DFI

ARS630-W880/Q870

ATX Industrial Motherboard
User's Manual

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FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.

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

- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Shielded interface cables must be used in order to comply with the emission limits.

Table of Contents

About this Manual

This manual can be downloaded from the website.

The manual is subject to change and update without notice, and may be based on editions that do not resemble your actual products. Please visit our website or contact our sales representatives for the latest editions.

Warranty

1. Warranty does not cover damages or failures that occur from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequential damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.

2. Wear an antistatic wrist strap.

3. Do all preparation work on a static-free surface.

4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.

5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

> **Important:**
> Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

• To avoid damage to the system, use the correct AC input voltage range.

• To reduce the risk of electric shock, unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

About the Package

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- 1 ARS630 motherboard

- 1 COM port cables (Length: 300mm, 2 x COM ports)

- 1 Serial ATA data cable (Length: 500mm)

- 1 I/O shield

- 1 M.2 screw/standoff

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance with the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Before Using the System Board

When installing the system board in a new system, you will need at least the following internal components.

- Memory module

- Storage device such as a hard disk drive.

- Power supply

External system peripherals may also be required for navigation and display, including at least a keyboard, a mouse and a video display monitor.

Chapter 1 - Introduction

▶ Specifications

SYSTEM	Processor	Intel® Core™ Ultra LGA 1851 Socket Processors, support up to TDP
		Intel® Core™ Ultra 9 285 (24 Cores, 36M Cache, up to 5.6 GHz); 65W
		Intel® Core™ Ultra 9 285T (24 Cores, 36M Cache, up to 5.4 GHz); 35W
		Intel® Core™ Ultra 7 265 (20 Cores, 30M Cache, up to 5.3 GHz); 65W
		Intel® Core™ Ultra 7 265T (20 Cores, 30M Cache, up to 5.3 GHz); 35W
		Intel® Core™ Ultra 5 245 (14 Cores, 24M Cache, up to 5.1 GHz); 65W
		Intel® Core™ Ultra 5 245T (14 Cores, 24M Cache, up to 5.1 GHz); 35W
		Intel® Core™ Ultra 5 225 (10 Cores, 20M Cache, up to 4.9 GHz); 65W
		Intel® Core™ Ultra 5 225T (10 Cores, 20M Cache, up to 4.9 GHz); 35W
	Chipset	Intel® W880/Q870 Chipset
	Memory	**W880:** Four 288-pin UDIMM up to 192GB (ECC/Non-ECC) Dual Channel DDR5 up to 5600 MHz **Q870:** Four 288-pin UDIMM up to 192GB (Non-ECC) Dual Channel DDR5 up to 5600 MHz ***Speed support list follow User's Manual*Speed Support List: Please refer to page.9**
	BIOS	AMI SPI 256Mbit
GRAPHICS	Controller	Intel® UHD Graphics 700 series
	Feature	OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9
	Display	1 x VGA, resolution up to 1920x1200 @ 60Hz 2 x DP++, resolution up to 4096x2304 @ 60Hz 1 x HDMI 2.0a, resolution up to 4096x2160 @ 24Hz
	Quad Displays	VGA + 2 DP++ + HDMI
EXPANSION	Interface	2 x PCIe x16 (Gen 5, 16 or 8+8) Support PCIE1/PCIE4 : single at x16(PCIE1) Support PCIE1/PCIE4 : dual at x8 (PCIE1)/x8 (PCIE4) Support PCIE1 : Riser card x16 or x8/x8 selected by Jumper 1 x PCIe x4 (Gen 5, open edge slot, share M.2 M-key, function selected by BIOS.) 3 x PCIe x4 (Gen 4, open edge slot) 1 x PCI
	M.2	1 x M.2 M key (PCIe x4 Gen5 NVMe, opt. share PCIE2, function selected by BIOS.) 1 x M.2 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 A key for M2-OOB 1 x M.2 E key

AUDIO	Audio Codec	Realtek ALC888S
ETHERNET	Controller	**W880:** 1 x Intel® I226-LM 1 x Intel® I210-AT (co-lay I226-V) 2 x Intel® I226-V **Q870:** 1 x Intel® I226-LM 1 x Intel® I210-AT (co-lay I226-V)
REAR I/O	Ethernet	**W880:** 3 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE) **Q870:** 1 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE)
	USB	4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1
	Display	1 x VGA 2 x DP++ 1 x HDMI
	Audio	1 x Line-out, 1 x Mic-in, 1 x Line-in (optional)
INTERNAL I/O	Serial	2 x RS-232/422/485 4 x RS-232
	USB	2 x USB 3.2 Gen1 1 x USB 2.0 Vertical Type A 2 x USB 2.0 Pin Header (2.54mm pitch)
	Audio	1 x Front Audio 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10
	PS/2	1 x PS/2 (2.54mm pitch)
	DIO	1 x 4-IN / 8-OUT DIO
	eSPI	1 x eSPI
	SMBus	1 x SMBus

WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	TPM2.0
POWER	Type	ATX
	Connector	8-pin ATX 12V power 24-pin ATX power
	Consumption	TBD
	RTC Battery	CR2032 Coin Cell
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows 11 IoT Enterprise 64-bit
	Linux	Linux
ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery
	Humidity	Operating: 5 to 95% RH Storage: 5 to 95% RH
	MTBF	TBD
MECHANISM	Dimensions	ATX Form Factor: 305mm (12") x 244mm (9.6")
	Height	PCB: 1.6mm Top Side: 33.3mm Bottom Side: 4mm
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS, UKCA

▶ **Speed Support List**

Tech	DIMM Type	Slot Per Channel (SPC)	DIMMs Per Channel (DPC)	Rank (s)	POR	ARL-S QS		ARL-S PRQ	
						Enabled Speed	BIOS/MRC Max. speed setting WW29 BKC release MRC version : 1.4.6.13	Enabled Speed	BIOS/MRC Max. speed setting WW04'25 BKC release MRC version : 1.4.6.89
DDR5	UDIMM	2 SPC	2 DPC	1R	4800	4800	4800 4000G4 4400G4 4800G4 4800G2	4800	4800 3200G4 4400G4 4400G4 4800G2
DDR5	UDIMM	2 SPC	2 DPC	2R	4400	4400	4400 4000G4 4000G4 4400G4 4400G2	4400	4400 3200G4 4000G4 4000G4 4400G2
DDR5	UDIMM	2 SPC	1 DPC	1R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2
DDR5	UDIMM	2 SPC	1 DPC	2R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2
DDR5	UDIMM	1 SPC	1 DPC	1R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2
DDR5	UDIMM	1 SPC	1 DPC	2R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2
DDR5	SODIMM	1 SPC	1 DPC	1R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2
DDR5	SODIMM	1 SPC	1 DPC	2R	5600	5600	5600 4000G4 4800G4 5200G4 5600G2	5600	5600 3200G4 4800G4 5200G4 5600G2

Important:
Electrostatic discharge (ESD) can damage your board, processor, disk drives, add-in boards, and other components. Perform installation procedures at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

▶ **Block Diagram**
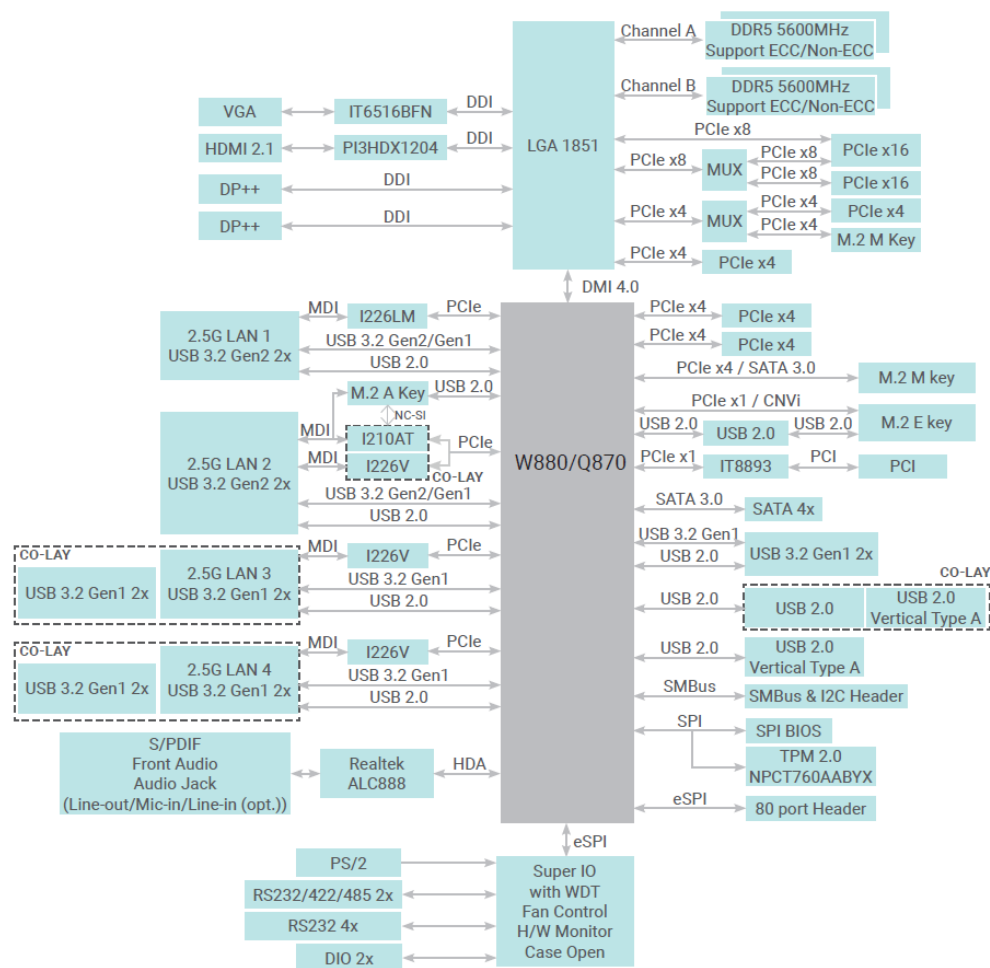
▶ **Dimension**
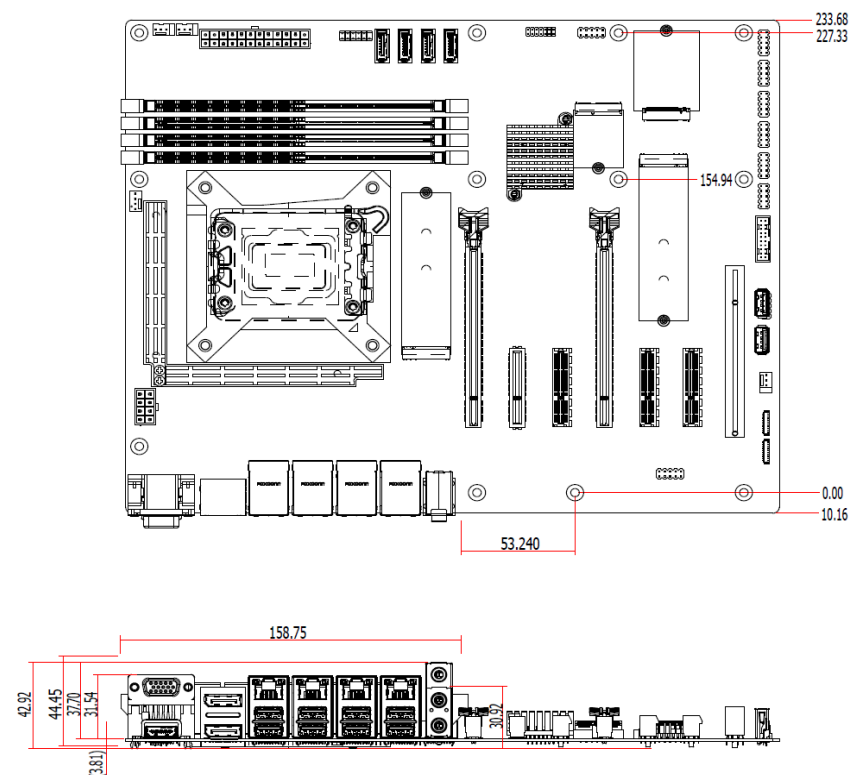
Chapter 2 - Hardware Installation

▶ Board Layout
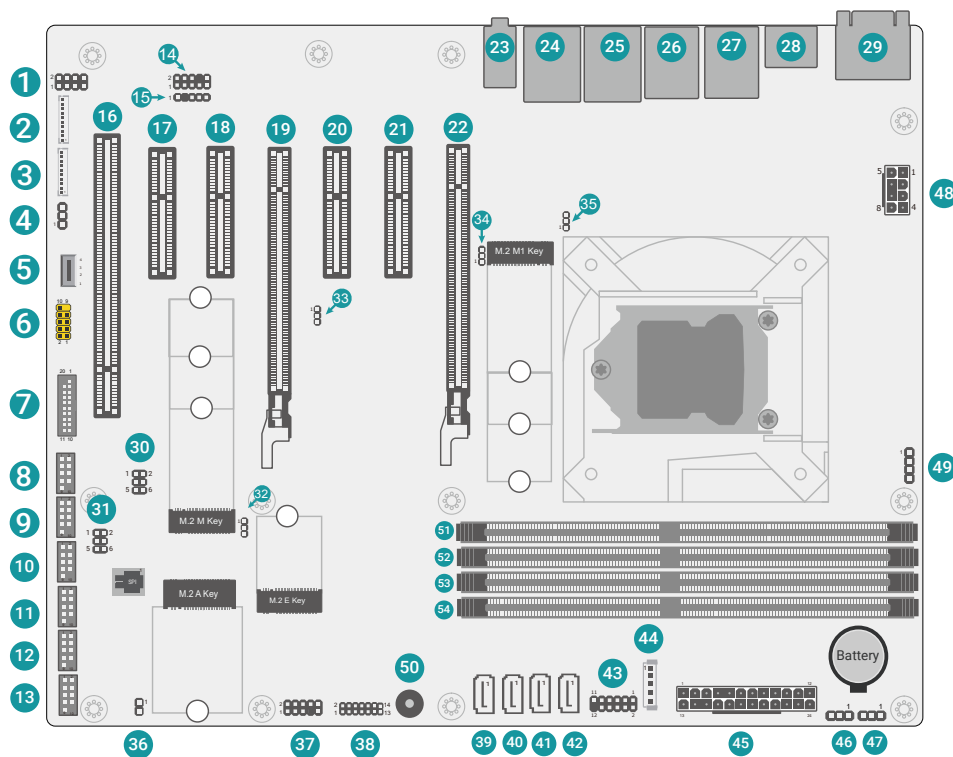
1	Front LAN LED (Optional)
2	DIO Conn. (4 in/4 out)
3	DIO Conn. (4 out)
4	System FAN1
5	USB2.0
6	USB2_11/12
7	USB3_5/6, USB2_5/6
8	COM1
9	COM2
10	COM3
11	COM4
12	COM5
13	COM6
14	Front Audio
15	S/PDIF
16	PCI
17	PCIE6 (PCIEx4)
18	PCIE5 (PCIEx4)
19	PCIE4 (PCIEx16)
20	PCIE3 (PCIEx4)

21	PCIE2 (PCIEx4)
22	PCIE1 (PCIEx16)
23	▲Line-Out / ▼Mic-In
24	▲LAN4 / ▼USB2_9/10 / USB3_9/10
25	▲LAN3 / ▼USB2_7/8 / USB3_7/8
26	▲LAN2 (W880 only) / ▼USB2_3/4 / USB3_3/4
27	▲LAN1(W880 only) / ▼USB2_1/2 / USB3_1/2
28	DP++
29	▲VGA / ▼HDMI
30	Power Select COM1
31	Power Select COM2
32	M2CN2 Power Select
33	PCIE Slot X8/X16 Select
34	M2CN1 Power Select
35	PEG Config Select
36	CASE OPEN
37	PS2 Header
38	eSPI Header
39	SATA3

40	SATA2		47	System Fan3
41	SATA1		48	12V ATX Power
42	SATA0		49	CPU Fan
43	Front Panel		50	Buzzer
44	SATA Power		51	DDR5 DIMM1
45	ATX Power		52	DDR5 DIMM2
46	System Fan2		53	DDR5 DIMM3
			54	DDR5 DIMM4

▶ **Installing the heat sink**

Installing the Heat Sink

The CPU must be kept cool by using a heat sink, otherwise the CPU will overheat damaging both the CPU and system board.

