EMX-R680P

Intel® 12th/13th Gen Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor, supports LGA 1700 CPU Mini ITX motherboard

User's Manual

1st Ed – 19 April 2023

Part No. E2047MR6800R

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice

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

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into body, or (b) support or sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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A Message to the Customer

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Avalue warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Avalue, or which have been subject to misuse, abuse, accident or improper installation. Avalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Avalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Avalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Avalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Content

1. Getting Started

1.1 Safety Precautions

Warning!

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

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x EMX-R680P Motherboard
- 2 x SATA Cables
- 1 x I/O Shield
- 1 x CPU Cooler bracket

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

1.3 Document Amendment History

Revision	Date	By	Comment
1st	April 2023	Avalue	Initial Release

1.4 Manual Objectives

This manual describes in details Avalue Technology EMX-R680P Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to set up EMX-R680P or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

If you have any suggestions or find any errors regarding this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

1.5 System Specifications

Product Specification	
CPU	Intel® 12th/13th Gen Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor, supports LGA 1700 CPU Up to 125W Max
BIOS	AMI uEFI BIOS, 256Mbit SPI Flash ROM
System Chipset	Intel® R680E
I/O Chip	NuvoTon NCT6126D
System Memory	2 x SODIMM Up to 64GB Dual Channel DDR5 4800MHz Non-ECC DRAM support
Watchdog Timer	H/W Reset, 5~255 seconds/5~255 minutes
H/W Status Monitor	CPU temperature monitoring Voltage monitoring CPU fan speed control
RAID	Support RAID 0, 1
TPM	fTPM
iAMT	Yes
Expansion Slot	
M.2	Top: 1 x M.2 (2230) E-Key, support Wi-Fi module with PCIe x 2 Gen 3 & USB 2.0 1 x M.2 (2242/2280) M-Key, support PCI-e x 4 Gen 4 SSD (top side) Bottom: 1 x M.2 (2280) M-Key, support PCI-e x 4 Gen 4 SSD (bottom side)
PCIe	1 x PCI-e x 16 Gen 5 or 2 x PCI-e x 8 by switch (from CPU)
Storage	
M.2	Top: 1 x M.2 (2242/2280) M-Key, support PCI-e x 4 Gen 4 SSD (top side) Bottom: 1 x M.2 (2280) M-Key, support PCI-e x 4 Gen 4 SSD (button side)
SATA	2 x SATA III
Edge I/O	
LAN	4 x 2.5 Gigabit Ethernet
USB 3.2	4 x USB 3.2 Gen 2 & 4 x USB 3.2 Gen 1
DP	2 x DP++, 1 x HDMI 2.1b
Onboard I/O	
COM	COM 1-2: Support RS232/422/485 selected by BIOS selection 2 x 2 x 5 pin, pitch 2.00mm connector for COM1~2 support RS232/RS422/RS485 connector selected by BIOS selection.

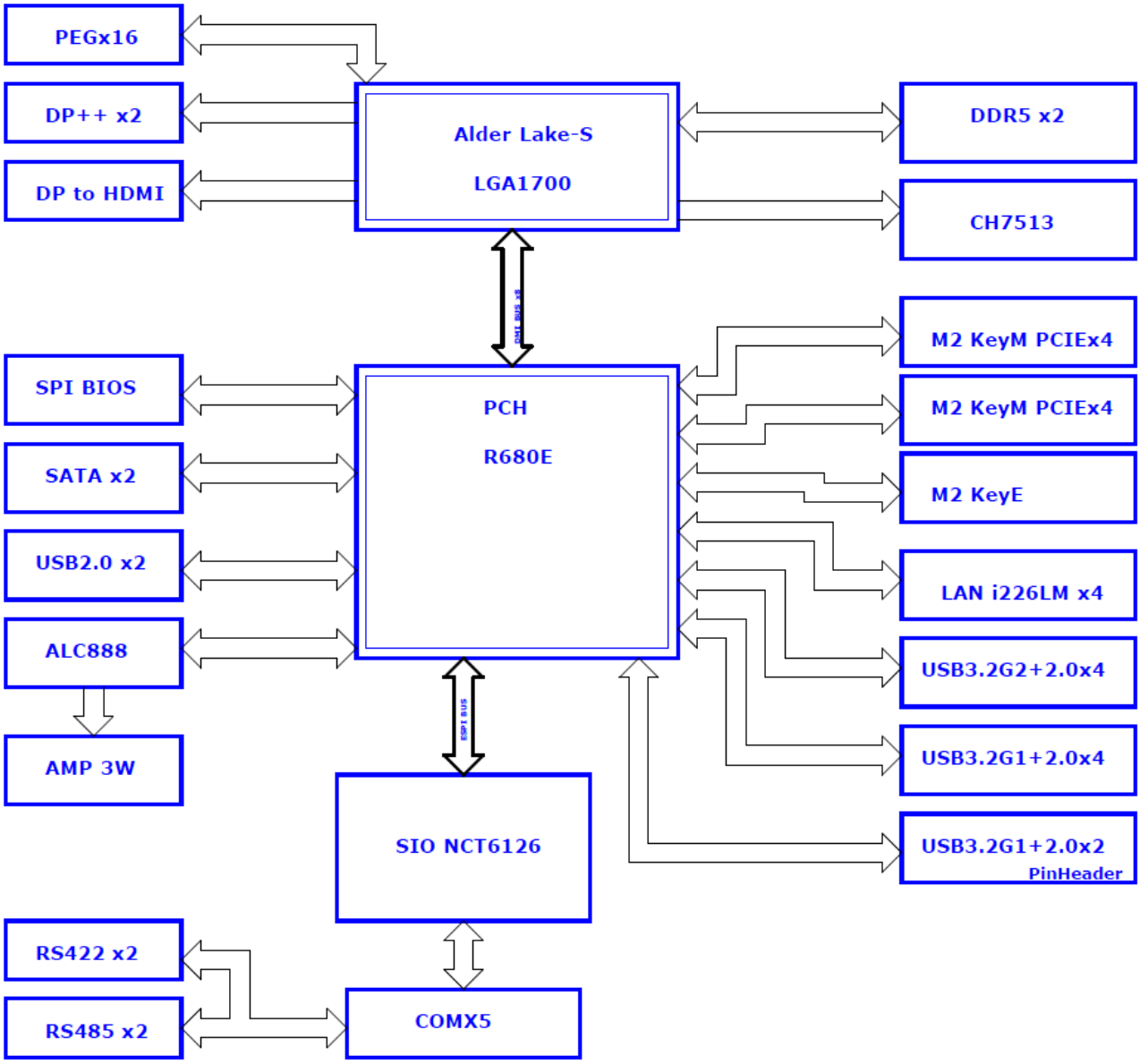
	COM 3-5: Support RS232 3 x 1 x 9 pin, pitch 1.0mm connector for COM 3~5 support RS-232 connector
USB 2.0	1 x 2 x 5 pin pitch 2.54mm connector for 2 x USB 2.0
USB 3.2	1 x 2 x 10 pin, pitch 2.0mm connector for 2 x USB 3.2 Gen 1
GPIO	1 x 2 x 10 pin, pitch 1.27mm connector for GPIO: 16 bits & +5VS Level SMBus
CPU/System FAN	1 x 1 x 4 pin, pitch 2.54mm CPU fan connector with smart fan function supported 1 x 1 x 4 pin, pitch 2.54mm System fan connector with smart fan function supported
Buzzer	Onboard
Front Panel	1 x 2 x 5 pin, pitch 2.54mm connector for front panel
RTC Battery	1 x 2 Pin Pitch 1.25mm Vertical type battery connector (SMD Type)
AT/ATX Selector	1 x 1 x 3 pin pitch 2.00mm connector for AT/ATX jumper 1 x 2 x 10 pin ATX power connector 1 x 2 x 4 pin ATX 12V power connector
Clear CMOS	1 x 1 x 3 pin, pitch 2.54mm connector for COMS Clear
LVDS / eDP	1 x 2 x 20 pin, pitch 1.25mm connector for LVDS or eDP (2 Lanes)
LCD Backlight Brightness	1 x 1 x 5 pin, pitch 2.00mm Wafer connector for LCD inverter backlight connector (5V/12V)
eSPI	1 x 2 x 6 pin, pitch 1.27mm connector for BIOS SPI
Audio	1 x 2 x 5 pin, pitch 2.00mm connector for front Audio
Amp Connector	1 x 1 x 4 pin, pitch 1.25mm connector for Amplifier 2W4Ω x 2
Auxiliary panel	1 x 2 x 4 pin, pitch 2.00mm connector for LAN1~LAN4 Activity Indicator LED
Other	1 x 1 x 3 pin, pitch 2.00mm connector for BIOS ME flash (MP remove) 1 x 1 x 3 pin, pitch 2.00mm connector for Power IC FW flash Onboard power-on LED
Display	
Graphic Chipset	Intel® 12th/13th Generation CPU integrated
Spec. & Resolution	2 x DP++: 4096 x 2304@60Hz / 5120 x 3200@60Hz 1 x HDMI 2.1b (supported with LSPCON): 8K@60Hz 1 x LVDS: 1920 x 1080@60Hz Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) Or 1 x eDP 1920 x 1080@60Hz (2 Lanes)
Multiple Display	4 Independent Displays
Audio	
Audio Codec	RealTek ALC888S Audio Codec
Amplifier	RealTek ALC105 Stereo Class-D 2W4Ω
Audio Interface	Line-Out,Mic-In by Pin header
Ethernet	
LAN Chipset	4 x Intel® i226LM 2.5 Gigabit Controller
LAN Spec.	4 x 2.5 Gigabit Ethernet

Mechanical & Environmental Specification	
Power Requirement	+12V / +5V / 5VSB /+3.3V /-12V
ACPI	Single power ATX Support S0, S3, S4, S5
Power Mode	AT / ATX mode Switchable Through Jumper
Operating Temp.	0~55°C (32~131°F) 0.5m/s
Storage Temp.	-40~ +75°C
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Size (L x W) (Please consult product engineers for the production feasibility if the size is larger than 410x360mm or smaller than 80x70mm)	6.7" x 6.7" (170mm x 170mm)
Weight	0.46kg
OS Information	BIOS Support: 1. Windows 10 ,Windows 11 64bit UEFI 2. Linux

Note: Specifications are subject to change without notice.

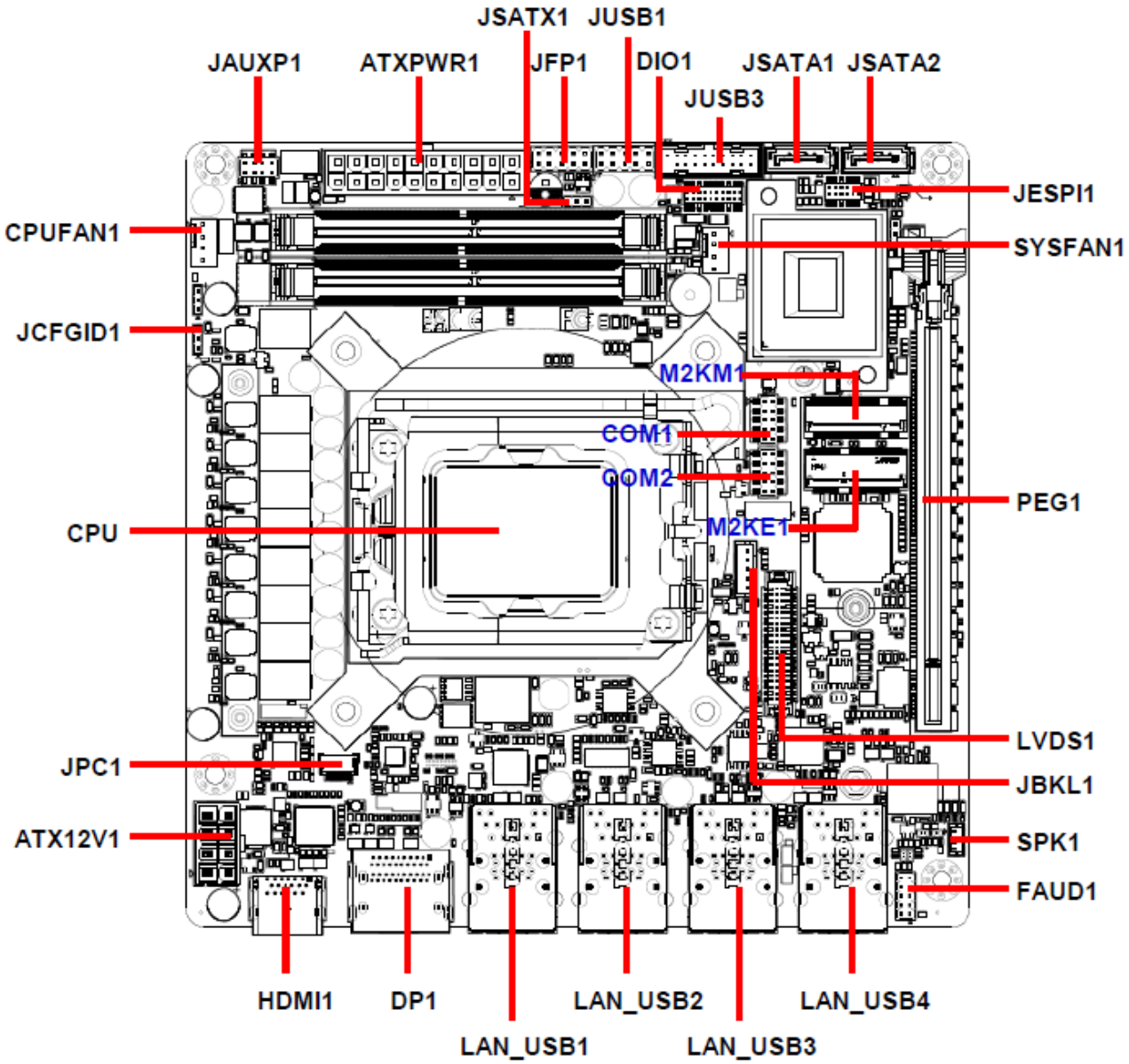
1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of EMX-R680P.



2. Hardware Configuration

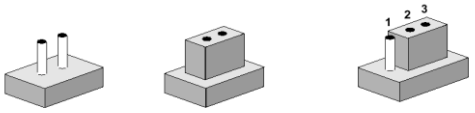
2.1 Product Overview



2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



Open Closed Closed 2-3

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

Open Closed Closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board's jumpers and connectors.

Jumpers

Label	Function	Note
JSATX1	AT/ATX Power Mode Select	3 x 1 header, pitch 2.00mm
JCFGID1	CPU TDP (Watts)	3 x 1 header, pitch 2.00mm

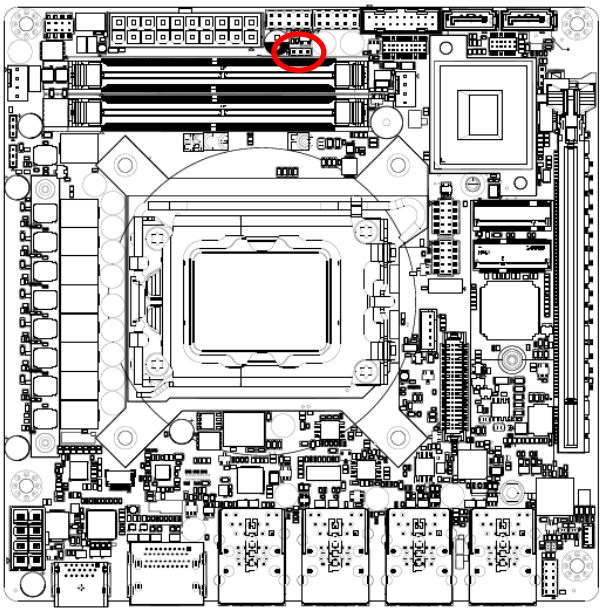
Connectors

Label	Function	Note
CPUFAN1	CPU fan connector	4 x 1 wafer, pitch 2.54mm
SYSFAN1	System fan connector 1	4 x 1 wafer, pitch 2.54mm
JFP1	Front Panel connector	5 x 2 header, pitch 2.54mm
SODIMMA1/2	288-pin DIMM Slot 1/2	
JAUXP1	Auxiliary Panel connector	4 x 2 header, pitch 2.00mm
COM1/2	Serial Port connector 1/2	5 x 2 box header, pitch 2.00mm
DIO1	General purpose I/O connector	10 x 2 header, pitch 1.27mm

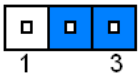
LAN_USB1/2/3/4	RJ-45 Ethernet 1/2/3/4	
HDMI1	HDMI1 connector	
DP1	DP connector	
CPU	CPU connector	
M2KM1	M.2 Key M	
M2KE1	M.2 Key E	
JUSB1	USB connector	5 x 2 header, pitch 2.54mm
JUSB3	USB connector	10 x 2 header, pitch 2.00mm
PEG1	PCI-e x16 slots 1	
ATXPWR1	ATX Power connector	10 x 2 wafer, pitch 4.20mm
ATX12V1	Power connector	2 x 4 wafer, pitch 4.20mm
JPC1	JPC1 connector	6 x 1 wafer, pitch 1.00mm
SPK1	Speaker connector	4 x 1 wafer, pitch 1.25mm
FAUD1	FAUD1 connector	5 x 2 header, pitch 2.00mm
JESPI1	JESPI1 connector	6 x 2 header, pitch 1.27mm
JSATA1/2	Serial ATA connector 1/2	
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
LVDS1	LVDS connector	20 x 2 wafer, pitch 1.25mm

2.3 Setting Jumpers & Connectors

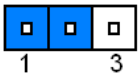
2.3.1 AT/ATX Power Mode Select (JSATX1)



ATX*

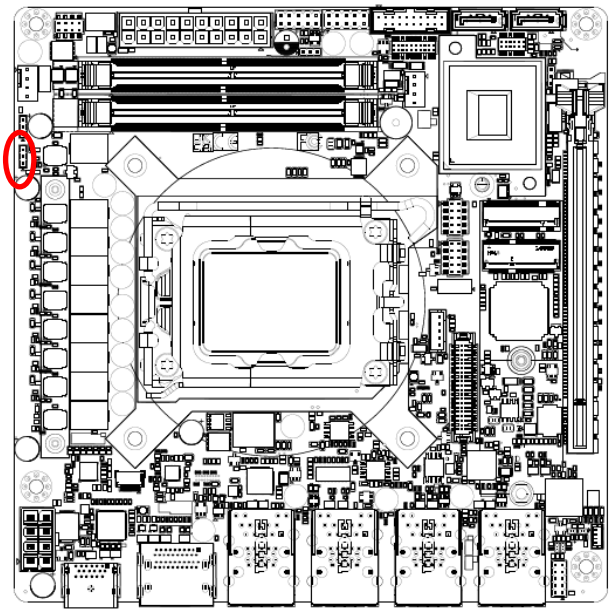


AT



*** Default**

2.3.2 CPU TDP (Watts) (JCFGID1)

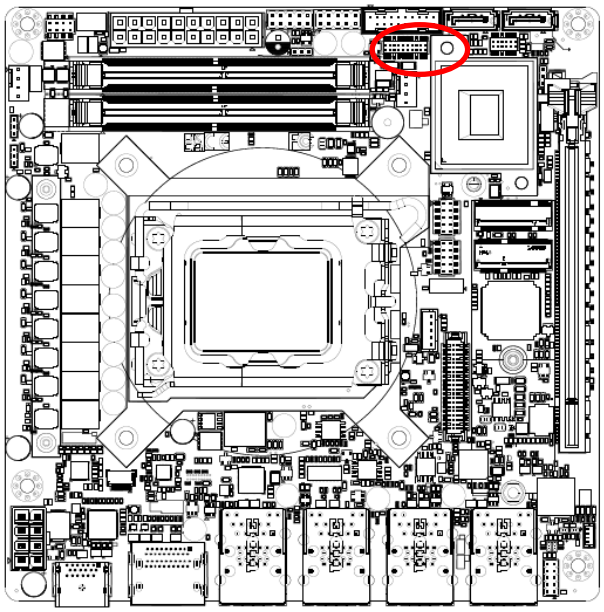


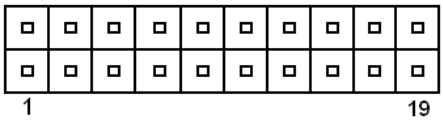
Config ID1 *

Config ID0

*** Default**

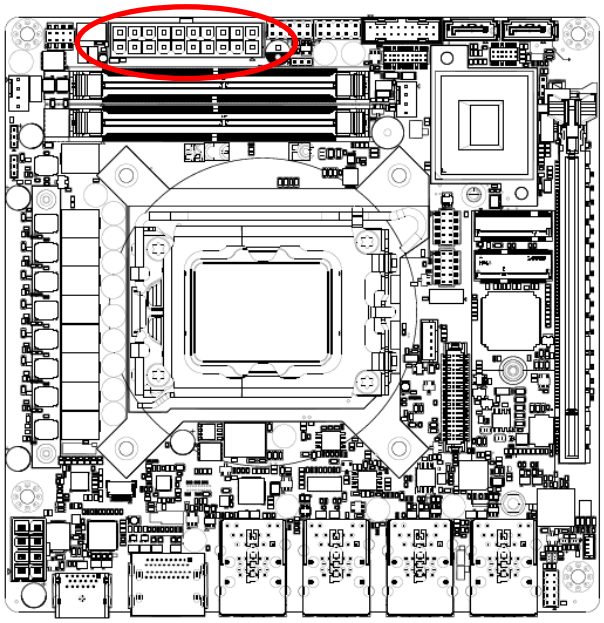
2.3.3 General purpose I/O connector (DIO1)

