NEXCOM International Co., Ltd.

Network and Communication Solutions

Fixed Wireless Access Telecom Appliance

FTA 5190

User Manual

NEXCOM International Co., Ltd.
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PREFACE

Copyright

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Acknowledgements

FTA 5190 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class B devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2011/65/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force in to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2013 will be RoHS compliant. They will use the usual NEXCOM naming convention.

Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by skilled person.

14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

    "ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions."

18. This equipment is not suitable for use in locations where children are likely to be present.

    Cet équipement ne convient pas à une utilisation dans des lieux pouvant accueillir des enfants.

19. Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

    Peut être installé dans des salles de matériel de traitement de l'information conformément à l'article 645 du National Electrical Code et à la NFPA 75.

20. Use certified and rated Laser Class I for Optical Transceiver product.

Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

Conventions Used in this Manual

Warning:
Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the product package you received is complete. It should contain all the items listed in the table below.

Item	Part Number	Name	Qty
1	19FT0519000X0	FTA5190 ASSY	1
2	5044440031X00	RUBBER FOOT KANG YANG:RF20-5-4P	4
3	6012200052X00	PE ZIPPER BAG #8	1
4	6012200053X00	PE ZIPPER BAG #3	1
5	6023309081X00	CABLE EDI:232091081804-RS	1
6	60111A0072X00	OUTSIDE CARTON FOR NSC3150 VER: A FULPAK 692x537x211mm (INSIDE) B FLUTE	1
7	60111A0071X00	INNER CARTON FOR NSC3150 VER:A FULPAK 675x520x180mm (INSIDE) AB FLUTE 18KG	1
8	6012200096X00	PE BAG FOR UTM625 VAR:A CHYUAN-JYH 910x600mm T:0.07mm	1
9	60110A0229X00	ACCESSORY BOX FOR S2216/S2224 VER:A YI GIA 284x207x42mm B FLUTE 14KG	1
10	6013300565X00	EPE LEFT FOR BBF640(NSC5130) VER:A FULPAK 675x180x128mm EPE	2
11	6013300566X00	EPE RIGHT FOR BBF640(NSC5130) VER:A FULPAK 675x180x128mm EPE	2
12	5040210036X00	EAR SET FOR NSA5181 VER:A PANADVANCE 53.85x43x22mm SECC T=2.0mm PANTING PANTONE 295U	1
13	50311F0713X00	I HEAD T8 SCREW LONG FEI M3x4 NI NYIOK	3

Ordering Information

FTA 5190 (P/N: 10FT0519000X0)
1U rackmount w/ Intel® Xeon® 6556P-B SoC processor, 8 x 25GbE SFP+ port, 8 x 1GbE RJ45 port, and 1 x LAN module slot

Chapter 1: Product Introduction

Overview

Front

Rear

Key Features

- Intel® Xeon® 6556P-B SoC processor, up to 36 cores
- 4 x DDR5 6400 ECC RDIMM, up to 128GB
- 1 x M.2 Key M 2280 NVMe SSD (PCIe 4.0/5.0)
- 2 x M.2 Key M/B 2242 SSD
- 8 x 25GbE SFP+ port
- 8 x 1GbE RJ45 port
- 1 x LAN module slot
  - Support: 1 x PCIe 4.0 x16

Hardware Specifications

Main Board

- Intel® Xeon® 6556P-B SoC processor, up to 36 cores
- Support Intel® QAT Gen 5
- TPM 2.0

Main Memory

4 x DDR5 6400 ECC RDIMM, up to 128GB, 32GB per DIMM

Storage Device

- 1 x M.2 Key M 2280 NVMe SSD (PCIe 4.0/5.0)
- 2 x M.2 Key M/B 2242 SSD (with RAID 0/RAID 1 or AHCI)

Interface External

- 8 x 25GbE SFP+ Port
- 8 x 1GbE RJ45 Port
- 1 x LAN module slot
  - Support: 1 x PCIe 4.0 x16
- 1 x 2.5 GbE RJ45 management port
- 1 x RJ45 console port
- 2 x USB 3.2, Type-A
- Buttons: Power/Reset
- LEDs: Status/MGMT/SYS/PWR1/PWR2/NVMe/SSD1/SSD2

Power

- 1 x 600W (1+1) redundant power supply

Dimension and Weight

- Chassis dimension: 438 mm (W) x 399mm (D) x 44mm (H)
- Carton dimension: 561 mm (W) x 536 mm (D) x 193mm (H)
- Without packing: 7.17kg
- With packing: 10.48kg

Environment

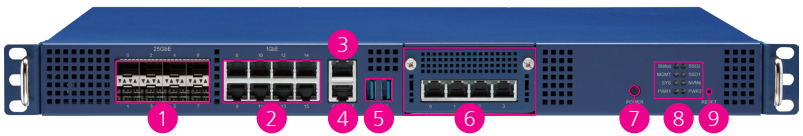
- Operating temperatures: 0°C~40°C
- Storage temperature: -20°C~70°C
- Relative humidity: 10%~90% non-condensing

Certifications

- CE
- FCC Class A
- LVD

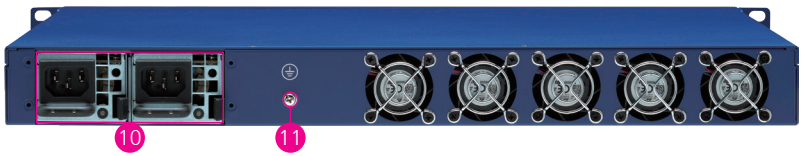
Knowing Your Device

Front Panel



1. **25GbE SFP+ Ports**
2. **1GbE RJ45 Ports**
3. **2.5GbE Management RJ45 Port**
4. **RJ45 Console Ports**
   Baud rate:115200
5. **USB 3.2 Type-A Ports**
6. **LAN Module Slot**
   Support PCIe Gen 4 x16 OCP with optional 80W power support. Refer to the table for details on supported modules.
7. **Power Button**
   Press and hold for 1 second to power the system on or off. Press and hold for 5 seconds to force a system shutdown.
8. **System Status Indicators**
9. **Reset Button**
   Press to trigger a user-defined event (default). Press and hold for 4 seconds to perform a hardware reset.

Rear Panel



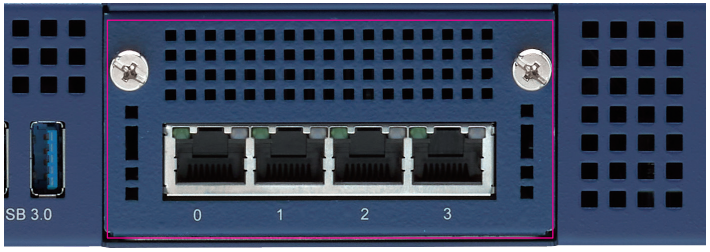
10 AC Power

600W redundant power supply.

11 Ground

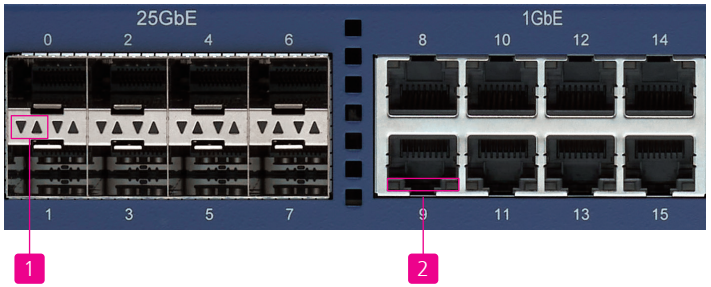
LAN Module Support

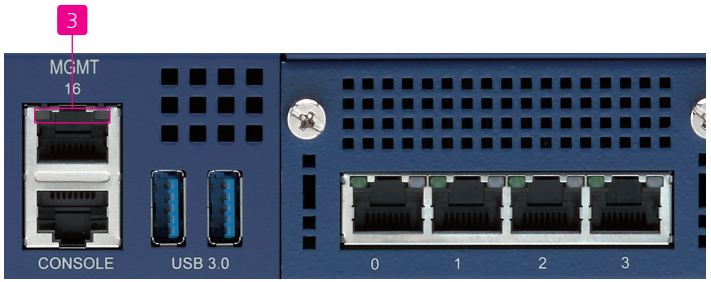
The table below provides details on supported LAN modules.



Pin	Model	Controller	I/O ports	Bypass	PCIe	LAN Slot
1G	NI 140C-OS	i350AM4x1	4xRJ45	0	PCIe2 x4	1
	NI 142CX1-OS	i350AM4x1	4xRJ45	2	PCIe2 x4	1
	NI 180C-OS	i350AM4x2	8xRJ45	0	2xPCIe2 x4	1
	NI 184CX1-OS	i350AM4x2	8xRJ45	4	2xPCIe2 x4	1
	NI 180F-OS	i350AM4x2	8xSFP	0	2xPCIe2 x4	1
2.5G	ND 180C-OS	I226x4	8xRJ45	0	PCIe2 x8	1
	ND 184CX1-OS	I226x8	8xRJ45	4	PCIe2 x8	1
10G	NX 140F-OS	XL710-BM1	4xSFP+	0	PCIe3 x8	1
	NX 142FX1-OS	XL710-BM1	4xLC (SR)	2	PCIe3 x8	1
	NX 142FX1-LR-OS	XL710-BM1	4xLC (LR)	2	PCIe3 x8	1
25G	NV 140F-OS	E810-CAM1	4 x SFP28	0	PCIe4 x8	1
100G	NC 120FIS4-OS	E810-CAM2	2xQSFP28	0	PCIe4 x16	1

LED Indicators





1 25GbE SFP+ Port Indicators

Left	Status
Steady Green	Linked
Blnking Green	Active with traffic

Right	Status
Steady Green	25G network link
Steady Orange	10G/1G network link

2 1GbE RJ45 Port Indicators

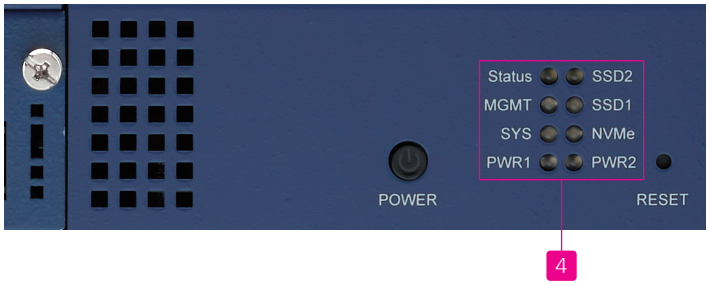
Left	Status
Steady Green	Linked
Blnking Green	Active with traffic

Right	Status
Steady Green	1G network link
Steady Orange	100M network link
Off	10M network link

