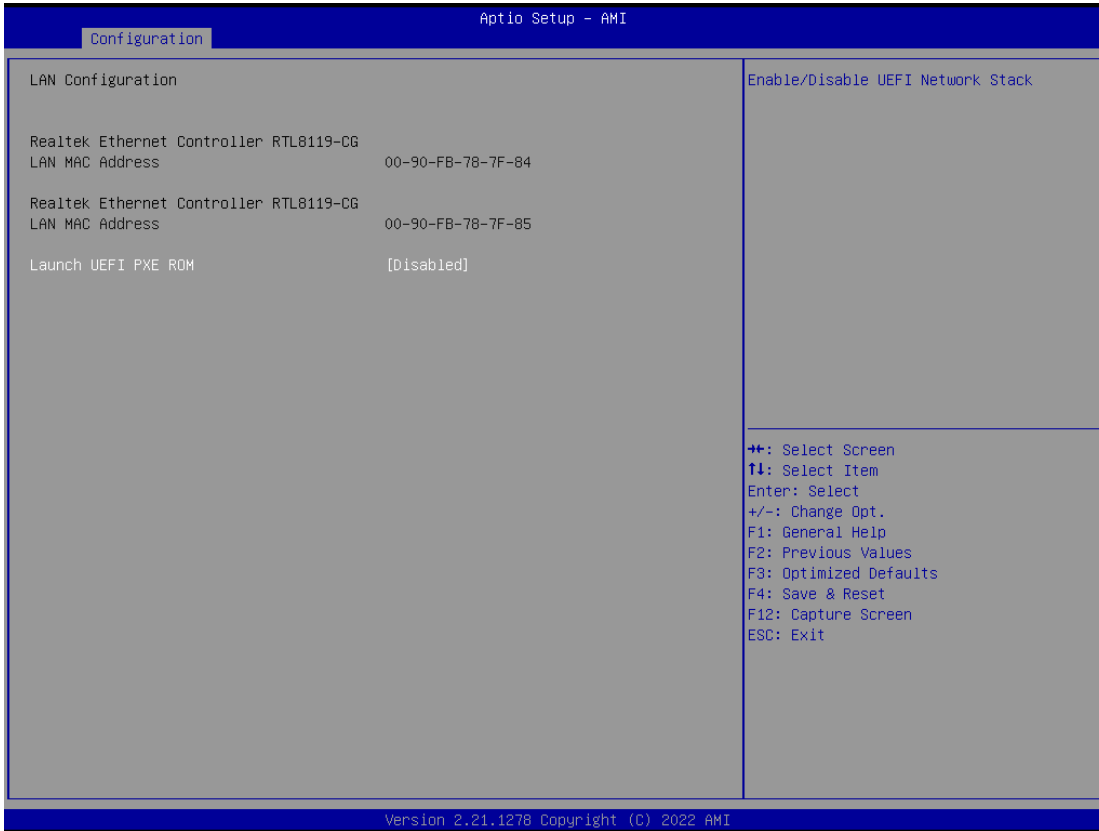




PCI Express setting

Configuration	Description
PCI Express root Port	Control the PCI Express Root Port 5/11/12. Auto to disable unused root port automatically for the most optimum power savings. Enable: Enable PCIe root port Disable: Disable PCIe root port
ASPM N	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto-configure DISABLE – Disables ASPM
PCIe Speed	Configure PCIe Speed

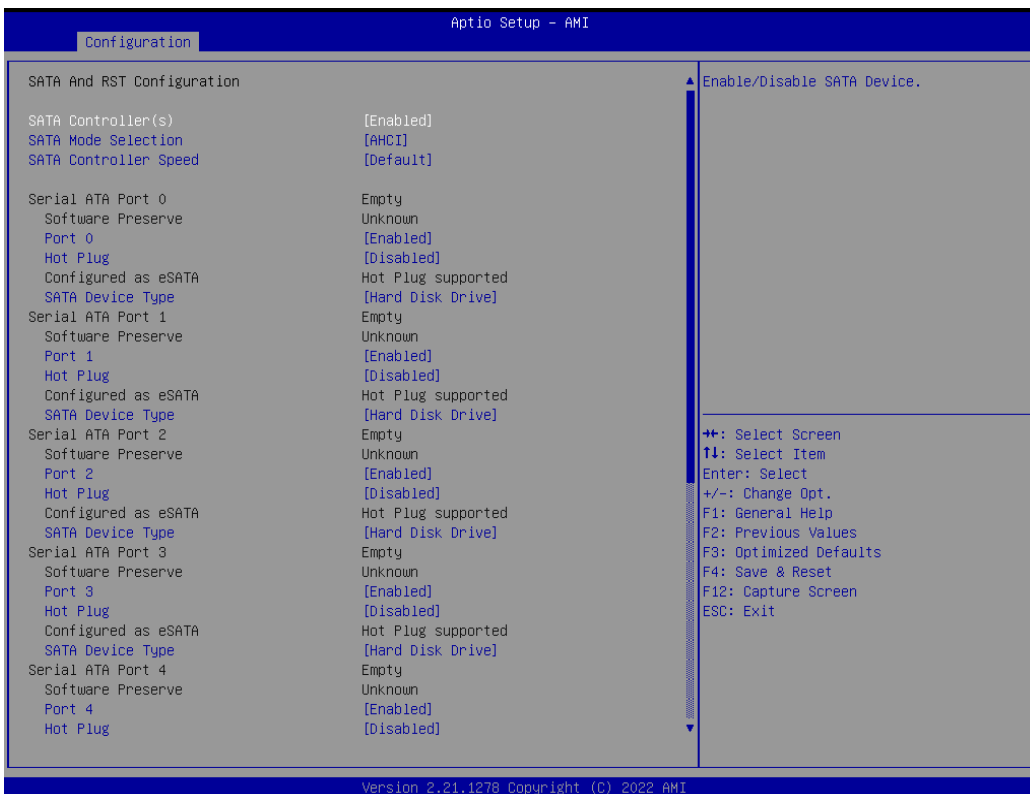
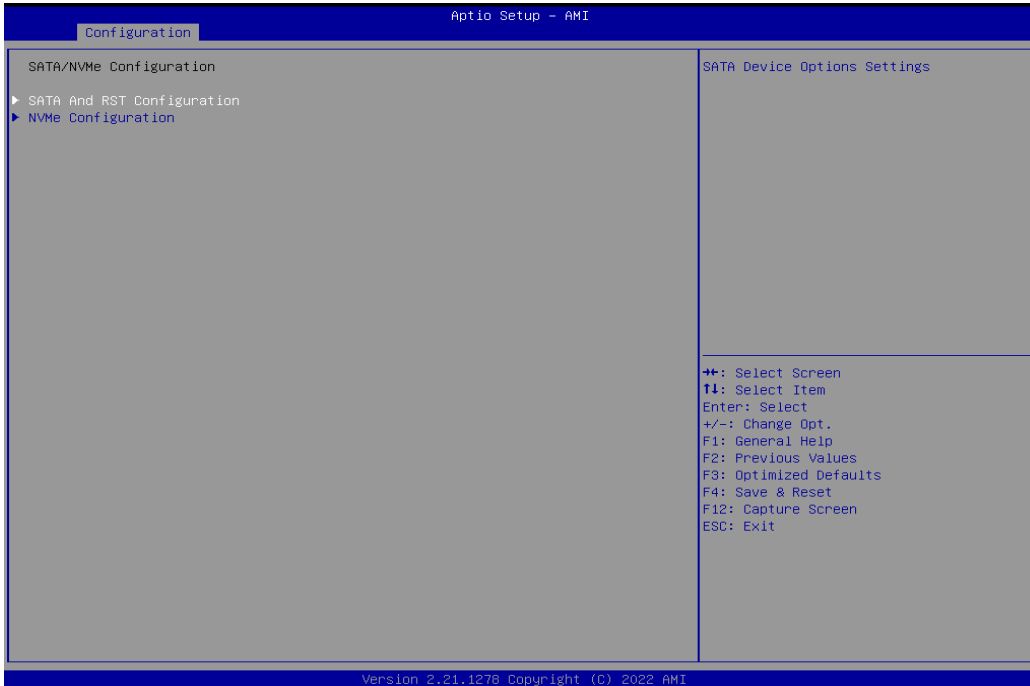
LAN Configuration