1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste is usually supplied when you purchase the fan / heat sink assembly. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.

   Some heat sinks come with a patch of preapplied thermal paste. Do not apply thermal paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste before you place the fan / heat sink on top of the CPU.

2. Place the heat sink on top of the CPU. The 4 spring screws around the heat sink, which are used to secure the heat sink onto the system board, must match the 4 mounting holes around the board.

3. Screw tight two of the spring screws at opposite corners into the mounting holes. And then proceed with the other two spring screws.

Mounting holes

Mounting holes
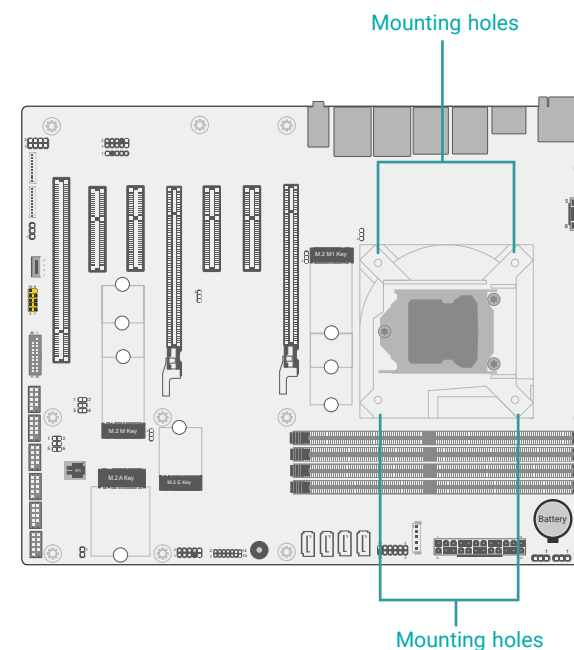
▶ **Jumper Settings**

M2CN1 Power Select (JP4)
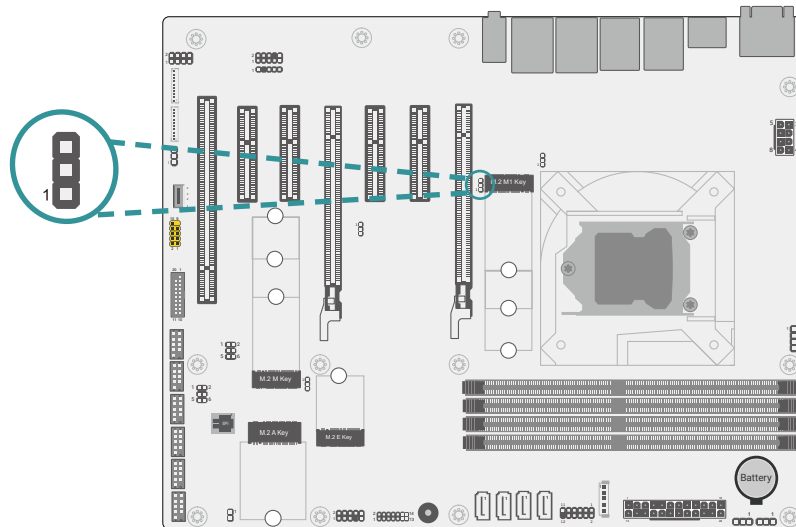
- 1-2 On: 3V3 (default)
- 2-3 On: 3V3DU

M2CN2 Power Select (JP5)
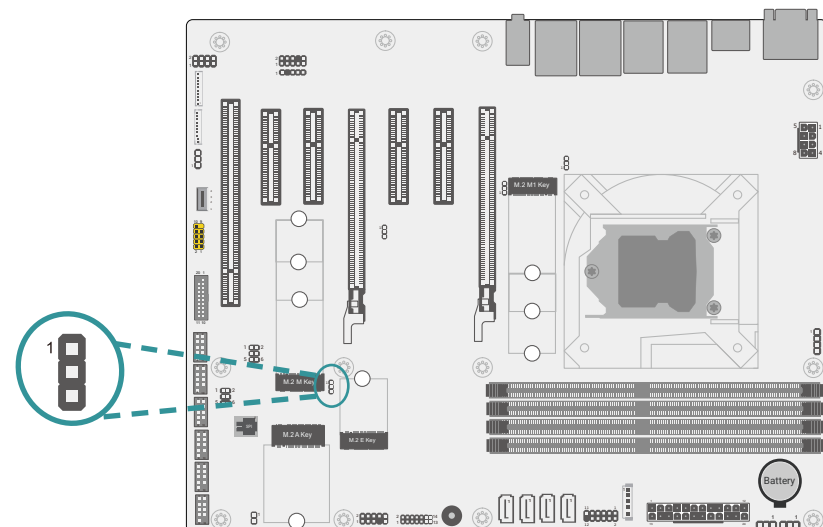
- 1-2 On: 3V3 (default)
- 2-3 On: 3V3DU

PEG Config Select (JP1)
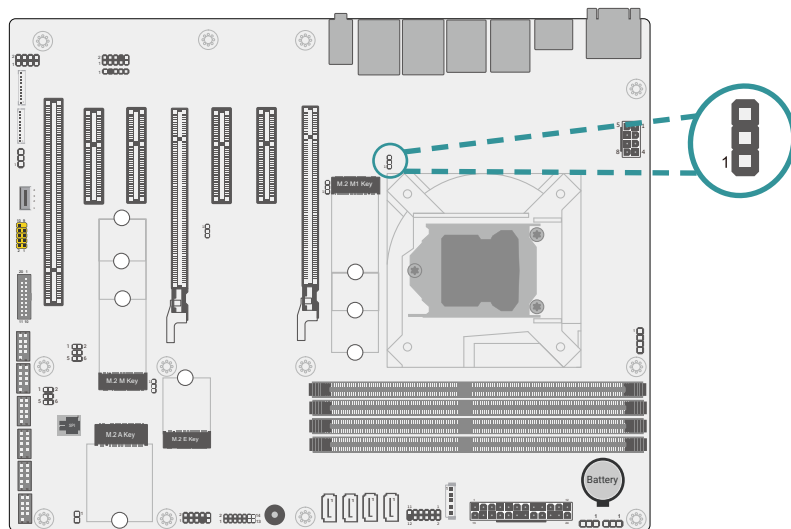
PCIE Slot X8/X16 Select (PBJP1)

1

■ 1-2 On: X8, X8

1

■ 2-3 On: X16 (default)

1
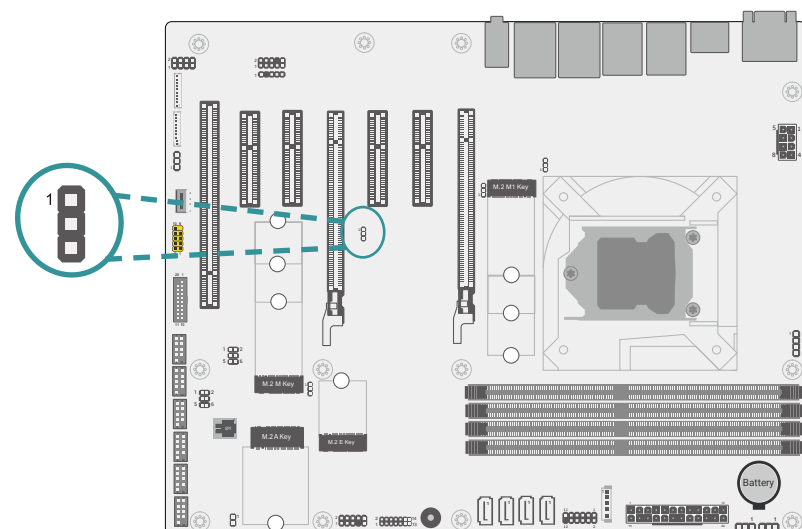
■ 1-2 On: PBPCIE1 X16 (default)

1

■ 2-3 On: PBPCIE1 X8, PBPCIE4 X8

Power Select COM1 (JP27)
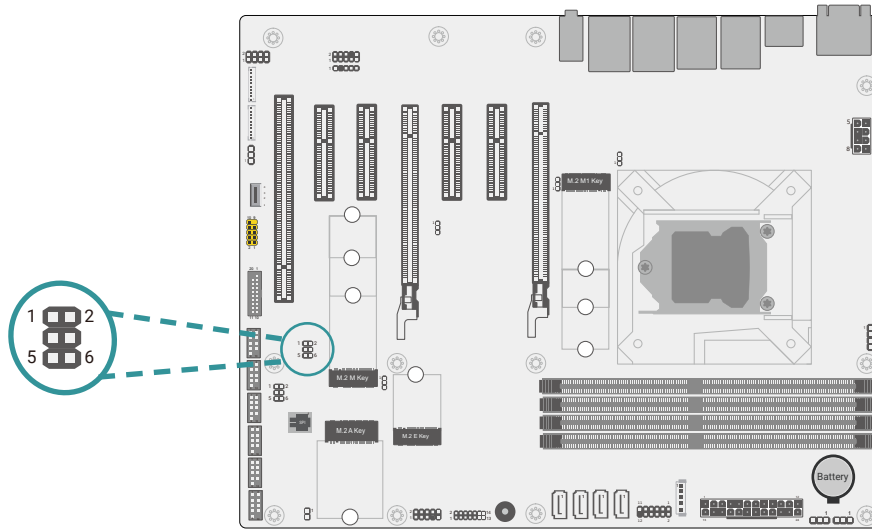
- ◼ 1-2 On: RS232 with 12V Power
- ◼ 3-4 On: RS232 Standard (default)
- ◼ 5-6 On: RS232 with 5V Power

Power Select COM2 (JP28)
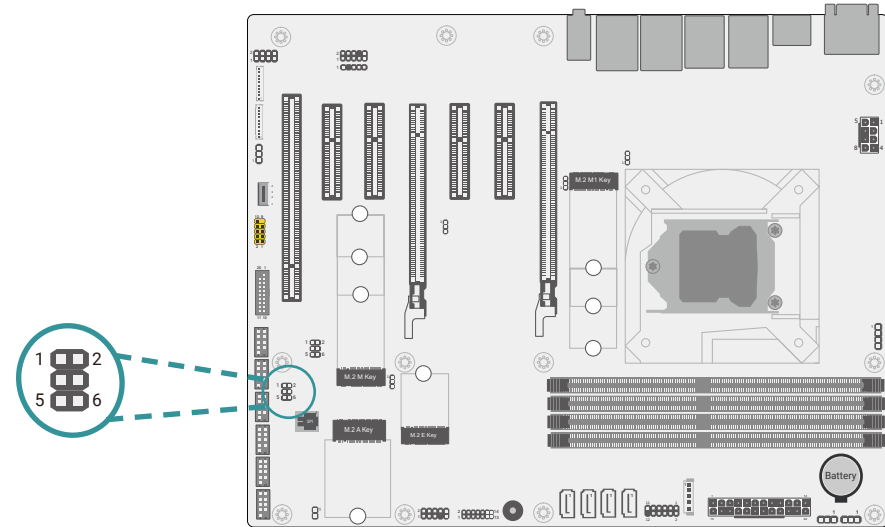
- ◼ 1-2 On: RS232 with 12V Power
- ◼ 3-4 On: RS232 Standard (default)
- ◼ 5-6 On: RS232 with 5V Power

▶ **Pin Assignment**

System Fan1 (J32)

System Fan2 (J22)

Pin	Assignment
1	GND
2	PWM
3	TACH
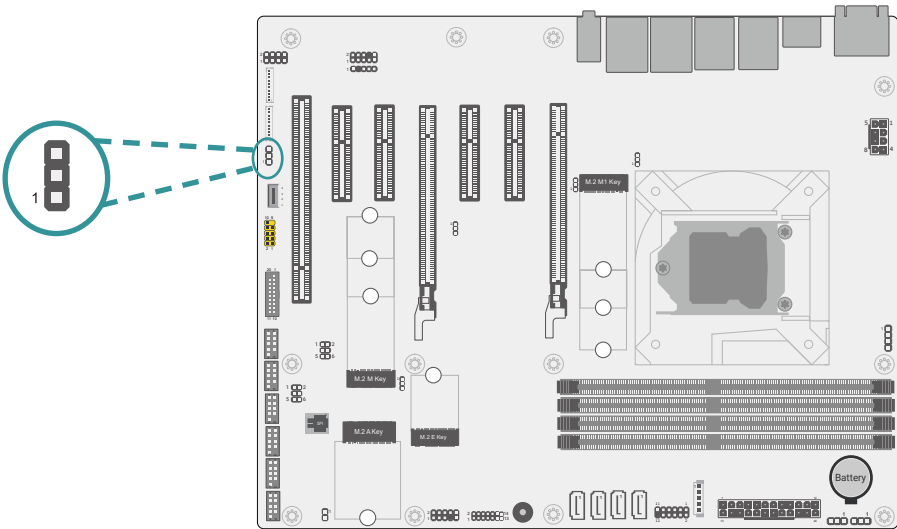
Pin	Assignment
1	GND
2	PWM
3	TACH

System Fan3 (J30)
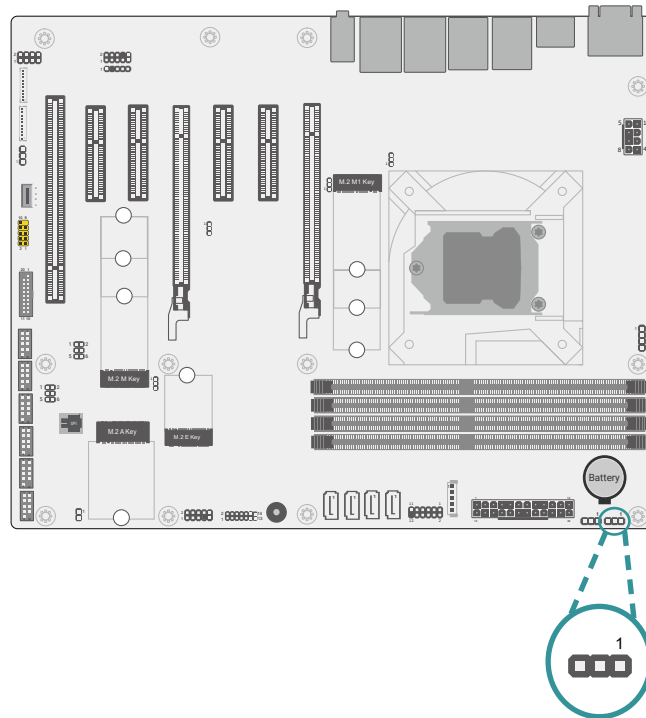
Pin	Assignment
1	GND
2	PWM
3	TACH