3 2.5GbE Management RJ45 Port Indicators

Left	Status
Steady Green	Linked
Blnking Green	Active with traffic

Right	Status
Steady Green	2.5G network link
Steady Orange	1G network link
Off	100M network link



4 System Status Indicators

Status

LED	State	Condition
Green/ Orange	On/Off	SW-programmable By CPLD
	Off	S5/ Power is down (default)

MGMT

LED	State	Condition
Green	On/Off	SW-programmable By CPLD
	Off	S5/ Power is down (default)

SYS

LED	State	Condition
Green	On/Off	SW-programmable By CPLD
	Off	S5/ Power is down (default)

PWR 1/2

LED	State	Condition
Green	Steady	Power is on
Red	Steady	Power is off

NVMe/SATA SSD 1/SATA SSD 2

LED	State	Condition
Green	Blnking	Data is transmitting
	Off	Idle (default)

Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the FTA5190 motherboard.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

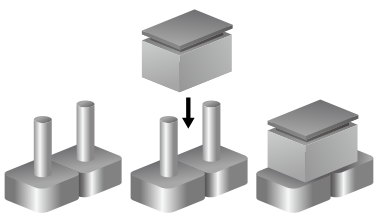
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

Jumper Settings

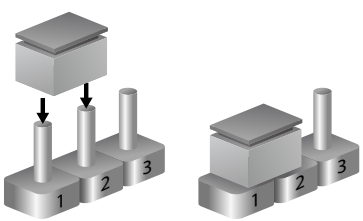
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is open.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)



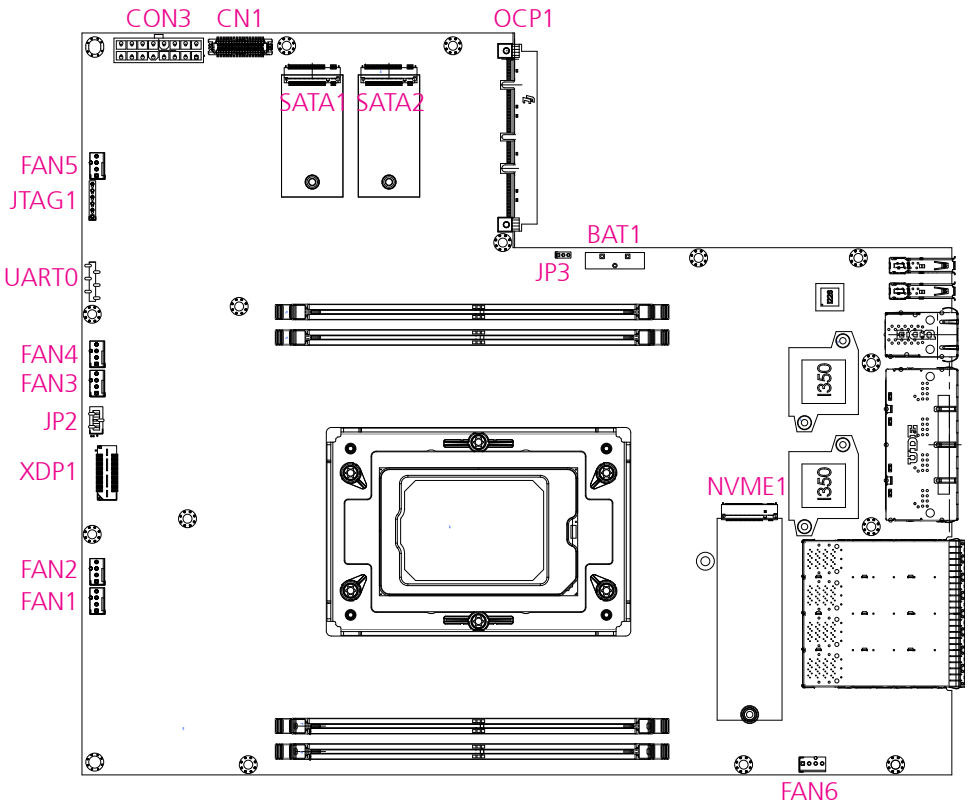
Three-Pin Jumpers: Pins 1 and 2 are Short



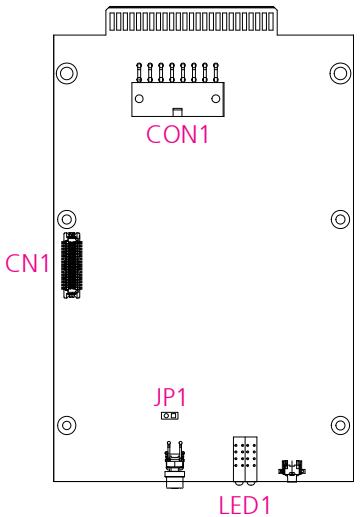
Locations of the Jumpers and Connectors

The system consists of a main board, I/O board, and power board. This chapter details the locations of DIP switches, jumpers, and connectors on each component. Refer to the illustrations for identification, where pin settings and definitions are marked in pink. Note that the illustrations shown in this chapter are not to scale and are for reference only.

Main Board

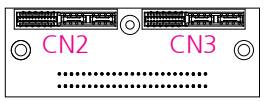


I/O Board

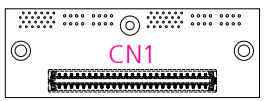


Power Board

Top View



Bottom View



Main Board Jumper

RTC Clear

Connector location: JP3

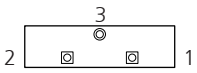
Pin	Mode
1-2	Normal
2-3	Clear CMOS

Pin	Definition
1	NA
2	RST_CPU0_RTCRST_N
3	PD_RST_RTCRST_N

Main Board Connectors and Headers

System RTC

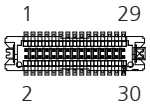
Connector location: BAT1



Pin	Definition
1	RTC_BAT
2	RTC_BAT
3	GND

I/O Signal (to I/O Board)

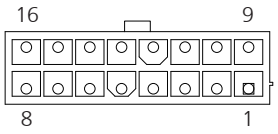
Connector location: CN1



Pin	Definition	Pin	Definition
1	P3V3	2	P3V3_AUX
3	GND	4	P3V3_AUX
5	NA	6	GND
7	FP_PWR_BTN_LVC3_N	8	RST_RSTBTN_N
9	PS_ON_D	10	PRESENT_IN_A_CAB
11	PMBUS1_STBY_LVC3_R_SCL	12	PRESENT_IN_B_CAB
13	PMBUS1_STBY_LVC3_R_SDA	14	PMB-ALERT_A_CAB
15	PW_OK_A_CAB	16	PMB-ALERT_B_CAB
17	PW_OK_B_CAB	18	CPLD_STATUS_GLED
19	RST_PLTRST_LVC3	20	CPLD_STATUS_OLED
21	CPLD_MGNT_LED	22	CPLD_SYS_LED
23	CPLD_NVME_LED_PB_N	24	CPLD_PWR1_ON_GLED
25	CPLD_SATA_LED0	26	CPLD_PWR1_OFF_RLED
27	CPLD_SATA_LED1	28	CPLD_PWR2_ON_GLED
29	NA	30	CPLD_PWR2_OFF_RLED

Power

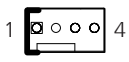
Connector location: CON3



Pin	Definition	Pin	Definition
1	P5V_STBY	2	P12V_AUX
3	P12V_AUX	4	P12V_AUX
5	GND	6	GND
7	GND	8	GND
9	P12V_AUX	10	P12V_AUX
11	P12V_AUX	12	P12V_AUX
13	GND	14	GND
15	GND	16	GND

Fan Connector

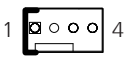
Connector location: FAN1, FAN2, FAN3, FAN4, FAN5



Pin	Definition
1	GND
2	P12V
3	CPUFAN_TAC_R_1-5
4	CPUFAN_CTL_R_1-5

Fan Connector

Connector location: FAN6



Pin	Definition
1	GND
2	P12V
3	NA
4	NA

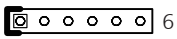
PWM SMB Header

Connector location: JP2

Pin	Definition
1	SMB_CPU0_CLK
2	SMB_CPU0_DATA
3	GND

CPLD JTAG Header

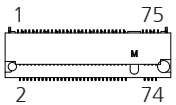
Connector location: JTAG1



Pin	Definition
1	P3V3_CPLD
2	GND
3	JTAG_TCK_CPLD
4	JTAG_TDO_CPLD
5	JTAG_TDI_CPLD
6	JTAG_TMS_CPLD

NVMe

Connector form factor: M.2 Key M (PCIe Gen5)
Connector location: NVMe1

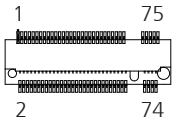


Pin	Definition	Pin	Definition
75	GND		
73	GND	74	P3V3
71	GND	72	P3V3
69	NA	70	P3V3
67	NA	68	SUSCLK
57	GND	58	NA
55	CLK_NVME_P	56	NA
53	CLK_NVME_N	54	NVME_WAKE_N
51	GND	52	CLKREQ_M.2_R_N
49	PCIE_NVME_TXP0	50	CPLD_RST_M.2_R_N
47	PCIE_NVME_TXN0	48	NA
45	GND	46	NA
43	PCIE_NVME_RXP0	44	NA
41	PCIE_NVME_RXN0	42	NA
39	GND	40	NA
37	PCIE_NVME_TXP1	38	NVME_DEVSLP
35	PCIE_NVME_TXN1	36	NA

Pin	Definition	Pin	Definition
33	GND	34	NA
31	PCIE_NVME_RXP1	32	NA
29	PCIE_NVME_RXN1	30	NA
27	GND	28	NA
25	PCIE_NVME_TXP2	26	NA
23	PCIE_NVME_TXN2	24	NA
21	GND	22	NA
19	PCIE_NVME_RXP2	20	NA
17	PCIE_NVME_RXN2	18	P3V3
15	GND	16	P3V3
13	PCIE_NVME_TXP3	14	P3V3
11	PCIE_NVME_TXN3	12	P3V3
9	GND	10	CPLD_NVME_LED_R_N
7	PCIE_NVME_RXP3	8	NA
5	PCIE_NVME_RXN3	6	NA
3	GND	4	P3V3
1	GND	2	P3V3

M.2 SATA1

Connector location: SATA1

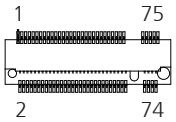


Pin	Definition	Pin	Definition
75	NGFF1_CONFIG_2		
73	GND	74	P3V3_SSD1
71	GND	72	P3V3_SSD1
69	NGFF1_CONFIG_1	70	P3V3_SSD1
67	NA	68	SSD1_SUSCLK
57	GND	58	NA
55	NA	56	NA
53	NA	54	NA
51	GND	52	NA
49	SSD1_TXP_0_C	50	NA
47	SSD1_TXN_0_C	48	NA
45	GND	46	NA
43	SSD1_RXN_0_C	44	NA
41	SSD1_RXP_0_C	42	NA
39	GND	40	NA
37	NA	38	NGFF1_DEVSLP
35	NA	36	NA