Configuration on board LAN device

Configuration	Description
Launch UEFI PXE ROM	Enable/Disable UEFI PXE ROM

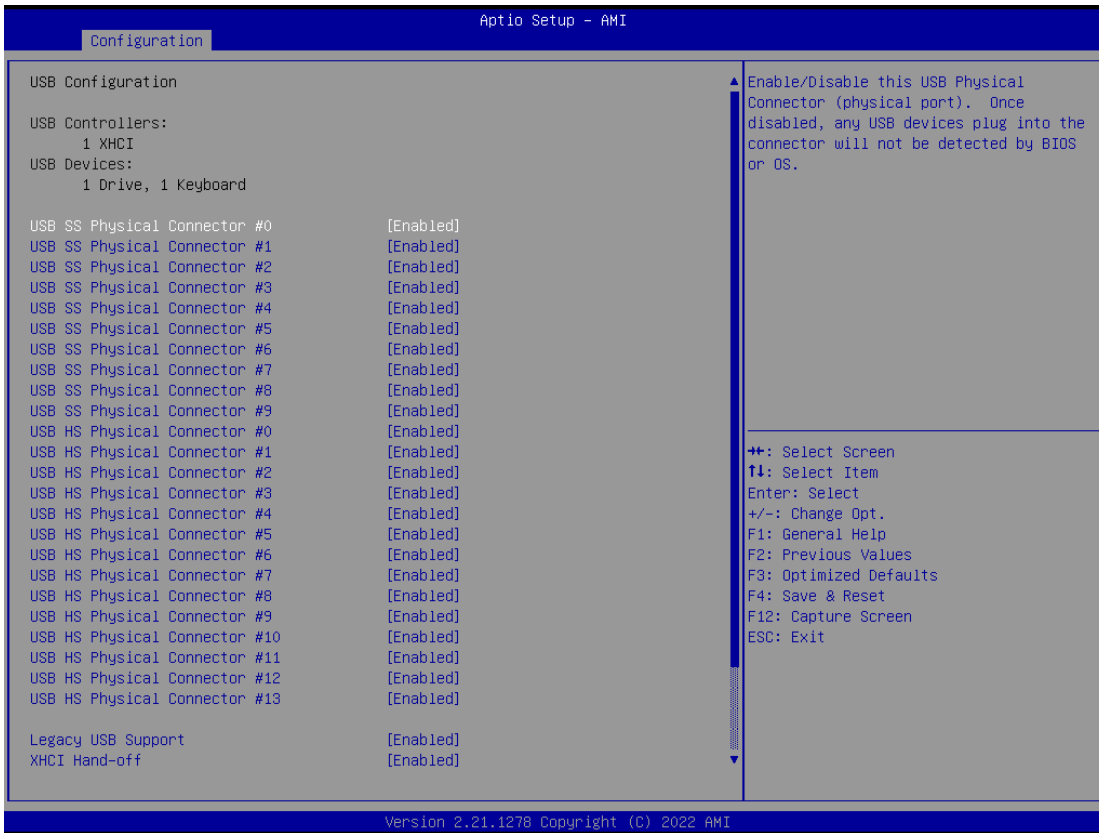
SATA Configuration



SATA configuration setting

Configuration	Description
Port 0/1	Enable / Disable SATA port
Hot Plug	Enable/Disable Hot Plug support

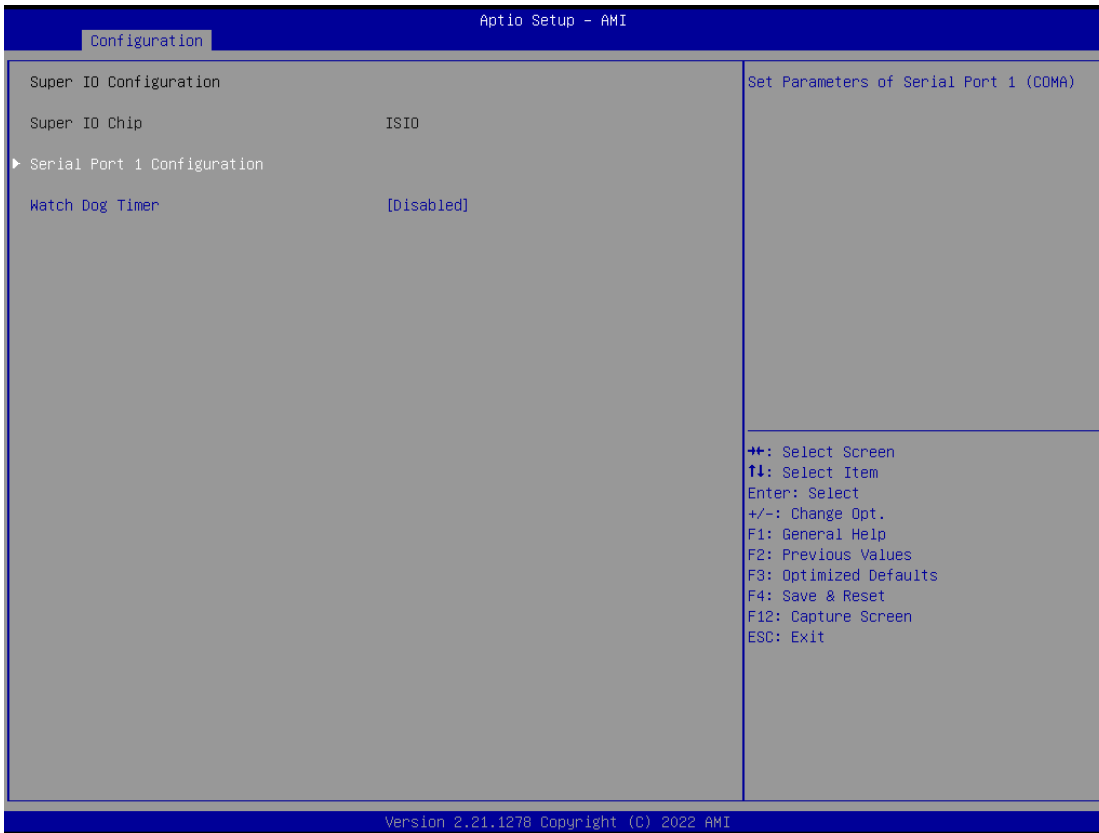
USB Configuration



USB configuration setting

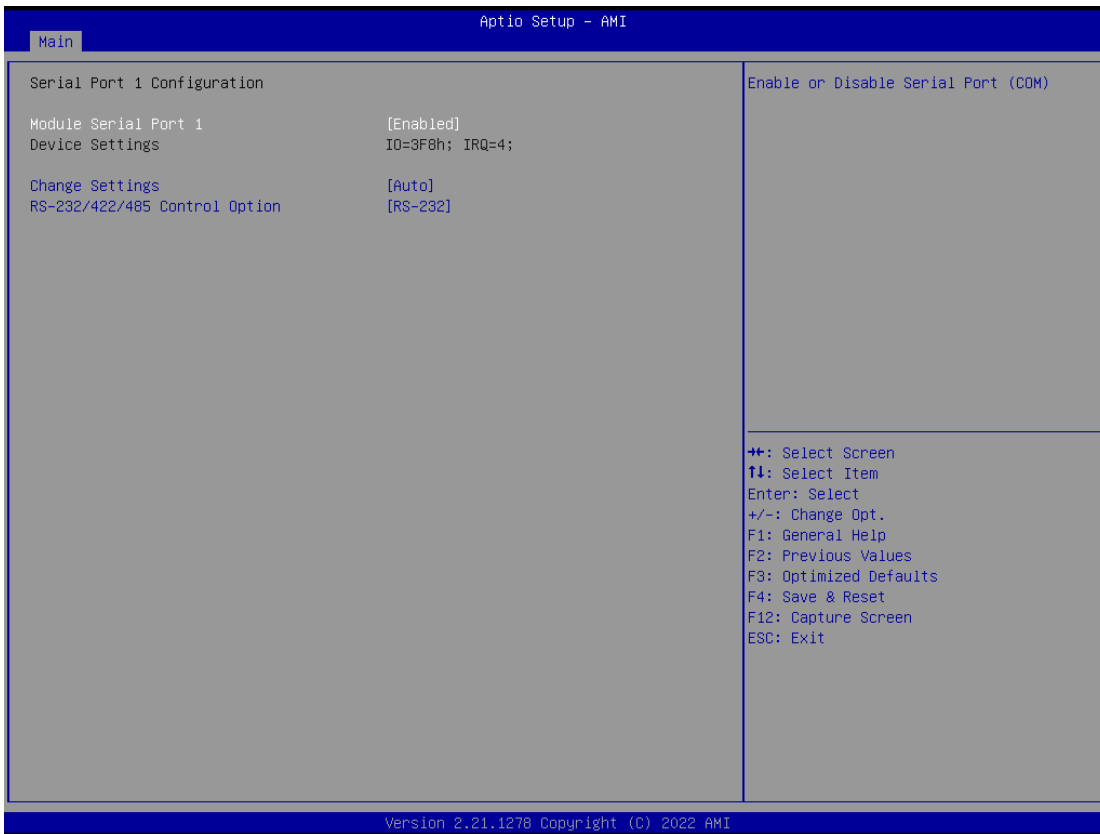
Configuration	Description
USB port #	Enable / Disable USB port. Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.
Legacy USB support	Enable/Disable Legacy USB support. Auto option disables legacy support if no USB devices are connected. Disable option will keep USB devices available only for EFI applications.
USB Mass storage driver	Enable/Disable USB Mass Storage Driver support.
USB transfer time-out	Time-out value for control, bulk, and interrupt transfers.
Device reset time-out	USB mass storage device Start Unit command time-out.
Device power-up delay	Maximum time the device will take before properly reporting itself to the Hot Controller, with 'Auto' using default value, for a Root port 100ms, and for a Hub port the delay is taken from the Hub descriptor.