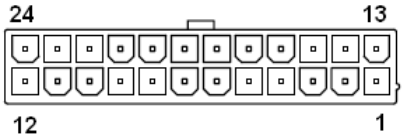




Signal	PIN	PIN	Signal
DI0	1	2	DO0
DI1	3	4	DO1
DI2	5	6	DO2
DI3	7	8	DO3
DI4	9	10	DO4
DI5	11	12	DO5
DI6	13	14	DO6
DI7	15	16	DO7
5V_SMB_CLK	17	18	5V_SMB_DATA
GND	19	20	+5V

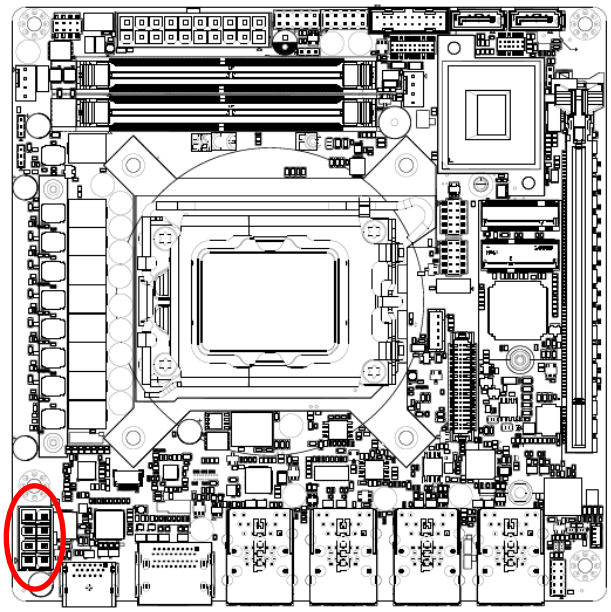
2.3.4 ATX Power connector (ATXPWR1)

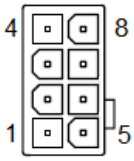




Signal	PIN	PIN	Signal
+V3P3S	11	1	+V3P3S
NC	12	2	+V3P3S
GND	13	3	GND
+V5A_SB	14	4	+5V
GND	15	5	GND
GND	16	6	+5V
GND	17	7	GND
NC	18	8	ATX20_PWROK
+5V	19	9	+V5A_SB
GND	20	10	+12V

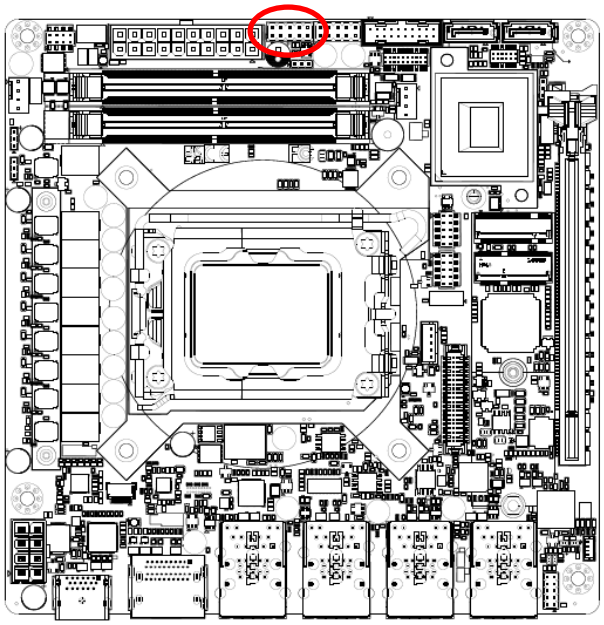
2.3.5 Power connector (ATX12V1)

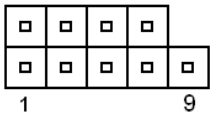




Signal	PIN	PIN	Signal
ATX_2X4_DET	4	8	+V12S_CPU
GND	3	7	+V12S_CPU
GND	2	6	+V12S_CPU
GND	1	5	+V12S_CPU

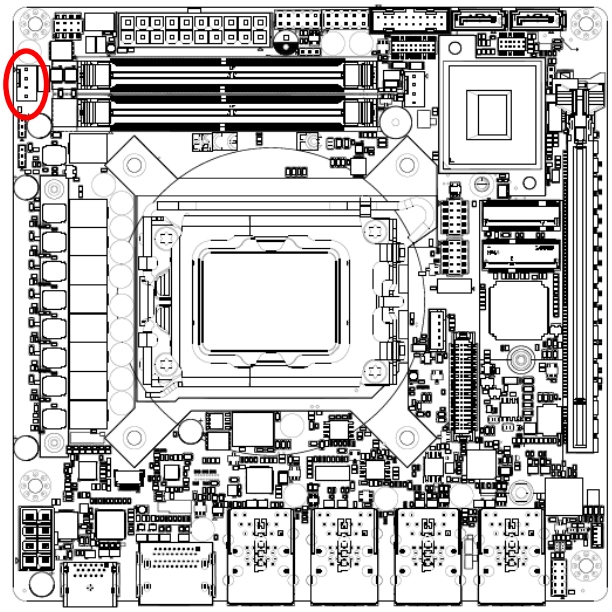
2.3.6 Front Panel connector (JFP1)

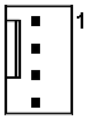




Signal	PIN	PIN	Signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
SYS_RST#	5	6	PWRBTN#
GND	7	8	GND
NC	9		

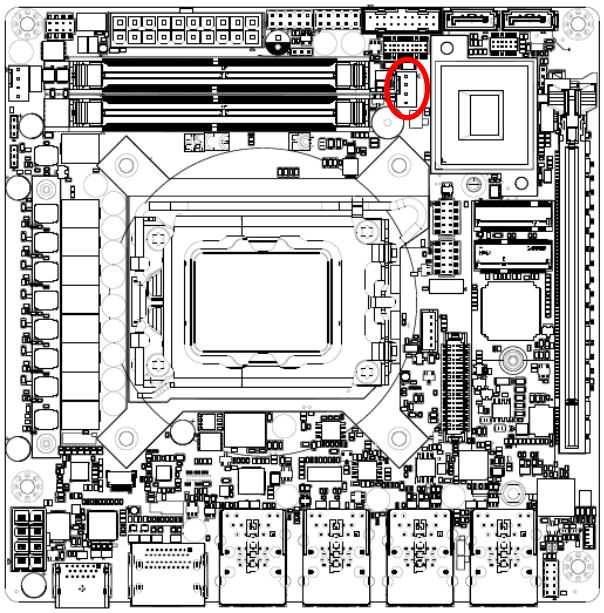
2.3.7 CPU fan connector (CPUFAN1)

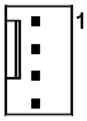




Signal	PIN
GND	1
+12V	2
CPU_ FANIN	3
CPU_FANOUT	4

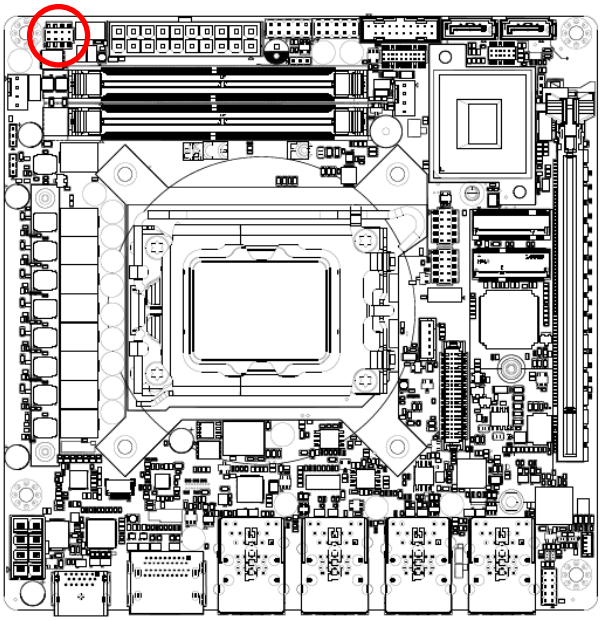
2.3.8 System fan connector 1 (SYSFAN1)

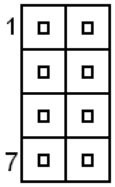




Signal	PIN
GND	1
+12V	2
SYS_ FANIN	3
SYS_FANOUT	4

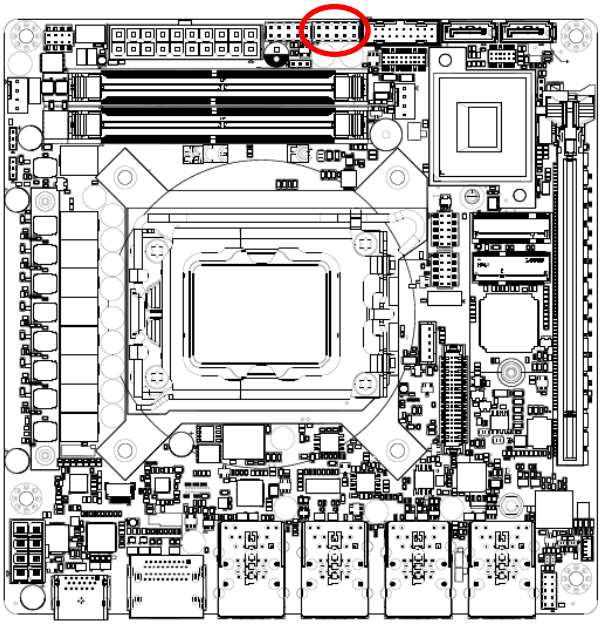
2.3.9 Auxiliary Panel connector (JAUXP1)

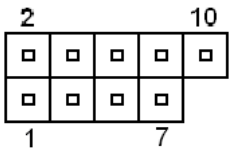




Signal	PIN	PIN	Signal
FRONT_LAN1_ACT	1	2	GND
FRONT_LAN2_ACT	3	4	GND
FRONT_LAN3_ACT	5	6	GND
FRONT_LAN4_ACT	7	8	GND

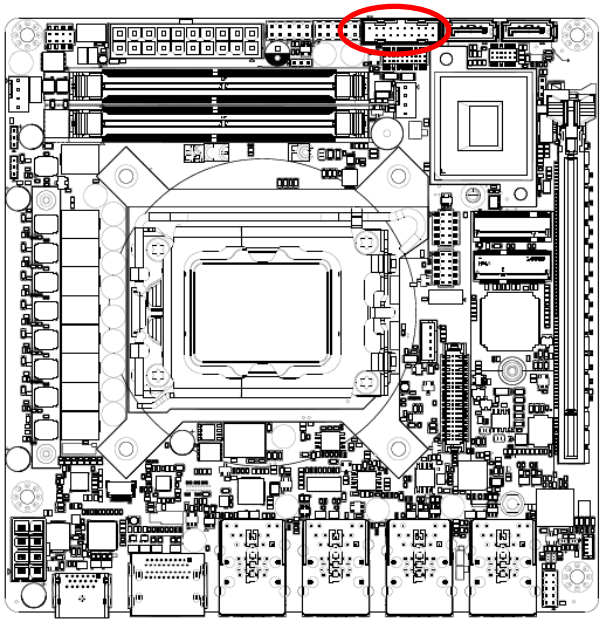
2.3.10 USB connector (JUSB1)

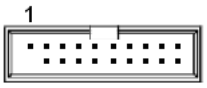




Signal	PIN	PIN	Signal
+V5A_USBB-C	1	2	+V5A_USBB-C
USB_11N	3	4	USB_12N
USB_11P	5	6	USB_12P
GND	7	8	GND
		10	NC

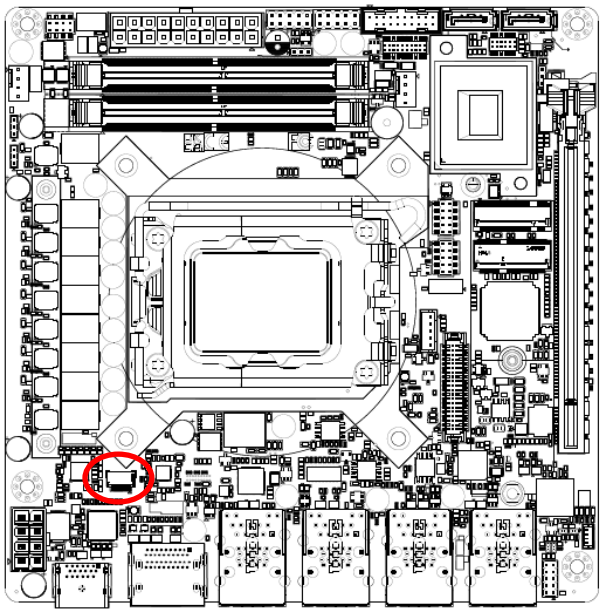
2.3.11 USB connector (JUSB3)

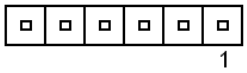




Signal	PIN	PIN	Signal
		1	+V5A_USB5-6
+V5A_USB5-6	19	2	USB32_RXN10
USB32_RXN9	18	3	USB32_RXP10
USB32_RXP9	17	4	GND
GND	16	5	USB32_TXN10
USB32_TXN9	15	6	USB32_TXP10
USB32_TXP9	14	7	GND
GND	13	8	USB_N10
USB_N9	12	9	USB_P10
USB_P9	11	10	GND

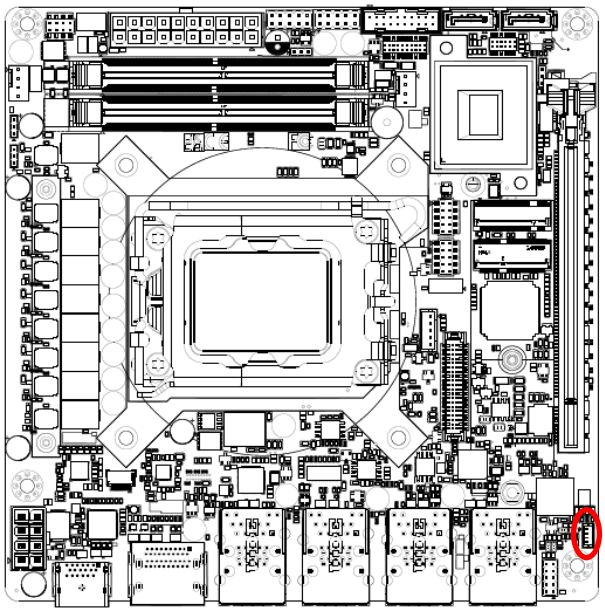
2.3.12 JPC1 connector (JPC1)

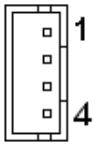




Signal	PIN
VCCCORE_nPMALERT	1
VCCCORE_PMSDA	2
GND	3
VCCCORE_PMSCL	4
NC	5
+V3P3_EXT	6
GND	7

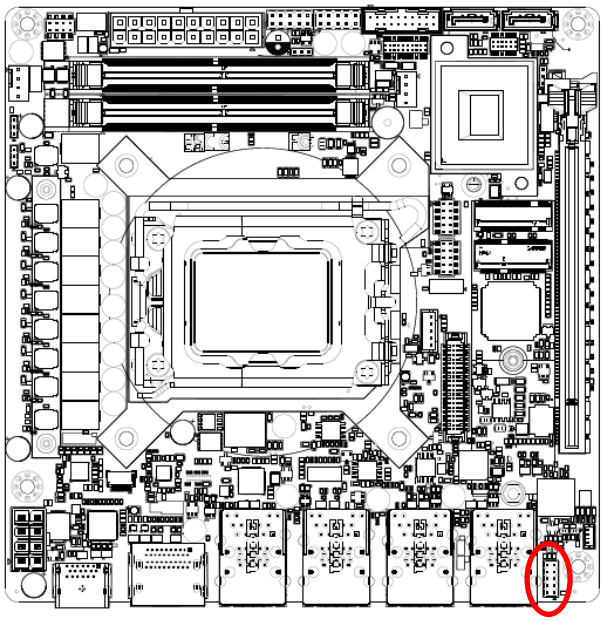
2.3.13 Speaker connector (SPK1)

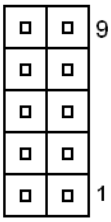




Signal	PIN
LSPK+	1
LSPK-	2
RSPK+	3
RSPK-	4

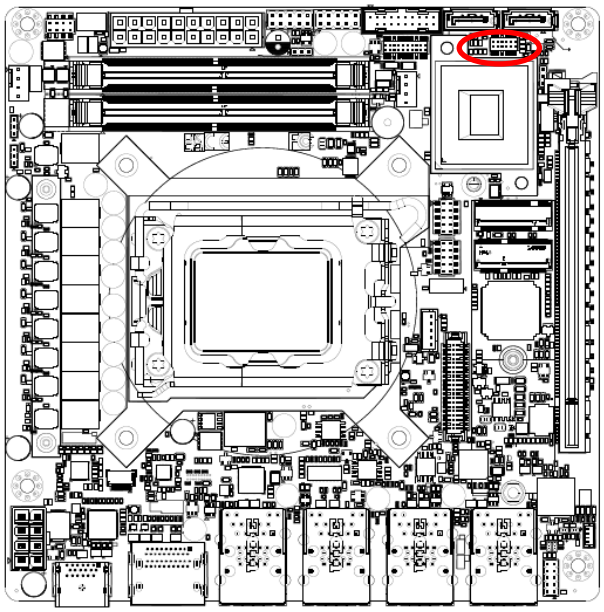
2.3.14 FAUD1 connector (FAUD1)

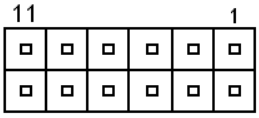




Signal	PIN	PIN	Signal
LINE2_JD	10	9	LINE2_LIN
NC	8	7	SENSE
MIC2_JD	6	5	LINE2_RIN
ACZ_DET#	4	3	MIC2_RIN
GND	2	1	MIC2_LIN

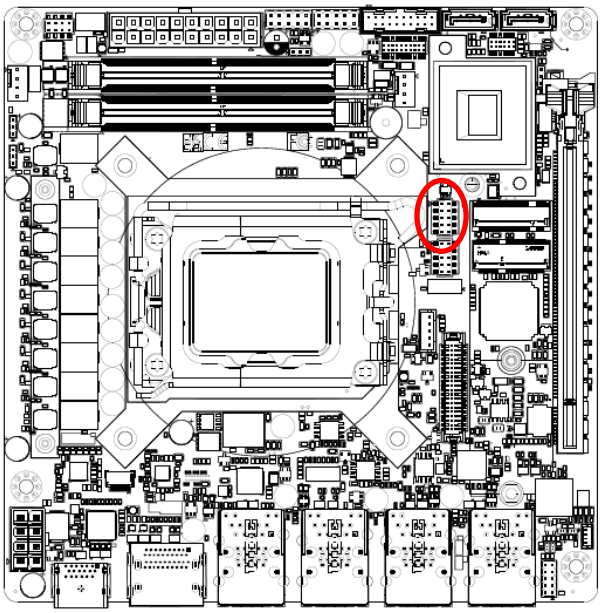
2.3.15 JESPI1 connector (JESPI1)

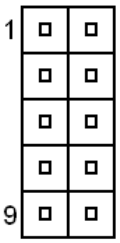




Signal	PIN	PIN	Signal
ESPI_DEG_IO0	1	2	+V3P3A
ESPI_DEG_IO1	3	4	PLT_RST#_BUF
ESPI_DEG_IO2	5	6	ESPI_CS#
ESPI_DEG_IO3	7	8	ESPI_DEG_CLK
ESPI_CS1#	9	10	GND
ESPI_RST#	11	12	ESPI_ALERT#

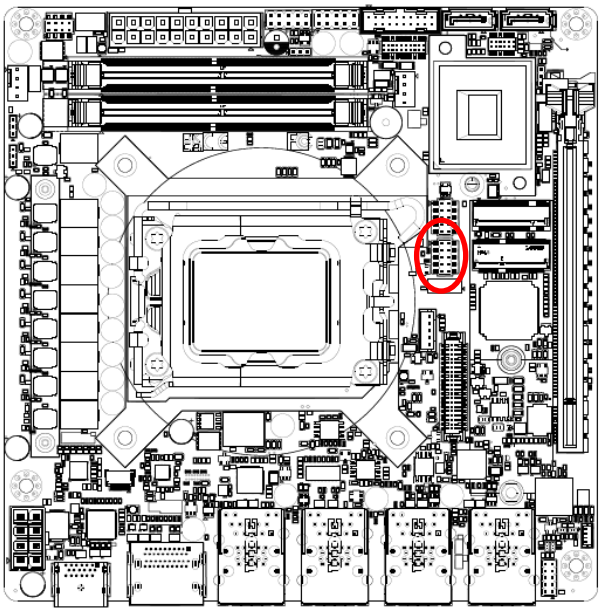
2.3.16 Serial port connector (COM1)