Pin	Definition	Pin	Definition
33	GND	34	NA
31	NA	32	NA
29	NA	30	NA
27	GND	28	NA
25	NA	26	NA
23	NA	24	NA
21	NGFF1_CONFIG_0	22	NA
19	NA	20	NA
17	NA	18	P3V3_SSD1
15	GND	16	P3V3_SSD1
13	NA	14	P3V3_SSD1
11	NA	12	P3V3_SSD1
9	GND	10	M.2_ACT_LED1
7	NA	8	NA
5	NA	6	NA
3	GND	4	P3V3_SSD1
1	NGFF1_CONFIG_3	2	P3V3_SSD1

M.2 SATA2

Connector location: SATA2



Pin	Definition	Pin	Definition
75	NGFF2_CONFIG_2		
73	GND	74	P3V3_SSD2
71	GND	72	P3V3_SSD2
69	NGFF2_CONFIG_1	70	P3V3_SSD2
67	NA	68	SSD2_SUSCLK
57	GND	58	NA
55	NA	56	NA
53	NA	54	NA
51	GND	52	NA
49	SSD2_TXP_0_C	50	NA
47	SSD2_TXN_0_C	48	NA
45	GND	46	NA
43	SSD2_RXN_0_C	44	NA
41	SSD2_RXP_0_C	42	NA
39	GND	40	NA
37	NA	38	NGFF2_DEVSLP
35	NA	36	NA

Pin	Definition	Pin	Definition
33	GND	34	NA
31	NA	32	NA
29	NA	30	NA
27	GND	28	NA
25	NA	26	NA
23	NA	24	NA
21	NGFF2_CONFIG_0	22	NA
19	NA	20	NA
17	NA	18	P3V3_SSD2
15	GND	16	P3V3_SSD2
13	NA	14	P3V3_SSD2
11	NA	12	P3V3_SSD2
9	GND	10	M.2_ACT_LED2
7	NA	8	NA
5	NA	6	NA
3	GND	4	P3V3_SSD2
1	NGFF2_CONFIG_3	2	P3V3_SSD2

URAT Header

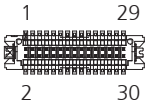
Connector location: UART0

Pin	Definition
1	P3V3_AUX
2	UART0_CPU0_RXD_LVC3
3	UART0_CPU0_TXD_LVC3
4	UART0_CPU0_RTS_LVC3
5	UART0_CPU0_CTS_LVC3
6	GND

I/O Board Connectors and Headers

I/O Signal (to Main Board)

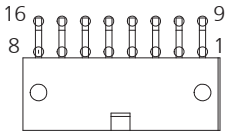
Connector location: CN1



Pin	Definition	Pin	Definition
1	P3V3	2	P3V3_AUX
3	GND	4	P3V3_AUX
5	NA	6	GND
7	FP_PWR_BTN_LVC3_N	8	RST_RSTBTN_N
9	PS_ON_R	10	PRESENT_IN_A_CAB
11	PMBUS1_STBY_LVC3_R_SCL	12	PRESENT_IN_B_CAB
13	PMBUS1_STBY_LVC3_R_SDA	14	PMB-ALERT_A_CAB
15	PW_OK_A_CAB	16	PMB-ALERT_B_CAB
17	PW_OK_B_CAB	18	CPLD_STATUS_GLED
19	RST_PLTRST_LVC3	20	CPLD_STATUS_OLED
21	CPLD_MGNT_LED	22	CPLD_SYS_LED
23	CPLD_NVME_LED_PB_N	24	CPLD_PWR1_ON_GLED
25	CPLD_SATA_LED0	26	CPLD_PWR1_OFF_RLED
27	CPLD_SATA_LED1	28	CPLD_PWR2_ON_GLED
29	NA	30	CPLD_PWR2_OFF_RLED

Power (to Main Board)

Connector location: CON1



Pin	Definition	Pin	Definition
1	P5V_STBY	9	P12V_PSU
2	P12V_PSU	10	P12V_PSU
3	P12V_PSU	11	P12V_PSU
4	P12V_PSU	12	P12V_PSU
5	GND	13	GND
6	GND	14	GND
7	GND	15	GND
8	GND	16	GND

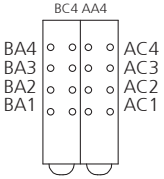
Power Button

Connector location: JP1

Pin	Definition
1	FP_PWR_BTN_LVC3_N
2	GND

Front LEDs

Connector location: LED1

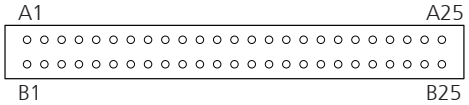


Pin	Definition	Pin	Definition
BC4	CPLD_STATUS_GLED	BA4	CPLD_STATUS_OLED
BC3	CPLD_MGNT_LED	BA3	P3V3
BC2	CPLD_SYS_LED	BA2	P3V3
BC1	CPLD_PWR1_ON_GLED	BA1	CPLD_PWR1_OFF_RLED
AC4	CPLD_SATA_LED1	AA4	P3V3
AC3	CPLD_SATA_LED0	AA3	P3V3
AC2	CPLD_NVME_LED_PB_N	AA2	P3V3
AC1	CPLD_PWR2_ON_GLED	AA1	P3V3

Power Board Connectors and Headers

Power Connector (to I/O Board)

Connector location: CN1

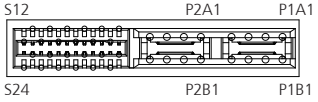


Pin	Definition	Pin	Definition
A1	GND	B1	GND
A2	GND	B2	GND
A3	GND	B3	GND
A4	GND	B4	GND
A5	GND	B5	GND
A6	GND	B6	GND
A7	GND	B7	GND
A8	GND	B8	GND
A9	P12V_PSU	B9	P12V_PSU
A10	P12V_PSU	B10	P12V_PSU
A11	P12V_PSU	B11	P12V_PSU
A12	P12V_PSU	B12	P12V_PSU
A13	P12V_PSU	B13	P12V_PSU

Pin	Definition	Pin	Definition
A14	P12V_PSU	B14	P12V_PSU
A15	P12V_PSU	B15	P12V_PSU
A16	P12V_PSU	B16	P12V_PSU
A17	P12V_PSU	B17	P12V_PSU
A18	PMB-ALERT_A_CAB	B18	PMB_SDA
A19	PMB-ALERT_B_CAB	B19	PMB_SCL
A20	NA	B20	PS_ON_R
A21	NA	B21	PW_OK_A_CAB
A22	PRESENT_IN_A_CAB	B22	PW_OK_B_CAB
A23	PRESENT_IN_B_CAB	B23	NA
A24	P3V3	B24	NA
A25	P5V_STBY	B25	P5V_STBY

Power Connector (to PSU)

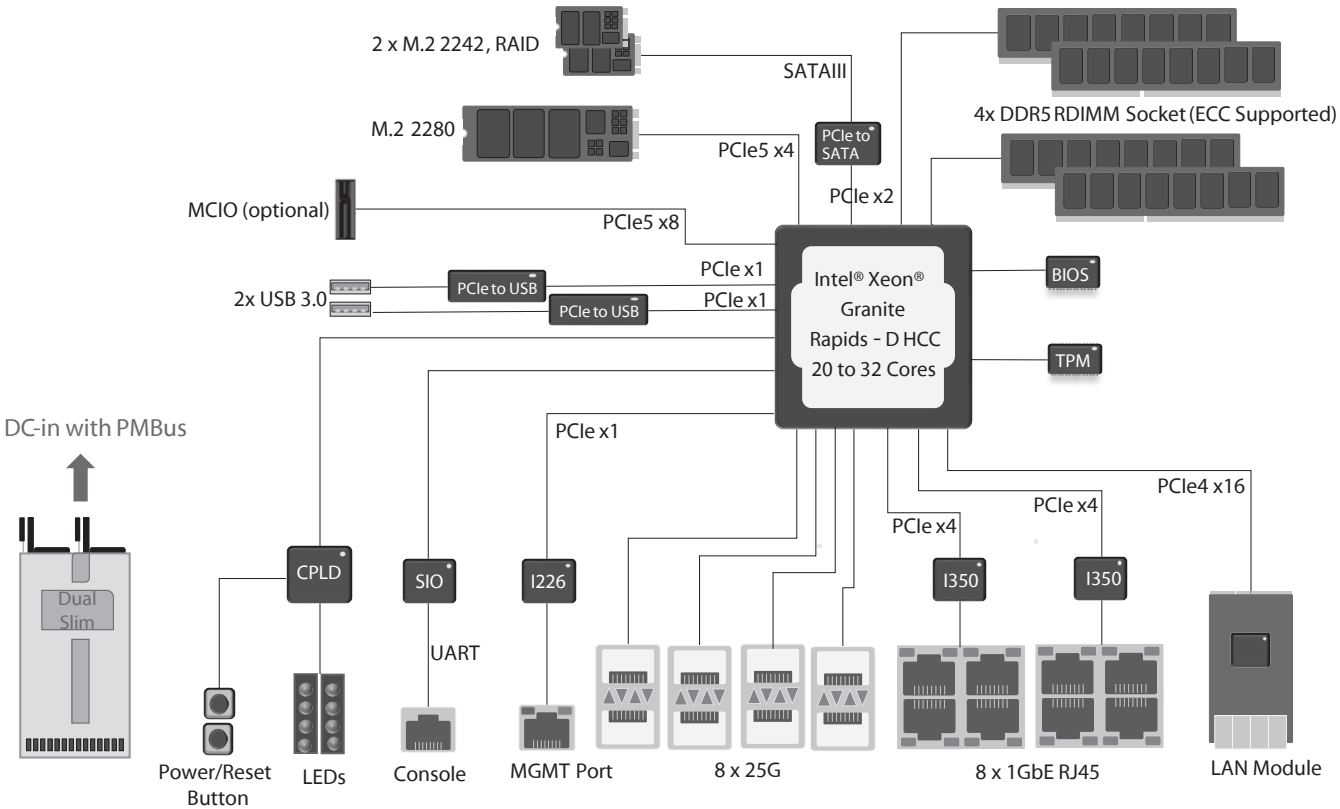
Connector location: CN2, CN3



Pin	Definition	Pin	Definition
P1A1	P12V_PSU	P1B1	P12V_PSU
P1A2	P12V_PSU	P1B2	P12V_PSU
P1A3	P12V_PSU	P1B3	P12V_PSU
P1A4	P12V_PSU	P1B4	P12V_PSU
P2A1	GND	P2B1	GND
P2A2	GND	P2B2	GND
P2A3	GND	P2B3	GND
P2A4	GND	P2B4	GND
S1	P5V_STBY	S13	P5V_STBY
S2	P5V_STBY	S14	P5V_STBY