Super I/O Configuration



System super IO chip parameters

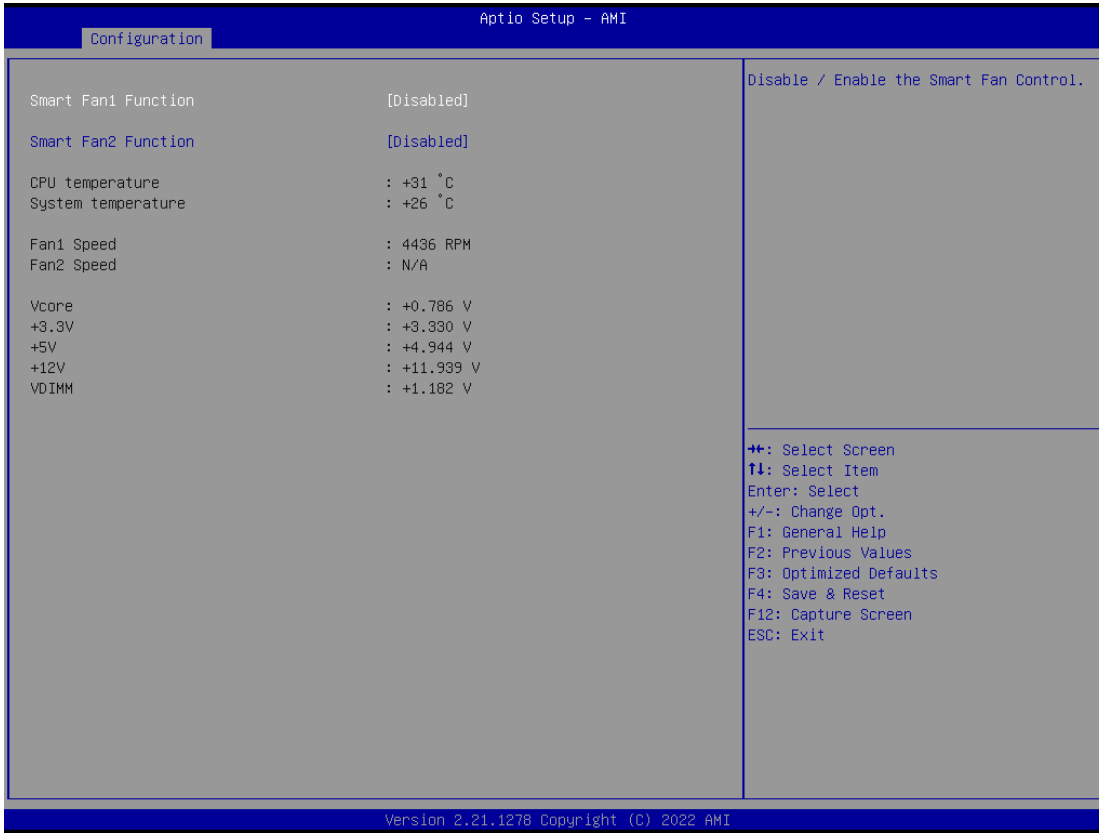
Configuration	Description
Watch Dog Timer	Enable/Disable watch dog timer



System super IO chip parameters

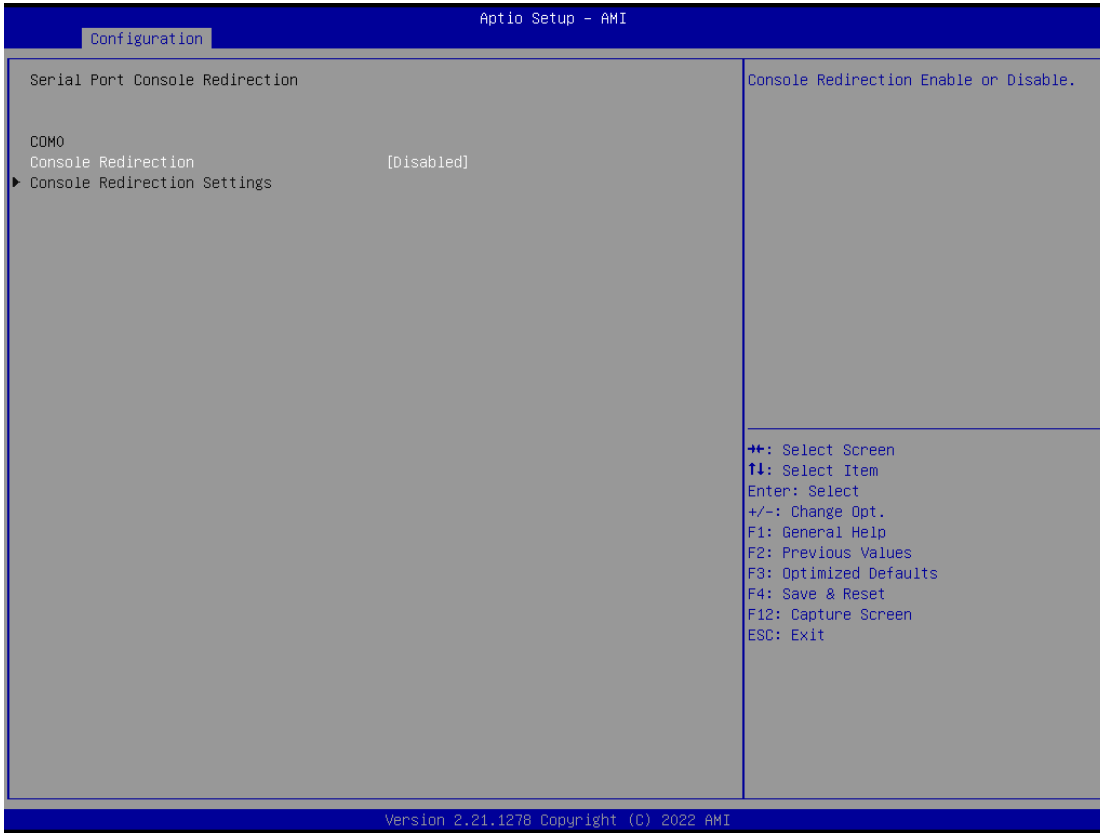
Configuration	Description
Module Serial Port 1	Enable/Disable Serial Port 1

H/W Monitor



Configuration	Description
Smart Fan1 Function	Enable/Disable CPU Smart Fan
Smart Fan2 Function	Enable/Disable System Smart Fan