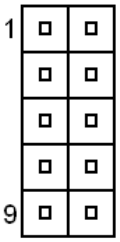




Signal	PIN	PIN	Signal
NDCDA#_TXN_1	1	2	NDCDA#_TXP_1
NTXDA_RXP_1	3	4	NTXDA_RXN_1
GND	5	6	NDSRA#
NRTSA#	7	8	NCTSA#
NRIA#	9	10	NC

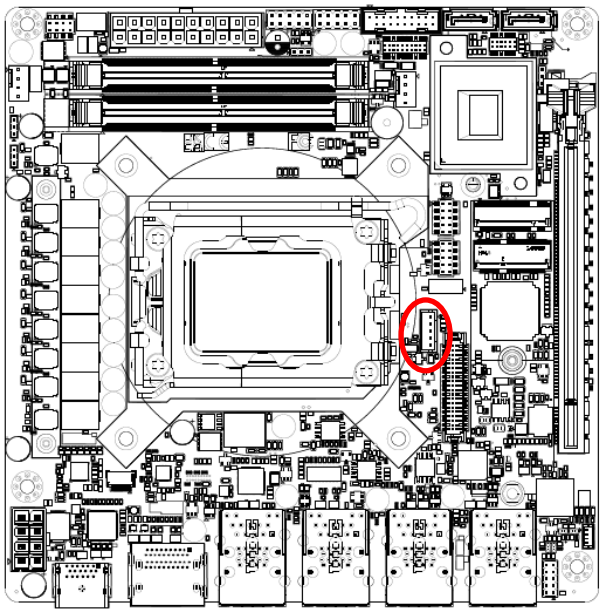
2.3.17 Serial port connector (COM2)





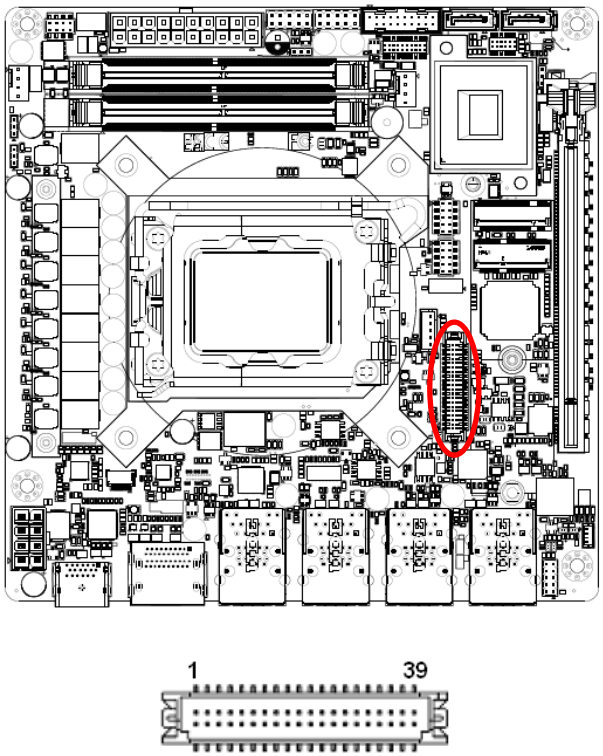
Signal	PIN	PIN	Signal
NDCDA#_TXN_2	1	2	NDCDA#_TXP_2
NTXDA_RXP_2	3	4	NTXDA_RXN_2
GND	5	6	NDSRA#
NRTSA#	7	8	NCTSA#
NRIA#	9	10	NC

2.3.18 LCD Inverter connector (JBKL1)



Signal	PIN
+12V	1
GND	2
LVDS_BKLTEN	3
LVDS_BKLADJ	4
+5V	5

2.3.19 LVDS connector (LVDS1)



Signal	PIN	PIN	Signal
LVDS_VDD33V	1	2	LVDS_VDD5V
LVDS_VDD33V	3	4	LVDS_VDD5V
NC	5	6	NC
GND	7	8	GND
LVDS_DATAP1	9	10	LVDS_DATAP0
LVDS_DATAN1	11	12	LVDS_DATAN0
GND	13	14	GND
LVDS_DATAP3	15	16	LVDS_DATAP2
LVDS_DATAN3	17	18	LVDS_DATAN2
GND	19	20	GND
LVDS_DATAP5	21	22	LVDS_DATAP4
LVDS_DATAN5	23	24	LVDS_DATAN4
GND	25	26	GND
LVDS_DATAP7	27	28	LVDS_DATAP6
LVDS_DATAN7	29	30	LVDS_DATAN6
GND	31	32	GND
LVDS_CLK2P	33	34	LVDS_CLK1P
LVDS_CLK2N	35	36	LVDS_CLK1N
GND	37	38	GND
LVDS_VDD12V	39	40	LVDS_VDD12V

3.BIOS Setup

3.1 Introduction

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

3.2 Starting Setup

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

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <Del> or <F2> immediately after switching the system on, or
By pressing the <Del> or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <Del> or <F2> to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

Press F1 to Continue, DEL to enter SETUP

3.3 Using Setup

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

Button	Description
↑↓→←	Move
Enter	Select
+/-	Value
Esc	Exit
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit Setup
<K>	Scroll help area upwards
<M>	Scroll help area downwards

- **Navigating Through The Menu Bar**
  Use the left and right arrow keys to choose the menu you want to be in.

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

- **To Display a Sub Menu**
  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

3.4 Getting Help

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

3.5 In Case of Problems

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

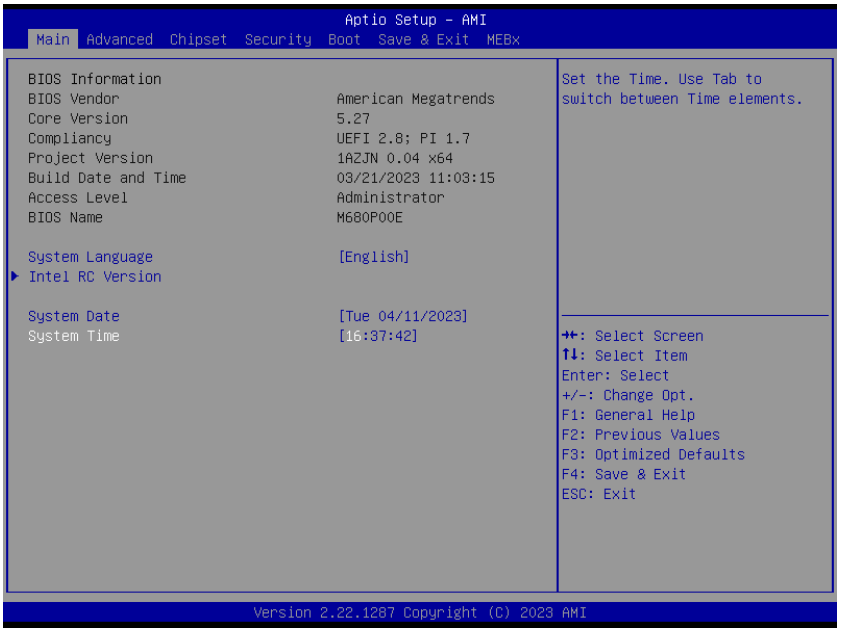
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance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

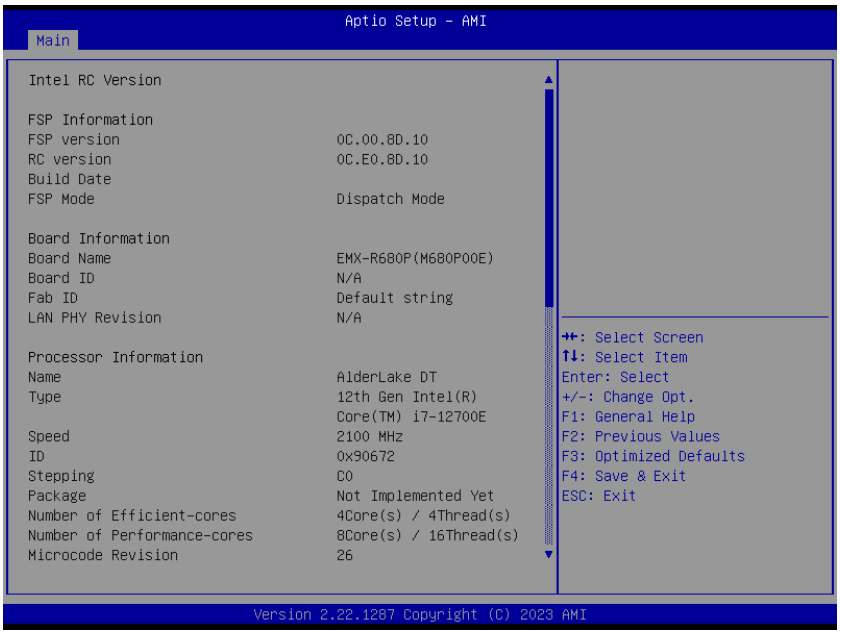
3.6 BIOS setup

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

3.6.1 Main Menu

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





3.6.1.1 System Language

This option allows choosing the system default language.

3.6.1.2 System Date

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

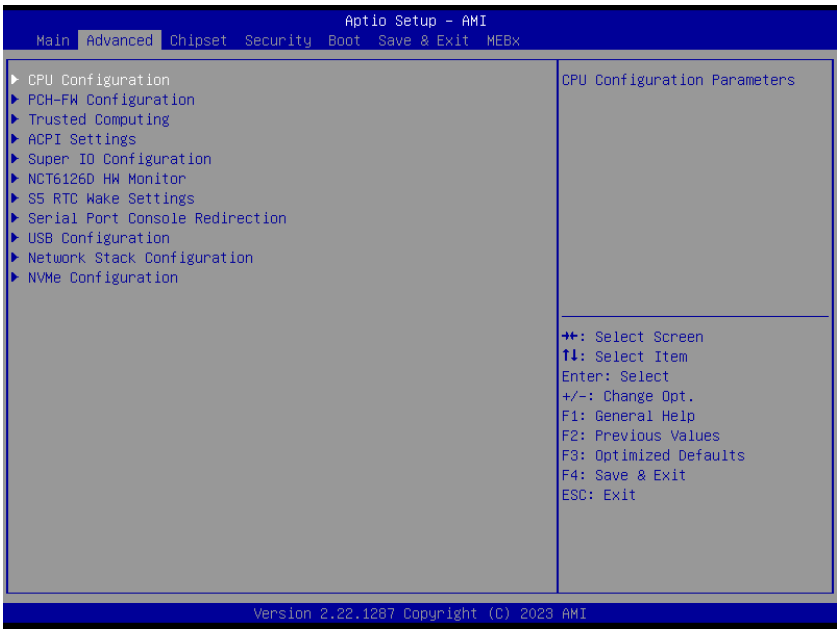
3.6.1.3 System Time

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

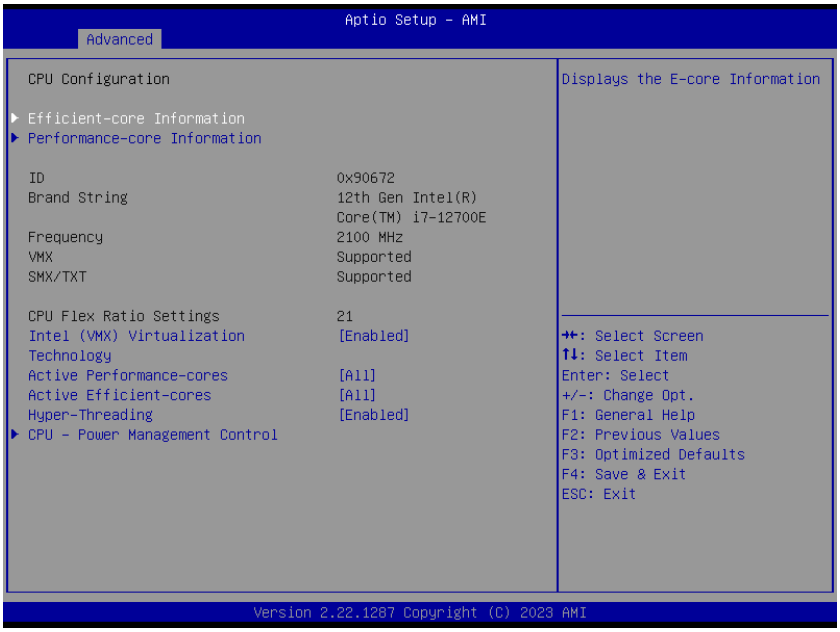
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.2 Advanced Menu

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

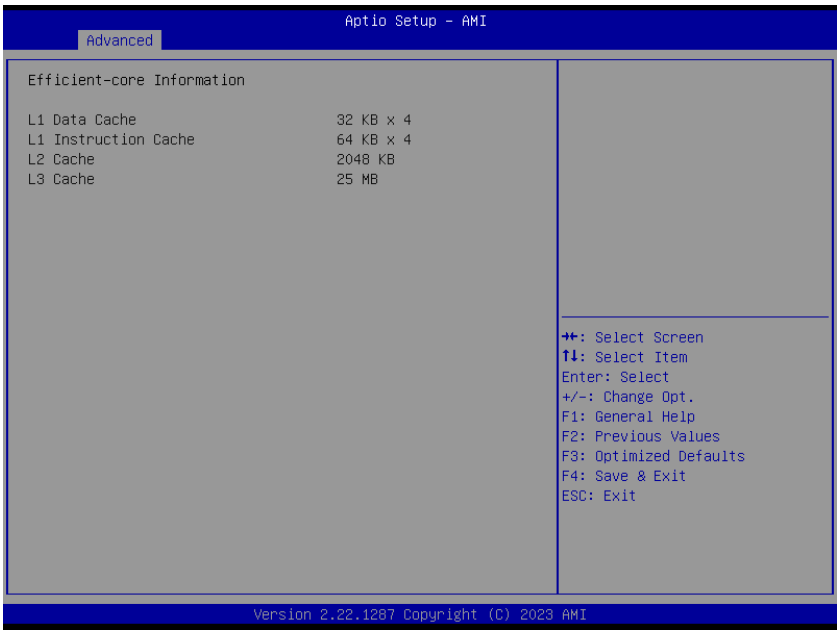


3.6.2.1 CPU Configuration

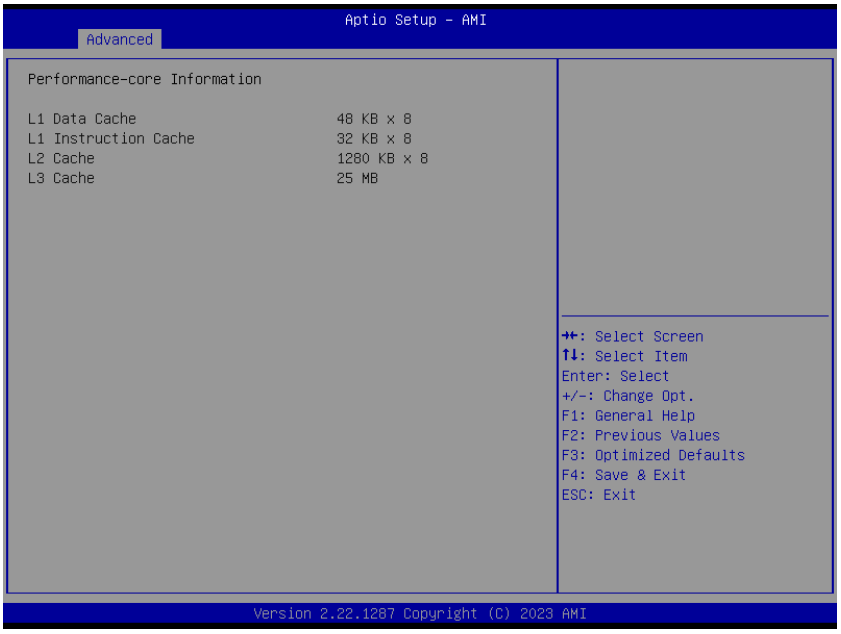


Item	Options	Description
Intel (VMX) Virtualization Technology	Disabled Enabled**[Default]**,	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Active Processor Cores	All**[Default]**, 7/6/5/4/3/2/1	Number of P-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.
Active Efficient-cores	All**[Default]**, 15/14/13/12/11 10/9/8/7/6/5/4/3/2/1	Number of E-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.
Hyper-Threading	Disabled Enabled**[Default]**,	Enable or Disable Hyper-Threading Technology.

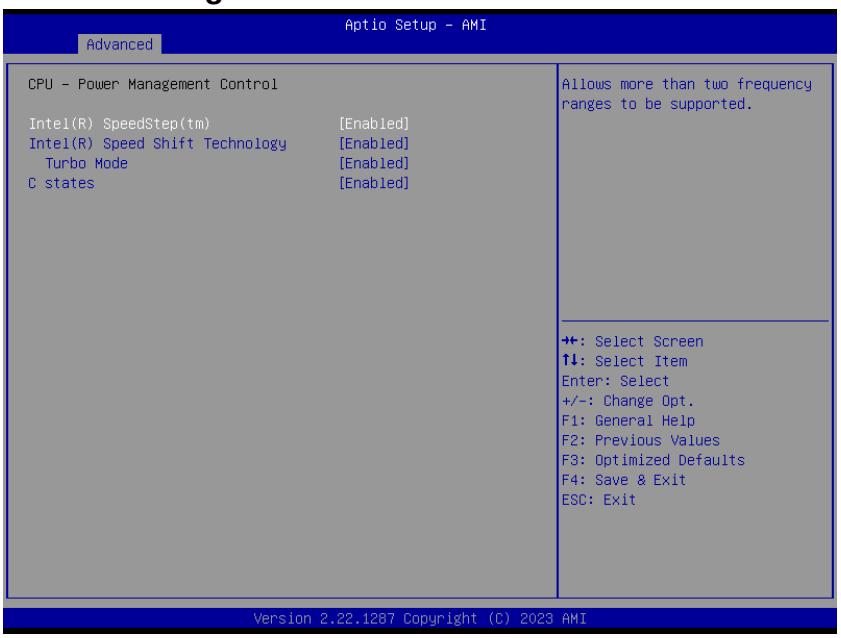
3.6.2.1.1 Efficient-core Information



3.6.2.1.2 Performance-core Information

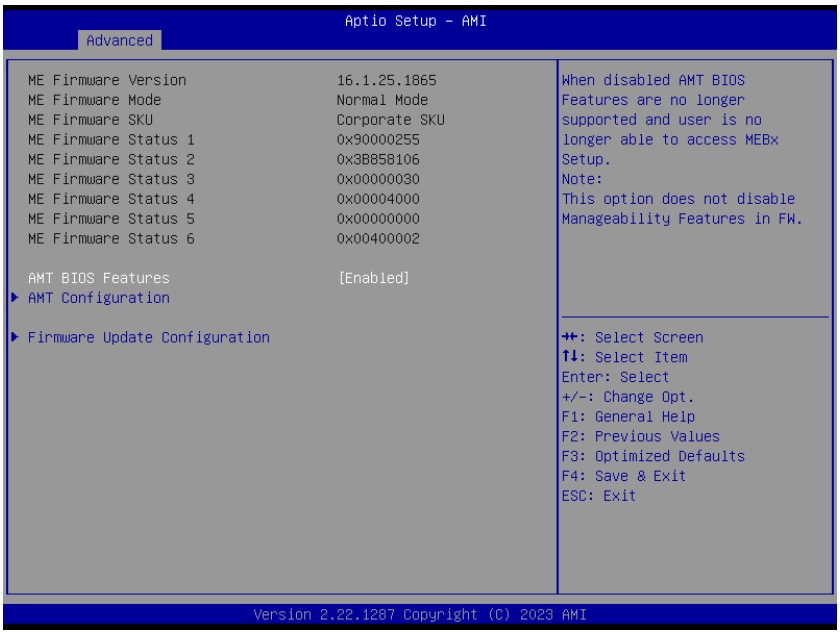


3.6.2.1.3 CPU - Power Management Control



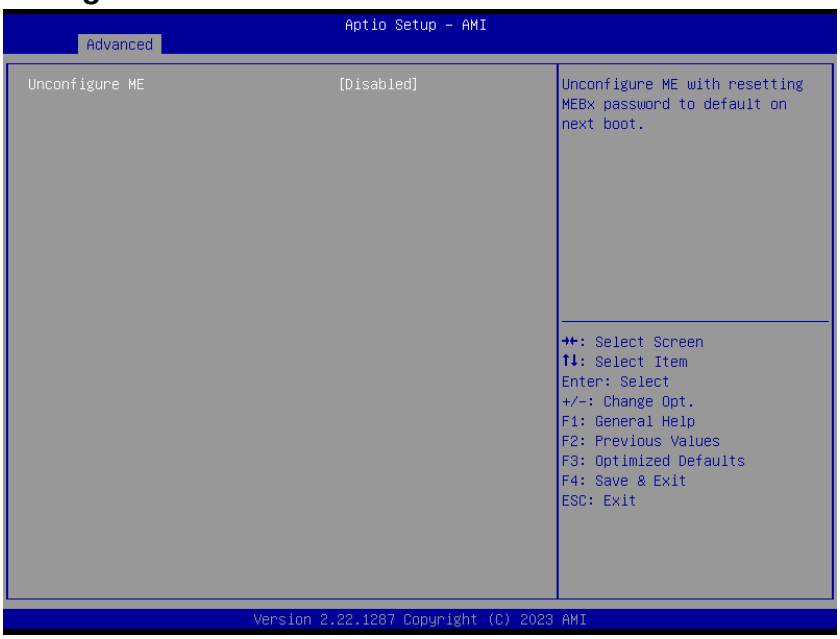
Item	Options	Description
Intel(R) SpeedStep(tm)	Disabled Enabled**[Default]**,	Allows more than two frequency ranges to be supported.
Intel(R) Speed Shift Technology	Disabled**[Default]**, Enabled	Enable/Disable Intel(R) Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware controlled P-states.
Turbo Mode	Disabled Enabled**[Default]**,	Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.
C-states	Disabled**[Default]**, Enabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