Case Open (SOJ1)
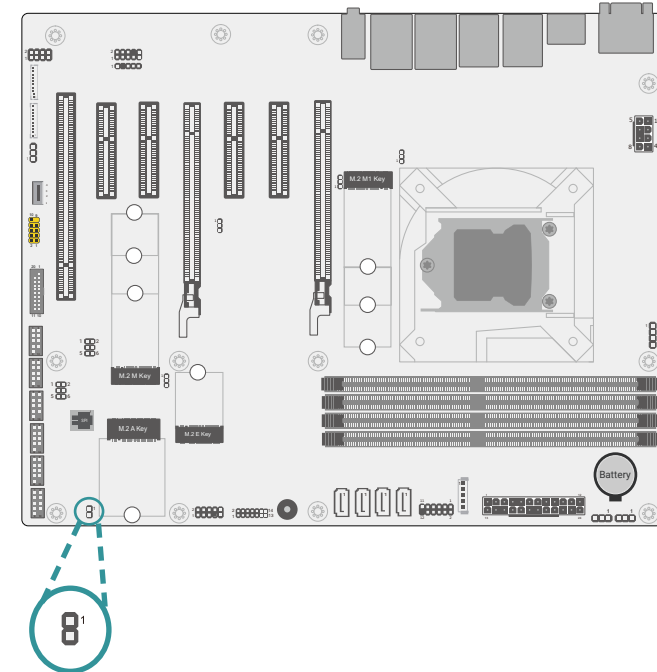
Pin	Assignment
1	Case Open#
2	GND

CPU Fan (J8)
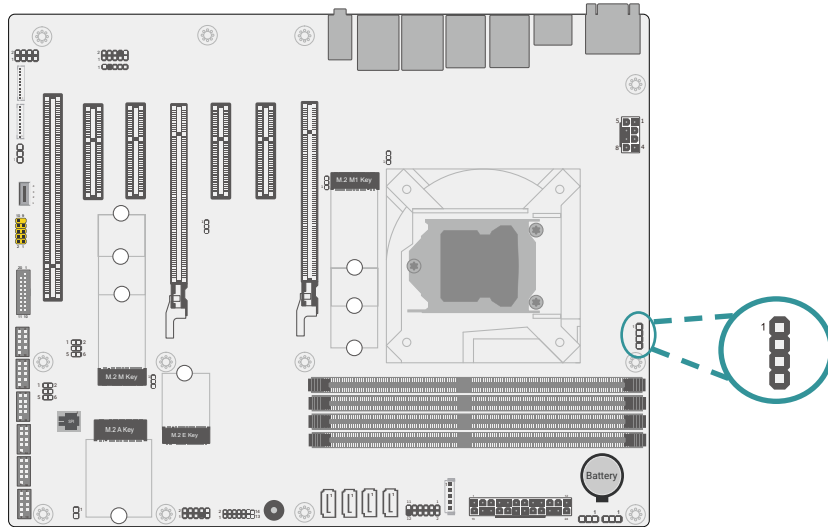
Pin	Assignment
1	GND
2	12V
3	RPM
4	CTRL

S/PDIF (AUJ1)
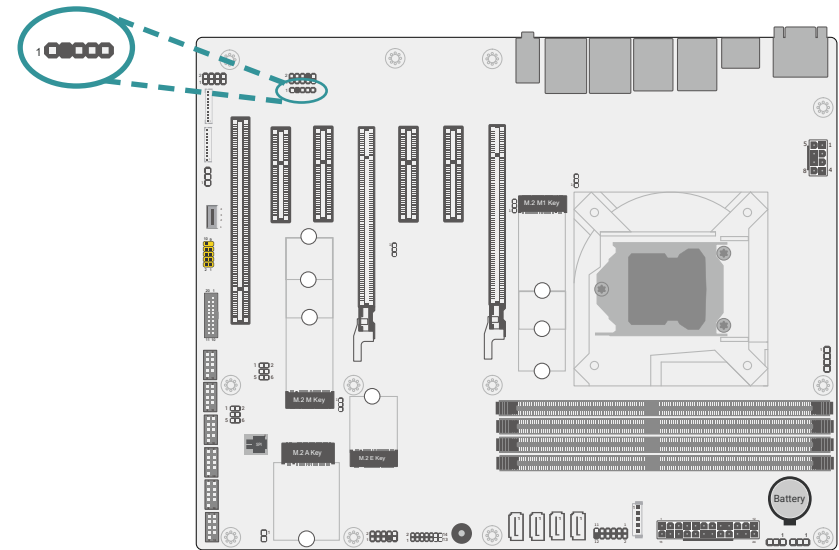
Pin	Assignment
1	5V
2	NC
3	SPDIF OUT
4	GND
5	SPDIF IN

SATA Power (CN8)
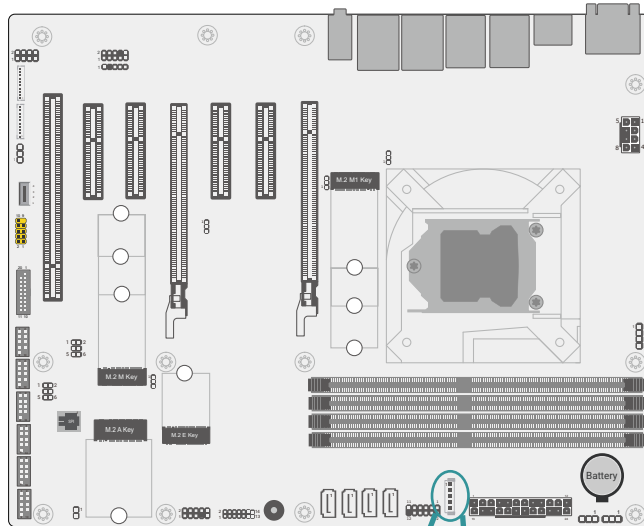
Pin	Assignment
1	5V
2	5V
3	12V
4	GND
5	GND

SATA3 (J1)
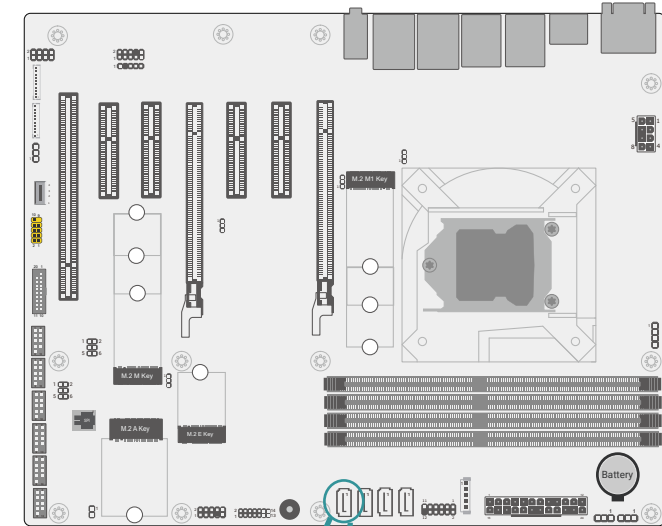
Pin	Assignment
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

SATA2 (J2)
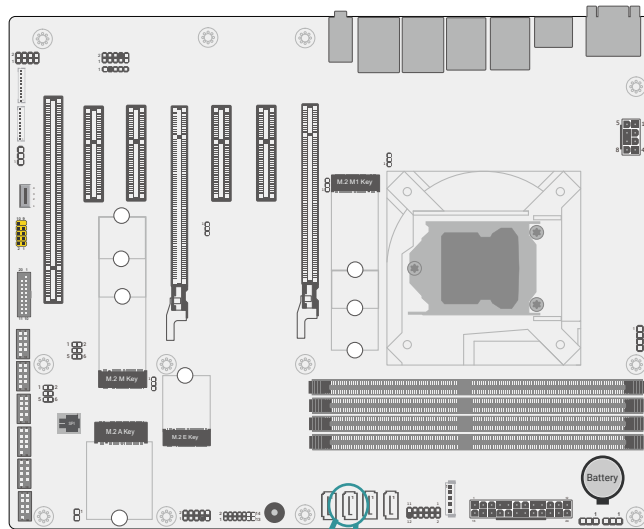
Pin	Assignment
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

SATA1 (J3)
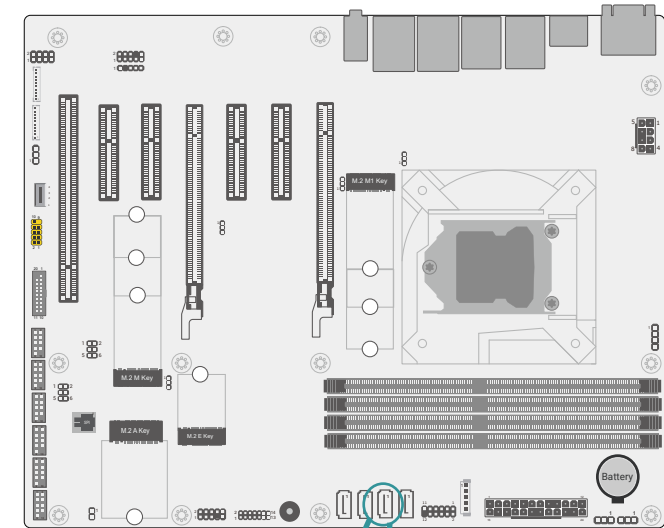
Pin	Assignment
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

SATA0 (J4)
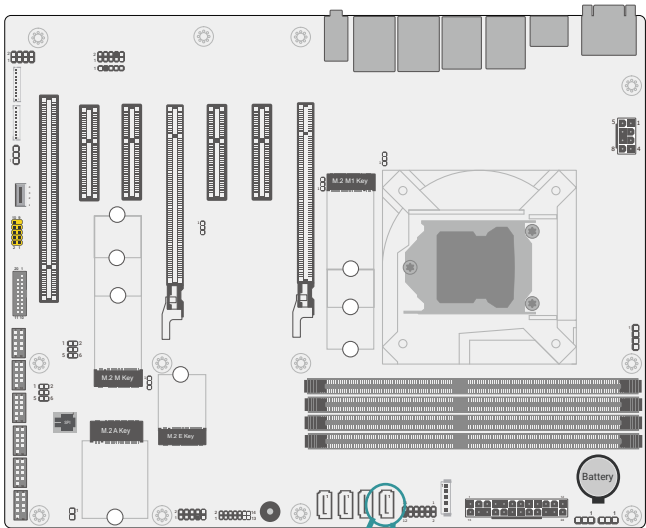
Front LAN LED Optional (ETJ1)

Pin	Assignment
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND
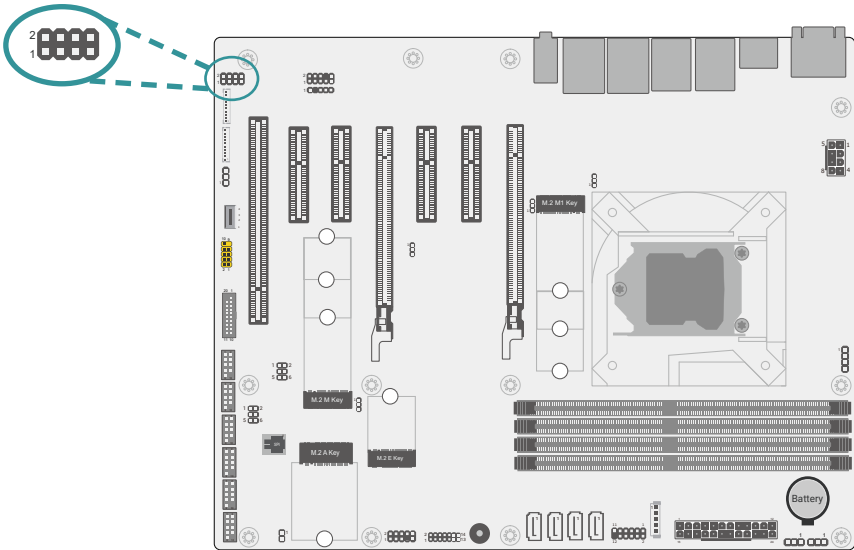
Pin	Assignment
1	LED_SPEED_2500#
2	LED_SPEED_1000#
3	GBE_LED_LINK_ACT#
4	3V3DU
5	LED_SPEED_2500#_2
6	LED_SPEED_1000#_2
7	GBE_LED_LINK_ACT#_2
8	3V3DU

Front Audio (AUJ2)
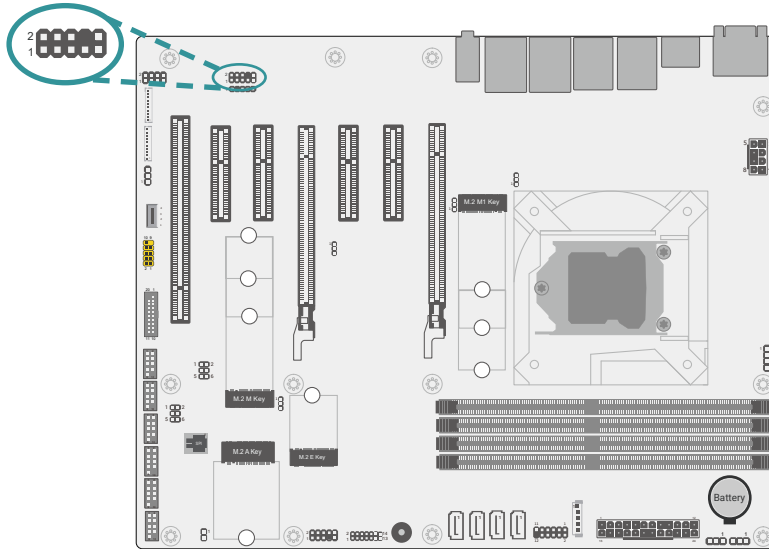
Pin	Assignment
1	MIC2_L
2	GND
3	MIC2_R
4	NC
5	LINE2_R
6	MIC2_JD
7	GND
8	-
9	LINE2_L
10	LINE2_JD