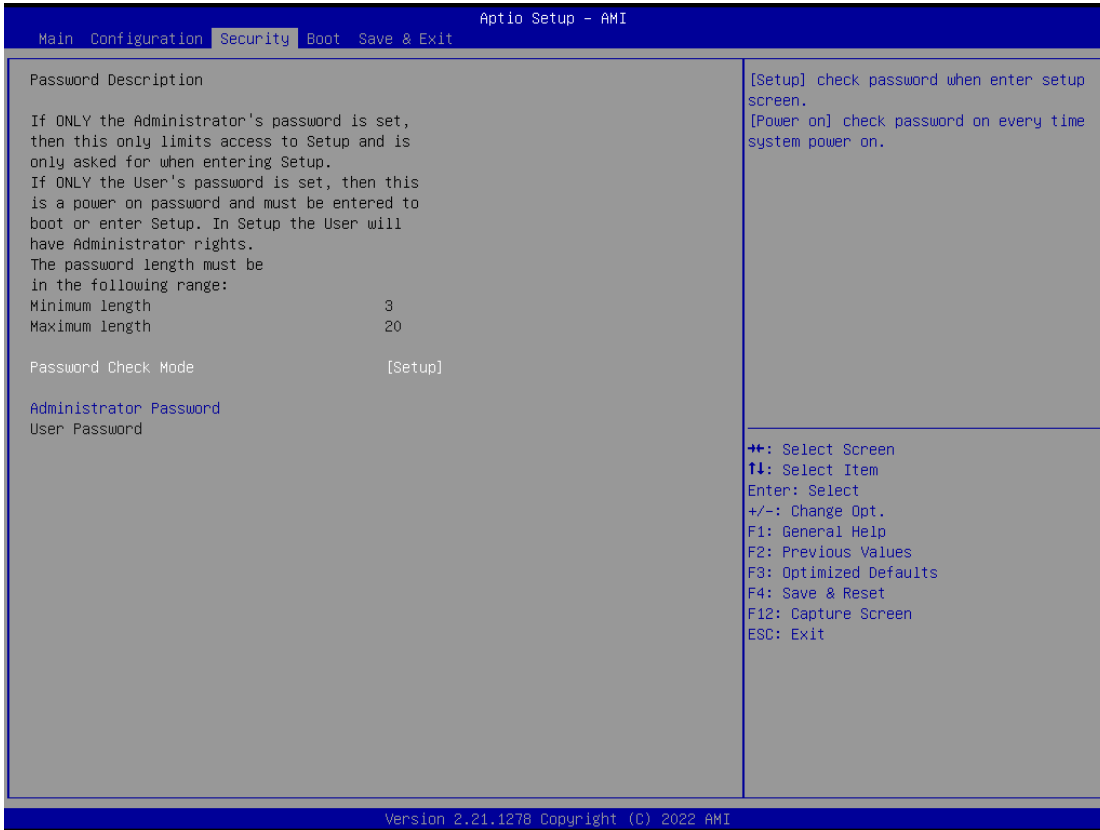
Serial Port Console Redirection



Serial Port Console Redirection

Configuration	Description
Console Redirection	Enable/Disable COM0 Console Redirection

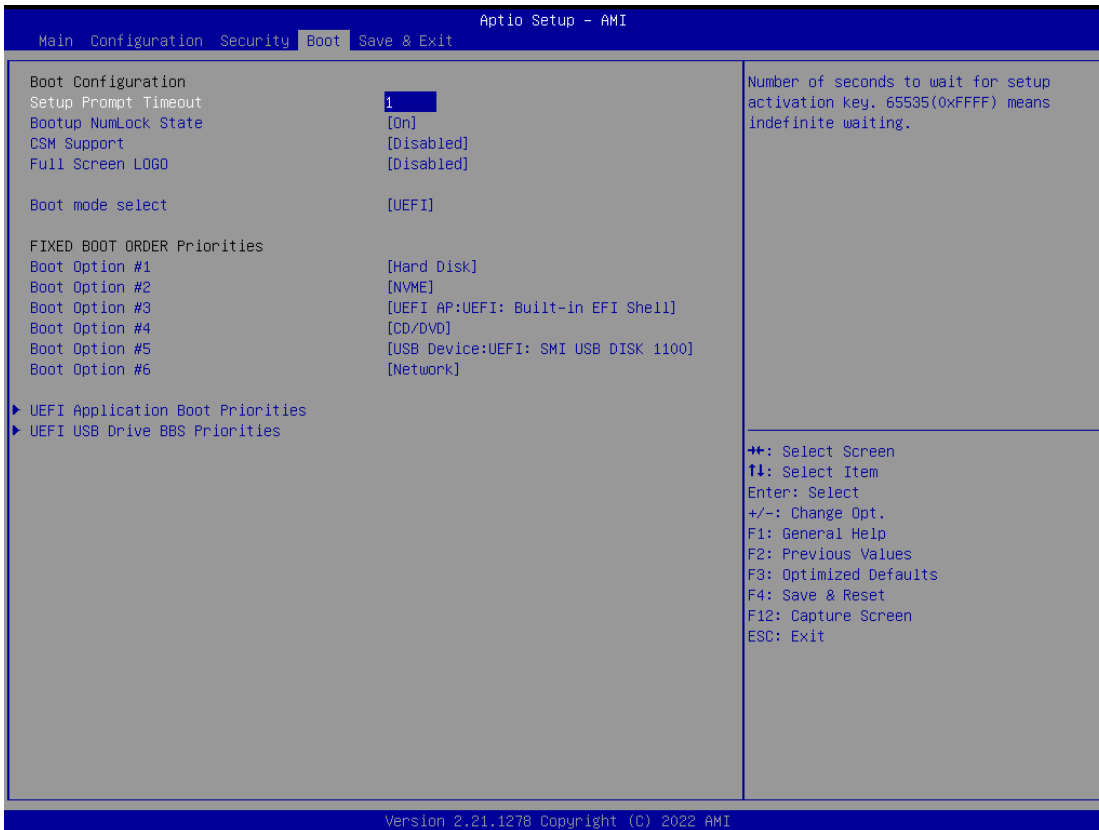
Security



Setup the security and check password when enter setup screen or when system power on.

Configuration	Description
Password check mode (Setup)	Check password when enter setup screen
Administrator Password	Setup Administrator Password
User Password	Setup User Password

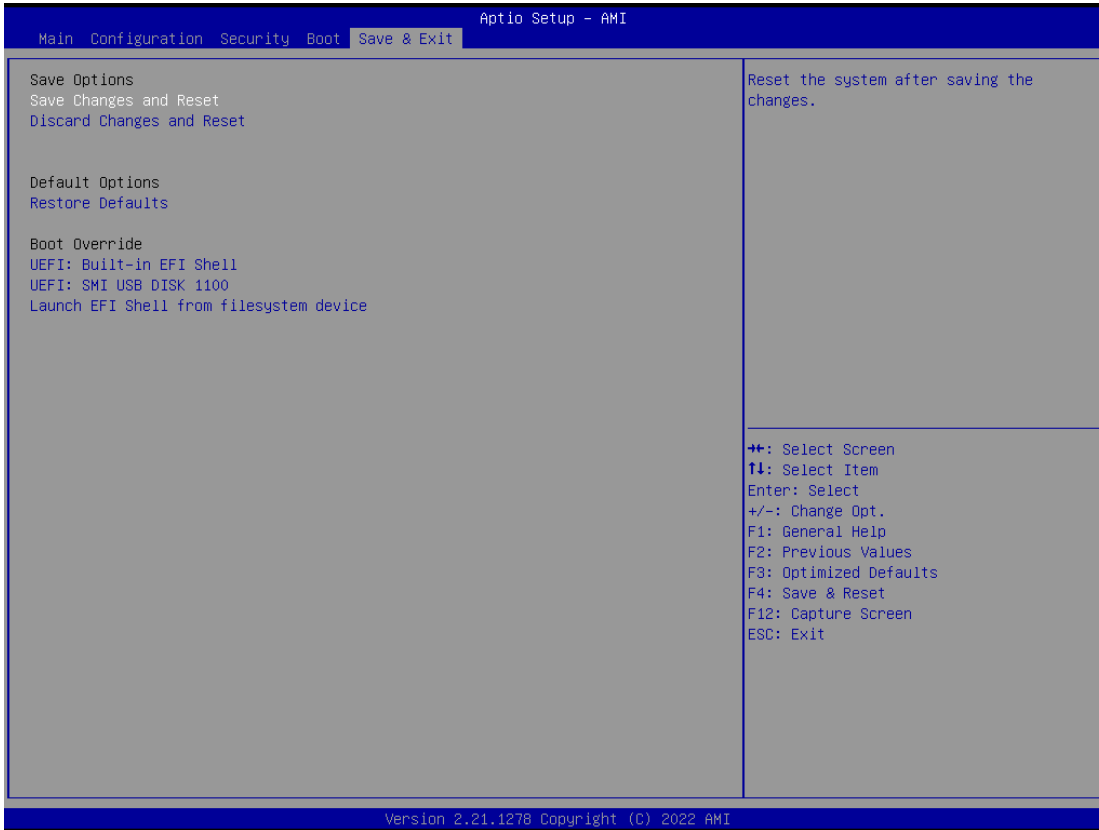
Boot



System boot setting and boot order priorities


Configuration	Description
Setup Prompt Timeout	Sets the number of seconds before the setup activation key is launched, with 65535(0xFFFF) for indefinite wait
Bootup NumLock State	Select the keypad Number Lock states
Full Screen LOGO	Enables or disables quiet boot option and full screen logo
Boot mode select	Select boot mode Legacy/ UEFI
UEFI USB Drive BBS Priorities	Specifies the boot device priority sequence from available UEFI USB drives
UEFI Hard disk drive BBS priorities	Specifies the boot device priority sequence from available UEFI hard disk drives
UEFI Application Boot Priorities	Specifies the boot device priority sequence from available UEFI Application