3.6.2.2 PCH-FW Configuration



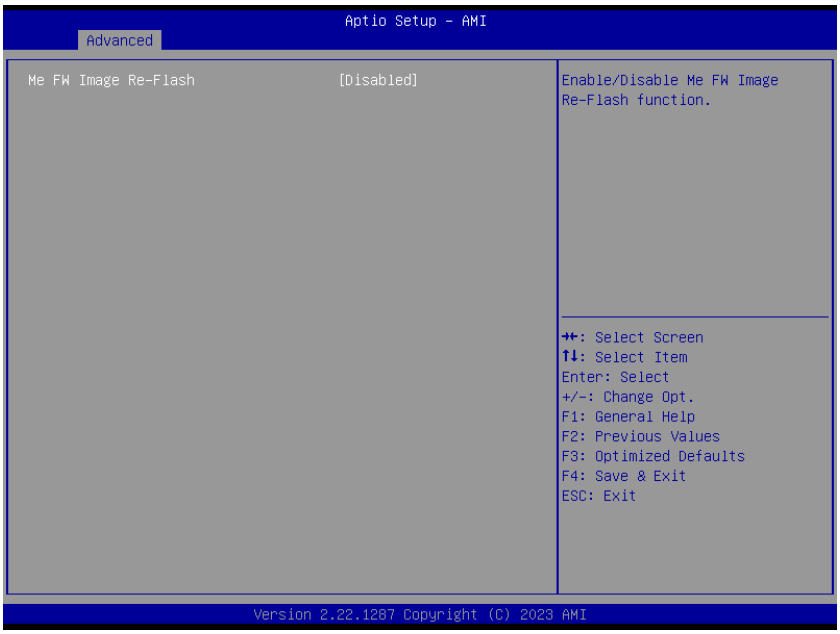
Item	Options	Description
AMT BIOS Features	Disabled Enabled**[Default]**,	When disabled AMT BIOS Features are no longer supported and user is no longer able to access MEBx Setup. Note: This option does not disable Manageability Features in FW.

3.6.2.2.1 AMT Configuration



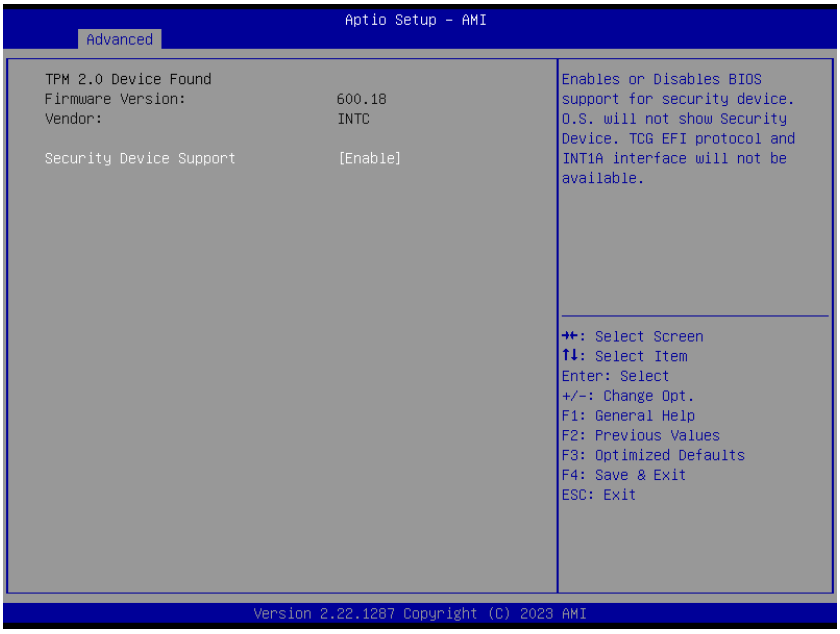
Item	Description
Unconfigure ME	Unconfigure ME with resetting MEBx password to default on next boot.

3.6.2.2.2 Firmware Update Configuration



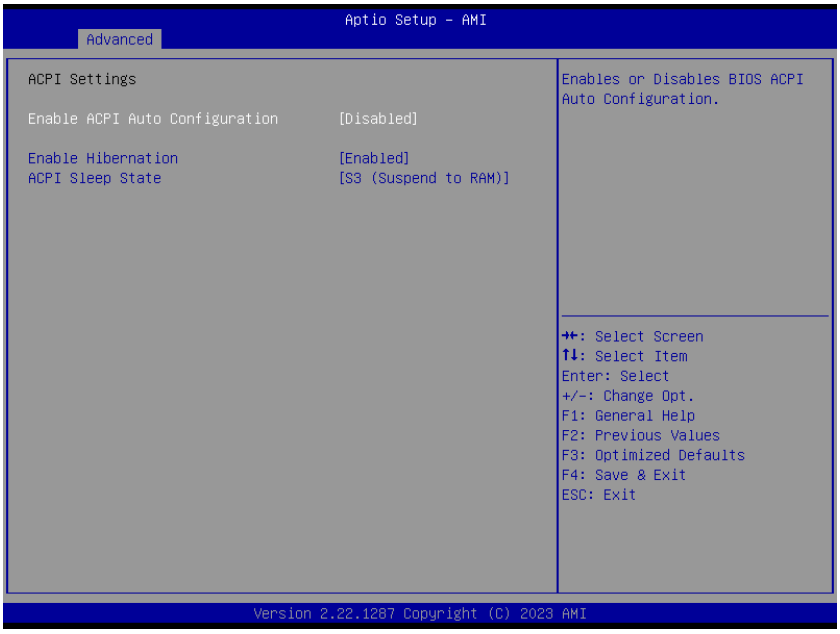
Item	Options	Description
Me FW Image Re-Flash	Disabled**[Default]**, Enabled	Enable/Disable Me FW Image Re-Flash function.

3.6.2.3 Trusted Computing



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

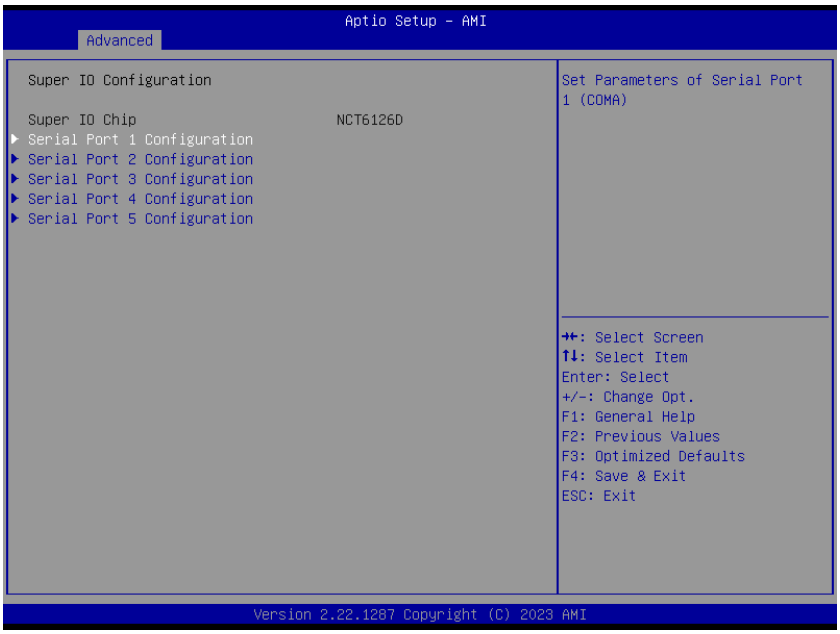
3.6.2.4 ACPI Settings



Item	Options	Description
Enable ACPI Auto Configuration	Disabled**[Default]**, Enabled	Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled Enabled**[Default]**,	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some Operating Systems.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM)**[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

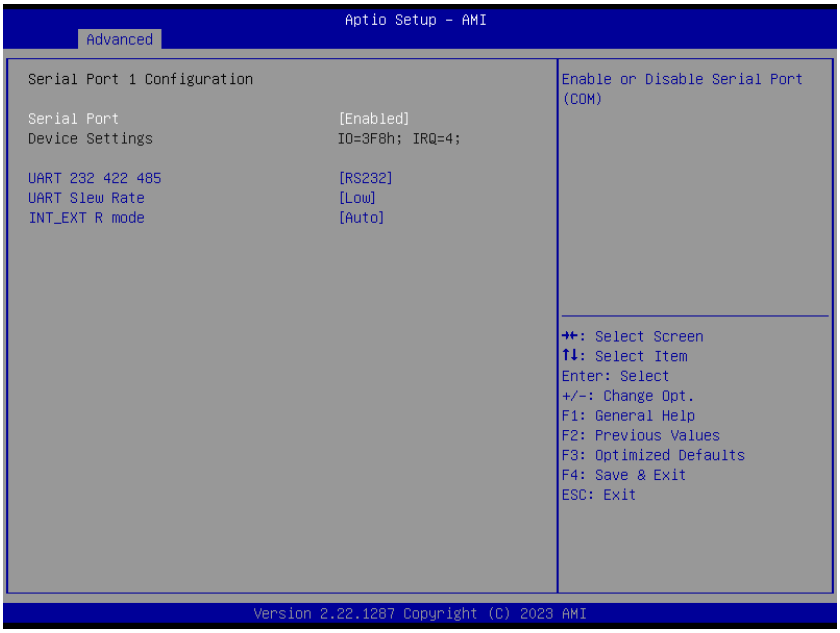
3.6.2.5 Super IO Configuration

You can use this item to set up or change the Super IO configuration for serial ports. Please refer to 3.6.2.5.1~ 3.6.2.5.5 for more information.



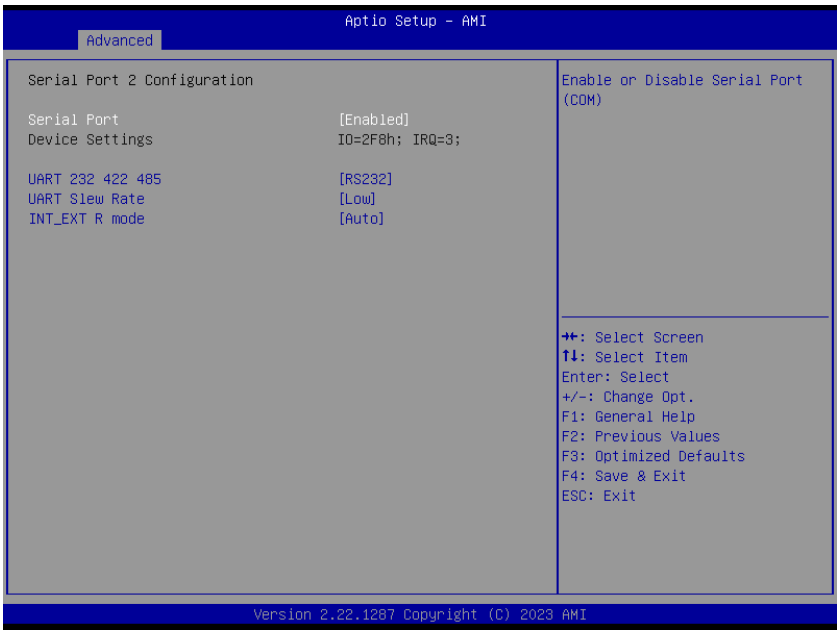
Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).

3.6.2.5.1 Serial Port 1 Configuration



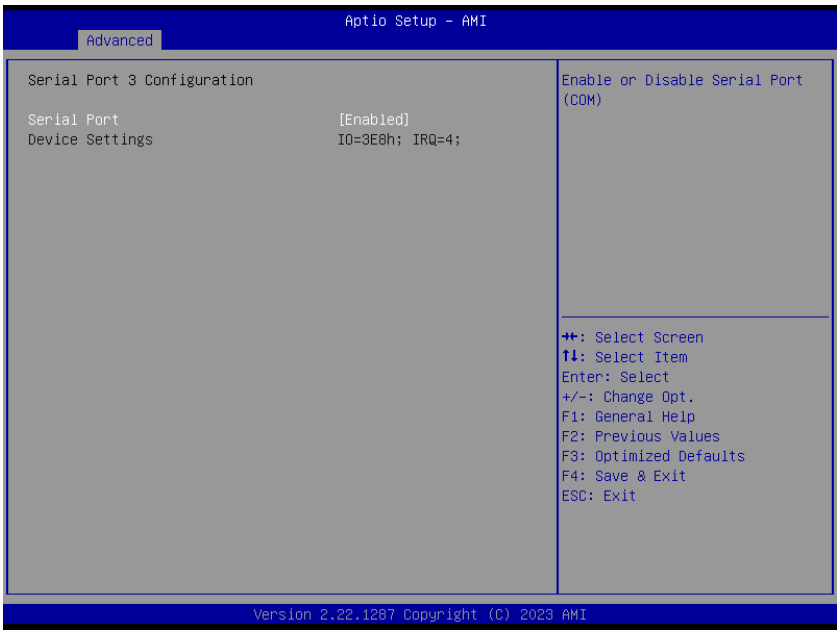
Item	Option	Description
Serial Port	Disabled Enabled**[Default]**,	Enable or Disable Serial Port (COM)
UART 232 422 485	UART 232**[Default]**, UART 422, UART 485	Set COM Port as RS232, 422 or 485 mode.
UART Slew Rate	Low**[Default]**, High	Low: RS232/422/485 =250Kbps High: RS232 = 3Mbps, RS422/485 = 20Mbps
INT_EXT R mode	Auto**[Default]**, Non INT + EXT R INT R EXT R INT + EXT R	Adjust the Serial Port with internal or external termination resistors

3.6.2.5.2 Serial Port 2 Configuration



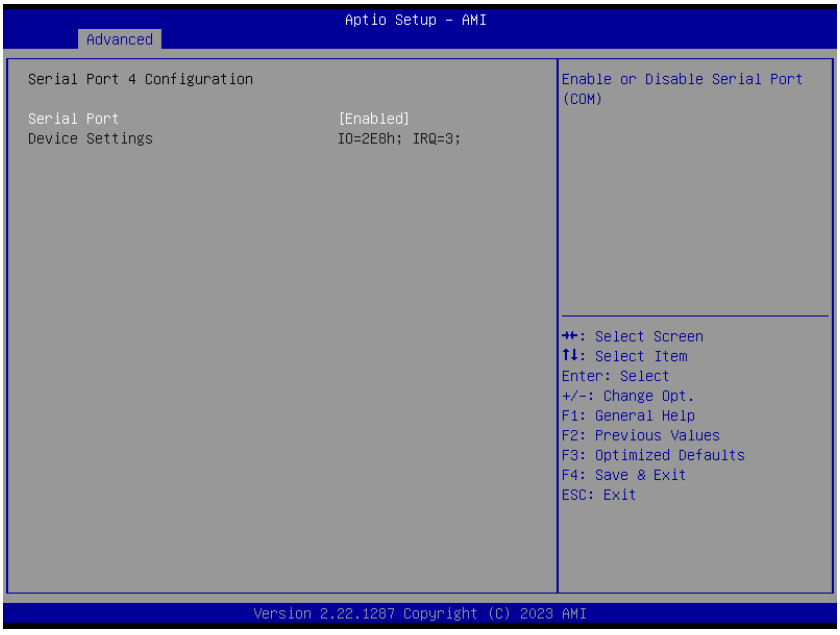
Item	Option	Description
Serial Port	Disabled Enabled**[Default]**,	Enable or Disable Serial Port (COM)
UART 232 422 485	UART 232**[Default]**, UART 422, UART 485	Set COM Port as RS232, 422 or 485 mode.
UART Slew Rate	Low**[Default]**, High	Low: RS232/422/485 =250Kbps High: RS232 = 3Mbps, RS422/485 = 20Mbps
INT_EXT R mode	Auto**[Default]**, Non INT + EXT R INT R EXT R INT + EXT R	Adjust the Serial Port with internal or external termination resistors

3.6.2.5.3 Serial Port 3 Configuration



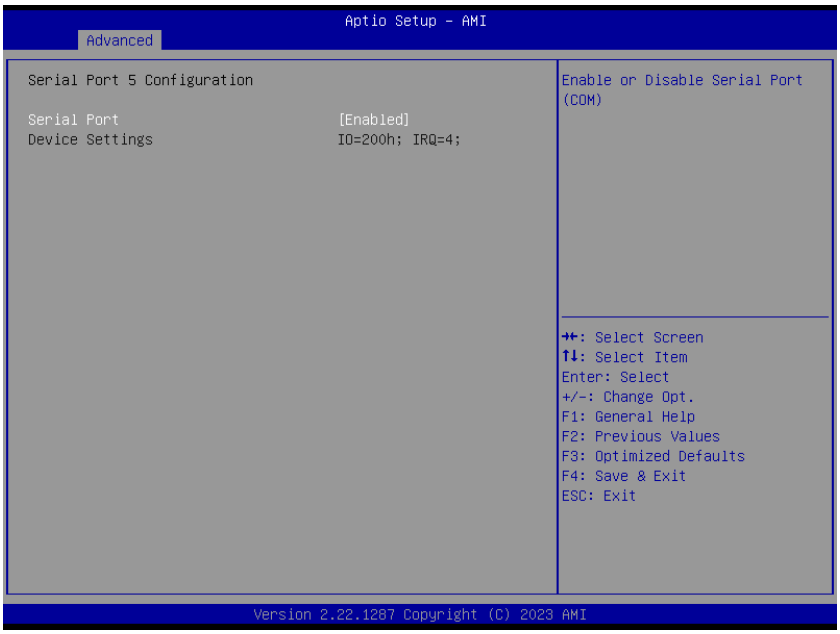
Item	Option	Description
Serial Port	Disabled Enabled**[Default]**,	Enable or Disable Serial Port (COM)

3.6.2.5.4 Serial Port 4 Configuration



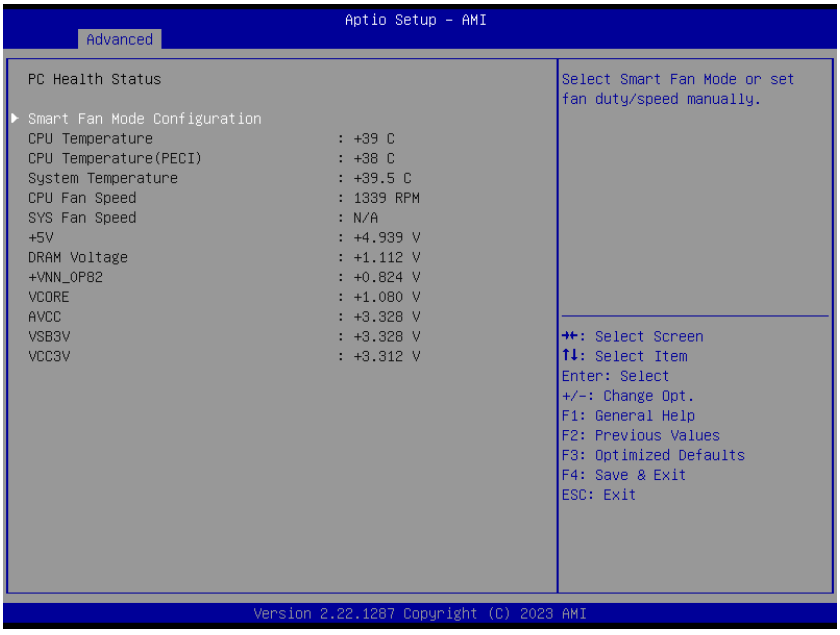
Item	Option	Description
Serial Port	Disabled Enabled**[Default]**,	Enable or Disable Serial Port (COM)