Pin	Definition	Pin	Definition
S3	PSU1_A1	S15	NA
S4	PW_OK_A_CAB	S16	PDB_FAIL
S5	PSU1_PSON#	S17	NA
S6	GND	S18	NA
S7	PMB_SCL1	S19	NA
S8	PMB_SDA1	S20	PSU_S17
S9	PMB-ALERT_A_CAB	S21	NA
S10	+MO_IS	S22	PSU1_A0
S11	NA	S23	PRESENT_IN_A_CAB
S12	NA	S24	NA

Block Diagram



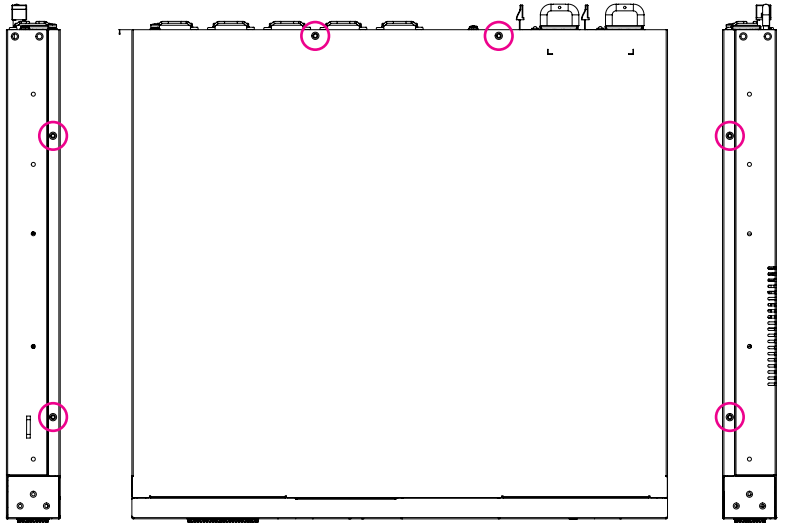
Chapter 3: System Setup

Removing the Chassis Cover

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources for 20 seconds to prevent electric shock or system damage.

1. Locate the pink indicators marked in the right illustration to loosen the screws, and place them in a safe location for later use.

2. With the screws removed, gently slide the cover outward, then lift it up.

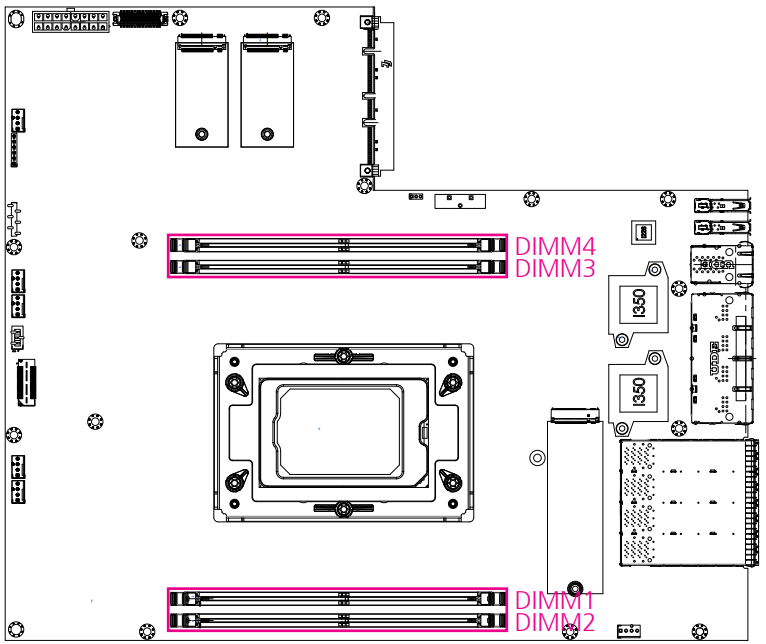


Installing Memory Modules

Before beginning the memory installation, please pay attention to the following notices.

- Before installing or removing internal components on the motherboard, ensure that the power is disconnected and the AC power cord is unplugged.
- The memory modules are foolproof design and can only be installed in one direction. If you encounter difficulty, try reversing the module's orientation and avoid using force to prevent damage.
- It is recommended to install memory modules with the same brand, speed, and capacity.
- This motherboard supports up to 128GB of DDR5 ECC memory modules across four UDIMM slots, with a maximum of 32GB per slot.

1. Refer to the illustration below to locate the UDIMM slots on the motherboard.



2. Gently push the locks outward on both ends of the memory slots. Some serial models may feature memory slots with a single-sided locking mechanism. If your model has this design, gently push the locking side outward.

3. Insert the module into the socket at a 90-degree angle. Apply firm, even pressure to each end of the module until it slides into the slot. As the module is pushed into position, the lock(s) will close automatically.

4. Repeat the steps above to install additional memory modules and refer to the table below for memory population if required.

DIMM Slot	DIMM 1	DIMM 2	DIMM 3	DIMM 4
1 DIMM	✓			
2 DIMMs	✓		✓	
4 DIMMs	✓	✓	✓	✓

This motherboard supports the installation of only 1, 2, or 4 DIMM memory modules and does not support installing three memory modules.

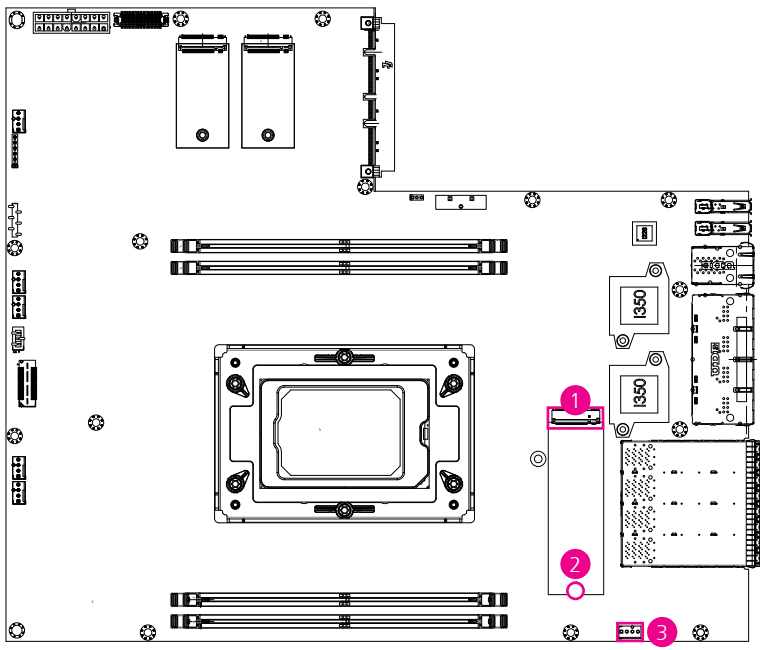
Installing an NVMe Storage Module

- The supported M.2 module form factor is Key M 2280 with an NVMe interface.

1. Insert the module into the corresponding slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears.

2. With the module fully inserted, tighten the screw in the mounting hole to secure it.

3. If the M.2 module you installed has a pre-attached thermal pad and a cooling fan, connect the fan's power cable from the module to the appropriate fan header on the motherboard.

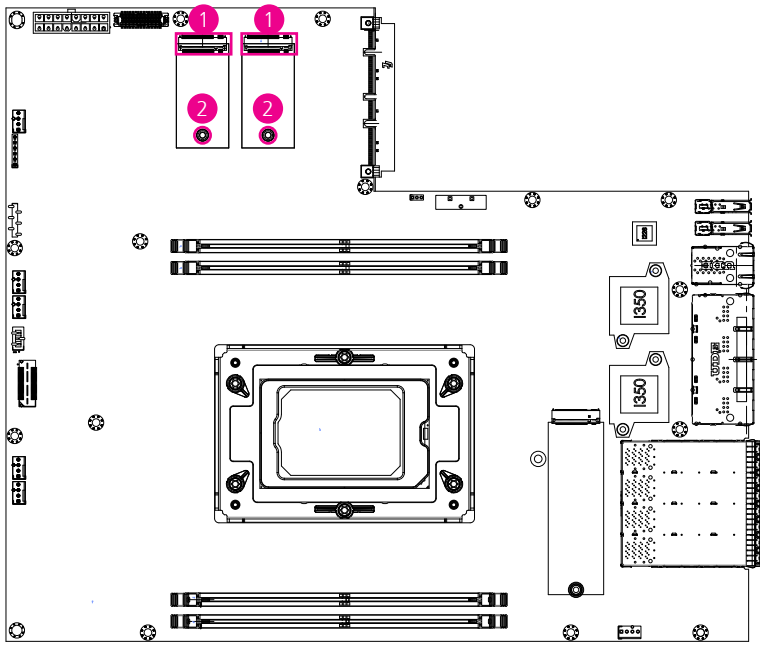


Installing SATA Storage Modules

- The supported M.2 module form factor is Key M 2242 with an AHCI interface, supporting RAID 0 and RAID 1.

1. Insert the module into the corresponding slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears.

2. With the module fully inserted, tighten the screw in the mounting hole to secure it.



Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the FTA 5190 series. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM website at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure items such as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

- This program should be executed under the following conditions:
- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

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 Setup

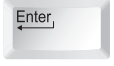
When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing 

allows you to enter Setup.

Legends

Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub-menu or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-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 

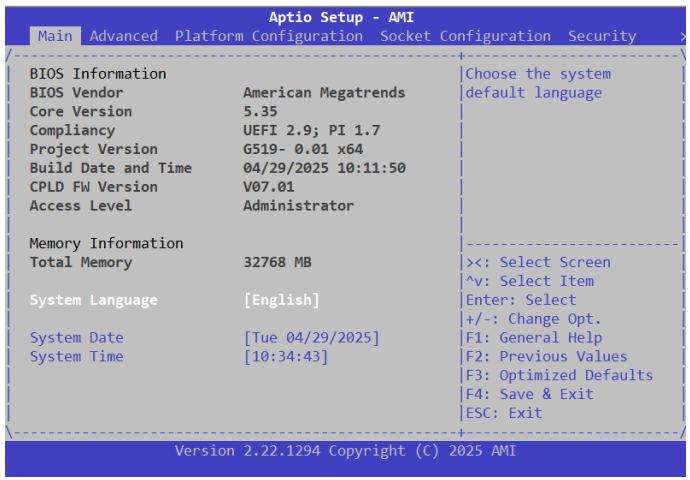
.

BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from several setup functions and one exit. Use arrow keys to select among the items and press Enter to accept or enter the submenu.

Main

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



System Language
Choose the system default language.

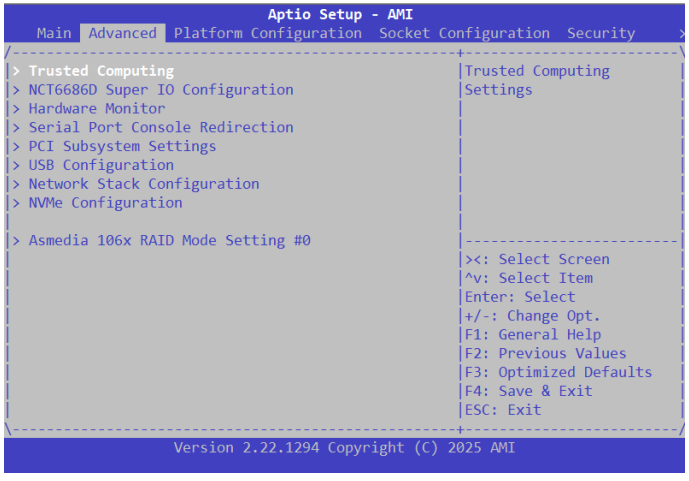
System Date
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from 1 to 12. Date displays the date, from 1 to 31. Year displays the year, from 2005 to 2099.

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.

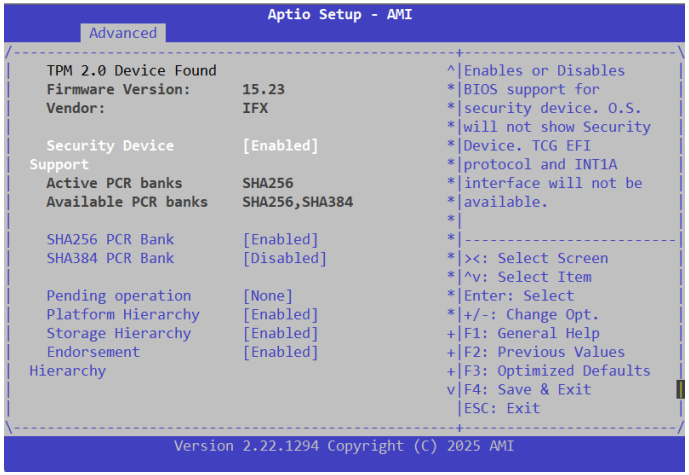
Advanced

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.

Setting incorrect field values may cause the system to malfunction.



Trusted Computing



Security Device Support
Enable or disable BIOS support for security device. O.S will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

SHA256 PCR Bank
Enable or disable SHA256 PCR Bank.

SHA384 PCR Bank
Enable or disable SHA384 PCR Bank.

Pending operation
Schedule an operation for the security device.

Platform Hierarchy
Enable or disable Platform Hierarchy.

Storage Hierarchy
Enable or disable Storage Hierarchy.

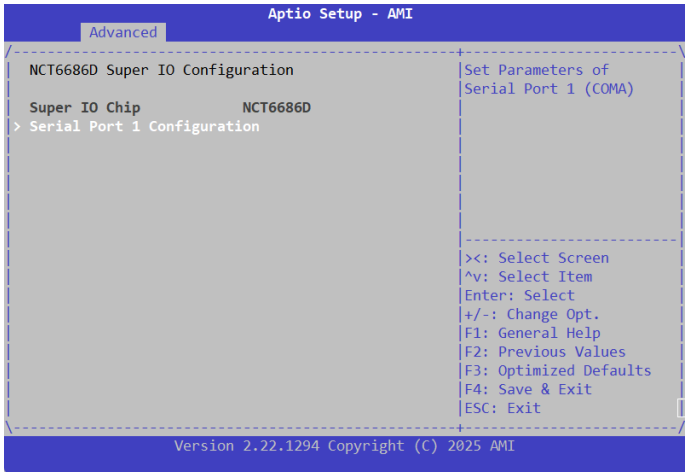
Endorsement Hierarchy
Enable or disable Endorsement Hierarchy.

TPM2.0 UEFI Spec Version
Configure the TPM2.0 UEFI spec version.

Physical Presence Spec Version
Configures the physical presence spec version.

Device Select
TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Auto will support both TPM 1.2 and 2.0 devices with the default set to TPM 2.0 devices if not found, and TPM 1.2 devices will be enumerated.

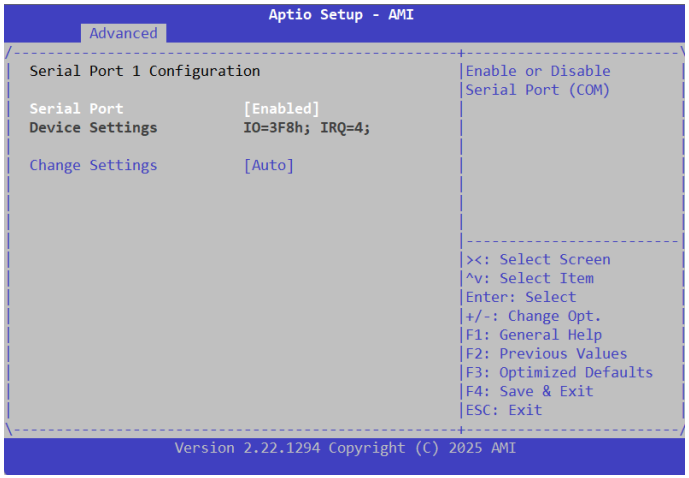
NCT6686D Super IO Configuration



Super IO Chip
Display the Super I/O chip used on the board.

Serial Port 1 Configuration
Configure the IO/IRQ settings of serial port 1.

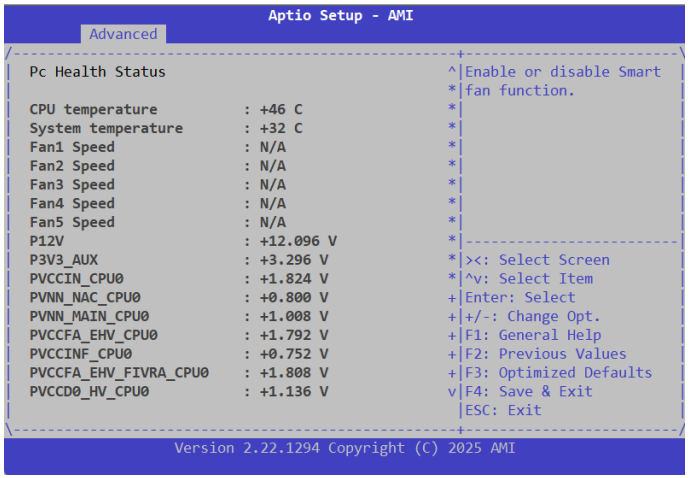
NCT6686D Super IO Configuration > Serial Port 1 Configuration



Serial Port
Enable or disable the serial port.

Change Settings
Select an optimal setting for the Super IO device.

Hardware Monitor



Smart Fan
Enable or disable smart fan function.

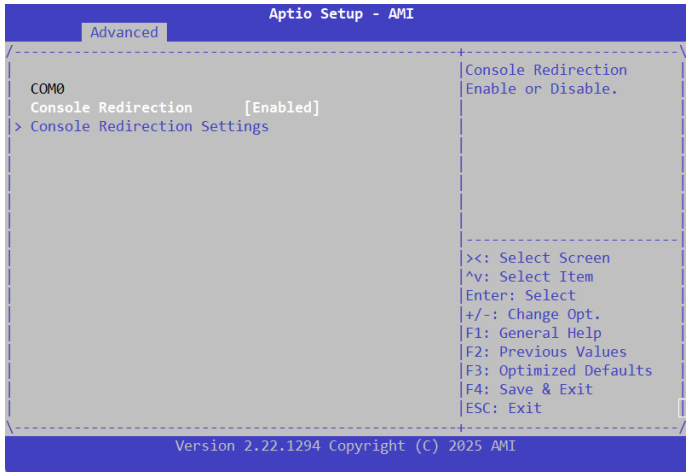
Fan off Temperature
Configure the temperature to turn the fan off.

Fan Start Temperature
Configure the temperature to turn the fan on.

Fan Full Speed
Configure the temperature to run the fan at full speed.

Fan Start Duty
Select smart fan start duty (0~255).

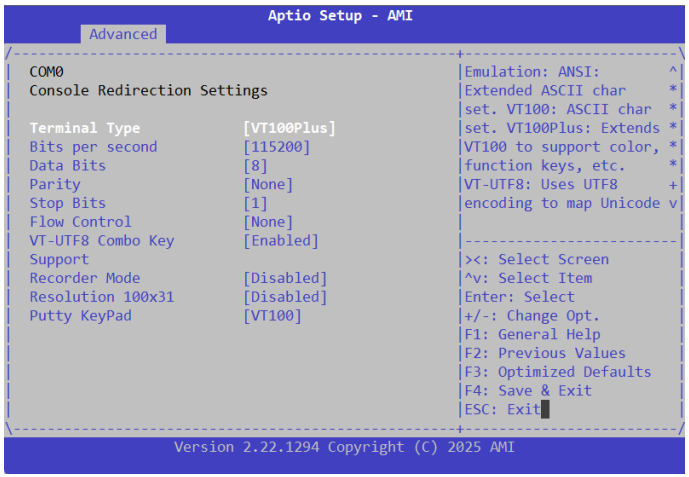
Serial Port Console Redirection



Console Redirection
Enable or disable console redirection.

Console Redirection Setting
Press Enter to access the submenu.

Serial Port Console Redirection > Console Redirection Settings



Terminal Type

ANSI Extended ASCII character set.
VT100 ASCII character set.
VT100+ Extends VT100 to support color, function keys, etc.
VT-UTF8 Uses UTF8 encoding to map Unicode characters onto 1 or more bytes.

Bits Per Second

Select the serial port transmission speed. The speed must match the other side. Long or noisy lines may require a lower speed.

Data Bits

The options are 7 and 8.

Parity

A parity bit can be sent with the data bits to detect some transmission errors.

Even Parity bit is 0 if the number of 1's in the data bits is even.
Odd Parity bit is 0 if number of 1's in the data bits is odd.

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data and the receiving buffers are full, a "stop" signal can be sent to stop the data flow.

VT-UTF8 Combo Key Support

Enables or disables VT-UTF8 combo key support.

Recorder Mode

When this field is enabled, only text will be sent. This is to capture the terminal data.