Save & Exit




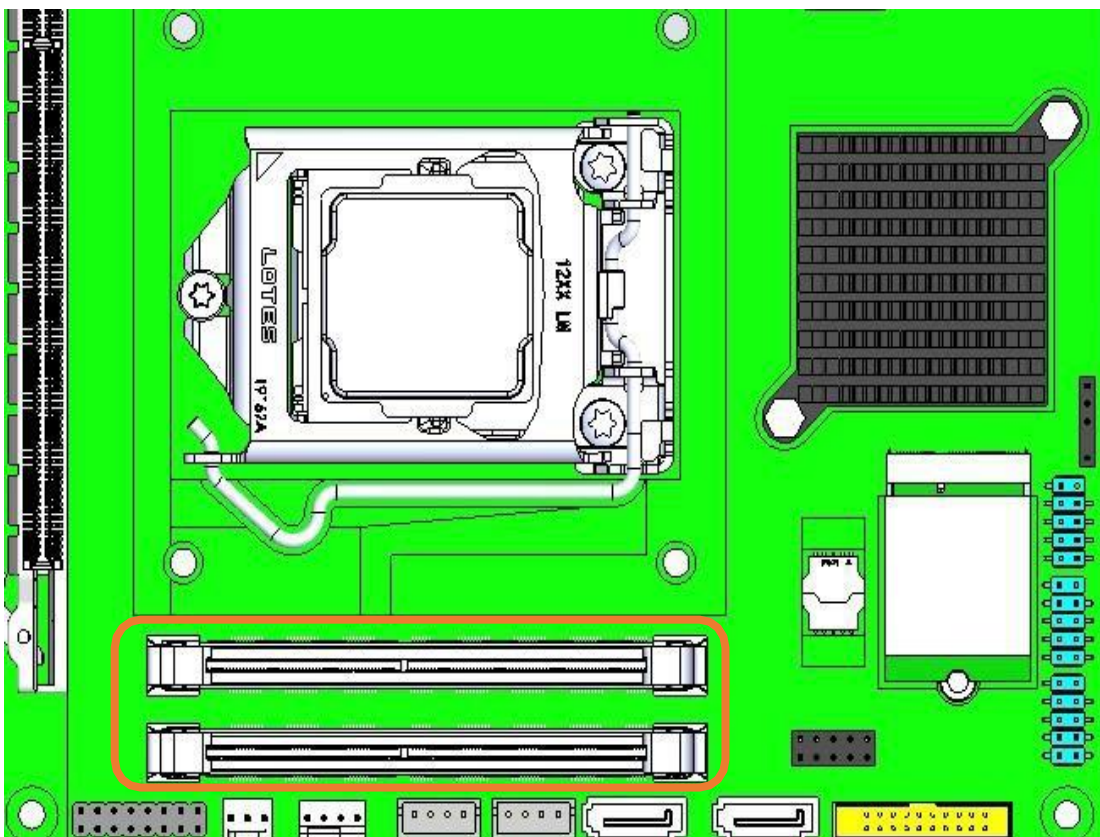
Configuration	Description
Save Changes and Reset	Reset the system after saving the changes
Discard Changes and Reset	Resets system setup without saving any changes
Restore defaults	Restore/load default values for all the setup options
Launch EFI shell from filesystem device	Attempts to launch EFI shell application from one of the available filesystem devices

MAINTENANCE

	<p>NOTE: Electrostatic discharge</p> <p>Electrostatic discharge can damage or destroy components. When handling, observe the necessary safety precautions against electrostatic discharge (ESD) according to EN 61340-5-1 and IEC 61340-5-1.</p>
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Memory installation

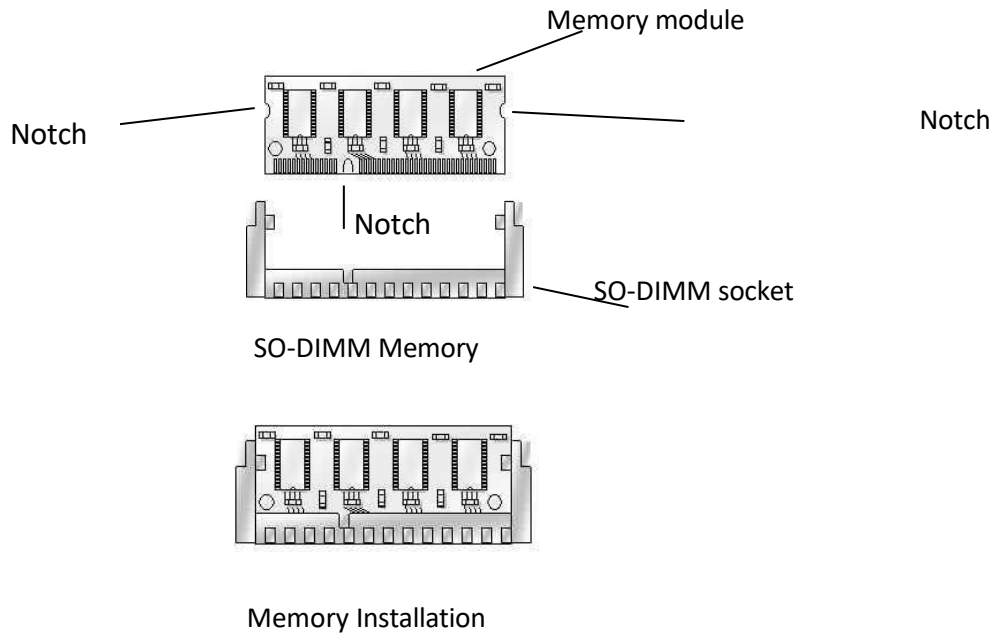
	<p>NOTE: Memory may be various for different model, please check specification for each model.</p>
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The figures display the notch marks and what they should look like on your SO-DIMM memory module.

- ◆ SO-DIMM DDR4 has 260-pin and two notches which match the onboard SO- DIMM socket. Refer to BLUMAX for memory specific details.
- ◆ Handle your new memory module carefully; do not flex or bend it. Always grasp the module by its edges.
- ◆ Memory module and the expansion socket are keyed. A small plastic bridge in the socket must align with those three notches in the module. The keyed bridge and notch ensure that the module can be plugged into the socket into the socket one way only.
- ◆ Insert memory module. Make sure the notch and module are properly aligned.

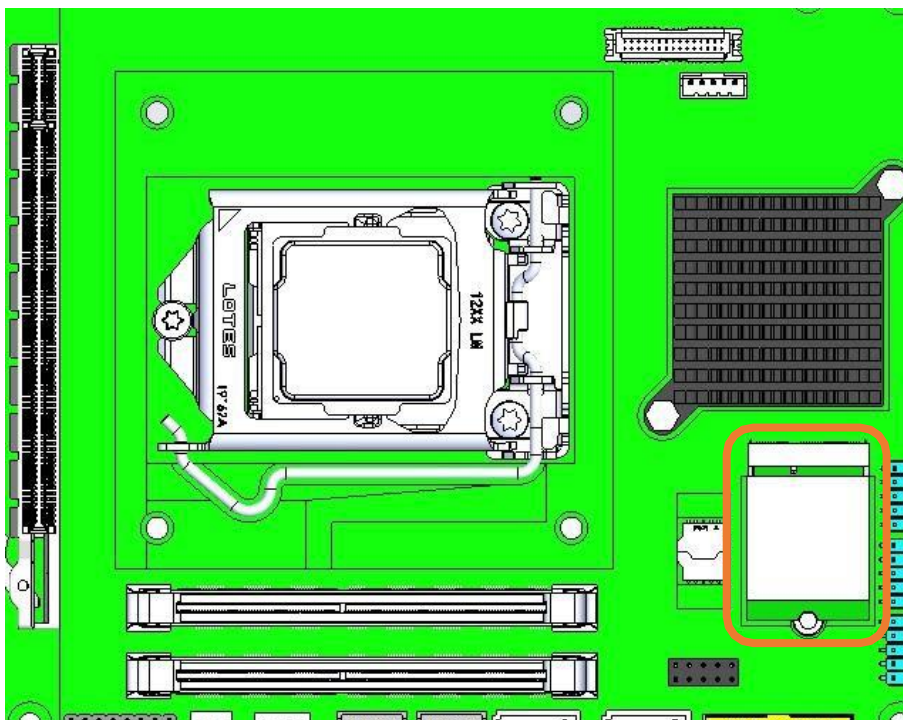
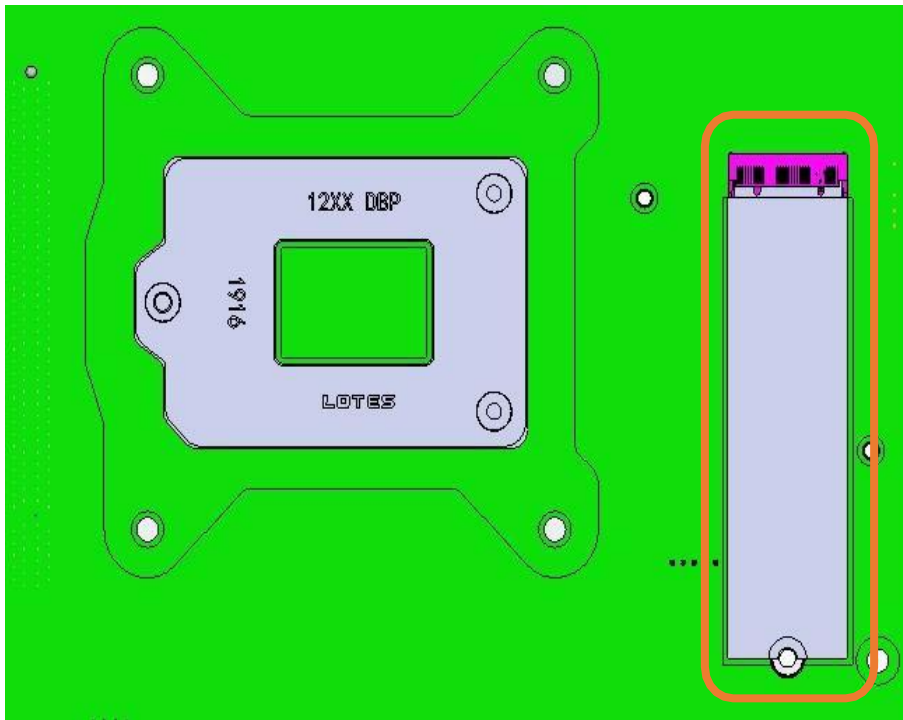
- ◆ Once the module is properly aligned with the socket, rotate the module downwards until the clips at each end of expansion click into place. To remove socket and pressing straight down until it fits tightly into the SO-DIMM socket.