3.6.2.5.5 Serial Port 5 Configuration

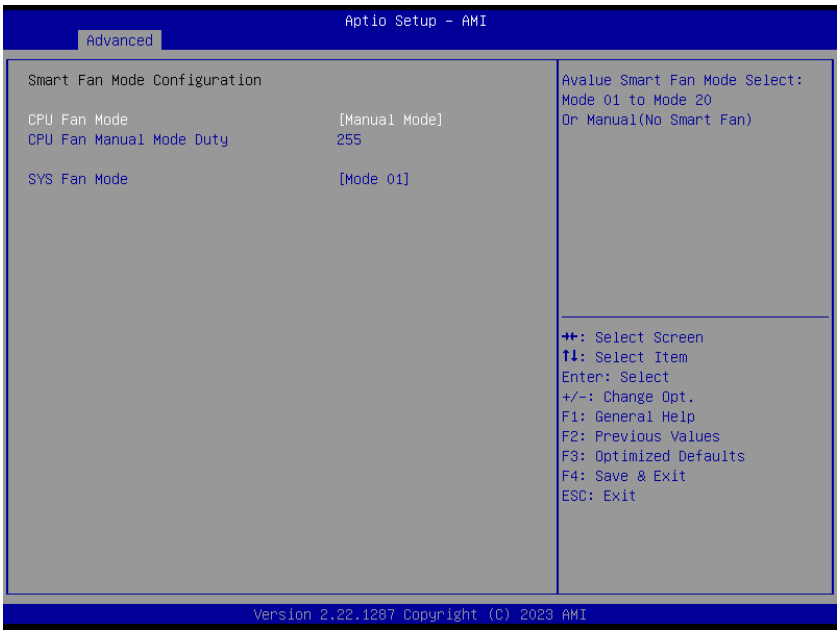


Item	Option	Description
Serial Port	Disabled Enabled**[Default]**,	Enable or Disable Serial Port (COM)

3.6.2.6 NCT6126D HW Monitor

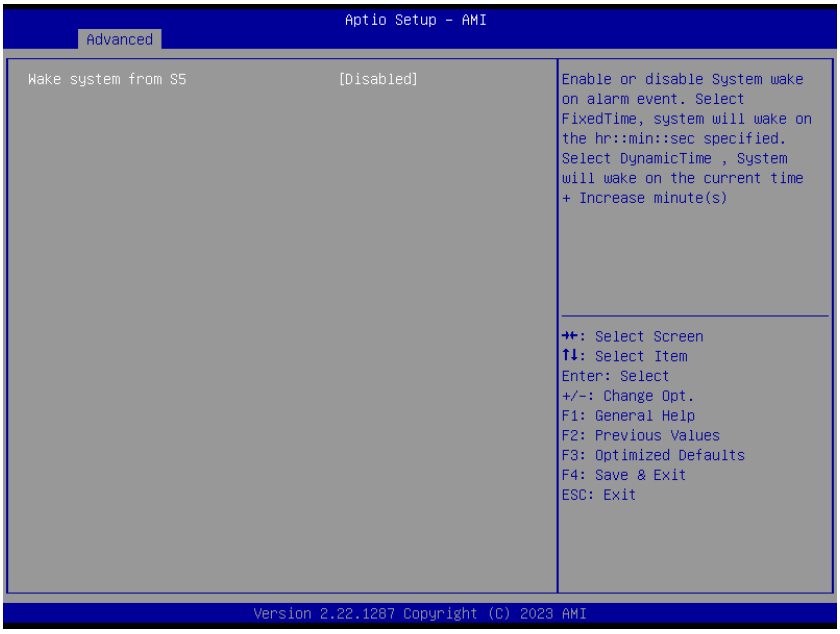


3.6.2.6.1 Smart Fan Mode Configuration



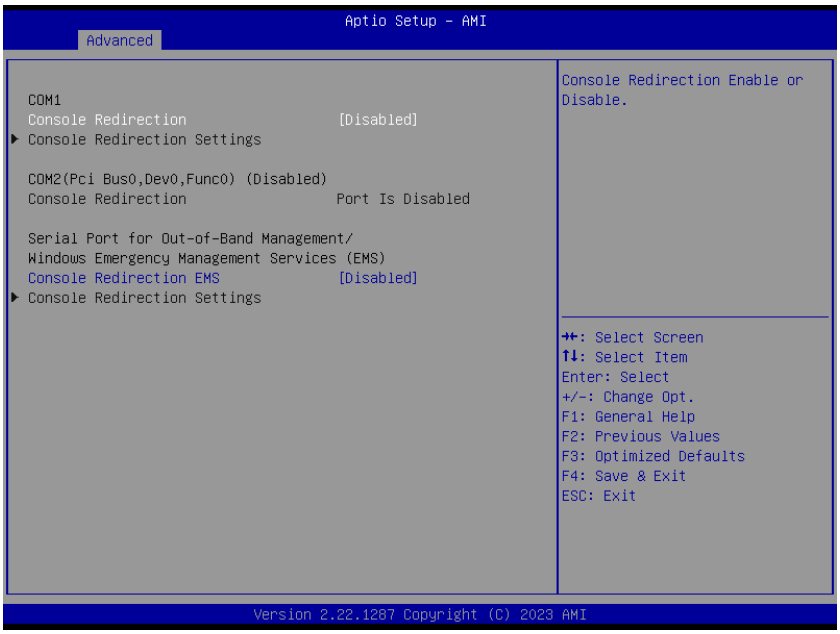
Item	Option	Description
CPU Fan Mode	Manual Mode**[Default]**, /Mode 01/Mode 02 /Mode 03/Mode 04 /Mode 05/Mode 06 /Mode 07/Mode 08 /Mode 09/Mode 10 /Mode 11/Mode 12 /Mode 13/Mode 14 /Mode 15/Mode 16 /Mode 17/Mode 18 /Mode 19/Mode 20	Avalue Smart Fan Mode Select: Mode 01 to Mode 20 Or Manual(No Smart Fan)
CPU Fan Manual Mode Duty	255	Set Fan Duty Manually(1~255)
SYS Fan Mode	Manual Mode /Mode 01**[Default]**, /Mode 02/Mode 03 /Mode 04/Mode 05 /Mode 06/Mode 07 /Mode 08/Mode 09 /Mode 10/Mode 11 /Mode 12/Mode 13 /Mode 14/Mode 15 /Mode 16/Mode 17 /Mode 18/Mode 19 /Mode 20	Avalue Smart Fan Mode Select: Mode 01 to Mode 20 Or Manual(No Smart Fan)

3.6.2.7 S5 RTC Wake Settings



Item	Options	Description
Wake system from S5	Disabled**[Default]**, Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime, System will wake on the current time + Increase minutes(s).

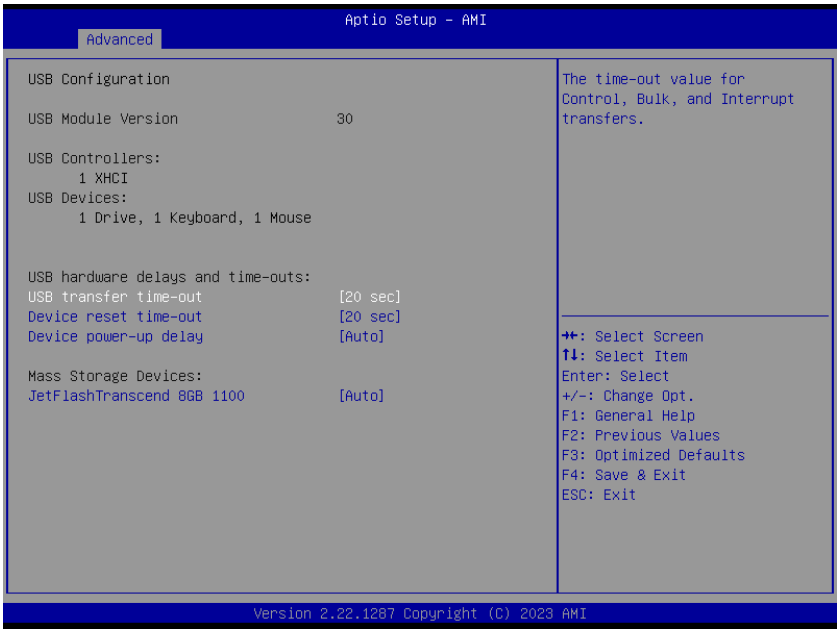
3.6.2.8 Serial Port Console Redirection



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

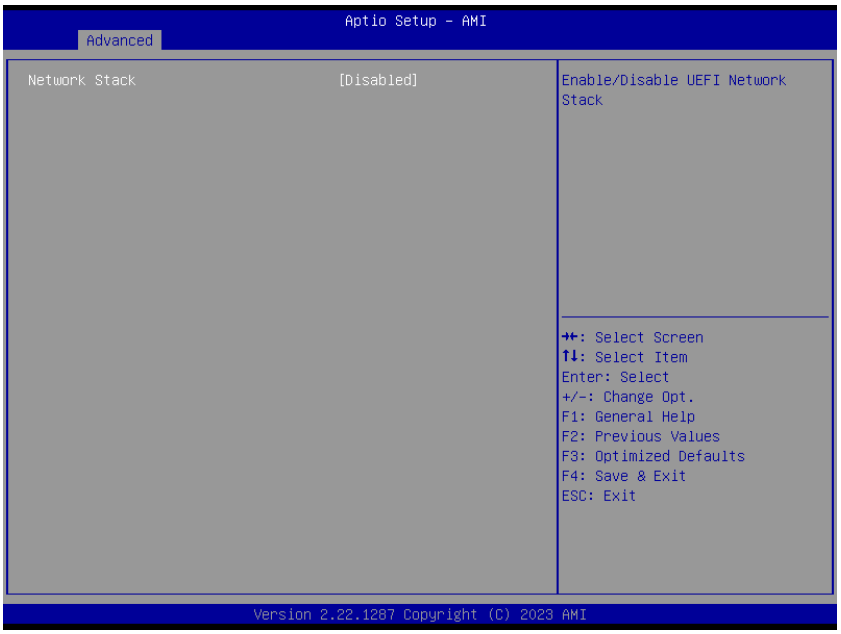
3.6.2.9 USB Configuration

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



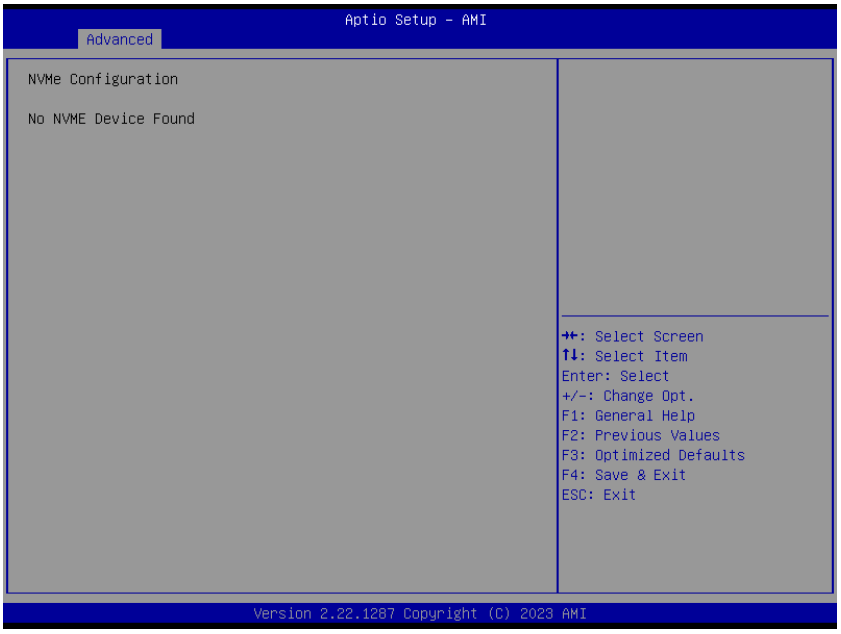
Item	Option	Description
USB transfer time-out	1 sec 5 sec 10 sec 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec**[Default]** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken form Hub descriptor.
Mass Storage Devices	Auto**[Default]** Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

3.6.2.10 Network Stack Configuration

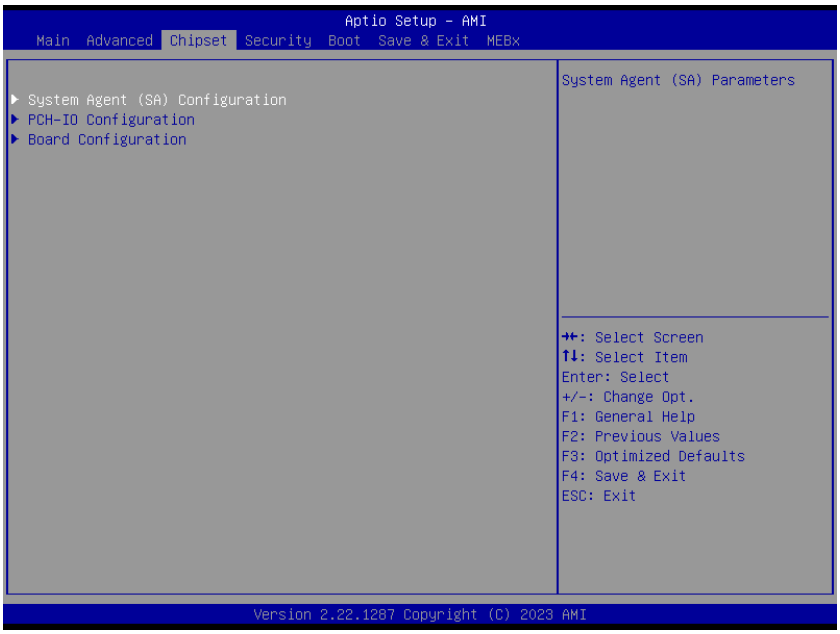


Item	Option	Description
Network Stack	Disabled**[Default]** Enabled	Enable/Disable UEFI Network Stack.

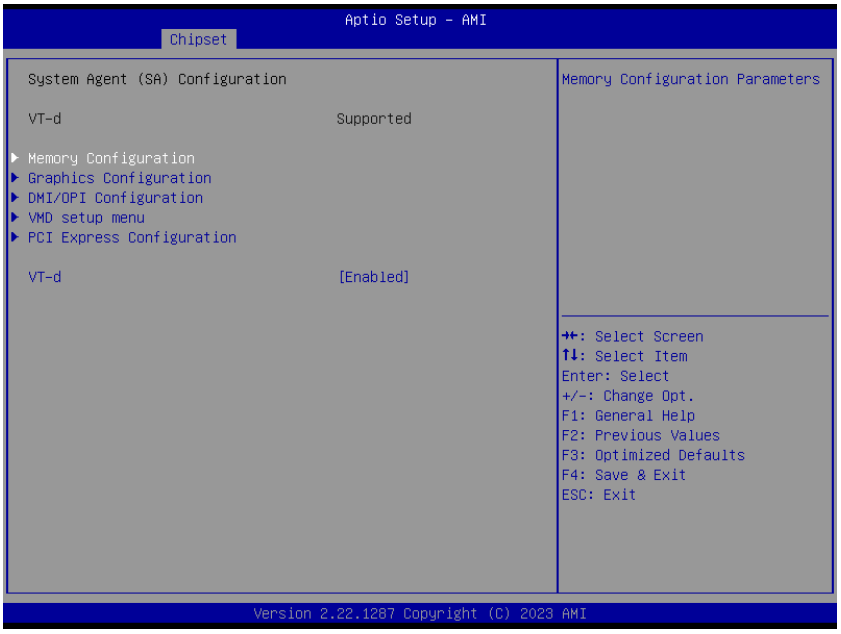
3.6.2.11 NVMe Configuration



3.6.3 Chipset

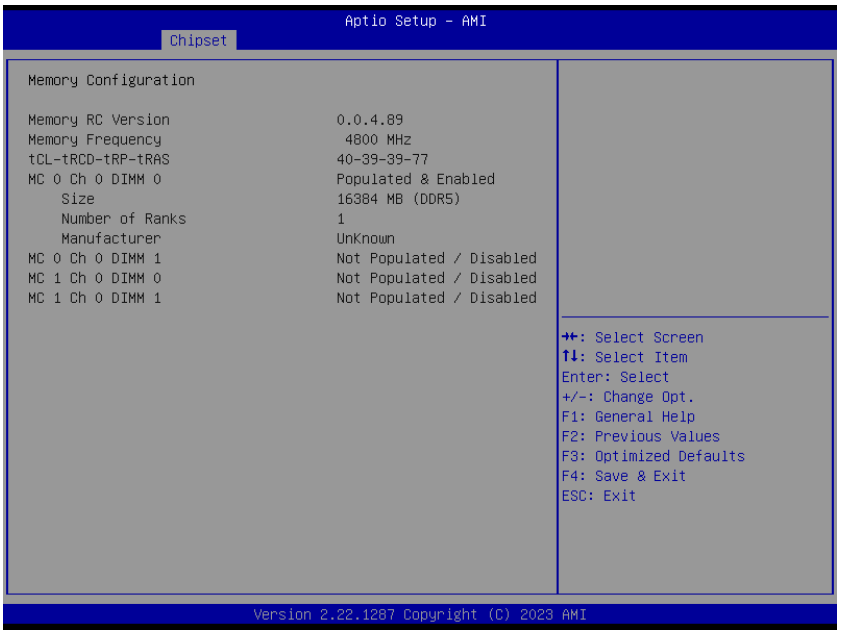


3.6.3.1 System Agent (SA) Configuration



Item	Option	Description
VT-d	Disabled Enabled**[Default]**	VT-d capability.

3.6.3.1.1 Memory Configuration

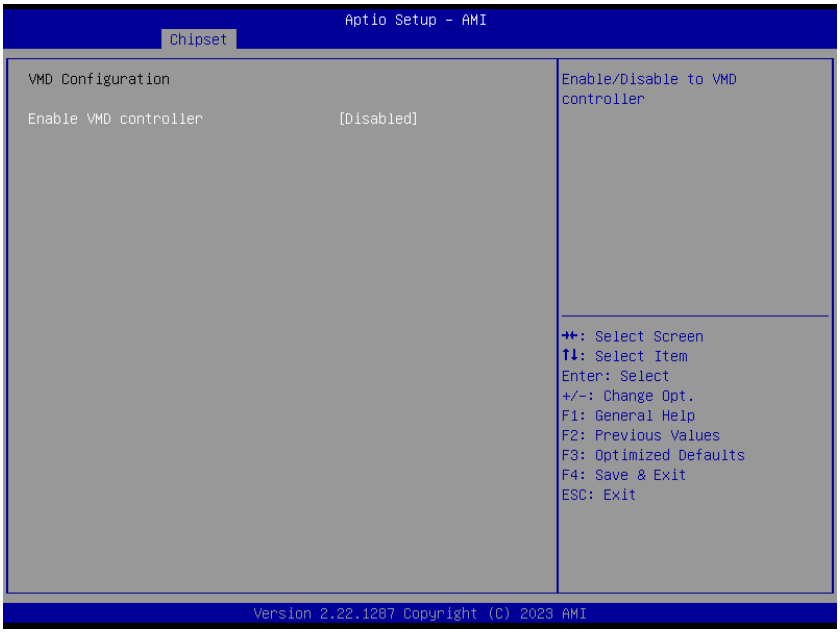


3.6.3.1.2 Graphics Configuration

Item	Option	Description
Primary Display	Auto**[Default]** IGFX PEG Slot	Select which of IGFX/PEG Graphics device should be Primary Display.
GTT Size	2MB 4MB 8MB**[Default]**	Select the GTT Size