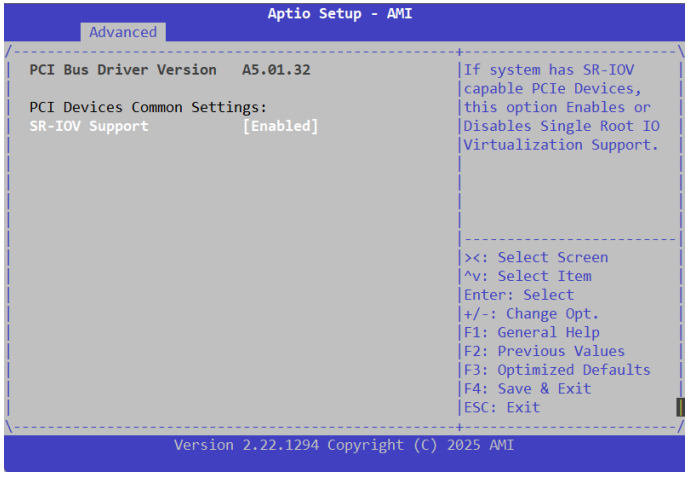
Resolution 100x31

Enables or disables extended terminal resolution.

Putty Keypad

Selects the Putty keyboard emulation type.

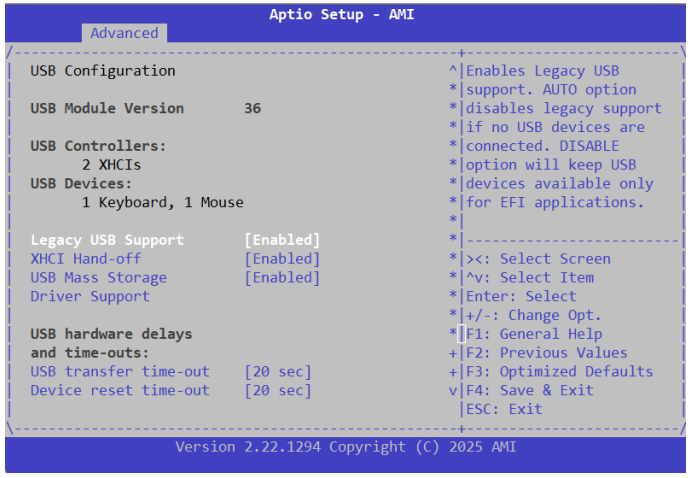
PCI Subsystem Settings



SR-IOV Support

Enable or disable SR-IOV support.

USB Configuration



Legacy USB Support

Enable Enables Legacy USB.
Auto Disables support for Legacy when no USB devices are connected.
Disable Keeps USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSes that does not support XHCI hand-off. The XHCI ownership change should be claimed by the XHCI driver.

USB Mass Storage Driver Support

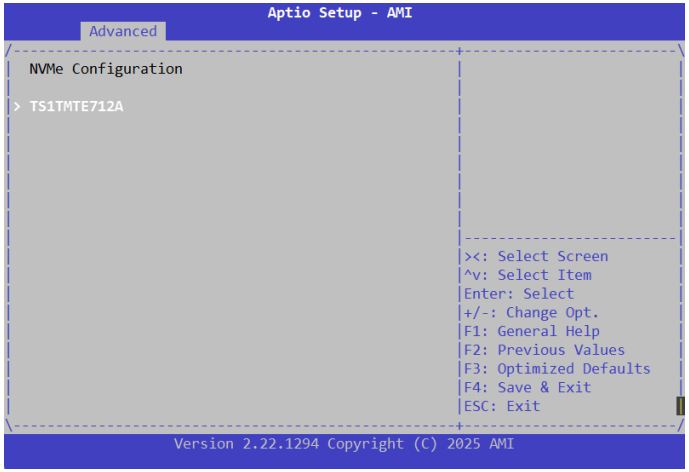
Enable or disable USB mass storage driver support.

USB Transfer Time-out
The time-out value for control, bulk, and Interrupt transfers.

Device Reset Time-out
Select the USB mass storage device's start unit command timeout.

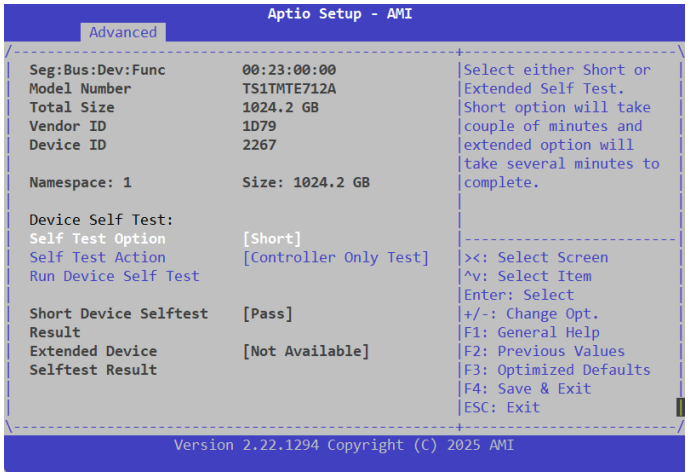
Device Power-up Delay
Maximum time the device will take before it properly reports itself to the Host Controller. "Auto" uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

NVMe Configuration



The NVMe device appears when plugged in. Press Enter for more configurations.

NVMe Configuration > NVMe Device



Self Test Option

Select either short or extended self test. Short option will take couple of minutes and extended option will take several minutes to complete.

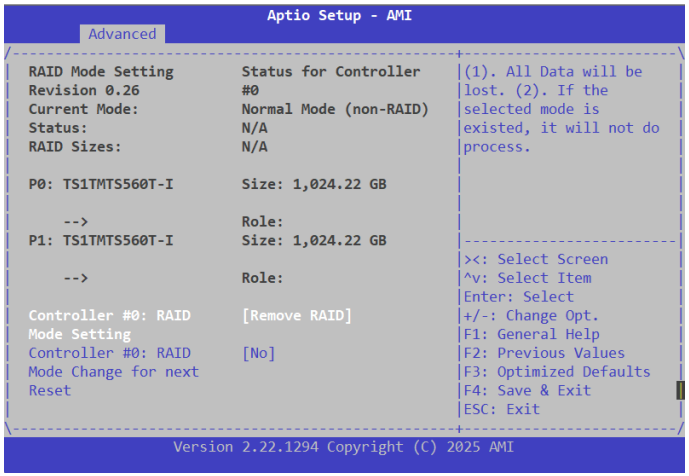
Self Test Action

Configure the items used for self test. Controller Only Test and Controller and NameSpace Test options are available. Selecting Controller and NameSpace Test will take longer to complete.

Run Device Self Test

Run the device self test according to the self test option and action selected. Pressing the Esc key will abort the test.

Asmedia 106x RAID Mode Setting #0



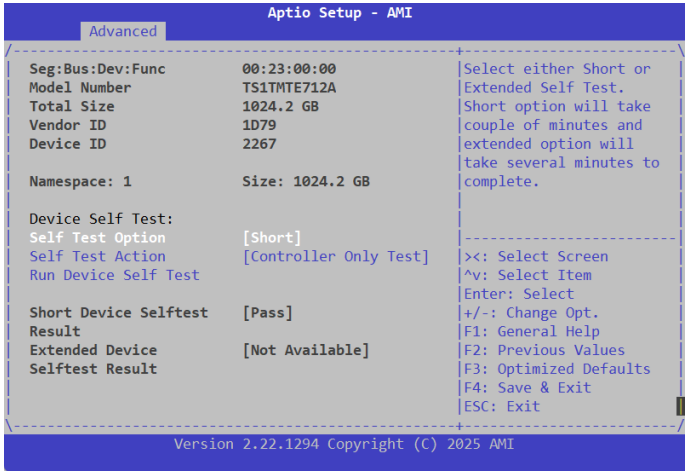
Controller #0: RAID Mode Setting

1. All data will be lost.
2. If the selected mode is existed, it will not do process.

Controller #0: RAID Mode Change for Next Reset

If yes, the RAID mode will change to the RAID Mode Setting for the next reset, and all data will be lost. If no, the RAID mode will not be changed, and will keep the current state.

NVMe Configuration > NVMe Device



Self Test Option

Select either short or extended self test. Short option will take couple of minutes and extended option will take several minutes to complete.

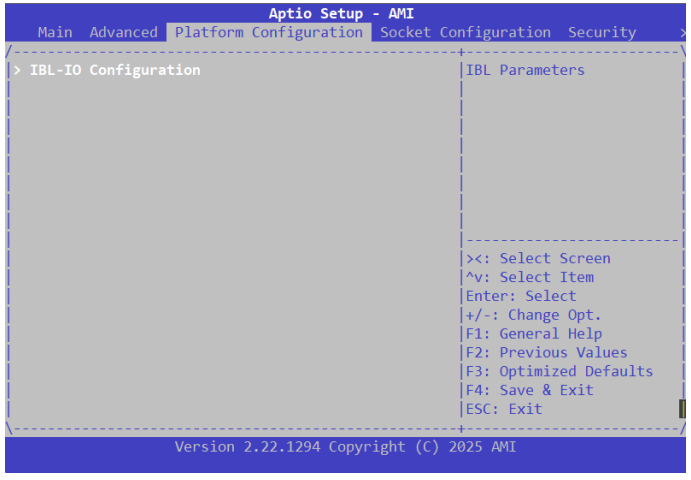
Self Test Action

Configure the items used for self test. Controller Only Test and Controller and NameSpace Test options are available. Selecting Controller and NameSpace Test will take longer to complete.

Run Device Self Test

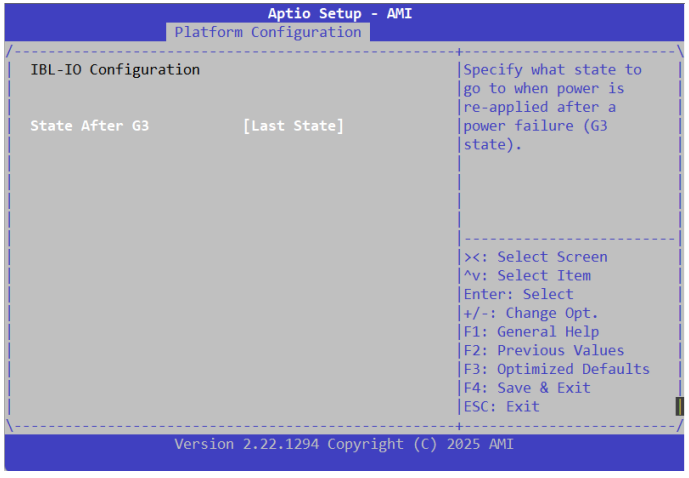
Run the device self test according to the self test option and action selected. Pressing the Esc key will abort the test.