M.2 2230 and M.2 2280 card installation

	<p>NOTE: expansion card may be various for different model, please check specification for each model.</p>
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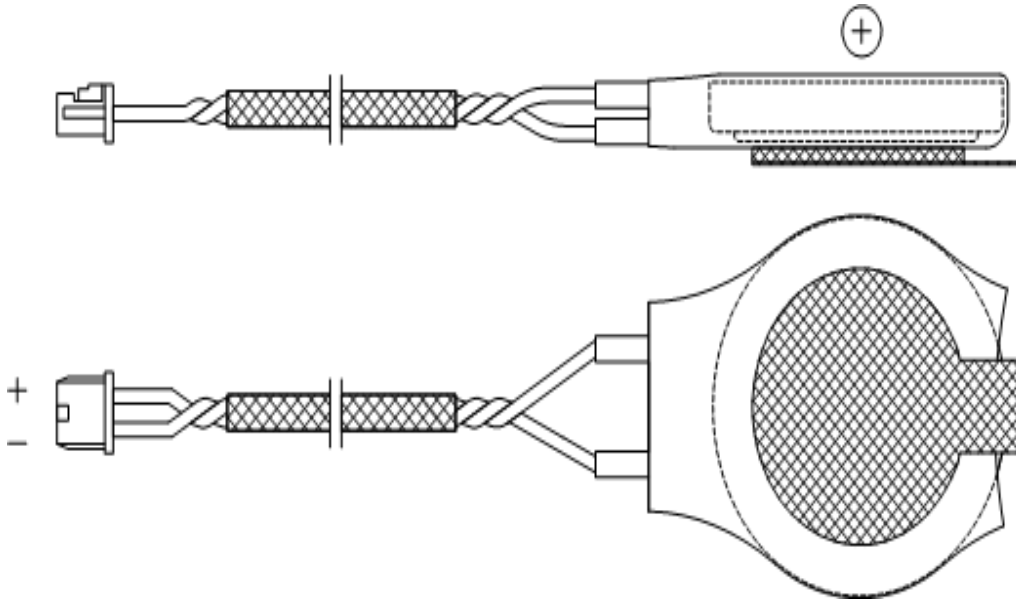
The BLUMAX can be disassembled and then install the additional storage, module, etc. by M.2 2230 slot and M.2 2280.




- ◆ Handle your module carefully; do not flex or bend it. Always grasp the module by its edges.
- ◆ Module and the expansion socket are keyed. A small plastic bridge in the socket must align with those notches in the module. The keyed bridge and notch ensure that the module can be plugged into the socket into the socket one way only.
- ◆ Insert module at 30° angle. Make sure the notch and module are properly aligned.
- ◆ Once the module is properly aligned with the socket, use the screws to fix it.

Battery change

1. Purchase the CMOS battery kit by below P/N from SUZOHAPP
2. Change and replace the battery kit.

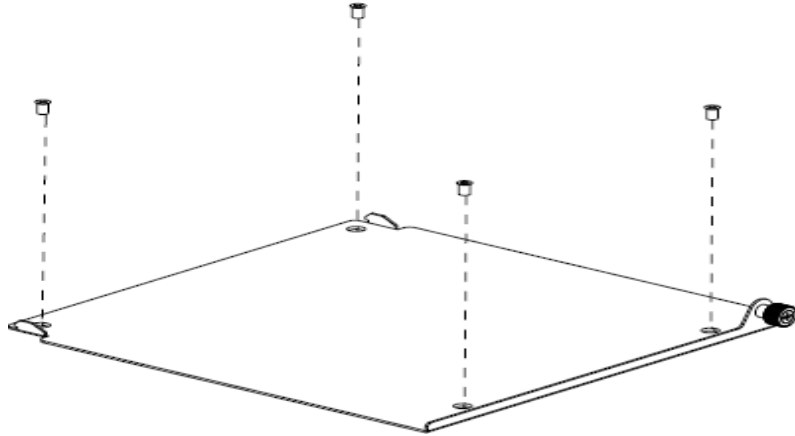


Model Name	Part Number	Description
Battery kit	B3600360	CMOS Battery kit, Coin manganese dioxide lithium battery (CR2032X), 220mAh Blue W/Wire 10.0CM

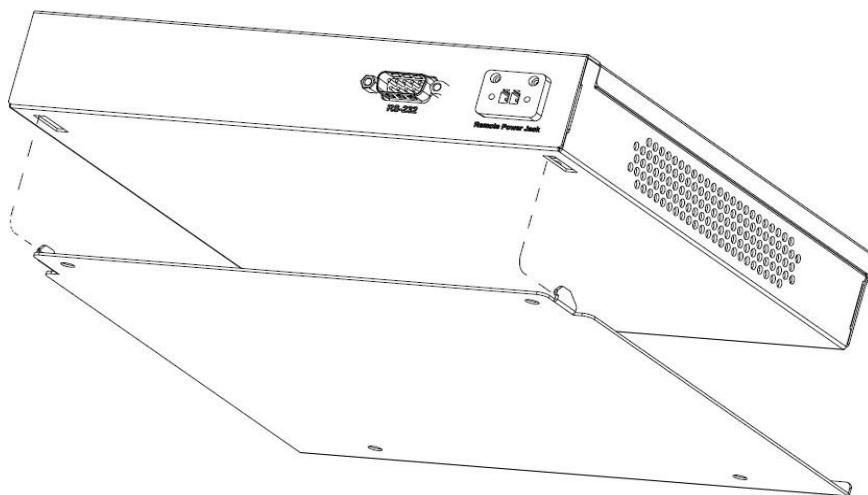
	<p>Dispose of used batteries properly. Always adhere to currently valid national regulations for battery disposal.</p>
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MOUNTING

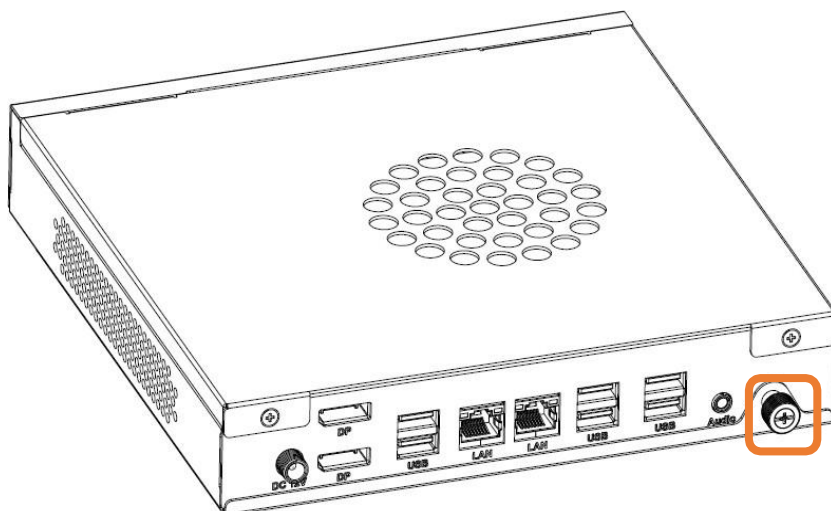
1. Secure Mounting Bracket by installing 4XM4 screws appropriate for mounting surface.