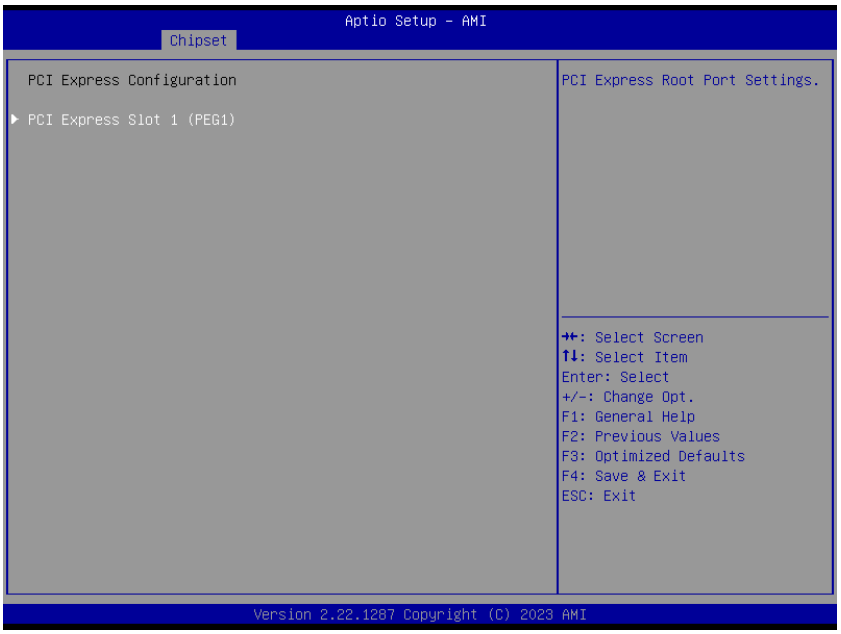
3.6.3.1.3 DMI/OPI Configuration

3.6.3.1.4 VMD setup menu

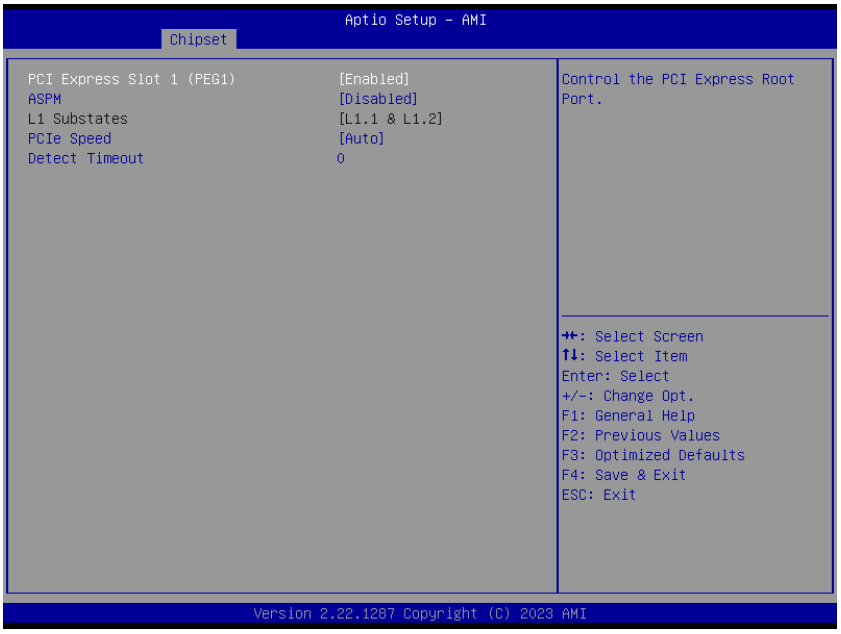


Item	Option	Description
Enable VMD controller	Disabled**[Default]** Enabled	Enable/Disable to VMD controller

3.6.3.1.5 PCI Express Configuration



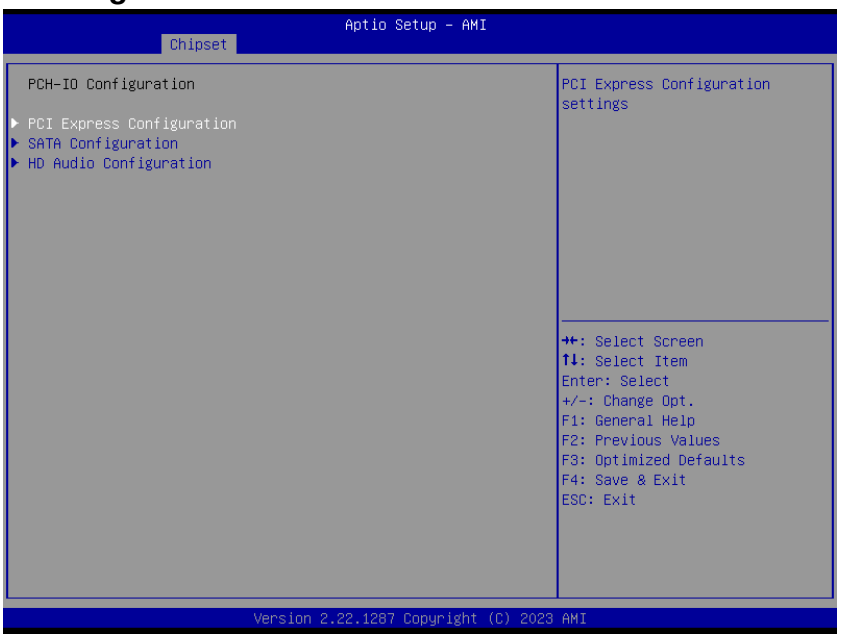
3.6.3.1.5.1 PCI Express Slot 1 (PEG1)



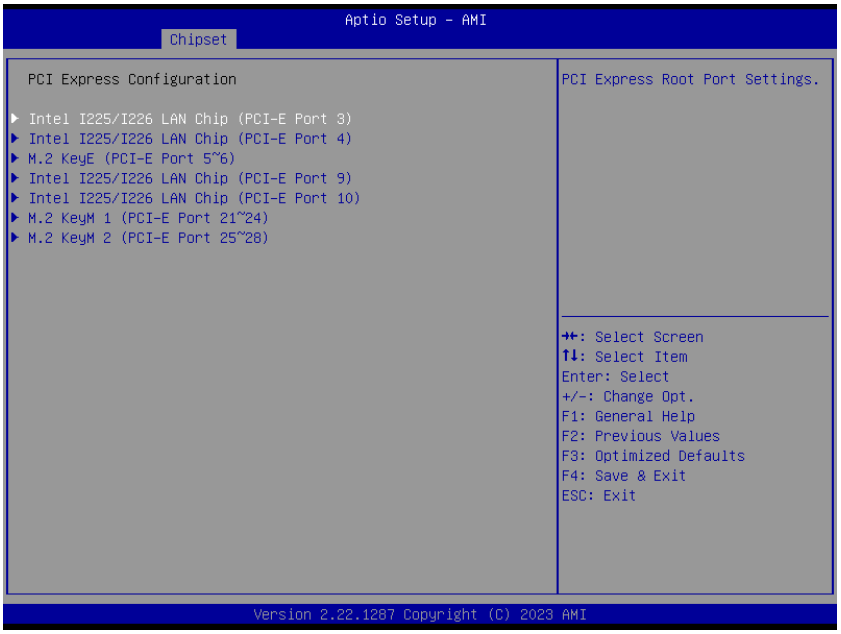
Item	Option	Description
PCI Express Slot 1 (PEG1)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L0s L1 L0sL1	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
PCIe Speed	Auto**[Default]** /Gen1/Gen2 /Gen3/Gen4 /Gen5	Configure PCIe speed.

Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

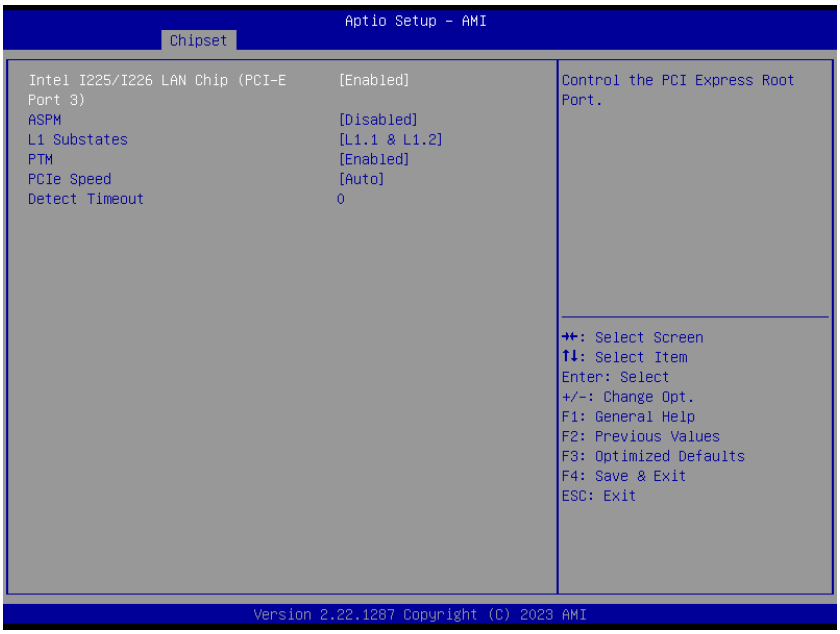
3.6.3.2 PCH-IO Configuration



3.6.3.2.1 PCI Express Configuration

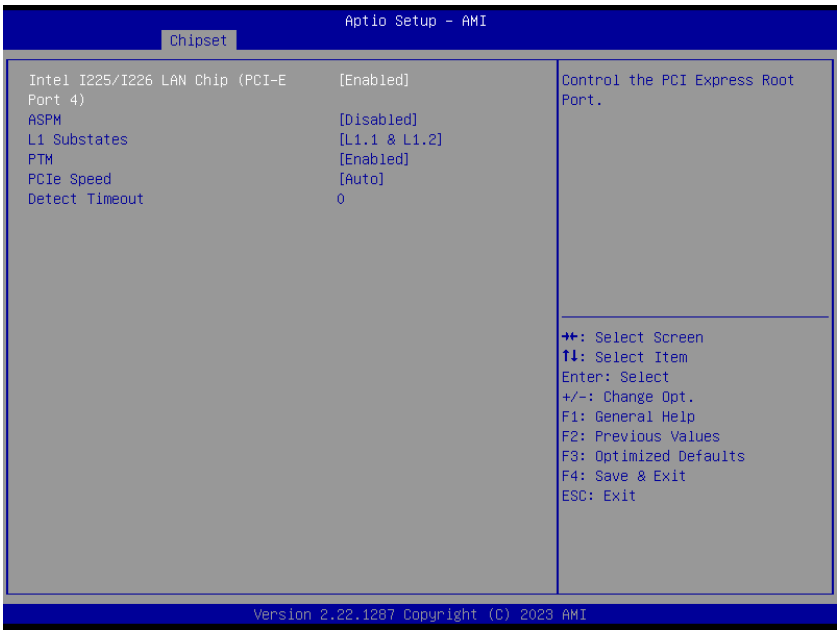


3.6.3.2.1.1 Intel I225/I226 LAN Chip (PCI-E Port 3)



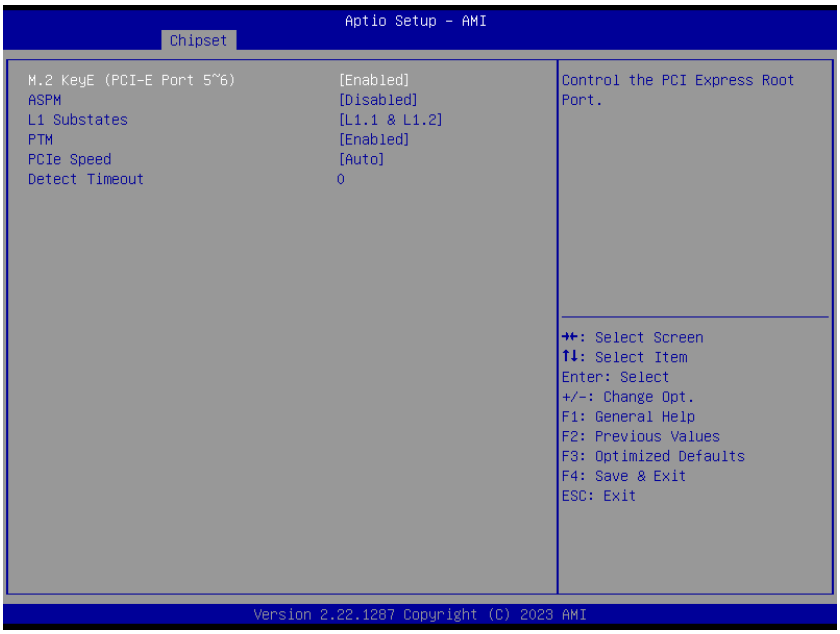
Item	Option	Description
Intel I225/I226 LAN Chip (PCI-E Port 3)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.2 Intel I225/I226 LAN Chip (PCI-E Port 4)



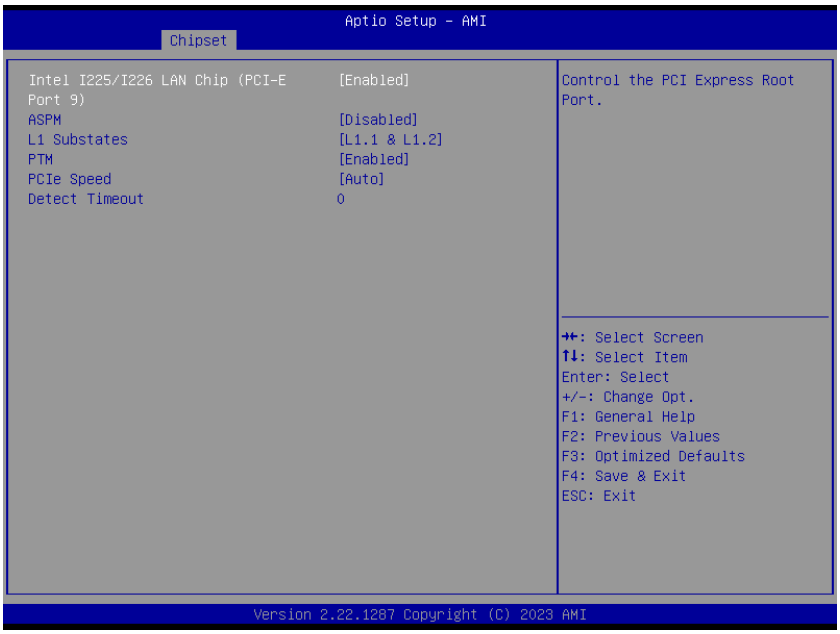
Item	Option	Description
Intel I225/I226 LAN Chip (PCI-E Port 4)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.3 M.2 KeyE (PCI-E Port 5~6)



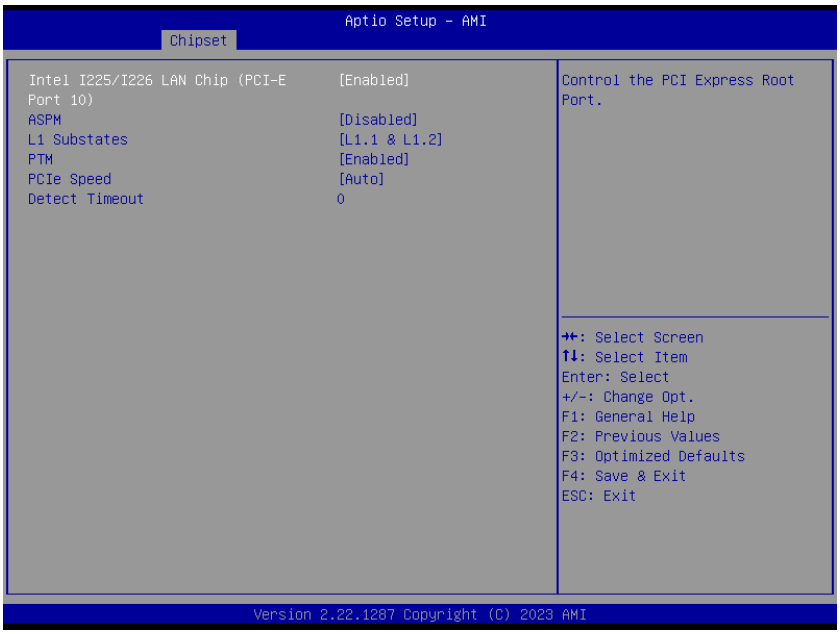
Item	Option	Description
M.2 KeyE (PCI-E Port 5~6)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.4 Intel I225/I226 LAN Chip (PCI-E Port 9)



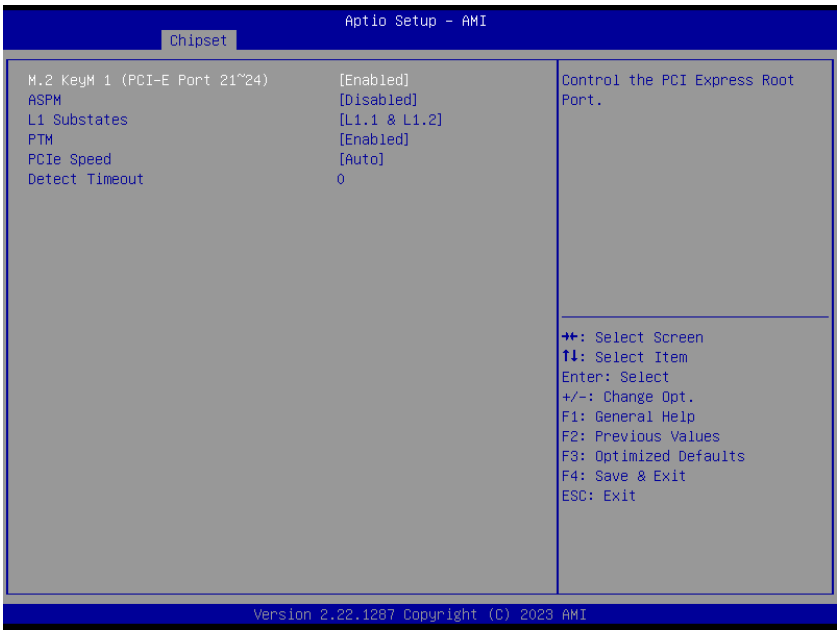
Item	Option	Description
Intel I225/I226 LAN Chip (PCI-E Port 9)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.5 Intel I225/I226 LAN Chip (PCI-E Port 10)



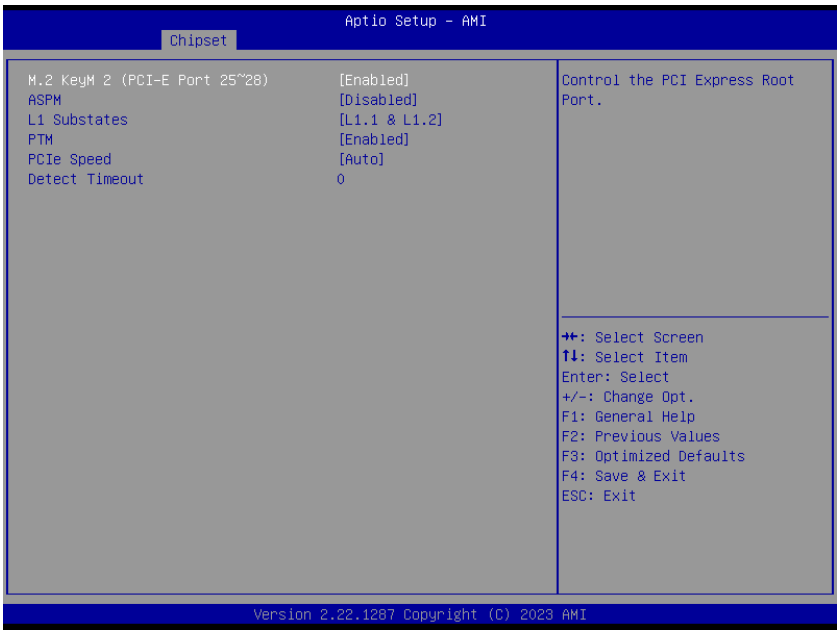
Item	Option	Description
Intel I225/I226 LAN Chip (PCI-E Port 10)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.6 M.2 KeyM 1 (PCI-E Port 21~24)



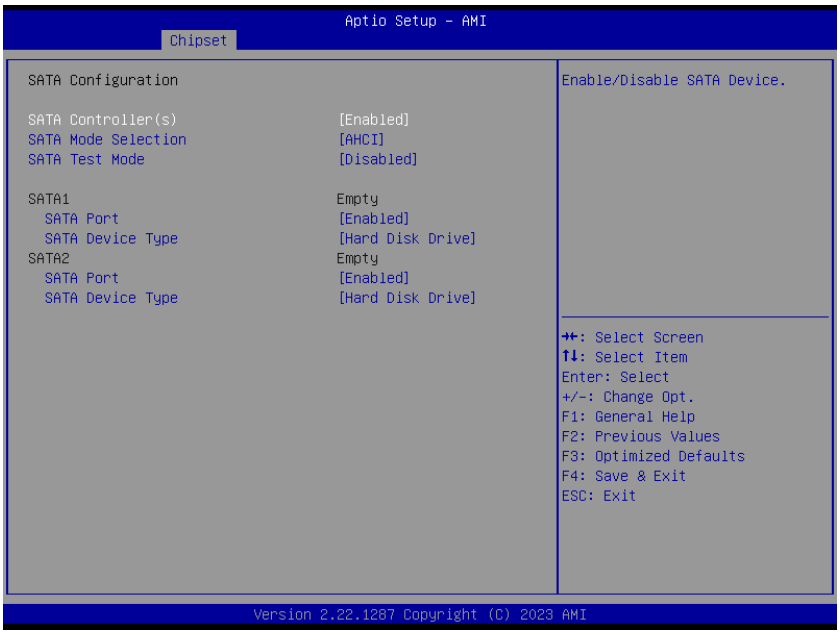
Item	Option	Description
3.6.3.2.1.6M.2 KeyM 1 (PCI-E Port 21~24)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.1.7 M.2 KeyM 2 (PCI-E Port 25~28)



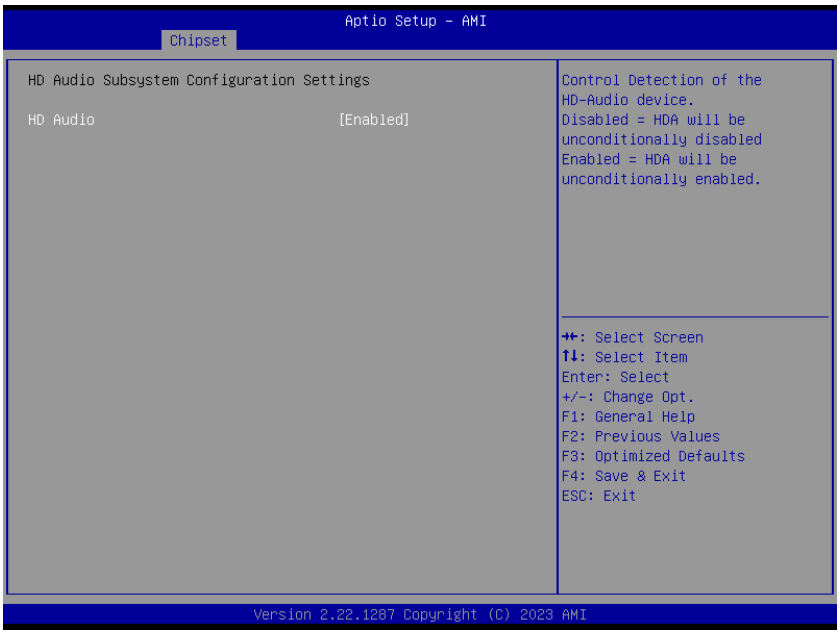
Item	Option	Description
M.2 KeyM 2 (PCI-E Port 25~28)	Disabled Enabled**[Default]**,	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**,	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4	Configure PCIe speed.
Detect Timeout	0	The number of milliseconds reference code will wat for link to exit Detect state for enabled ports before assuming there is no device and potentially disabling the port.