USB2_11/12 (UBJ2)
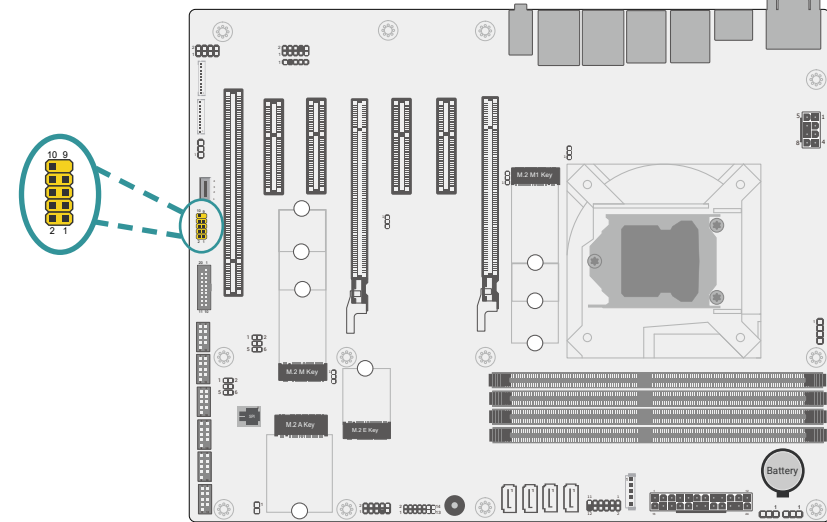
Pin	Assignment
1	5VDU
2	5VDU
3	USB1N
4	USB2N
5	USB1P
6	USB2P
7	GND
8	GND
9	-
10	NC

PS2 Header (SOJ2)
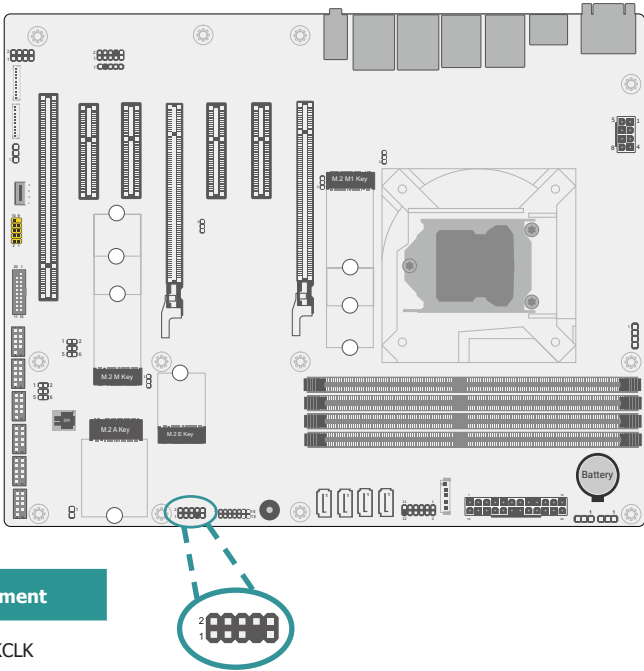
Pin	Assignment
1	PS2_KCLK
2	PS2_MCLK
3	PS2_KDAT
4	PS2_MDAT
5	GND
6	GND
7	-
8	GND
9	5VDU
10	5VDU

COM1 (TSJ2)
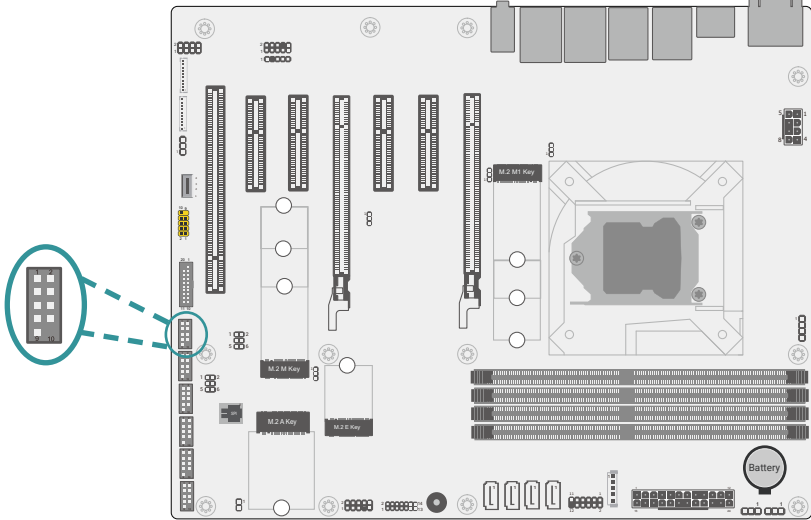
Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----

COM2 (TSJ3)
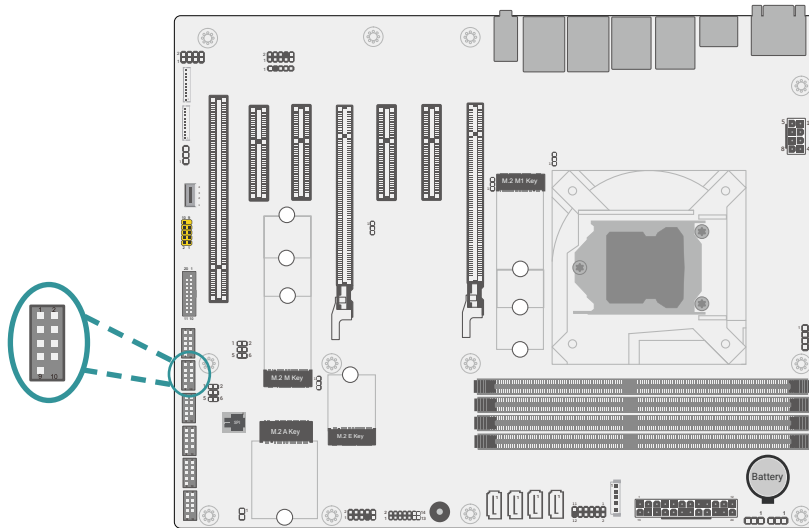
COM3 (TSJ4)
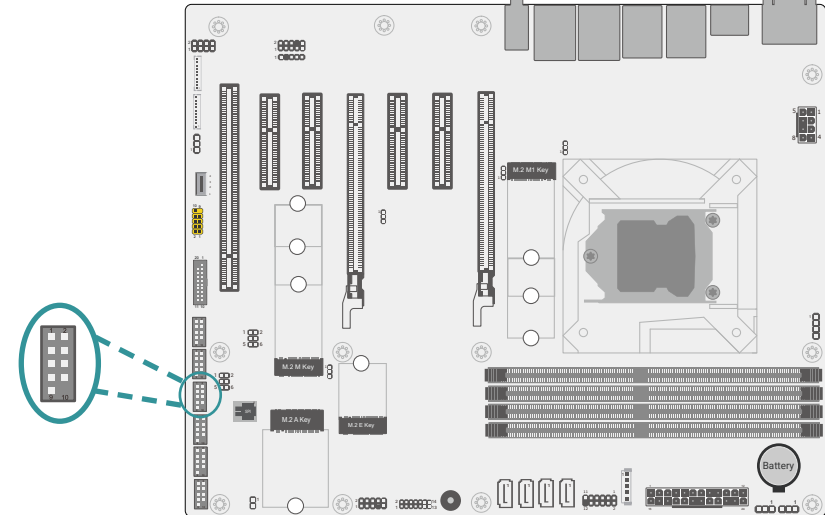
Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----

Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----

COM4 (TSJ5)
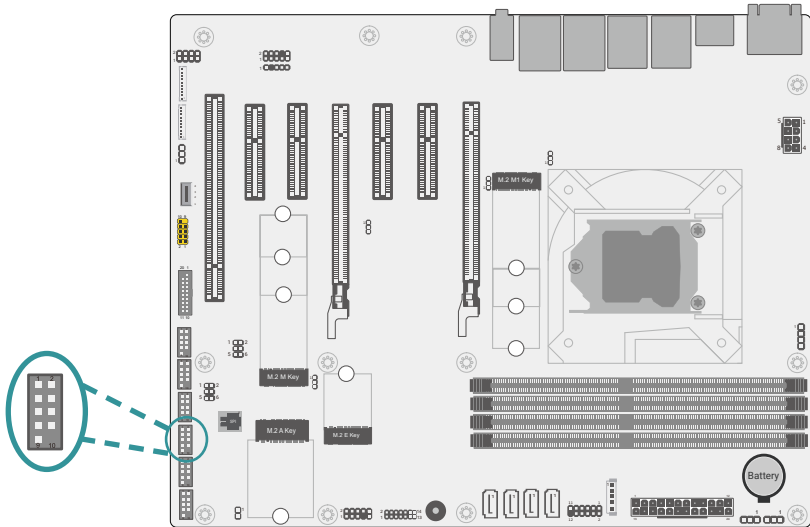
COM5 (TSJ6)

Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----
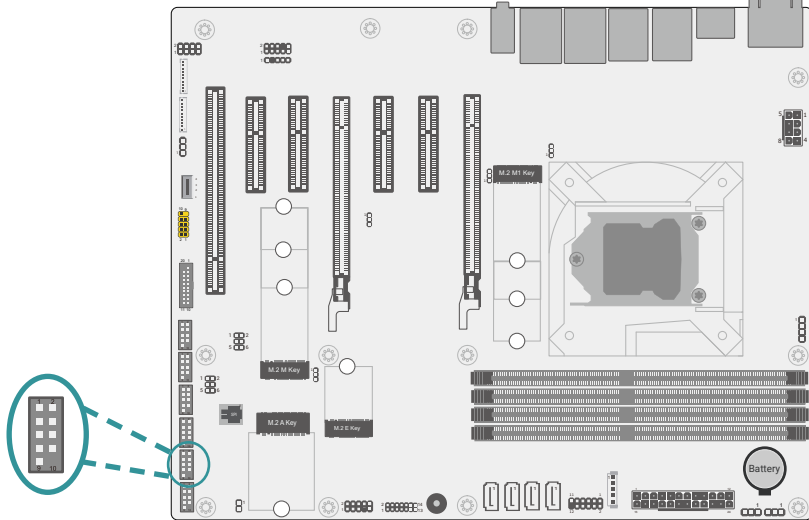
Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----

COM6 (TSJ7)
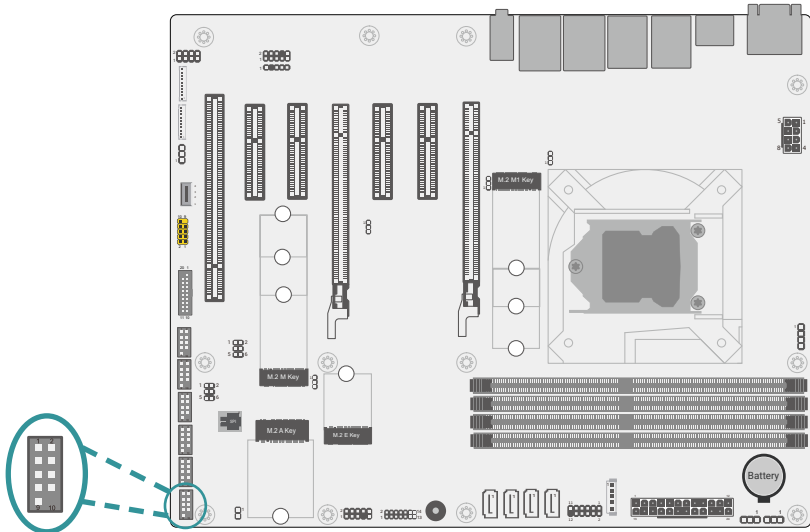
DIO Conn. (4 in/4 out) (J6)

Pin	Assignment	Pin	Assignment
1	MDCD-	2	MSIN-
3	MSO-	4	MDTR-
5	GND	6	MDSR-
7	MRTS-	8	MCTS-
9	MRI-	10	----
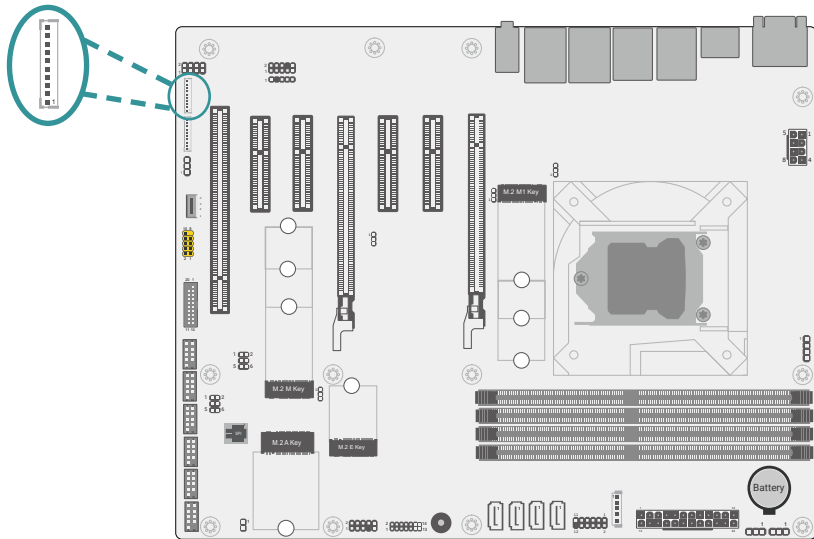
Pin	Assignment
1	DI3
2	DI2
3	DI1
4	DI0
5	DO3
6	DO2
7	DO1
8	DO0
9	VCC
10	GND

DIO Conn. (4 out) (J7)
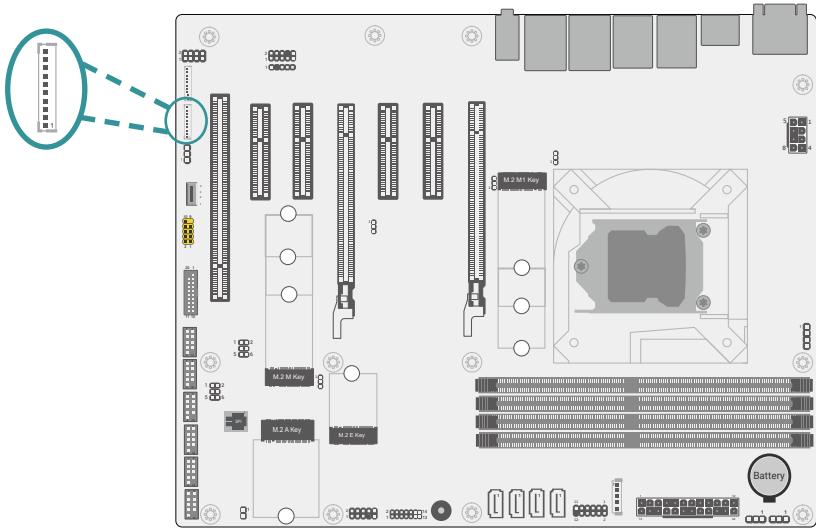
Pin	Assignment
1	NC
2	NC
3	NC
4	NC
5	DO7
6	DO6
7	DO5
8	DO4
9	VCC
10	GND