2. Put the system into the latch as below:



3. Use the screw to fix the system.



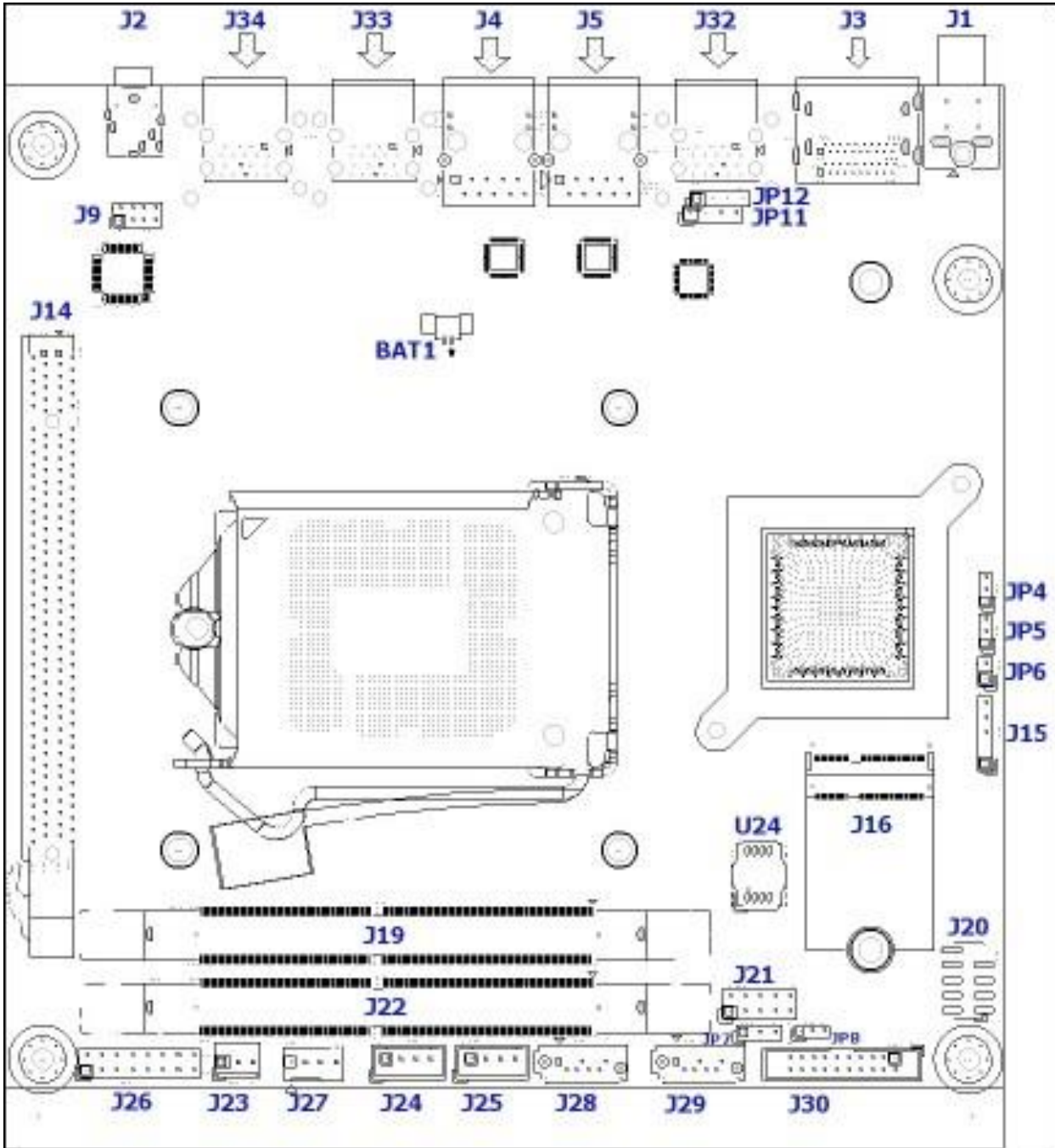
SSD/RAM TYPES

SSD (M.2 2280)	
Size	Description
128GB	128GB M.2 2280, SATA3 IA215SQ-L, SanDisk 3D TLC BiCS4, WARIS

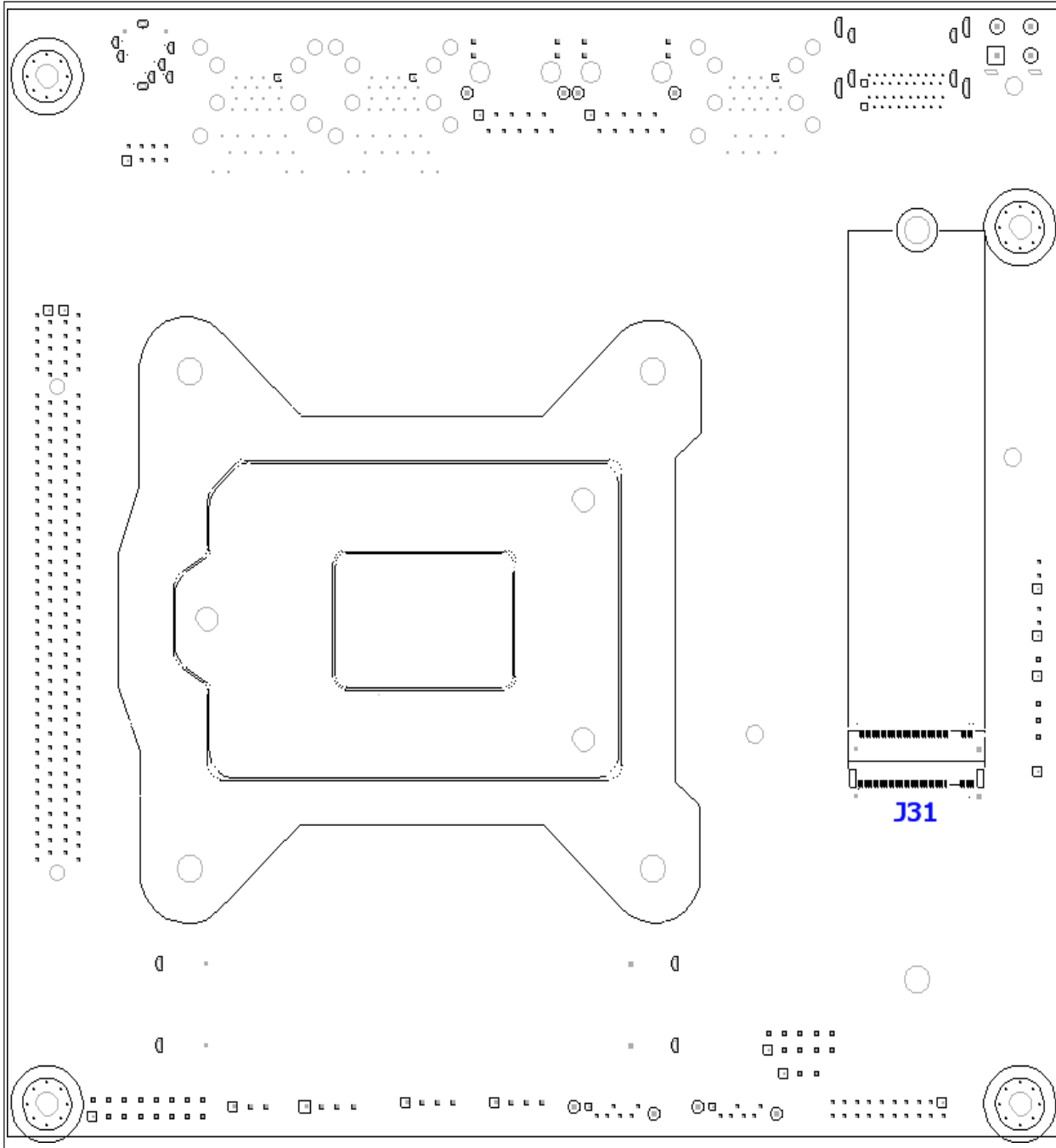
Memory (DDR4 SO-DIMM)	
Size	Description
8GB	(GP)DDR4 VLP SO-DIMM/2400 DRAM Module, 8GB, 1Gx8, Samsung, WARIS

CONNECTORS & JUMPER SETTINGS

Top View



Bottom View

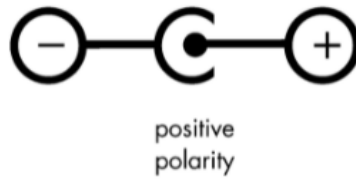


Connector List

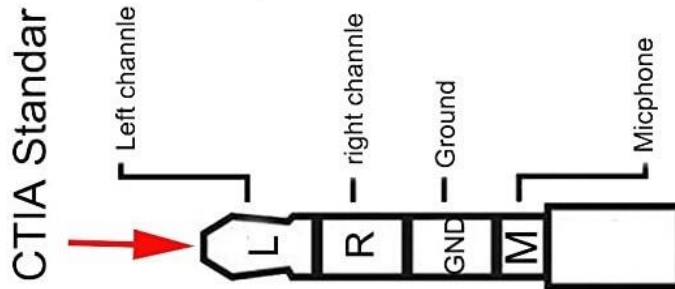
I/O peripheral devices are connected to the interface connectors.