3.6.3.2.2 SATA Configuration



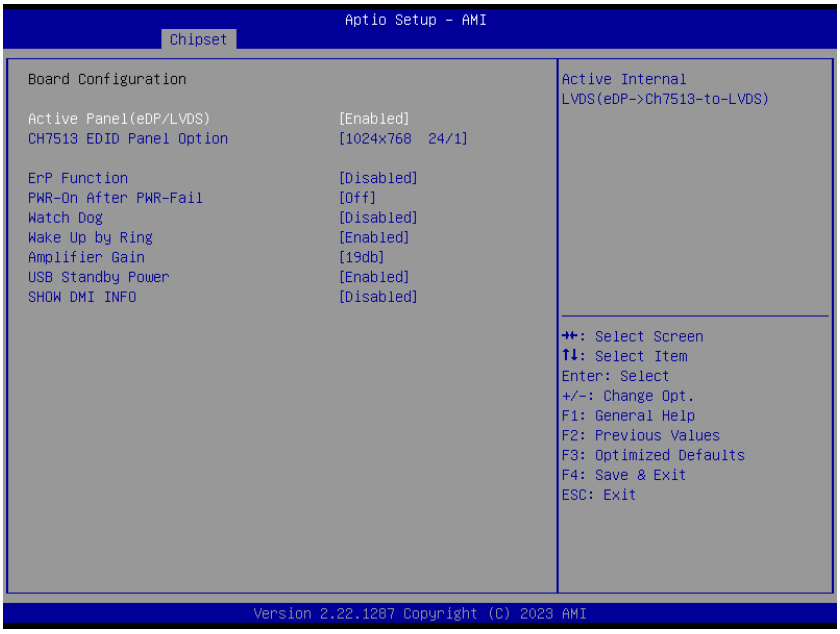
Item	Option	Description
SATA Controller(s)	Enabled**[Default]**, Disabled	Enable/Disable SATA Device.
SATA Mode Selection	AHCI	Determines how SATA controller(s) operate.
SATA Test Mode	Enabled**[Default]**, Disabled	Test Mode Enable/Disable (Loop Back).
SATA Port	Disabled**[Default]**, Enabled	Enable or Disable SATA Port
SATA Device Type	Hard Disk Drive**[Default]**, Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive

3.6.3.2.3 HD Audio Configuration



Item	Option	Description
HD Audio	Disabled Enabled**[Default]**,	Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled.

3.6.3.2.4 Board & Panel Configuration



Item	Option	Description
Active Panel(eDP/LVDS)	Disabled Enabled**[Default]**	Active Internal LVDS(eDP->Ch7513-to-LVDS)

CH7513 EDID Panel Option	1024 x 768 24/1**[Default]** 800 x 600 18/1 1024 x 768 18/1 1366 x 768 18/1 1024 x 600 18/1 1280 x 800 18/1 1920 x 1200 24/2 1920 x 1080 18/2 1280 x 1024 24/2 1440 x 900 18/2 1600 x1200 24/2 1366 x768 24/1 1920 x1080 24/2 7513-eDP	Port1-EDP to LVDS(Chrotel 7513)Panel EDID Option
ErP Function	Disabled**[Default]**, Enabled	ErP Function (Deep S5).
PWR-On After PWR-Fail	Off**[Default]**, On Last State	AC Ioss resume.
Watch Dog	Disabled**[Default]**,/ 30 sec/40 sec/50 sec/ 1 min/2 min/10 min/30 min	Select WatchDog.
Wake Up by Ring	Disabled Enabled**[Default]**,	Wake Up by Ring from S3/S4/S5
Amplifier Gain	11db 14db 19db**[Default]**, 25db	Amplifier Gain
USB Standby Power	Disabled Enabled**[Default]**,	Enable/Disable USB Standby Power during S3/S4/S5
SHOW DMI INFO	Disabled**[Default]**, Enabled	SHOW DMI INFO

3.6.4 Security

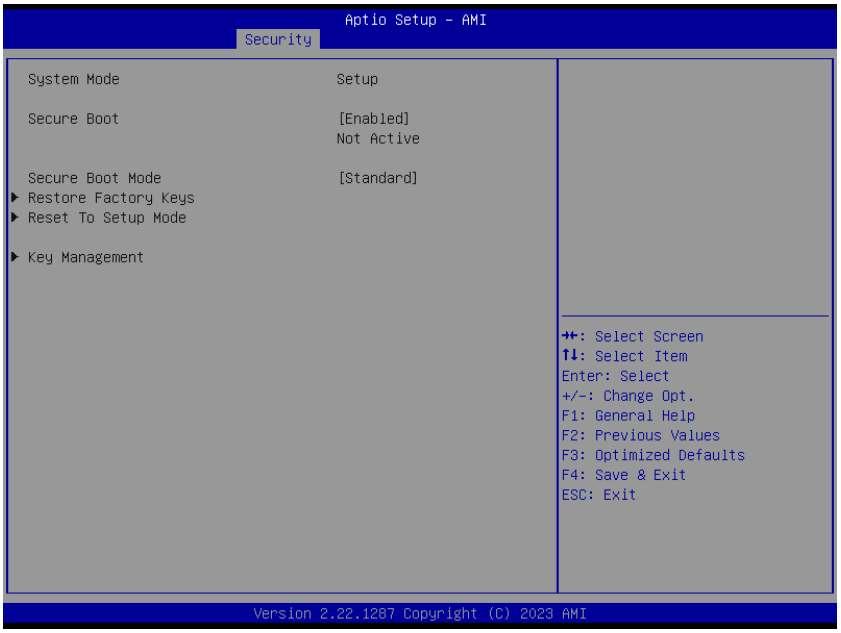
- **Administrator Password**

Set setup Administrator Password

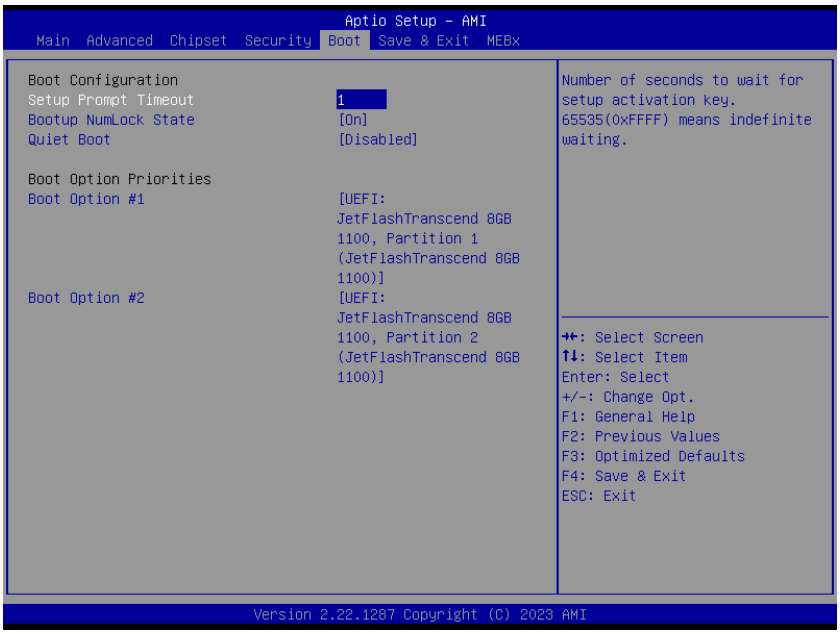
- **User Password**

Set User Password

3.6.4.1 Secure Boot menu

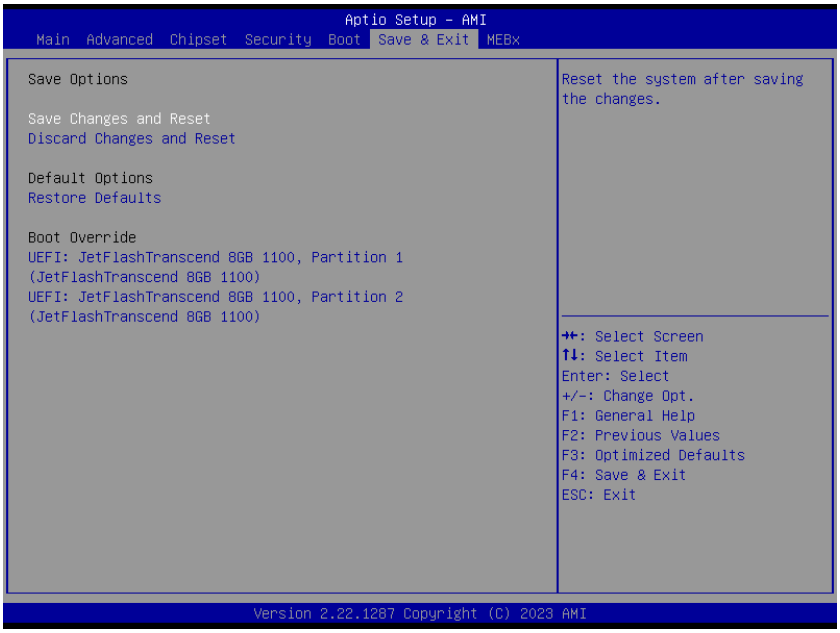


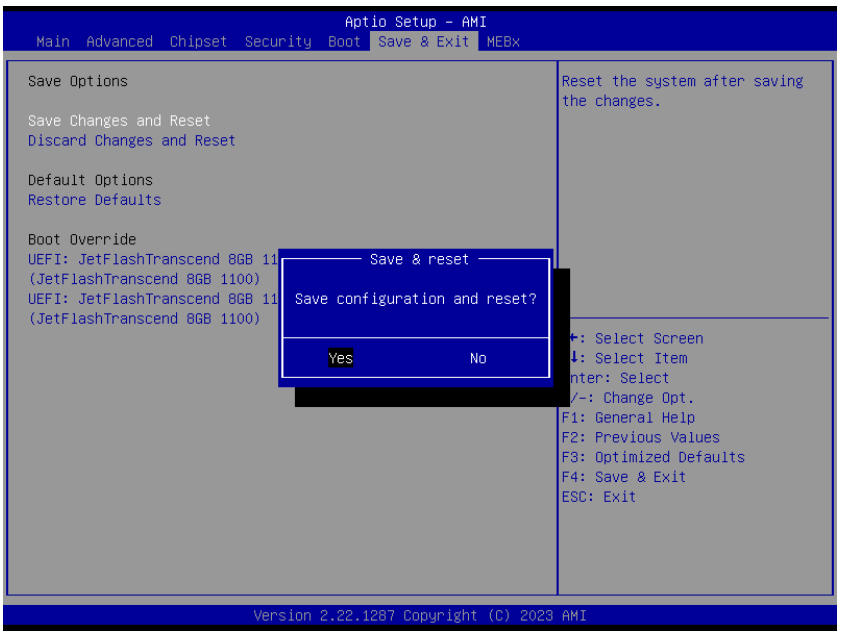
3.6.5 Boot



Item	Option	Description
Setup Prompt Timeout	1	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the Keyboard NumLock state
Quiet Boot	Disabled**[Default]** Enabled	Enables or disables Quiet Boot option
Boot Option #1	Set the system boot order.	
Boot Option #2	Set the system boot order.	

3.6.6 Save and exit





3.6.6.1 Save Changes and Reset

Reset the system after saving the changes.

3.6.6.2 Discard Changes and Reset

Reset system setup without saving any changes.

3.6.6.3 Restore Defaults

Restore/Load Default values for all the setup options.

3.6.6.4 Launch EFI Shell from filesystem device

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

3.6.7 MEBx


Aptio Setup – AMI
Main Advanced Chipset Security Boot Save & Exit MEBx
Intel(R) ME Password
MEBx Login
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1287 Copyright (C) 2023 AMI

4. Drivers Installation

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

4.1 Install Chipset Driver

All drivers can be found on the Avalue Official Website: **http://www.avalue.com.tw**.

Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.

Step1. Click **Next**.

Step 3. Click **Install**.

Step 2. Click **Accept**.

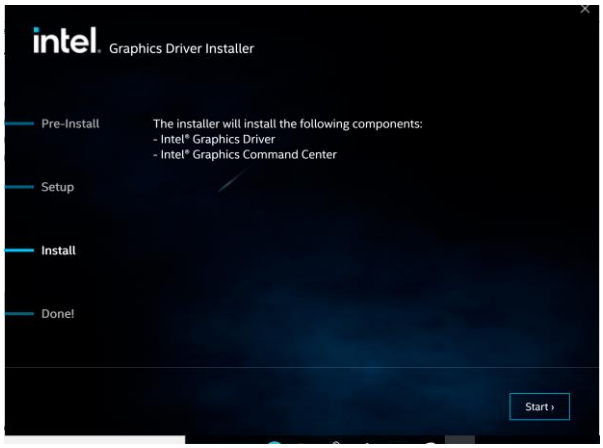
Step 4. Setup completed.

4.2 Install VGA Driver

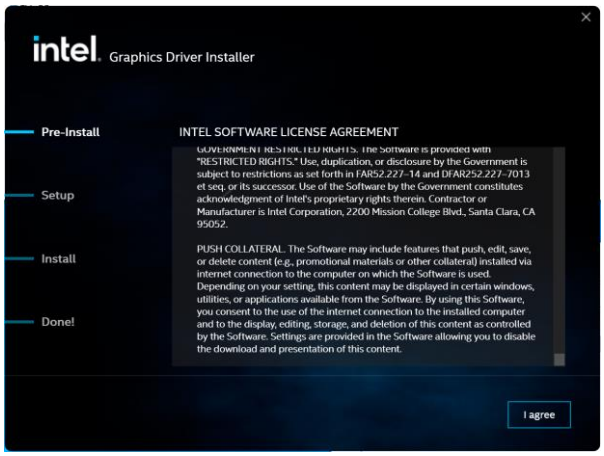
All drivers can be found on the Avalue Official Website:
http://www.avalue.com.tw.

Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.

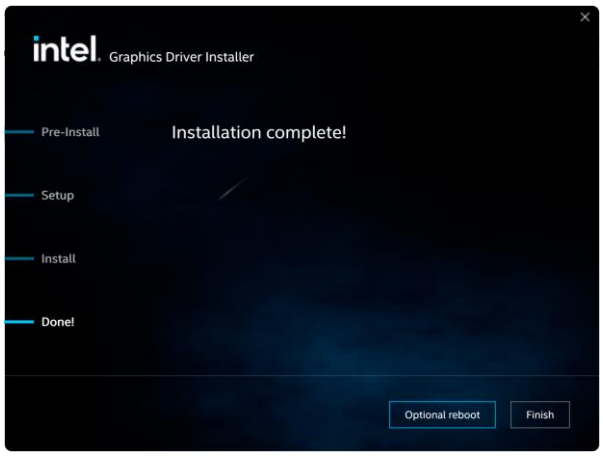
Step 1. Click **Begin installation**.



Step 3. Click **Start**.



Step 2. Click **Next**.

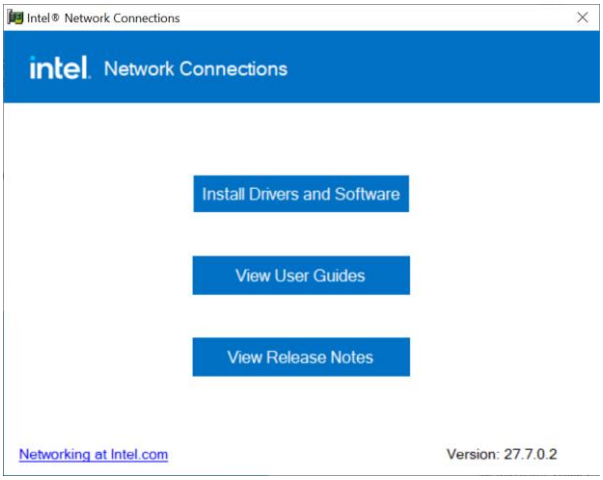


Step 4. Click **Finish** to complete setup.

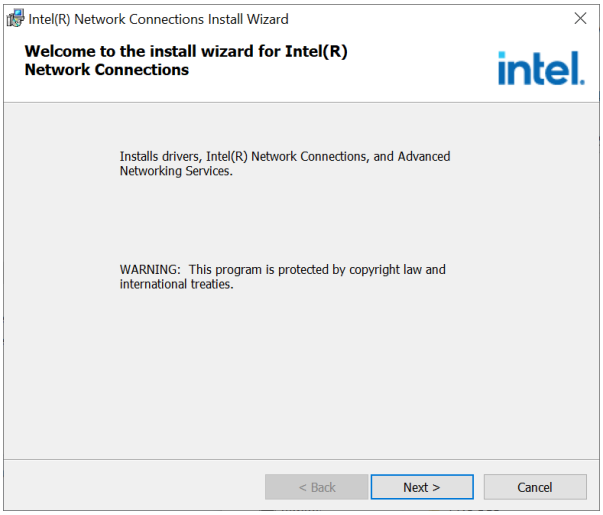
4.3 Install Ethernet Driver

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

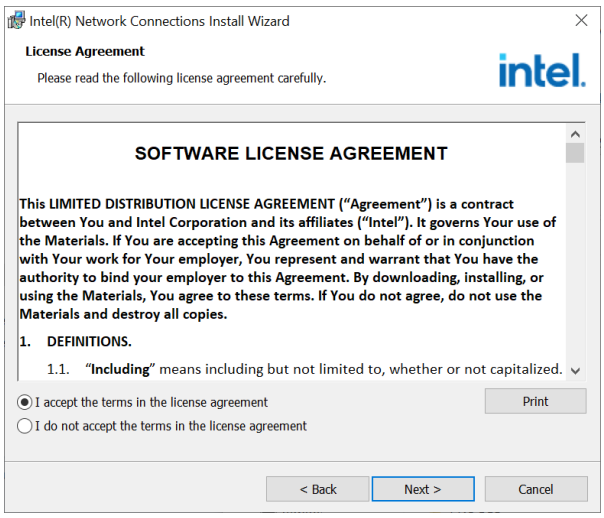
Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.



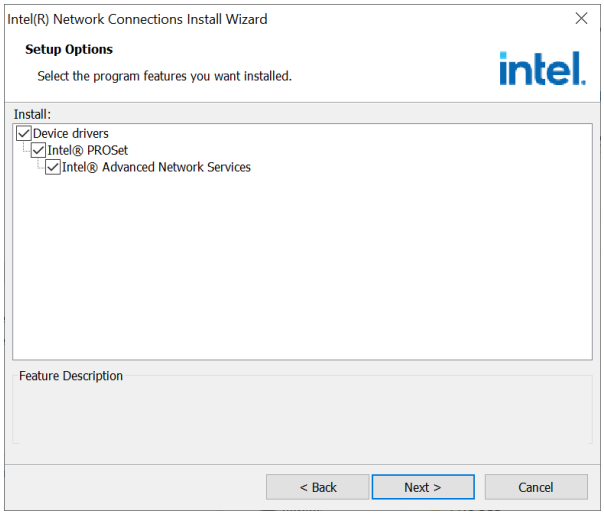
Step 1. Click **Install Drivers and Software** to continue installation.