Front Panel (J9)
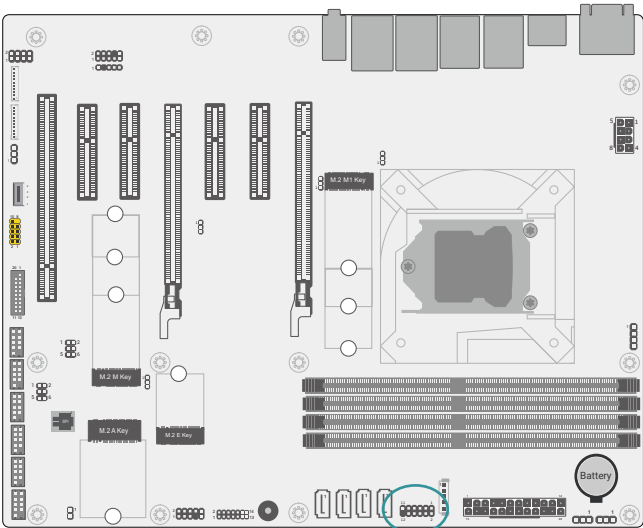
Pin	Assignment	Pin	Assignment
1	NC	2	V_SUS_LED
3	3V3	4	V_SUS_LED
5	HDD_LED	6	SUS_LED
7	GND	8	GND
9	SYS_RST-	10	PWR_BTN-
11	NC	12	---
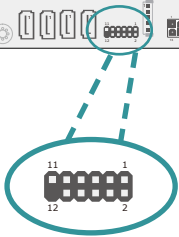
eSPI (J31)
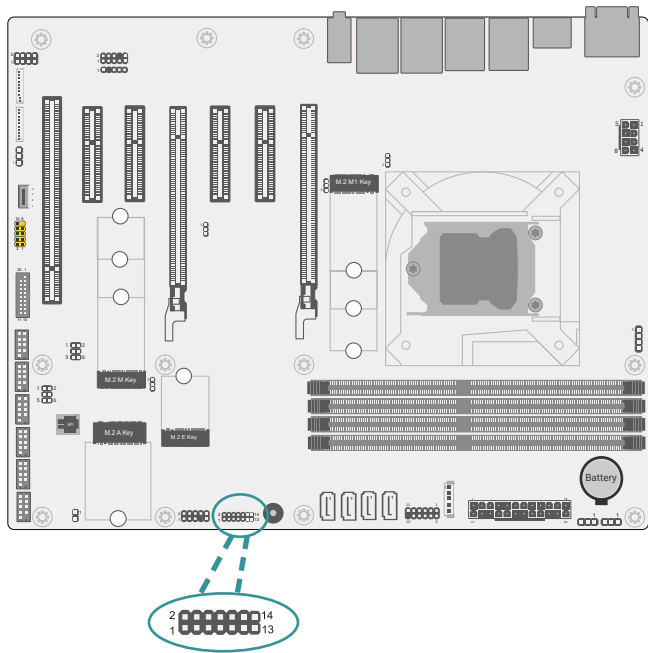
Pin	Assignment	Pin	Assignment
1	3V3SB	2	ESPI_CLK
3	ESPI_RESET#	4	GND
5	ESPI_ALT#	6	GND
7	ESPI_D0	8	---
9	ESPI_D1	10	ESPI_CS
11	ESPI_D2	12	3V3SB
13	ESPI_D3	14	3V3SB

USB3_5/6, USB2_5/6 (UBJ1)
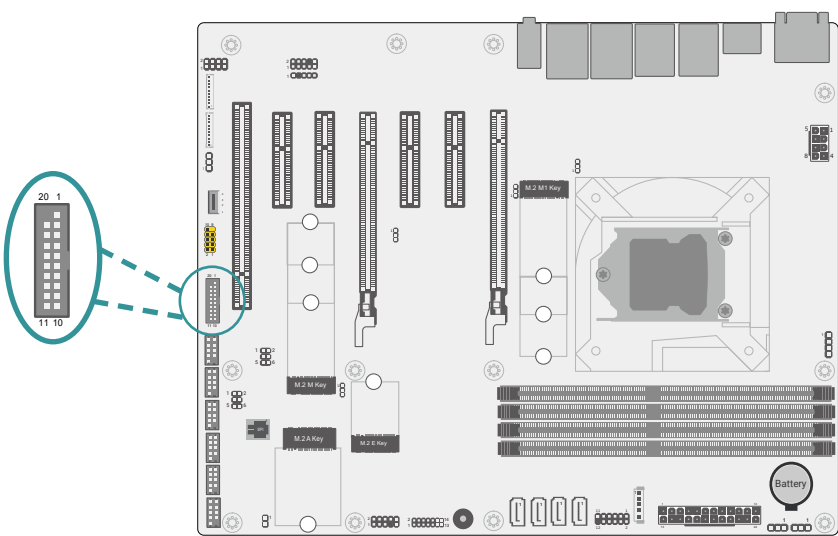
Pin	Assignment	Pin	Assignment
1	5VDU	11	USB2_2P
2	USB3_RX1_DN	12	USB2_2N
3	USB3_RX1_DP	13	GND
4	GND	14	USB3_TX2_DP
5	USB3_TX1_DN	15	USB3_TX2_DN
6	USB3_TX1_DP	16	GND
7	GND	17	USB3_RX2_DP
8	USB2_1N	18	USB3_RX2_DN
9	USB2_1P	19	5VDU
10	NC	20	----

▶ **System Memory**
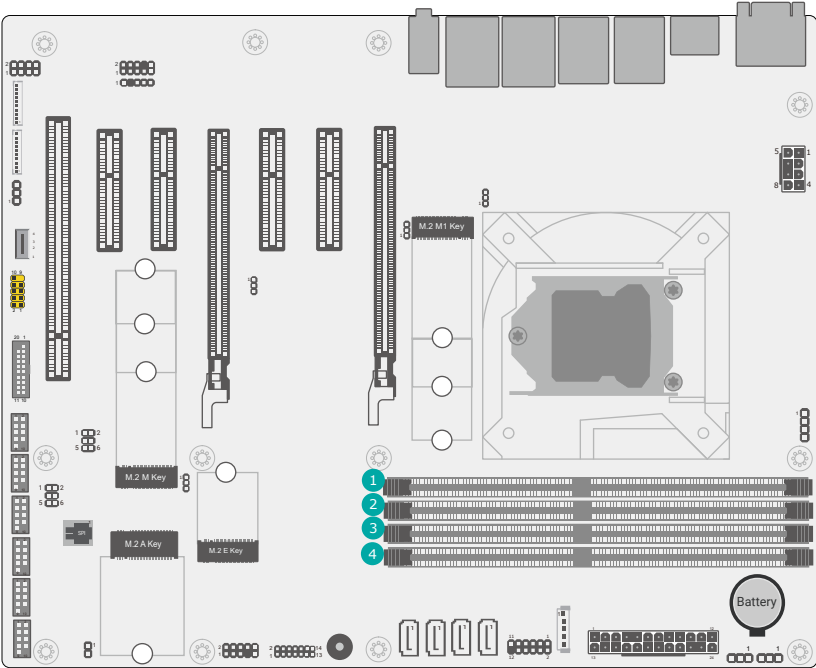
1	DIMM1
2	DIMM2
3	DIMM3
4	DIMM4

Installing the DIMM Module

Before installing the memory module, please make sure that the following safety cautions are well-attended.

1. Make sure the PC and all other peripheral devices connected to it has been powered down.

2. Disconnect all power cords and cables.

3. Locate the DIMM socket on the system board

4. Make sure the notch on memory card is aligned to the key on the socket.

⫷ **Memory Module**

↑ Notch

⫷ **Socket Top View**

↑ Key

Eject Tab   Eject Tab

⫷ **Socket Side View**
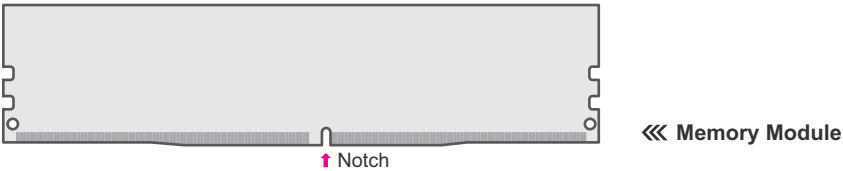
The system board supports the following memory interface.

Single Channel (SC)
Data will be accessed in chunks of 64 bits from the memory channels. DIMMs are on the same channel. DIMMs in a channel can be identical or completely different. However, we highly recommend using identical DIMMs. Not all slots need to be populated.

Dual Channel (DC)
Data will be accessed in chunks of 128 bits from the memory channels. Dual channel provides better system performance because it doubles the data transfer rate.

► Expansion Slots
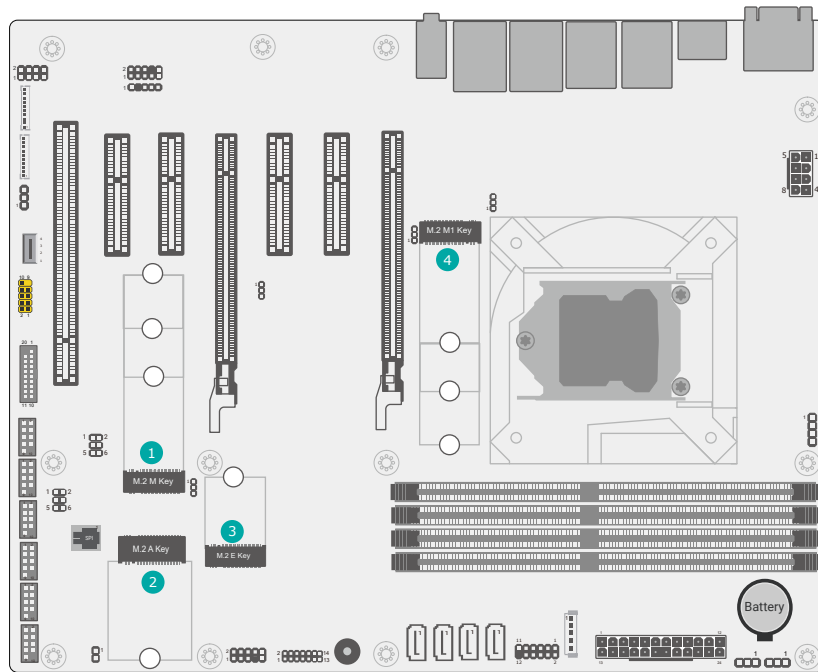
1	M.2 M-Key
2	M.2 A-Key
3	M.2 E-Key
4	M.2 M1-Key

Installing the M.2 Module

Before installing the M.2 module into the M.2 socket, please make sure that the following safety cautions are well-attended.

1. Make sure the PC and all other peripheral devices connected to it has been powered down.

2. Disconnect all power cords and cables.

3. Locate the M.2 socket on the system board

4. Make sure the notch on card is aligned to the key on the socket.

5. Make sure the standoff screw is removed from the standoff.

M.2 Module   **M.2 Socket**

Notch ➡   Stand-off ➡   Key ➡
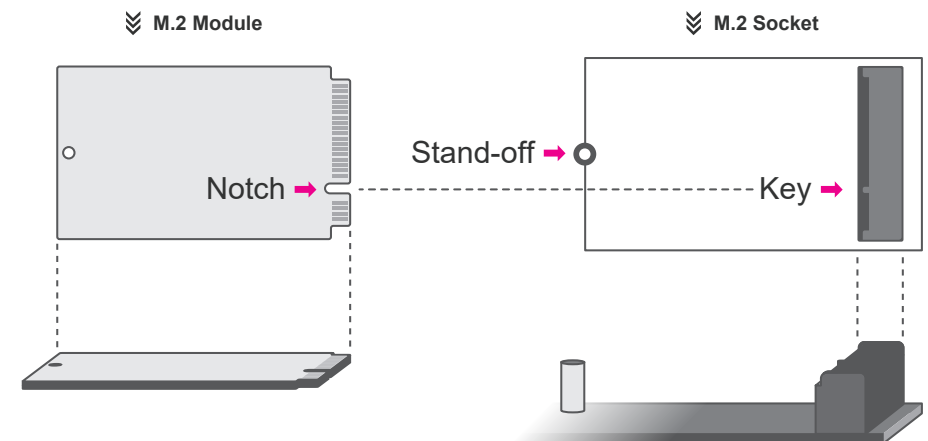
Please follow the steps below to install the card into the socket.
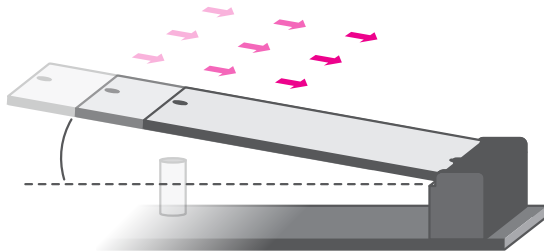
Step 1:
Insert the card into the socket at an angle while making sure the notch and key are perfectly aligned.
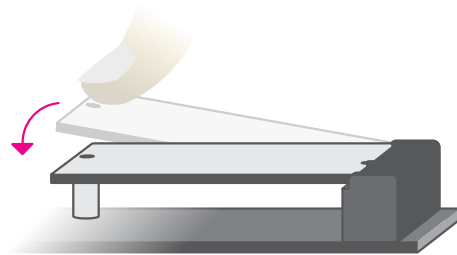
Step 2:
Press the end of the card far from the socket down until against the stand-off.

Step 3:
Screw tight the card onto the stand-off with a screw driver and a stand-off screw until the gap between the card and the stand-off closes up. The card should be lying parallel to the board when it's correctly mounted.

Chapter 3 - BIOS Settings

▶ Overview

The BIOS is a program that takes care of the basic level of communication between the CPU and peripherals. It contains codes for various advanced features found in this system board. The BIOS allows you to configure the system and save the configuration in a battery-backed CMOS so that the data retains even when the power is off. In general, the information stored in the CMOS RAM of the EEPROM will stay unchanged unless a configuration change has been made such as a hard drive replaced or a device added.

It is possible that the CMOS battery will fail causing CMOS data loss. If this happens, you need to install a new CMOS battery and reconfigure the BIOS settings.

Note:
The BIOS is constantly updated to improve the performance of the system board; therefore the BIOS screens in this chapter may not appear the same as the actual one. These screens are for reference purpose only.

Default Configuration
Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering the BIOS Setup Utility
The BIOS Setup Utility can only be operated from the keyboard and all commands are keyboard commands. The commands are available at the right side of each setup screen.
The BIOS Setup Utility does not require an operating system to run. After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the message "Press DEL to run setup" will appear on the screen. If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

Legends

Keys	Function
Right / Left arrow	Move the highlight left or right to select a menu
Up / Down arrow	Move the highlight up or down between submenus or fields
<Enter>	Enter the highlighted submenu
+ (plus key)/F6	Scroll forward through the values or options of the highlighted field
- (minus key)/F5	Scroll backward through the values or options of the highlighted field
<F1>	Display general help
<F2>	Display previous values
<F7>	Popup Boot Device List
<F9>	Optimized defaults
<F10>	Save and Exit
<Esc>	Return to previous menu

Scroll Bar
When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu
When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

▶ **Main**

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

```
                          Aptio Setup - AMI
     Main  Advanced  Security  Boot  Save & Exit  MEBx

  Project Name              ARS630              Set the Date. Use Tab to
  BIOS Version              B256.05A            switch between Date elements.
  UUID                                          Default Ranges:
  00020003-0004-0005-0006-000700080009         Year: 1998-2121
                                                Months: 1-12
  Intel(R) Core(TM) Ultra 9 285T               Days: Dependent on month
  ID                        0xC0662             Range of Years may vary.
  Stepping                  A0
  Microcode Revision        110

  FSP version               0D.00.C5.51
  RC version                0D.E0.C5.51
  IGFX GOP Version          22.0.1053
  Memory RC Version         1.4.6.30            →←: Select Screen
  Total Memory              16384 MB            ↑↓: Select Item
  Memory Frequency           5600 MHz           Enter: Select
                                                +/-: Change Opt.
  PCH SKU                   MTL SOC S           F1: General Help
  ME FW Version             19.0.0.1797         F2: Previous Values
  ME Firmware SKU           Corporate SKU       F9: Optimized Defaults
                                                F10: Save & Reset
  System Date               [Sun 06/22/2025]    ESC: Exit
  System Time               [22:12:40]

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```

System Date

The date format is <month>, <date>, <year>. Press "Tab" to switch to the next field and press "-" or "+" to modify the value.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

▶ **Advanced**

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

> **Important:**
> Setting incorrect field values may cause the system to malfunction.