- J1: DC 12V Power Input Connector (DC Jack/2.5mm)
 - J2: Audio Jack Connector (Mic-in/Line-out)
 - J3: Display Connector (DP x2)
 - J4: LAN2 Connector (RJ45)
 - J5: LAN1 Connector (RJ45)
 - J9: Audio Jack Connector (2x4 Pin Header/2mm)
 - J14: PCIe16 Slot Connector
 - J15: SMBus Connector (1*5 Pin cut Pin 2 Header/2.54mm)
 - J16: M.2 Key-E 2230 Connector
 - J19: DDR4 SoDIMM Channel A Socket
 - J20: USB 2.0 Port 7~8 Connector (2*5 Pin cut Pin 9 Header/2.54mm)
 - J21: GPIO Connector (2*5 Pin Header/2.54mm)
 - J22: DDR4 SoDIMM Channel B Socket
 - J23: System Fan Connector (1x3 Pin Header Wafer/2.54mm)
 - J24: SATA Power Connector (1x4 Pin Header Wafer/2.5mm)
 - J25: SATA Power Connector (1x4 Pin Header Wafer/2.54mm)
 - J26: Front Panel Connector (2*8 Pin Header/2.54mm)
 - J27: CPU Fan Connector (1x4 Pin Header Wafer/2.54mm)
 - J28: SATA Port 0 Connector (7 Pin/Vertical)
 - J29: SATA Port 1 Connector (7 Pin) /Vertical)
 - J30: LPC (TPM) for debug Connector (2x10 Pin Header Wafer/2mm)
 - J31: M.2 Key-M 2280 Connector
 - J32: USB3.0 Port 5~6 Connector (USB3.0x2/Type A)
 - J33: USB3.0 Port 3~4 Connector (USB3.0x2/Type A)
 - J34: USB3.0 Port 1~2 Connector (USB3.0x2/Type A)
- BAT1: Battery Connector

J1 DC 12V Power Input Connector (DC Jack/2.5mm)



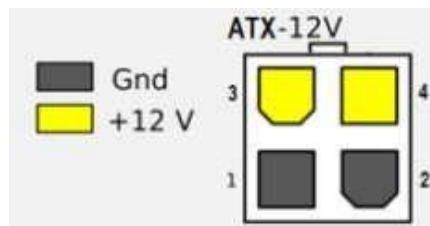
J2 Audio Jack Connector (Mic-in/Line-out)



J9 Audio Jack (2x4 Pin Header/2mm)

PIN	Signal Description	PIN	Signal Description
1	MIC IN L	2	LINE IN L
3	GND	4	LINE IN R
5	LINE OUT L	6	GND
7	LINE OUT R	8	MIC IN R

J9: Audio Jack Connector (2x4 Pin Header/2mm)



J15 SMBUS (1x5 Pin Header/2mm)

PIN	Signal Description
1	SMB_CLK
2	NC
3	GND
4	SMB_DATA
5	+5V

J16 M.2 Key-E 2230 Connector

PIN	Signal Description	PIN	Signal Description
1	GND	2	3.3V
3	USB_DP	4	3.3V
5	USB_DN	6	
7	GND	8	
9		10	
11		12	
13		14	
15		16	
17		18	GND
19		20	
21		22	
23		32	
33	GND	34	
35		36	
37		38	VENDOR/NC1
39	GND	40	VENDOR/NC2
41		42	VENDOR/NC3
43		44	
45	GND	46	
47		48	
49		50	SUSCLK
51	GND	52	PERSTO#
53		54	W_DISABLE#2
57	PEWAKE0#	56	W_DISABLE#1
59		58	I2C_DATA
61		60	I2C_CLK
63	GND	62	
65		64	
67		66	
69	GND	68	
71		70	
73		72	3.3V
75	GND	74	3.3V

J20 USB 2.0 Port 7~8 Connector (2*5 Pin cut Pin 9 Header/2.54mm)

PIN	Signal Description	PIN	Signal Description
1	+5V	2	+5V
3	USB_D7-	4	USB_D8-
5	USB_D7+	6	USB_D8+
7	GND	8	GND
		10	NC

J21 Connector (2*5 Pin Headers/ 2.54mm)

PIN	Signal Description	PIN	Signal Description
1	GPI0	2	GPO0
3	GPI1	4	GPO1
5	GPI2	6	GPO2
7	GPI3	8	GPO3
9	GND	10	+5V

J23 System FAN Connector (1x3 Pin Header Wafer/2.54mm)

PIN	Signal Description
1	GND
2	System FANOUT (12V Level)
3	System FANIN

J24 SATA Power Connector (1x4 Pin Header Wafer/2.5mm)

PIN	Signal Description
1	+12V
2	GND
3	GND
4	+5V

J26 Front Panel Connector (2*8 Pin Header/2.54mm)

PIN	Signal Description	PIN	Signal Description
1	Suspend LED+	2	Buzzer+
3	Suspend LED-	4	GND
5	LAN1 Active/Link LED-	6	NC
7	LAN2 Active/Link LED-	8	Buzzer-
9	GND	10	GND
11	LAN2 LED+	12	Power Button
13	HDD LED+	14	Reset Button
15	HDD LED-	16	GND

J27 CPU FAN Connector (1x4 Pin Header Wafer/2.54mm)

PIN	Signal Description
1	GND
2	+12V
3	CPU FANIN
4	CPU FANOUT

J28 SATA Port0 Connector (7 Pin/Vertical)

PIN	Signal Description
1	GND
2	A+
3	A-
4	GND
5	B-
6	B+
7	GND

J30 LPC (TPM) for debug Connector (2*10 Pin Header/2mm)

PIN	Signal Description	PIN	Signal Description
1	LPC clock	2	GND
3	LFRAME#	4	NC
5	LPC Reset	6	+5V
7	LAD3	8	LAD2
9	+3.3V	10	LAD1
11	LAD0	12	GND
13	SMBus clock	14	SMBus data
15	+3.3VSB	16	SERIRQ
17	GND	18	GND
19	SUS_STAT#	20	GND

J31 M.2 Key-M 2280 Connector

PIN	Signal Description	PIN	Signal Description
1	GND	2	3.3V
3	GND	4	3.3V
5	PERn3	6	
7	PERp3	8	
9	GND	10	DAS/DSS#/LED1#
11	PETn3	12	3.3V
13	PETp3	14	3.3V
15	GND	16	3.3V
17	PERn2	18	3.3V
19	PERp2	20	
21	GND	22	
23	PETn2	24	
25	PETp2	26	
27	GND	28	
29	PERn1	30	
31	PERp1	32	
33	GND	34	
35	PETn1	36	
37	PETp1	38	

39	GND	40	
41	PERn0/SATA B+	42	
43	PERp0/SATA B-	44	
45	GND	46	
47	PETn0/SATA A-	48	
49	PETp0/SATA A+	50	PERST#
51	GND	52	CLKREQ#
53	REFCLKn	54	PEWAKE#
55	REFCLKp	56	
57	GND	58	
67		68	SUSCLK
69	PEDET (NC- PCIe/GND-SATA)	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

BAT1 Battery Header

PIN	Description
1	BAT+
2	BAT-

Jumper Settings

The jumper settings are schematically depicted in this manual as follows:

- JP4: RTC setup
- JP5: CMOS setup
- JP6: PS_ON reset setup
- JP7: GPIO output voltage level setup
- JP8: AT/ATX mode select

JP4 RTC Setup

PIN No.		Description
1-2	2-3	
Short		Normal (Default)
	Short	Clear RTC

JP5 CMOS Setup

PIN No.		Description
1-2	2-3	
Short		Normal (Default)
	Short	Clear CMOS

JP6 PS_ON reset setup

PIN No.		Description
1-2	2-3	
Open		Normal (Default)
	Short	Reset PS_ON when System Reset active

JP7 GPIO Output voltage level setup

PIN No.		Description
1-2	2-3	
Short		+5V
	Short	+3.3V (Default)

JP8 AT/ATX mode setup

PIN No.		Description
1-2	2-3	
Short		AT mode
	Short	ATX mode (Default)



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