Platform Configuration



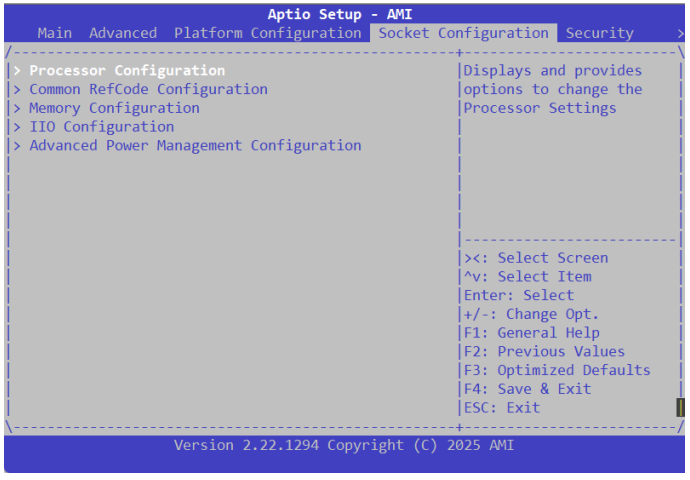
IBL-IO Configuration
Press Enter to access the submenu.

IBL-IO Configuration



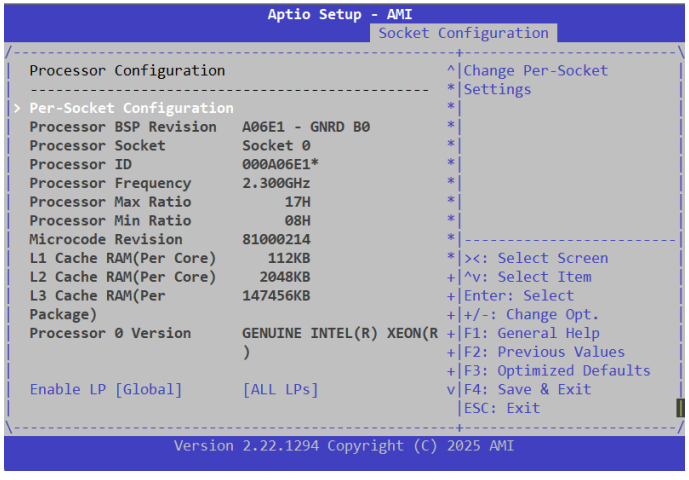
State After G3
Specify what state to go to when power is re-applied after a power failure (G3 state).

Socket Configuration



Press Enter to access each submenu.

Processor Configuration



Pre-Socket Configuration
Change pres-socket settings.

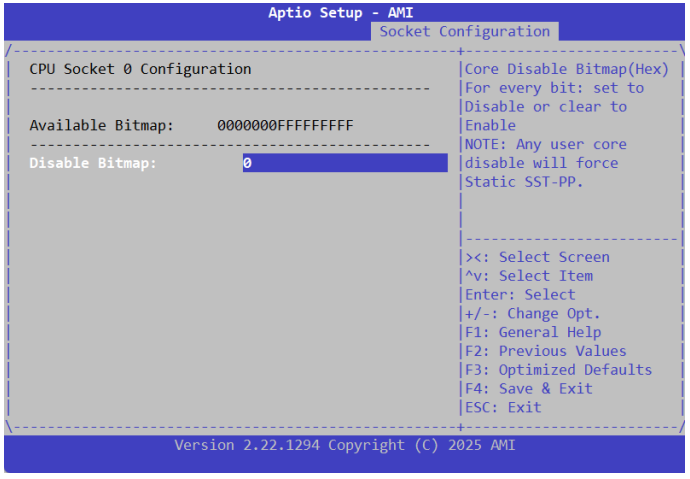
Eable LP [Global]
Configure the option of Enable LP.

Enable Intel(R) TXT
Enable or disable the Intel® TXT support.

VMX
Enable or disable the Virtual Machine Extensions.

Enable SMX
Enable or disable the Secure Mode Extensions.

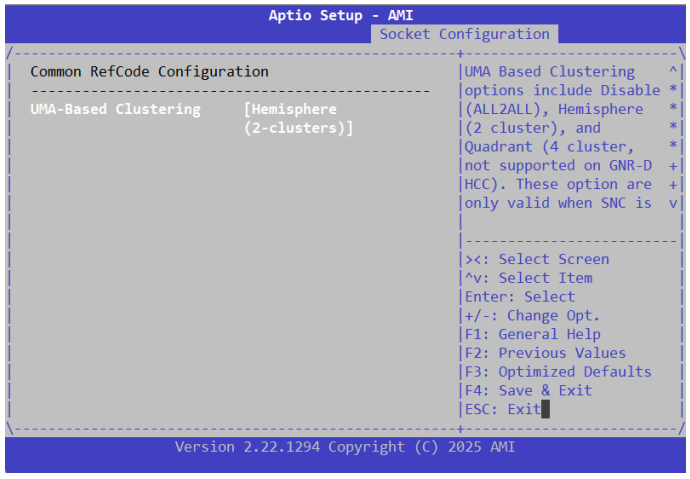
Processor Configuration > Pre-Socket Configuration



Disable Bitmap

Core disable bitmap (Hex) for every bit: set to disable or clear to enable. Note: Any user core disable will force Static SST-PP.

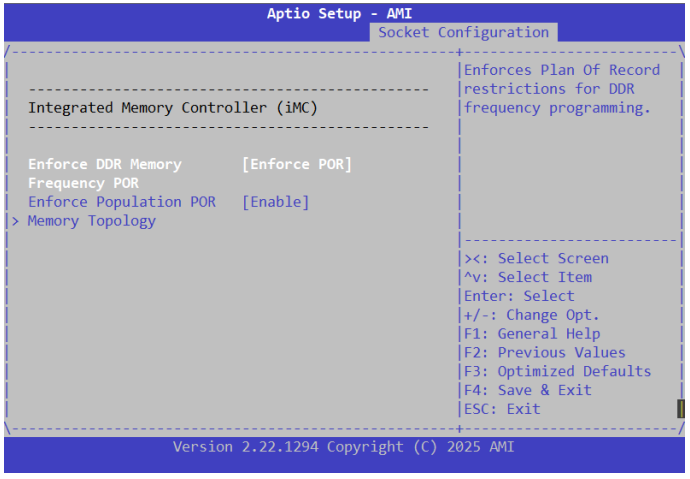
Common RefCode Configuration



UMA-Based Clustering

Configure the option for UMA-Based Clustering.

Memory Configuration

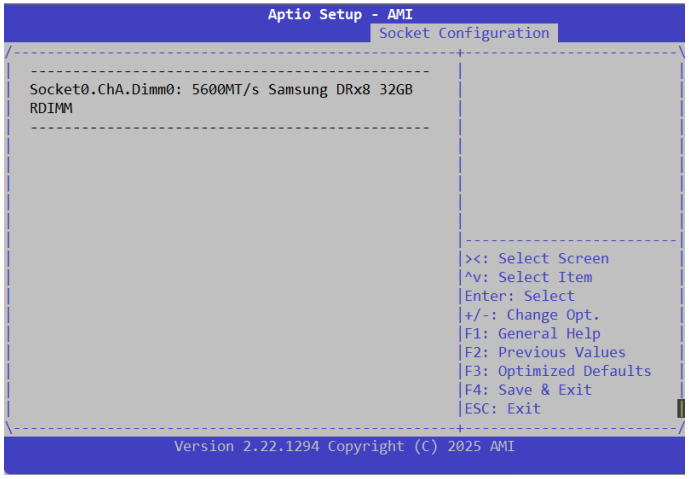


Enforce DDR Memory Frequency
Enforce play of record restrictions for DDR frequency programming.

Enforce Population POR
Enable or disable Enforce Population POR.

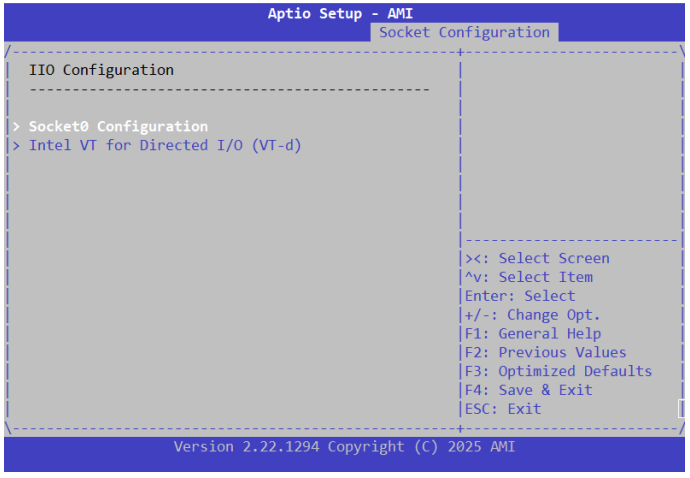
Memory Topology
Press Enter to access the submenu.

Memory Configuration > Memory Topology



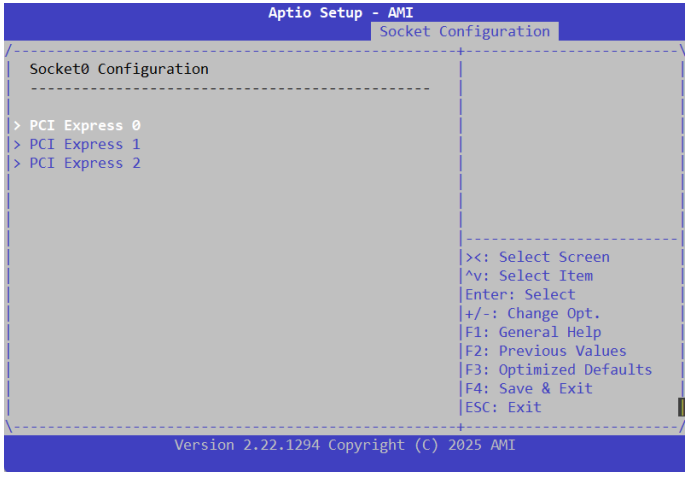
Detect and display the information on the memory installed.