```
                          Aptio Setup - AMI
     Main  Advanced  Security  Boot  Save & Exit  MEBx

  ▶ CPU Configuration                    CPU Configuration Parameters
  ▶ Power & Performance
  ▶ System Agent (SA) Configuration
  ▶ PCIE Configuration
  ▶ PCH-IO Configuration
  ▶ PCH-FW Configuration
  ▶ Trusted Computing
  ▶ NCT6126D Super IO Configuration
  ▶ NCT6126D HW Monitor
  ▶ Serial Port Console Redirection
  ▶ ACPI Settings
  ▶ Network Stack Configuration          →←: Select Screen
  ▶ NVMe Configuration                   ↑↓: Select Item
  ▶ DFI WDT Configuration                Enter: Select
  ▶ USB Power Control                    +/-: Change Opt.
                                         F1: General Help
                                         F2: Previous Values
                                         F9: Optimized Defaults
                                         F10: Save & Reset
                                         ESC: Exit

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```

▶ **Advanced**

CPU Configuration

```
                          Aptio Setup - AMI
  ┌─────────────┐
  │  Advanced   │
 ┌─────────────────────────────────────────┬─────────────────────────────┐
 │ CPU Configuration                        │ When enabled, a VMM can     │
 │                                          │ utilize the additional      │
 │ Intel (VMX) Virtualization   [Enabled]   │ hardware capabilities provided│
 │ Technology                               │ by Vanderpool Technology.   │
 │ AES                          [Enabled]   │                             │
 │                                          │                             │
 │                                          │                             │
 │                                          ├─────────────────────────────│
 │                                          │ ↔: Select Screen            │
 │                                          │ ↑↓: Select Item             │
 │                                          │ Enter: Select               │
 │                                          │ +/-: Change Opt.            │
 │                                          │ F1: General Help            │
 │                                          │ F2: Previous Values         │
 │                                          │ F9: Optimized Defaults      │
 │                                          │ F10: Save & Reset           │
 │                                          │ ESC: Exit                   │
 │                                          │                             │
 └─────────────────────────────────────────┴─────────────────────────────┘
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```

Intel (VMX) Virtualization Technology

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

AES

Enable or disable AES function.

▶ **Advanced**

Power & Performance

```
                          Aptio Setup - AMI
  ┌─────────────┐
  │  Advanced   │
 ┌─────────────────────────────────────────┬─────────────────────────────┐
 │ Power & Performance                      │ CPU - Power Management Control│
 │                                          │ Options                     │
 │ ▶ CPU - Power Management Control         │                             │
 │ ▶ GT - Power Management Control          │                             │
 │                                          │                             │
 │                                          ├─────────────────────────────│
 │                                          │ ↔: Select Screen            │
 │                                          │ ↑↓: Select Item             │
 │                                          │ Enter: Select               │
 │                                          │ +/-: Change Opt.            │
 │                                          │ F1: General Help            │
 │                                          │ F2: Previous Values         │
 │                                          │ F9: Optimized Defaults      │
 │                                          │ F10: Save & Reset           │
 │                                          │ ESC: Exit                   │
 │                                          │                             │
 └─────────────────────────────────────────┴─────────────────────────────┘
                Version 2.22.1296 Copyright (C) 2025 AMI
```

Note:
Some of the fields may not be available when the features are not supported by the equipped CPU.

▶ **Advanced**

Power & Performance ▶ **CPU- Power Management Control**

```
                          Aptio Setup - AMI
        Advanced

     CPU - Power Management Control               Enable/Disable Resource
                                                  Priority Feature support.
     Resource Priority Feature      [Disabled]
       Turbo Mode                   [Enabled]
     C states                       [Enabled]




                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save & Reset
                                                  ESC: Exit



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```
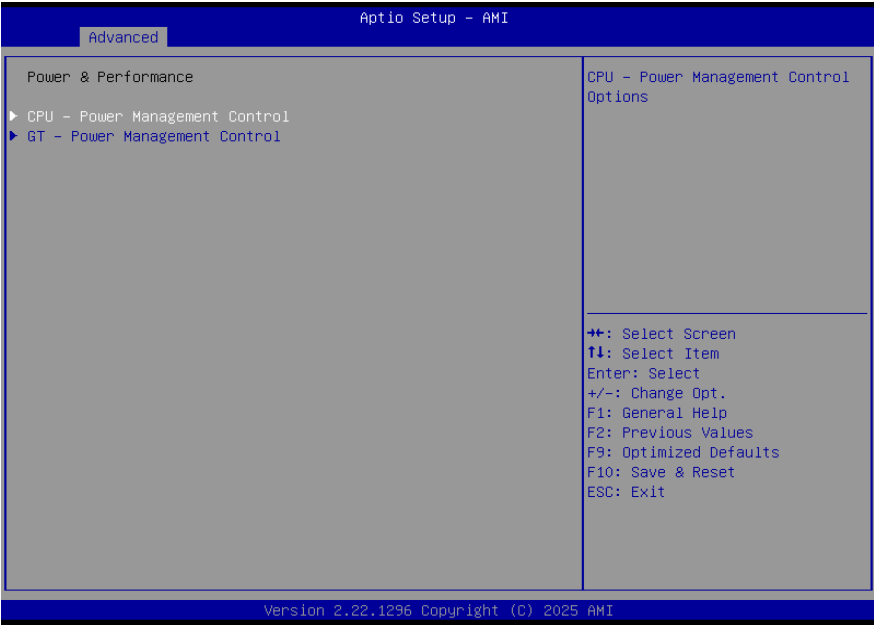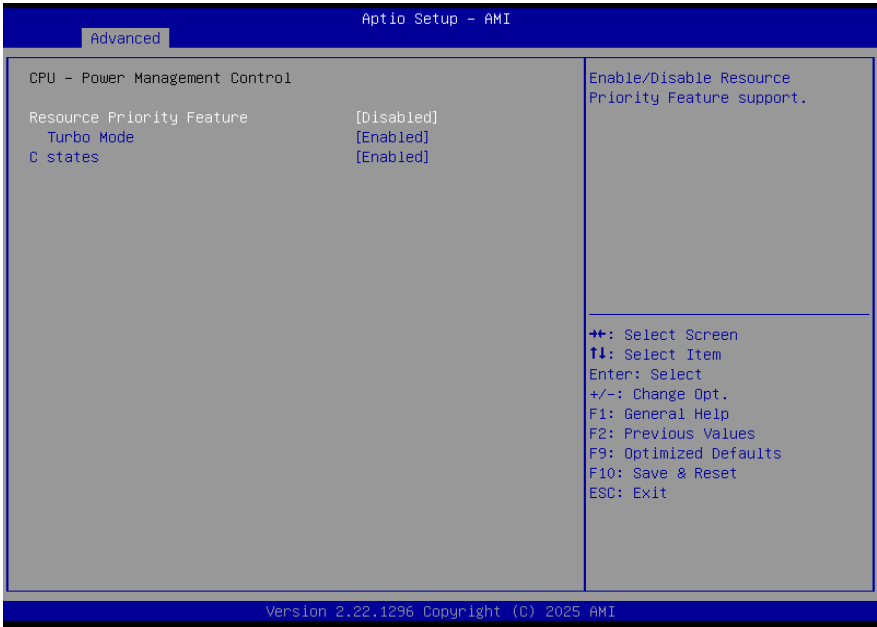
Resource Priority Feature

Enable/Disable Resource Priority Feature support.

Turbo Mode

Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.

C states

Enable or disable CPU Power Management. It allows CPU to enter "C states" when it's idle and nothing is executing.

▶ **Advanced**

Power & Performance ▶ **GT- Power Management Control**

```
                          Aptio Setup - AMI
        Advanced

     GT - Power Management Control                Check to enable render standby
                                                  support.
     RC6(Render Standby)            [Enabled]




                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save & Reset
                                                  ESC: Exit



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```
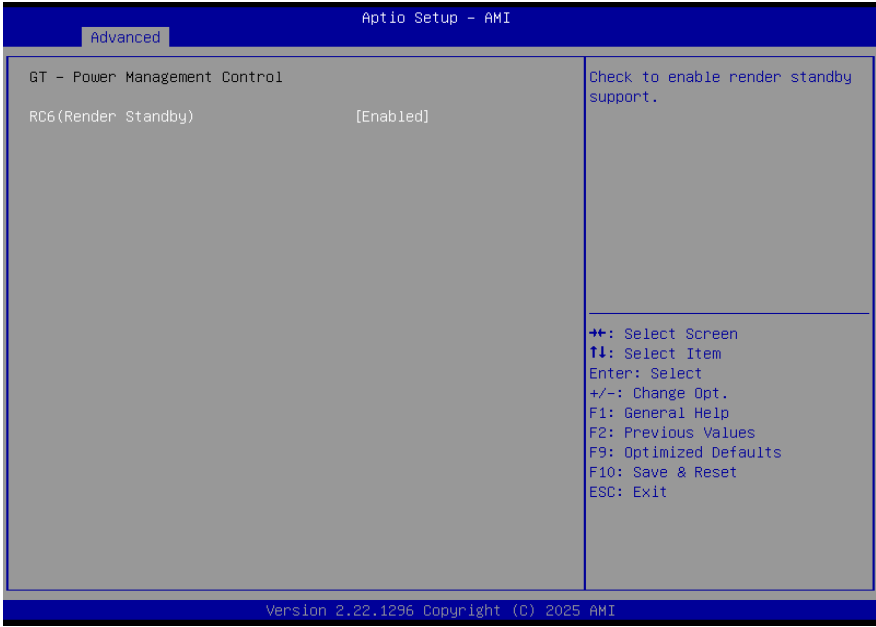
RC6 (Render Standby)
Check to enable render standby support.

▶ **Advanced**

System Agent (SA) Configuration

```
                           Aptio Setup - AMI
    ┌─────────────┐
    │  Advanced   │
    └─────────────┘
     System Agent (SA) Configuration              Memory Configuration Parameters

   ▶ Memory Configuration
   ▶ Graphics Configuration
   ▶ VMD setup menu




                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save & Reset
                                                  ESC: Exit




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```
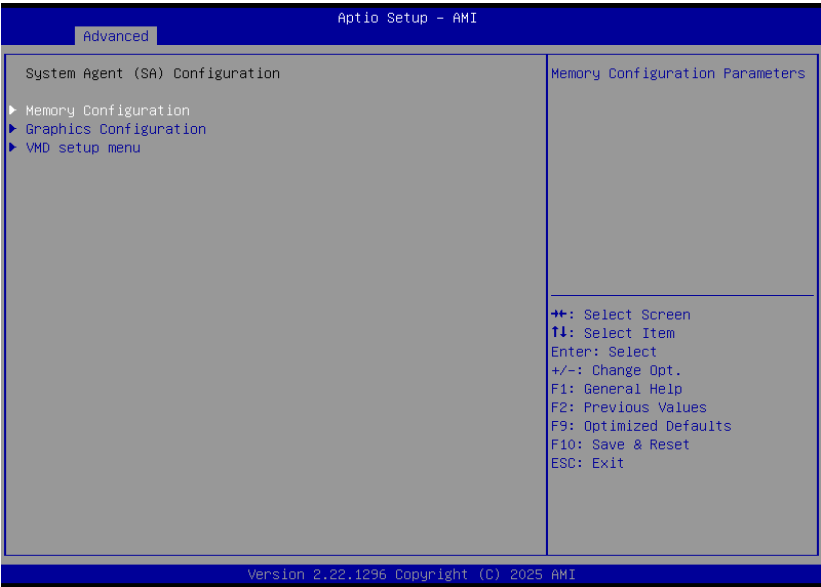
Memory Configuration

Memory Configuration Parameters

Graphics Configuration

Graphics Configuration

VMD setup menu

VMD Configuration Settings

▶ **Advanced**

PCIE Configuration

```
                           Aptio Setup - AMI
    ┌─────────────┐
    │  Advanced   │
    └─────────────┘
     PCIE Configuration                           Enable when using Compliance
                                                  Load Board
     Compliance Test Mode            [Disabled]


     SOC Configuration
   ▶ PCIE1
   ▶ PCIE4

     IOE Configuration
   ▶ PCIE3
   ▶ M.2-M1/PCIE2

     PCH Configuration                            →←: Select Screen
   ▶ LAN3                                         ↑↓: Select Item
   ▶ LAN4                                         Enter: Select
   ▶ M.2-E                                        +/-: Change Opt.
   ▶ PCIE5                                        F1: General Help
   ▶ LAN1                                         F2: Previous Values
   ▶ LAN2                                         F9: Optimized Defaults
   ▶ M.2-M2(RO)                                   F10: Save & Reset
   ▶ PCIE6                                        ESC: Exit



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```

Select one of the PCI Express channels and press enter to configure the following settings.

Compliance Test Mode

Enable when using compliance Load Board.

PCIE1, 2, 3, 4, 5, 6, LAN1, 2, 3, 4, M.2-E, M.2-M1, M.2-M2

Control the PCI Express Root Port.

▶ **Advanced**

PCH-IO Configuration

```
                          Aptio Setup - AMI
        Advanced

     PCH-IO Configuration                          SATA Device Options Settings

   ▶ SATA Configuration
   ▶ HD Audio Configuration

     EUP                            [Disabled]

                                                  ↔: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save & Reset
                                                  ESC: Exit

                    Version 2.22.1296 Copyright (C) 2025 AMI
```
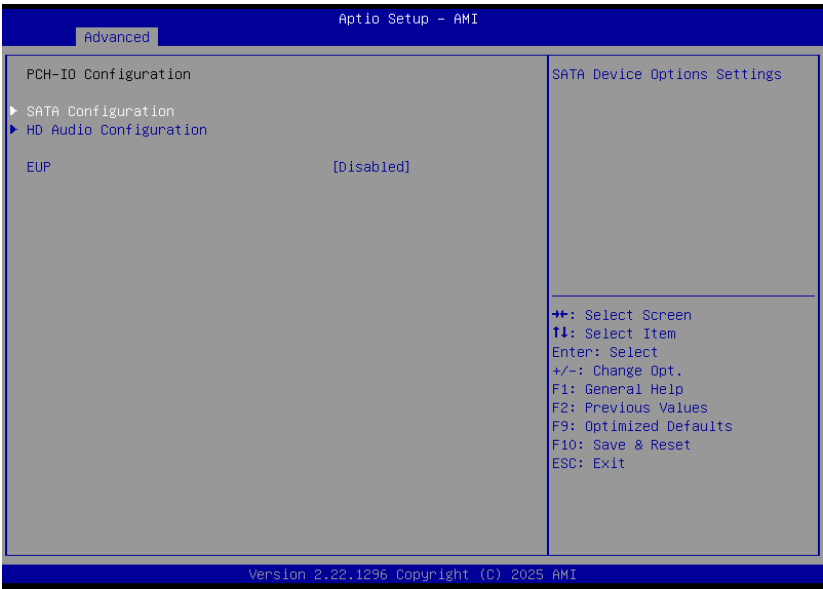
SATA Configuration

SATA Device Otpions Settings

HD Audio Configuration

HD Audio Subsystem Configuration Settings

▶ **Advanced**

PCH-IO Configuration▶ SATA Configuration

```
                          Aptio Setup - AMI
        Advanced

     SATA Configuration                           Enable/Disable SATA Device.