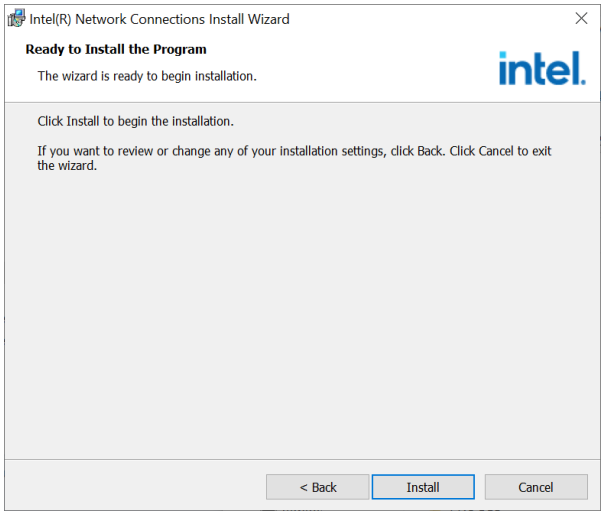
Step 2. Click **Next**.



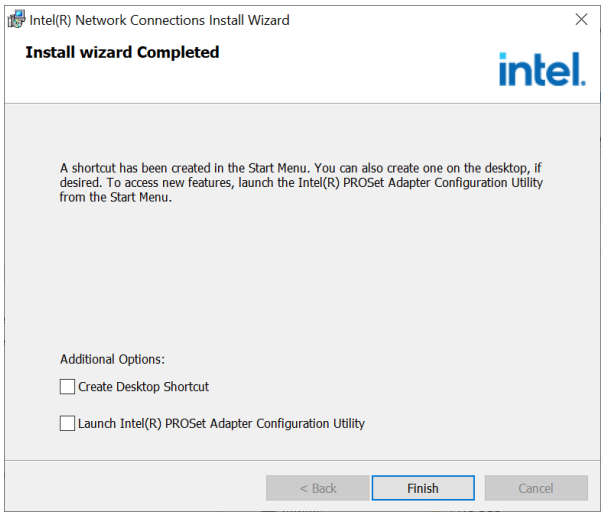
Step 3. Click **Next.**



Step 4. Click **Next.**



Step 5. Click **Install**.

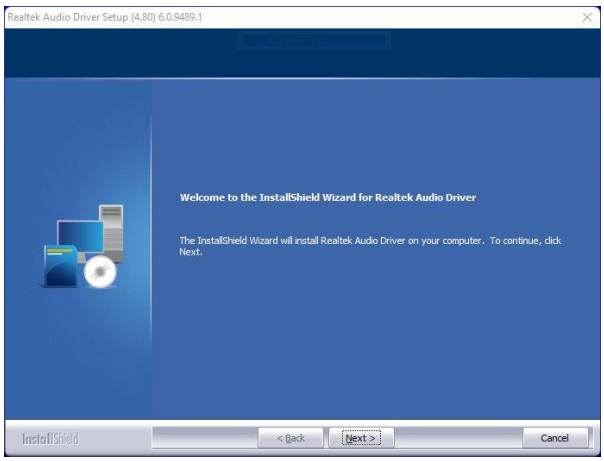


Step 6. Click **Finish** to complete setup.

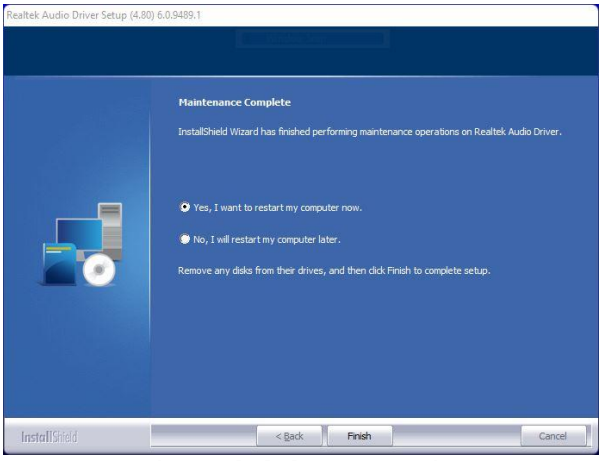
4.4 Install Audio Driver (For Realtek ALC888S HD Audio)

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

Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.



Step 1. Click **Next** to Install.



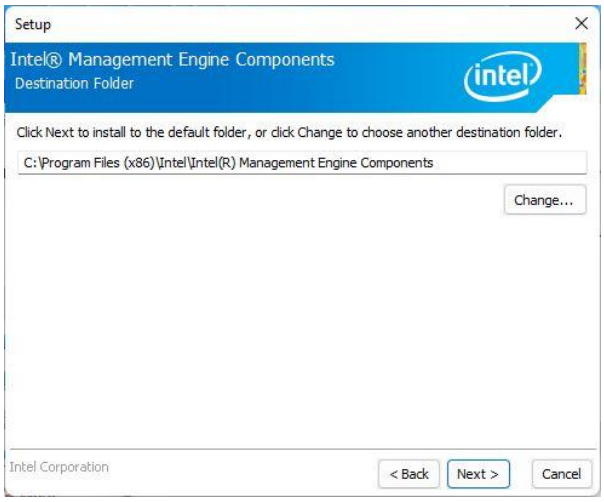
Step 2. Select **Finish** to complete Installation.

4.5 Install ME Driver

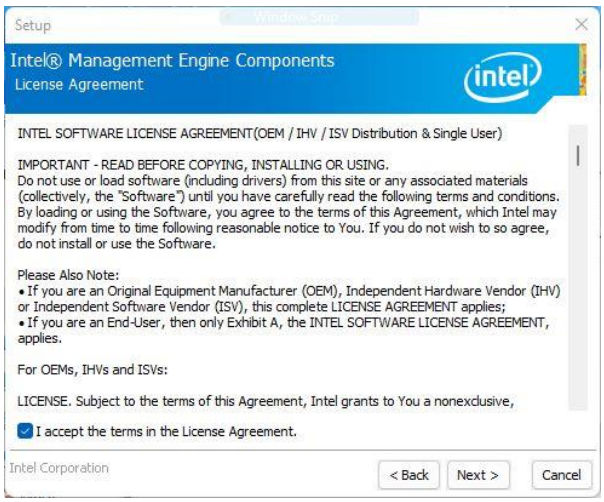
All drivers can be found on the Avalue Official Website: **http://www.avalue.com.tw**.

Note: The installation procedures and screen shots in this section are based on Windows 11 operation system. If the warning message appears while the installation process, click Continue to go on.

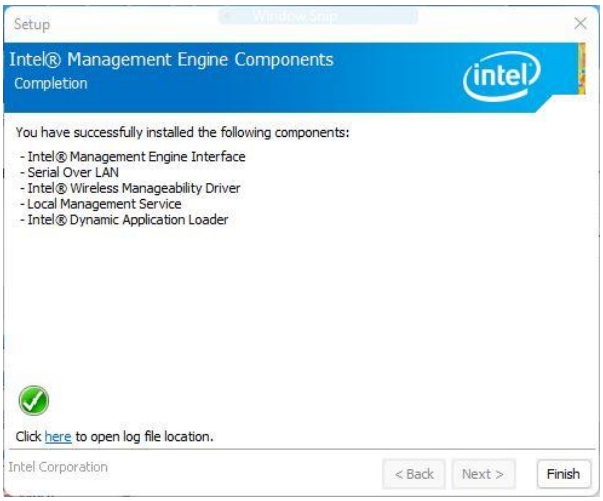
Step1. Click **Next** to start installation.



Step 3. Click **Next** to continue installation.



Step 2. Click **Next**.

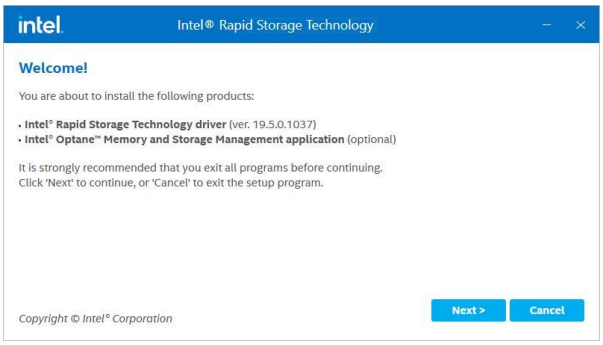


Step 4. Click **Finish** to complete setup.

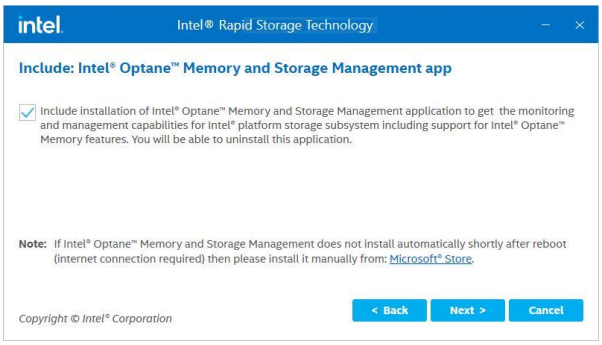
4.6 Install RST Driver for RAID Mode

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

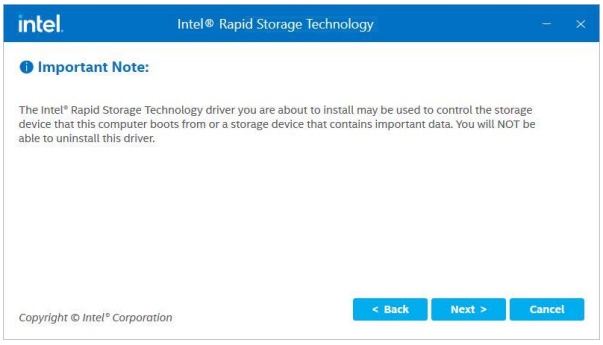
Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.



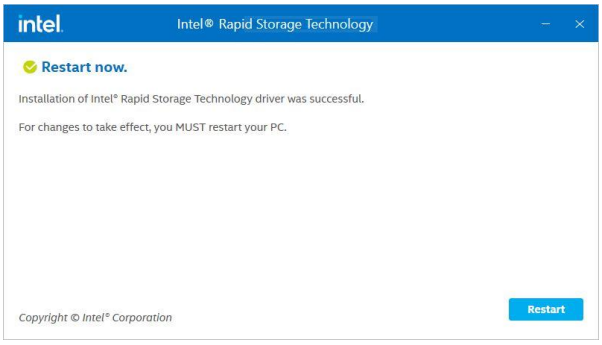
Step 1. Click **Next** to continue installation.



Step 3. Click **Next**.



Step 2. Click **Next**.

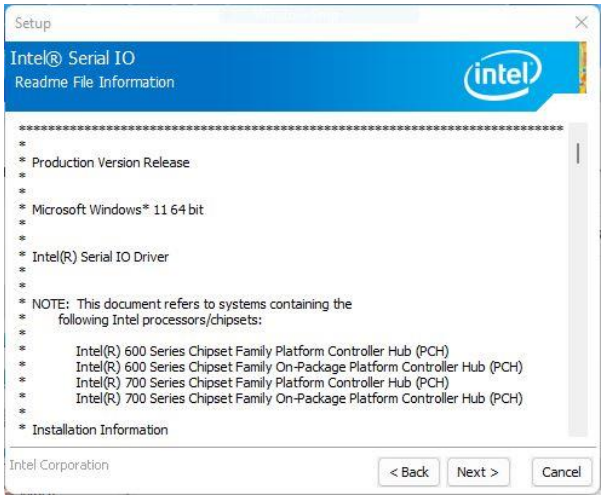


Step 4. Click **Finish** to complete setup.

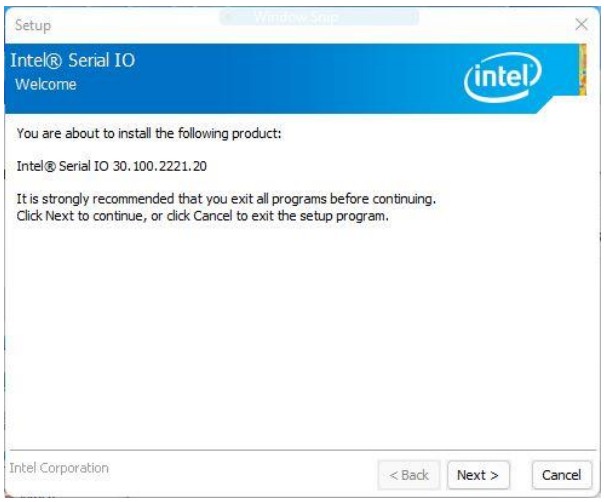
4.7 Install Serial IO Driver

All drivers can be found on the Avalue Official Website: **http://www.avalue.com.tw**.

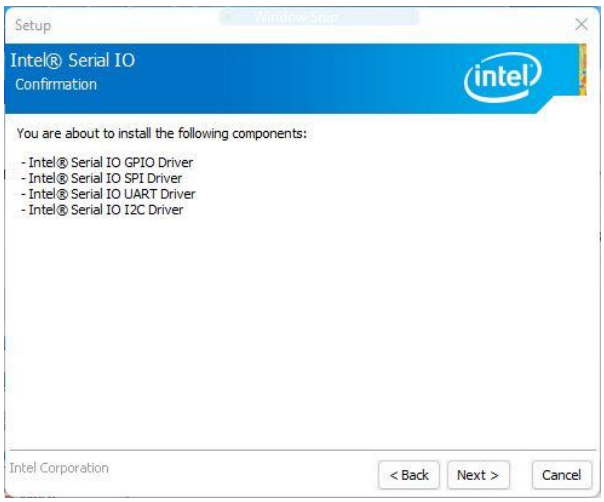
Note: The installation procedures and screen shots in this section are based on Windows 11 operation system.



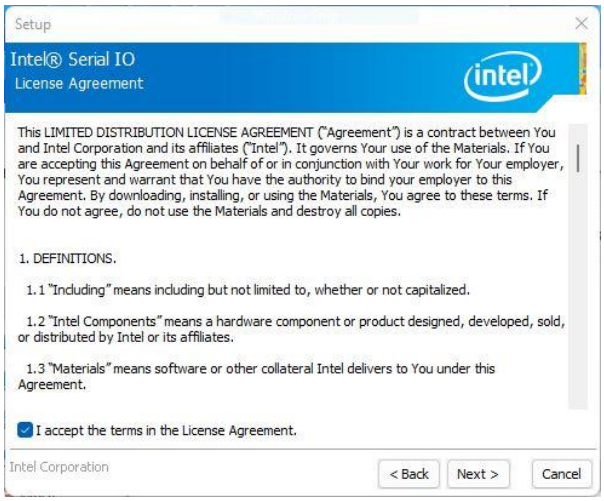
Step 3. Click **Next.**



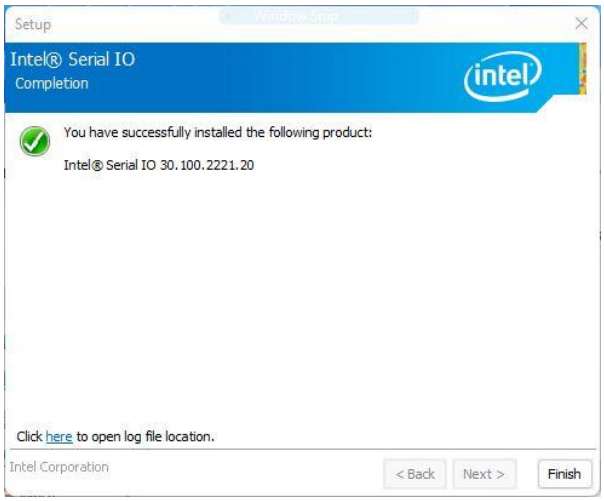
Step 1. Click **Next** to continue installation.



Step 4. Click **Next**.

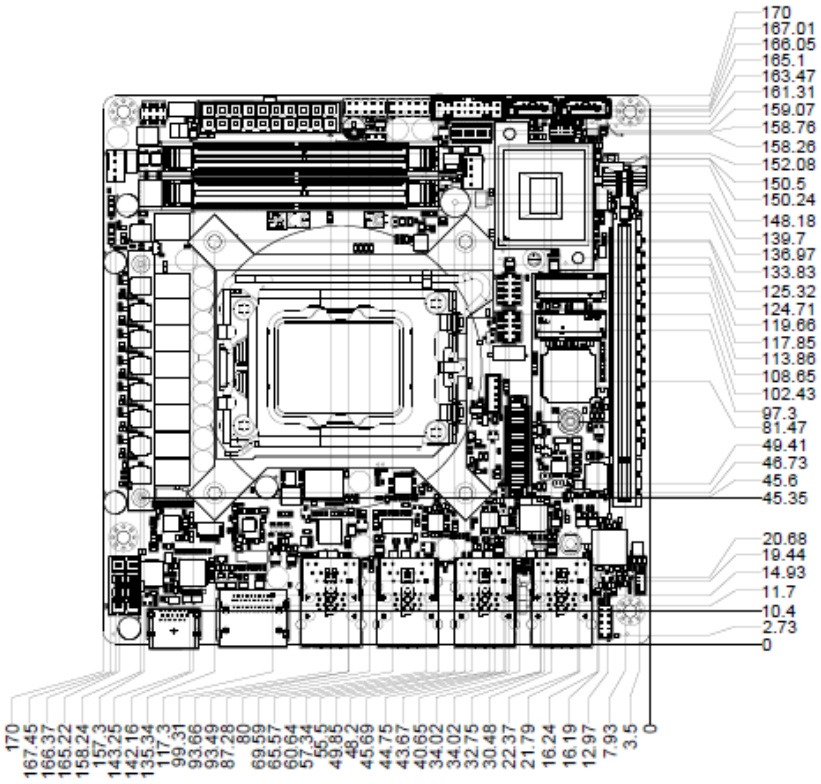


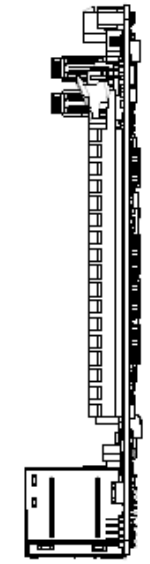
Step 2. Click **Next**.



Step 5. Click **Finish** to complete setup.

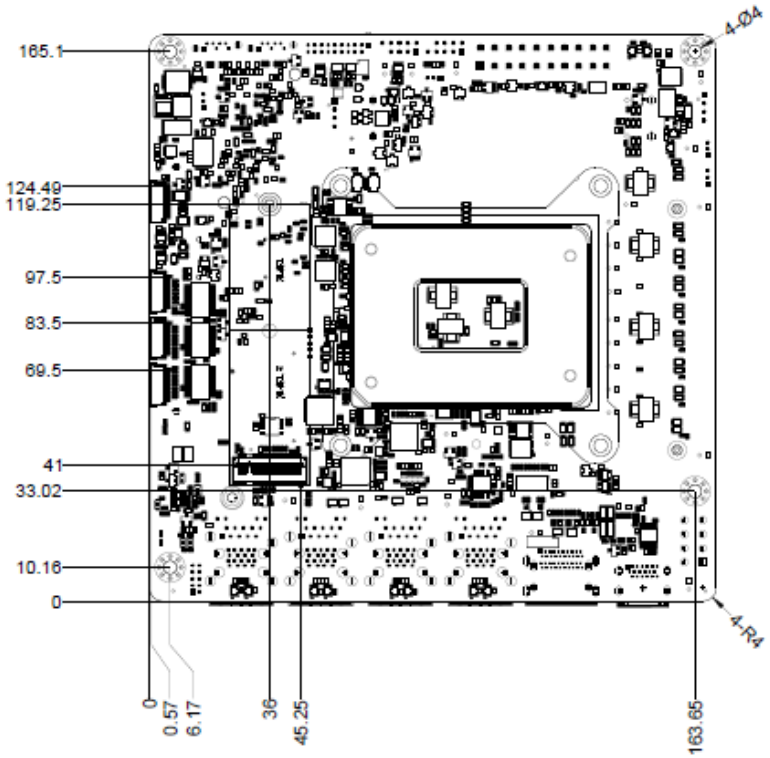
5. Mechanical Drawing


170
167.01
166.05
165.1
163.47
161.31
159.07
158.76
158.26
152.08
150.5
150.24
148.18
139.7
136.97
133.83
125.32
124.71
119.66
117.85
113.86
108.65
102.43
97.3
81.47
49.41
46.73
45.6
45.35
20.68
19.44
14.93
11.7
10.4
2.73
0
170
167.45
166.37
165.22
158.24
157.3
143.25
142.16
135.34
117.3
99.31
93.66
93.49
87.28
80
69.59
65.57
60.64
57.34
55.5
49.85
48.2
45.69
44.75
43.67
40.65
34.02
34.02
32.75
30.48
22.37
21.79
16.24
16.19
12.97
7.93
3.5
0




30.82
1.6
3.85

Unit: mm


4-ØA
165.1
124.49
119.25
97.5
83.5
69.5
41
33.02
10.16
0
4-R4
0
0.57
6.17
36
45.25
163.65

Unit: mm