     SATA Controller(s)             [Enabled]
     SATA Speed                     [Auto]

     M.2-M2(R0)                     Empty
        Port 0                      [Enabled]
     SATA0(R4)                      Empty
        Port 4                      [Enabled]
     SATA1(R5)                      Empty
        Port 5                      [Enabled]
     SATA2(R6)                      Empty
        Port 6                      [Enabled]
     SATA3(R7)                      Empty
        Port 7                      [Enabled]
                                                  ↔: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save & Reset
                                                  ESC: Exit

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```

SATA Controller(s)

This field is used to enable or disable the Serial ATA controller.

SATA Speed

This field is used to select SATA speed generation limit: Auto, Gen1, Gen2 or Gen3.

Ports

Enable or disable the Serial ATA port function.

▶ **Advanced**

PCH-IO Configuration▶ HD Audio Configuration

```
                          Aptio Setup - AMI
     Advanced

    HD Audio Subsystem Configuration Settings        Control Detection of the
                                                     HD-Audio device.
    HD Audio                      [Enabled]          Disabled = HDA will be
                                                     unconditionally disabled
                                                     Enabled = HDA will be
                                                     unconditionally enabled.

                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F9: Optimized Defaults
                                                     F10: Save & Reset
                                                     ESC: Exit

                   Version 2.22.1296 Copyright (C) 2025 AMI
```
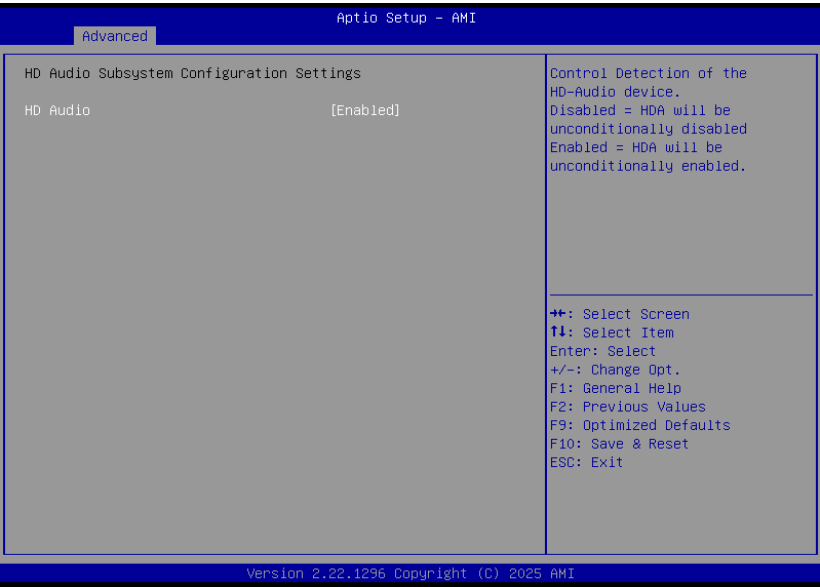
HD Audio

Control the detection of the HD Audio device.

• **Disabled** HDA will be unconditionally disabled.

• **Enabled** HDA will be unconditionally enabled.

▶ **Advanced**

PCH-FW Configuration

```
                          Aptio Setup - AMI
     Advanced

    ME State                      [Enabled]          When Disabled, ME will be put
                                                     into ME Temporarily Disabled
  ▶ Firmware Update Configuration                    Mode.
                                                     NOTE:
                                                     Once this option is changed
                                                     and saved, it is grayed out to
                                                     prevent command been sent
                                                     again before reset.

                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F9: Optimized Defaults
                                                     F10: Save & Reset
                                                     ESC: Exit

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```

ME State

When this field is set to Disabled, ME will be put into ME Temporarily Disabled Mode.

Firmware Update Configuration

Configure Management Engine Technology Parameter

Note:
The sub-menus are detailed in following sections.

▶ **Advanced**

Trusted Computing

```
                        Aptio Setup - AMI
        Advanced

  Configuration                              Enables or Disables BIOS
    Security Device Support      [Enabled]   support for security device.
    NO Security Device Found                 O.S. will not show Security
                                             Device. TCG EFI protocol and
                                             INT1A interface will not be
                                             available.


                                             →←: Select Screen
                                             ↑↓: Select Item
                                             Enter: Select
                                             +/-: Change Opt.
                                             F1: General Help
                                             F2: Previous Values
                                             F9: Optimized Defaults
                                             F10: Save & Reset
                                             ESC: Exit


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```

Security Device Support

This field is used to enable or disable BIOS support for the security device such as an TPM 2.0 to achieve hardware-level security via cryptographic keys.

▶ **Advanced**

NCT6126D Super IO Configuration

```
                        Aptio Setup – AMI
  ┌──────────┐
  │ Advanced │
  └──────────┘
   NCT6126D Super IO Configuration              WatchDog Timer Unit Selection

   Super IO Chip                NCT6126D

   WatchDog Timer Unit          [Second]
      SuperIO WatchDog Timer     0

  ▶ Serial Port 1 Configuration
  ▶ Serial Port 2 Configuration
  ▶ Serial Port 3 Configuration
  ▶ Serial Port 4 Configuration
  ▶ Serial Port 5 Configuration
  ▶ Serial Port 6 Configuration
                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/−: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F9: Optimized Defaults
                                               F10: Save & Reset
                                               ESC: Exit

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```

> **Note:**
> The sub-menus are detailed in following sections.

▶ **Advanced**

NCT6126D Super IO Configuration ▶ **Serial Port 1, 2 Configuration**

```
                        Aptio Setup – AMI
  ┌──────────┐
  │ Advanced │
  └──────────┘
   Serial Port 1 Configuration                 Enable or Disable Serial Port
                                               (COM)
   Serial Port                  [Enabled]
   Device Settings              IO=3F8h; IRQ=4;
   Electrical Interface Mode    [RS232]

                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/−: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F9: Optimized Defaults
                                               F10: Save & Reset
                                               ESC: Exit

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```

```
                        Aptio Setup – AMI
  ┌──────────┐
  │ Advanced │
  └──────────┘
   Serial Port 2 Configuration                 Enable or Disable Serial Port
                                               (COM)
   Serial Port                  [Enabled]
   Device Settings              IO=2F8h; IRQ=3;
   Electrical Interface Mode    [RS232]

                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/−: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F9: Optimized Defaults
                                               F10: Save & Reset
                                               ESC: Exit

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```

Serial Port
Enable or disable serial port.

▶ **Advanced**

NCT6126D Super IO Configuration ▶ **Serial Port 3, 4 Configuration**
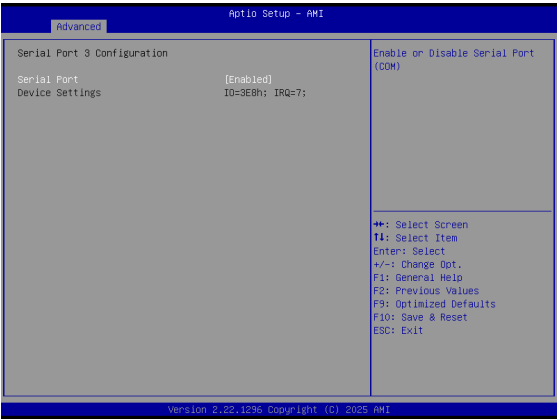
Serial Port
Enable or disable serial port.

▶ **Advanced**

NCT6126D Super IO Configuration ▶ **Serial Port 5, 6 Configuration**

Serial Port
Enable or disable serial port.

▶ **Advanced**

NCT6126D Hardware Monitor

```
                        Aptio Setup - AMI
        Advanced

  Pc Health Status                          Smart Fan function setting

▶ Smart Fan Function

  Case Open                   [Disabled]

  System temperature        : +30 %
  CPU temperature           : +48 %
  System temperature3       : +30 %
  SYS_FAN                   : N/A
  CPU_FAN                   : 3110 RPM
  SYS_FAN2                  : N/A
  Fan4 Speed                : N/A
  VBAT                      : +3.040 V       ++: Select Screen
  VCORE                     : +1.344 V       ↑↓: Select Item
  VDDQ                      : +1.104 V       Enter: Select
  5V                        : +5.038 V       +/-: Change Opt.
  +12V                      : +12.320 V      F1: General Help
                                             F2: Previous Values
                                             F9: Optimized Defaults
                                             F10: Save & Reset
                                             ESC: Exit


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```

This section displays the system's health information, i.e. voltage readings, CPU and system temperatures, and fan speed readings

▶ **Advanced**

NCT6126D Hardware Monitor ▶ Smart FAN Function

```
                        Aptio Setup - AMI
        Advanced

  System Smart Fan(1) Control              ▲  System Smart Fan Mode Select
  System Smart Fan Mode          [Smart Fan]
    Boundary 1                      30
    Boundary 2                      40
    Boundary 3                      50
    Boundary 4                      60
    Speed Count 1                   35
    Speed Count 2                   60
    Speed Count 3                   80
    Speed Count 4                   100
  CPU Smart Fan Control
  CPU Smart Fan Mode             [Smart Fan]
    Boundary 1                      30
    Boundary 2                      40          ++: Select Screen
    Boundary 3                      50          ↑↓: Select Item
    Boundary 4                      60          Enter: Select
    Speed Count 1                   35          +/-: Change Opt.
    Speed Count 2                   60          F1: General Help
    Speed Count 3                   80          F2: Previous Values
    Speed Count 4                   100         F9: Optimized Defaults
  System Smart Fan(2/3) Control                 F10: Save & Reset
  System Smart Fan(2/3) Mode     [Smart Fan]    ESC: Exit
    Boundary 1                      30
    Boundary 2                      40
    Boundary 3                      50       ▼


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```

CPU/SYS Smart Fan Mode = [Smart Fan]

Boundary 1 to Boundary 4
Set the boundary temperatures that determine the fan speeds accordingly, the value ranging from 0-127℃. For example, when the system temperature reaches Boundary 1 setting, the fan speed will be turned up to the designated speed of the Fan Speed Count 1 field.

Fan Speed Count 1 to Fan Speed Count 4
Set the fan speed, the value ranging from 1-100%, 100% being full speed. The fans will operate according to the specified boundary temperatures above-mentioned.

CPU/SYS Smart Fan Mode = [Manual Mode]

Fix Fan Speed Count
Set the fan speed, the value ranging from 1-100%, 100% being full speed. The fans will always operate at the specified speed regardless of gauged temperatures.

▶ **Advanced**

Serial Port Console Redirection

```
                        Aptio Setup - AMI
    Advanced


  COM1 (Disabled)
  Console Redirection          Port Is Disabled

  COM2 (Disabled)
  Console Redirection          Port Is Disabled




                                        →←: Select Screen
                                        ↑↓: Select Item
                                        Enter: Select
                                        +/-: Change Opt.
                                        F1: General Help
                                        F2: Previous Values
                                        F9: Optimized Defaults
                                        F10: Save & Reset
                                        ESC: Exit


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```
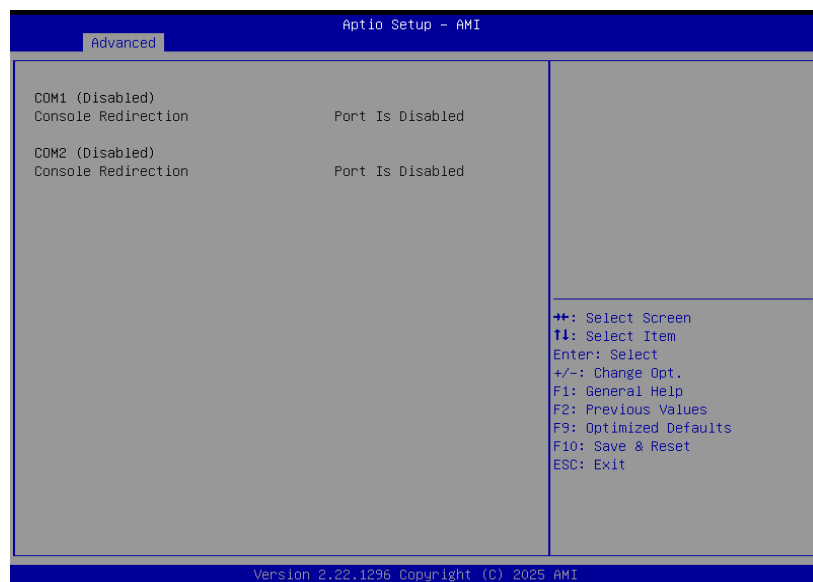
Console Redirection

By enabling Console Redirection of a COM port, the sub-menu of console redirection settings will become available for configuration as detailed in the following.

▶ **Advanced**

ACPI Settings

```
                           Aptio Setup - AMI
      Advanced

       ACPI Settings                                   Enable or disable System wake
                                                       on alarm event. When enabled,
       Wake System from S5 via RTC     [Disabled]      System will wake on the
       State After G3                  [S0 State]      hr::min::sec specified




                                                       →←: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F9: Optimized Defaults
                                                       F10: Save & Reset
                                                       ESC: Exit


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```
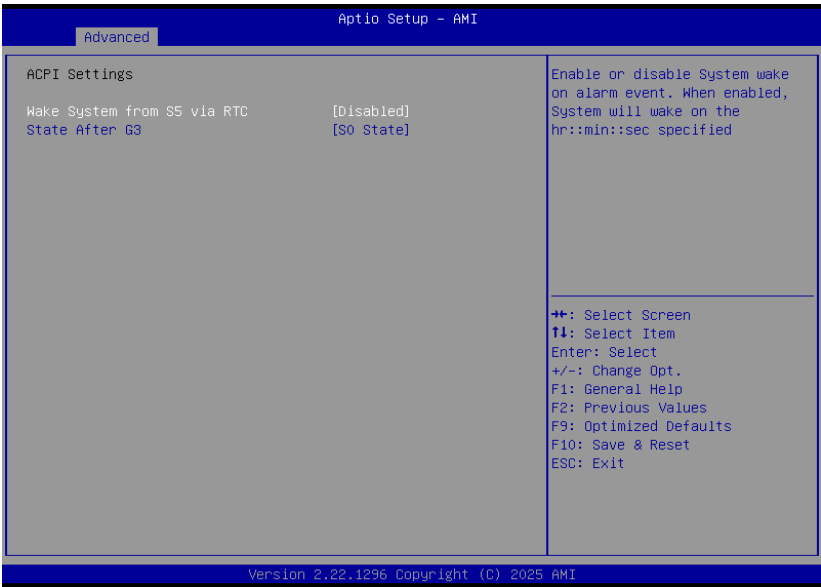
Wake system from S5 via RTC

When Enabled, the system will automatically power up at a designated time every day. Once it's switched to [Enabled], please set up the time of day — hour, minute, and second — for the system to wake up.

State After G3

Select between S0 State, and S5 State. This field is used to specify what state the system is set

to return to when power is re-applied after a power failure (G3 state).

• **S0 State**   The system automatically powers on after power failure.

• **S5 State**   The system enter soft-off state after power failure. Power-on signal input is
required to power up the system.

• **Last State**   The system returns to the last state right before power failure.

▶ **Advanced**

Network Stack Configuration

```
                           Aptio Setup - AMI
      Advanced

       Network Stack                 [Enabled]         Enable/Disable UEFI Network
         IPv4 PXE Support            [Disabled]        Stack
         IPv4 HTTP/S Support         [Disabled]
         IPv6 PXE Support            [Disabled]
         IPv6 HTTP/S Support         [Disabled]
         PXE boot wait time          0
         Media detect count          1


                                                       →←: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F9: Optimized Defaults
                                                       F10: Save & Reset
                                                       ESC: Exit


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```

Network Stack

Enable or disable UEFI network stack. The following fields will appear when this field is enabled.

Ipv4 PXE/HTTP/S Support

Enable or disable IPv4 PXE/HTTP/S boot support. If disabled, IPv4 PXE/HTTP/S boot support will not be available.

Ipv6 PXE/HTTP/S Support

Enable or disable IPv6 PXE/HTTP/S boot support. If disabled, IPv6 PXE/HTTP/S boot support will not be available.

PXE boot wait time

Set the wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.

Media detect count

Set the number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.

▶ **Advanced**

DFI WDT Configuration

```
                          Aptio Setup - AMI
   ┌─────────┐
   │Advanced │
   └─────────┘
 DFI WDT Configuration                              Enable/Disable Watchdog Timer

 Watchdog Timer                  [Enabled]
    Timeout Delay                15


                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F9: Optimized Defaults
                                                    F10: Save & Reset
                                                    ESC: Exit


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```
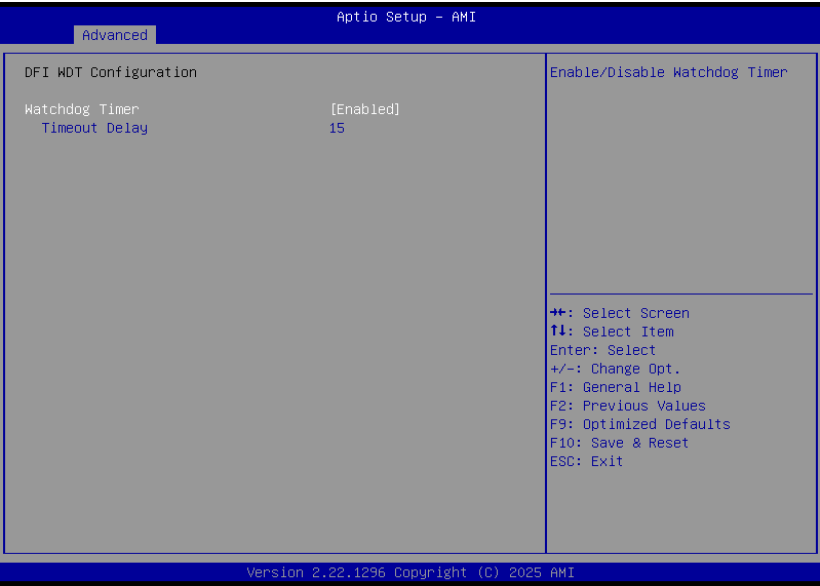
Watchdog Timer

Enable or disable Watchdog Timer.

▶ **Advanced**

USB Power Control

```
                          Aptio Setup - AMI
   ┌─────────┐
   │Advanced │
   └─────────┘
 USB3_1/2 USB2_1/2               [5V_Dual]          5V_Dual: Support system wake
 USB3_3/4 USB2_3/4               [5V_Dual]          up from S3/S4 by USB KB&MS
 USB3_5/6 USB2_5/6               [5V_Dual]          5V: No support system wake up
 USB3_7/8 USB2_7/8               [5V_Dual]          from S3/S4 by USB KB&MS
 USB3_9/10 USB2_9/10             [5V_Dual]
 USB2_11/12/13                   [5V_Dual]
 PS/2                            [5V_Dual]

                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F9: Optimized Defaults
                                                    F10: Save & Reset
                                                    ESC: Exit


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```

USB Power Switch

5_Dual: Support system wake up from S3/S4 by USB KB&MS

5V: No support system wake up from S3/54 by USB KB&MS

▶ **Security**

Secure Boot

```
                         Aptio Setup - AMI
       Main  Advanced  Security  Boot  Save & Exit  MEBx

   Password Description                              Set Administrator Password

   Minimum length               3
   Maximum length               20

   Administrator Password

 ▶ Secure Boot




                                                    ↔: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F9: Optimized Defaults
                                                    F10: Save & Reset
                                                    ESC: Exit


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```

```
                         Aptio Setup - AMI
              Security

   System Mode              Setup              Secure Boot feature is Active
                                               if Secure Boot is Enabled,
   Secure Boot              [Disabled]         Platform Key(PK) is enrolled
                            Not Active         and the System is in User mode.
                                               The mode change requires
   Secure Boot Mode         [Custom]           platform reset
 ▶ Restore Factory Keys
 ▶ Reset To Setup Mode

 ▶ Expert Key Management                       ↔: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F9: Optimized Defaults
                                               F10: Save & Reset
                                               ESC: Exit


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```
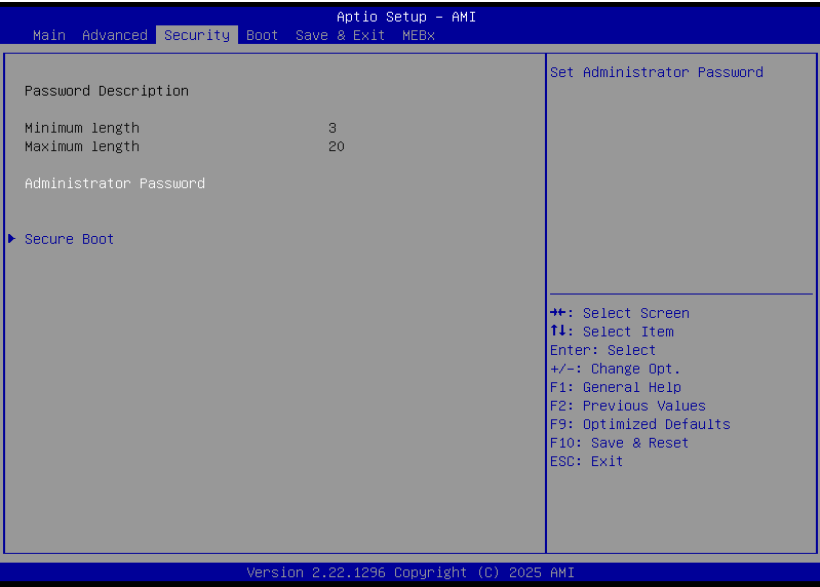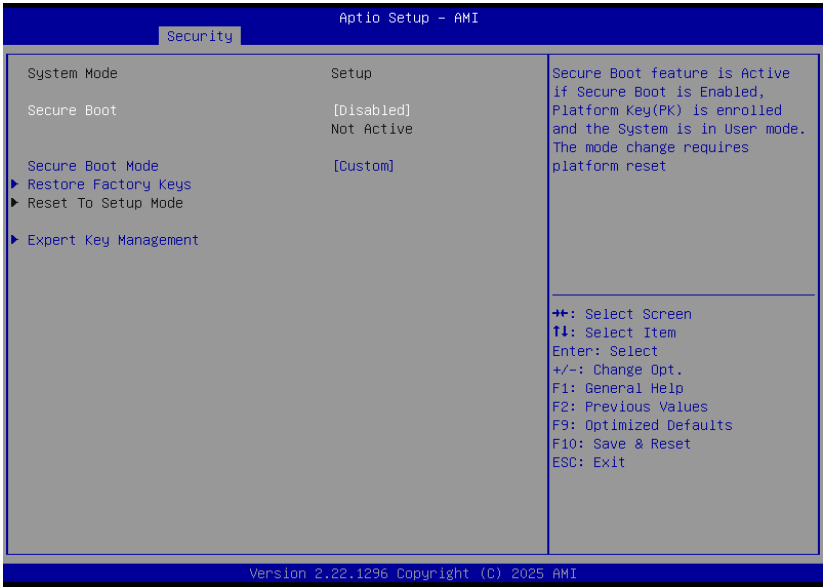
Administrator Password

Set the administrator password. To clear the password, input nothing and press enter when a new password is asked. Administrator Password will be required when entering the BIOS.

Secure Boot

The Secure Boot store a database of certificates in the firmware and only allows the OSes with authorized signatures to boot on the system. To activate Secure Boot, please make sure that "Secure Boot" is "[Enabled]", Platform Key (PK) is enrolled, "System Mode" is "User", and CSM is disabled. After enabling/disabling Secure Boot, please save the configuration and restart the system. When configured and activated correctly, the Secure Boot status will be "Active".

Secure Boot Mode

Select the secure boot mode — Standard or Custom. When set to Custom, the following fields will be configurable for the user to manually modify the key database.

Restore Factory Keys

Force system to User Mode. Load OEM-defined factory defaults of keys and databases onto the Secure Boot. Press Enter and a prompt will show up for you to confirm.

Reset To Setup Mode

Clear the database from the NVRAM, including all the keys and signatures installed in the Key Management menu. Press Enter and a prompt will show up for you to confirm.

Expert Key Management

Enables expert users to modify Secure Boot Policy variables without full authentication.

▶ **Boot**

```
                          Aptio Setup - AMI
     Main  Advanced  Security  Boot  Save & Exit  MEBx

    Boot Configuration                              Number of seconds to wait for
    Setup Prompt Timeout              1             setup activation key.
    Bootup NumLock State              [On]          65535(0xFFFF) means indefinite
    Quiet Boot                        [Disabled]    waiting.

    Boot Option Priorities
    Boot Option #1                    [UEFI: Generic Flash
                                      Disk 8.07, Partition 1
                                      (Generic Flash Disk
                                      8.07)]

                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F9: Optimized Defaults
                                                    F10: Save & Reset
                                                    ESC: Exit

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```

Setup Prompt Timeout

Set the number of seconds to wait for the setup activation key. 65535 (0xFFFF) denotes indefinite waiting.

Bootup NumLock State

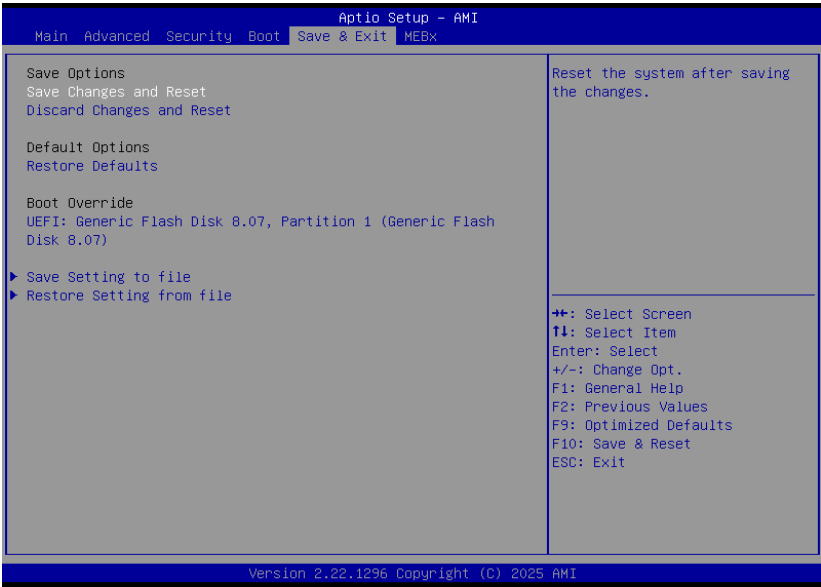Select the keyboard NumLock state: On or Off.

Quiet Boot

This section is used to enable or disable quiet boot option.

Boot Option Priorities

Rearrange the system boot order of available boot devices.

▶ **Save & Exit**

```
                          Aptio Setup - AMI
     Main  Advanced  Security  Boot  Save & Exit  MEBx

    Save Options                                    Reset the system after saving
    Save Changes and Reset                          the changes.
    Discard Changes and Reset

    Default Options
    Restore Defaults

    Boot Override
    UEFI: Generic Flash Disk 8.07, Partition 1 (Generic Flash
    Disk 8.07)

    ▶ Save Setting to file
    ▶ Restore Setting from file

                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F9: Optimized Defaults
                                                    F10: Save & Reset
                                                    ESC: Exit

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```

Save Changes and Reset

To save the changes, select this field and then press <Enter>. A dialog box will appear. Select Yes to reset the system after saving all changes made.

Discard Changes and Reset

To discard the changes, select this field and then press <Enter>. A dialog box will appear. Select Yes to reset the system setup without saving any changes.

Restore Defaults

To restore and load the optimized default values, select this field and then press <Enter>. A dia-log box will appear. Select Yes to restore the default values of all the setup options.

Boot Override

Move the cursor to an available boot device and press Enter, and then the system will immediately boot from the selected boot device. The Boot Override function will only be effective for the current boot. The "Boot Option Priorities" configured in the Boot menu will not be changed.

• **Save Setting to file** Select this option to save BIOS configuration settings to a USB flash device.

• **Restore Setting from file** This field will appear only when a USB flash device is detected. Select this field to restore set-ting from the USB flash device.

▶ Updating the BIOS

To update the BIOS, you will need the new BIOS file and a flash utility. Please contact technical support or your sales representative for the files and specific instructions about how to update BIOS with the flash utility.

▶ Notice: BIOS SPI ROM

1. The Intel® Management Engine has already been integrated into this system board. Due to the safety concerns, the BIOS (SPI ROM) chip cannot be removed from this system board and used on another system board of the same model.

2. The BIOS (SPI ROM) on this system board must be the original equipment from the factory and cannot be used to replace one which has been utilized on other system boards.

3. If you do not follow the methods above, the Intel® Management Engine will not be updated and will cease to be effective.

> **Note:**
> a. You can take advantage of flash tools to update the default configuration of the BIOS (SPI ROM) to the latest version anytime.
>
> b. When the BIOS IC needs to be replaced, you have to populate it properly onto the system board after the EEPROM programmer has been burned and follow the technical person's instructions to confirm that the MAC address should be burned or not.
>
> c. After updating unique MAC Address from manufacturing, NVM will be protected immediately after power cycle.
> Users cannot update NVM or MAC address.