IIO Configuration



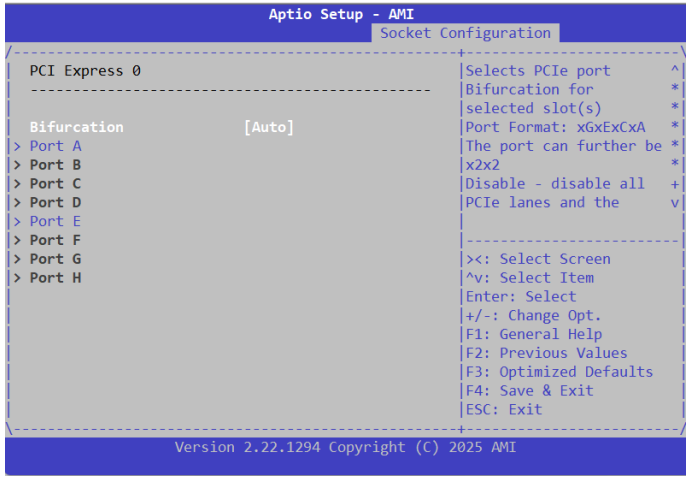
Press Enter to access each submenu.

IIO Configuration > Socket0 Configuration



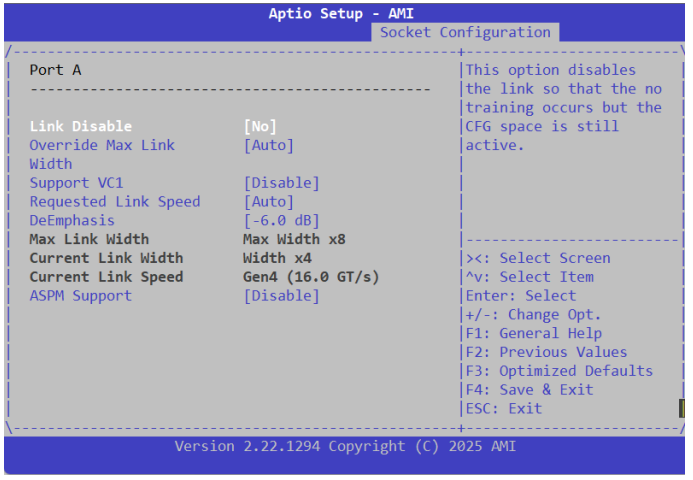
Press Enter to access each submenu.

IIO Configuration > Socket0 Configuration > PCI Express 0/1/2



Bifurcation
Select PCIe port bifurcation for selected slot(s).

IIO Configuration > Socket0 Configuration > PCI Express 0/1/2 > Port A



Link Disable
This option disables the link so that the no training occurs but the CFG space is still active.

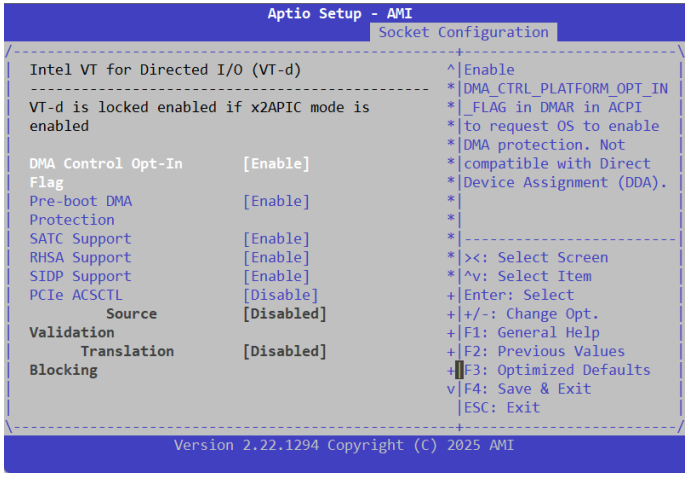
Override Max Link Width
Configure the link speed to override the max link width set by bifurcation.

Support VC1
Enable or disable the Support VC1.

Requested Link Speed DeEmphasis
Configure the level of the link speed deemphasis.

ASPM Support
Enable or disable the ASPM Support.

IIO Configuration > Intel VT for Directed IO (VT-d)



DMA Control Opt-In Flag
Enable or disable the DMA Control Opt-In Flag.

Pre-boot DMA Protection
Enable or disable the Pre-boot DMA Protection.

SATC Support
Enable or disable the SATC Support.

RHSA Support
Enable or disable the RHSA Support.

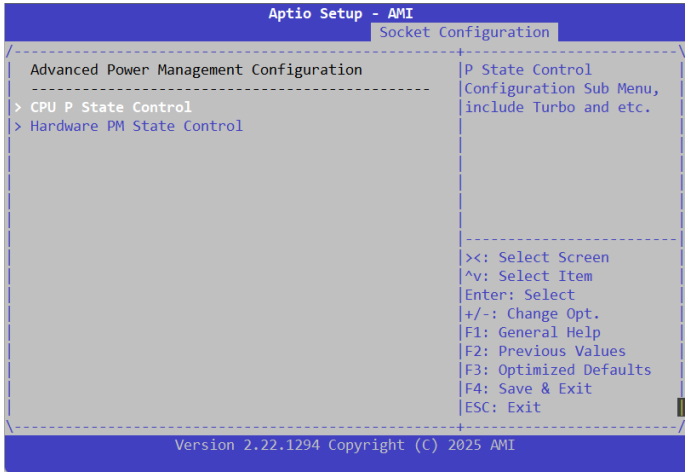
SIDP Support
Enable or disable the SIDP Support.

PCIe ACSCTL
Enable or disable soverwrite of PCI Access Control Services Control register in PCI root ports.

Cache Allocation
Enable or disable the Cache Allocation.

PRS Capability for PCIe
Configure the PRS Capability for PCIe.

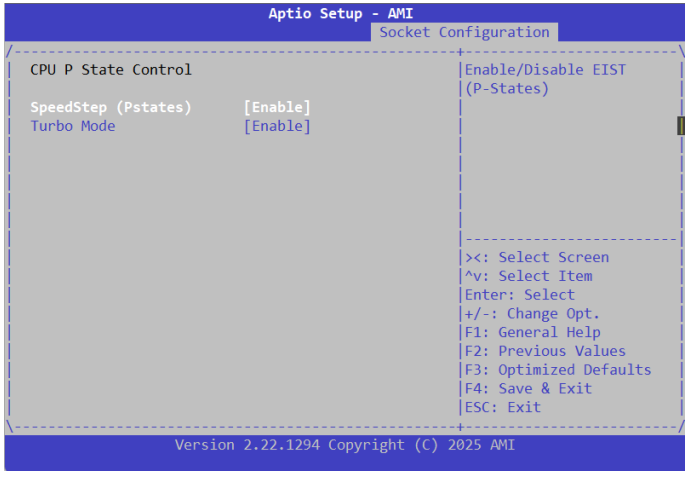
Advanced Power Management Configuration



CPU P State Control
P state control configuration sub menu, include turbo and etc.

Hardware PM State Control
Press Enter to access the submenu.

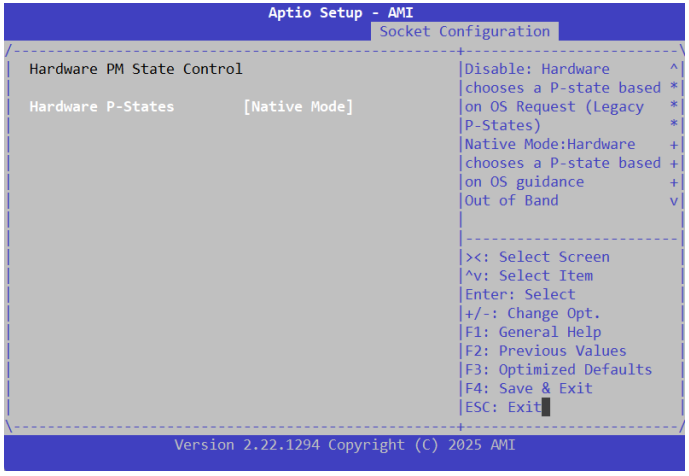
Advanced Power Management Configuration > CPU P State Control



SpeedStep (Pstates)
Enable or disable the EIST (P-States).

Turbo Mode
Enable or disable the turbo mode.

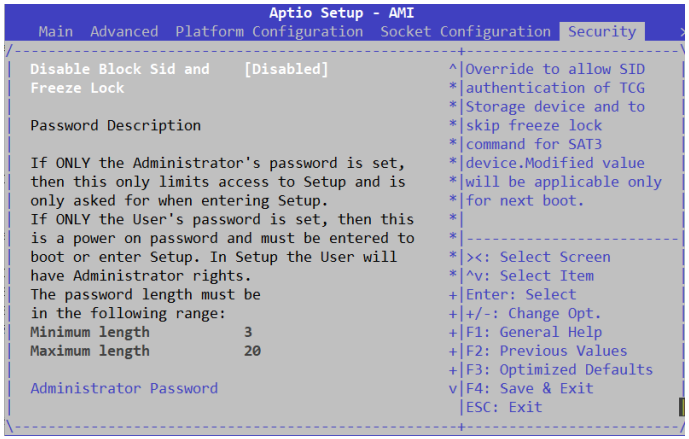
Advanced Power Management Configuration > Hardware PM State Control



Hardware P-States

Disable	Hardware chooses a P-state based on OS Request. (Legacy P-States).
Native Mode	Hardware chooses a P-state based on OS guidance.
Out of Band Mode	Hardware autonomously chooses a P-state (no OS guidance).

Security



Disable Block Sid and Freeze Lock
Override to allow SID authentication of TCG Storage device and to skit freeze lock command for SAT3 device. Modified value will be applicable only for next boot.

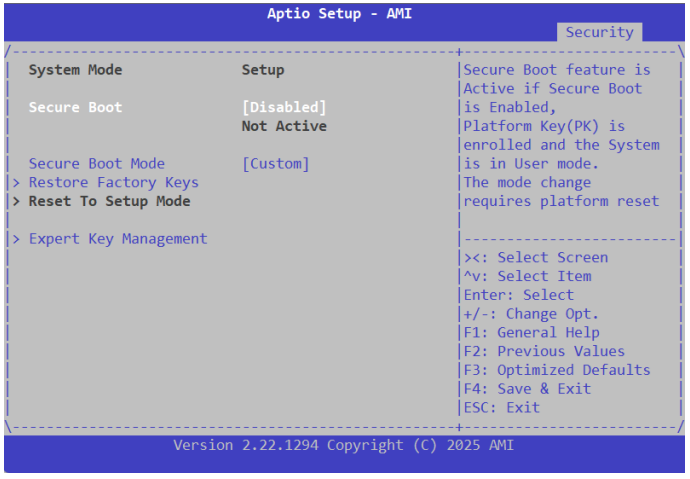
Administrator Password
Select this to reconfigure the administrator's password.

User Password
Select this to reconfigure the user's password.

Secure Boot
Press Enter to access the submenu.

TCG Storage Security Configuration
The device will appear once a TCG storage device is plugged in. More options will be available. Press Enter for more configurations.

Secure Boot



Secure Boot
Secure Boot feature is Active if Secure Boot is enabled, Platform Key (PK) is enrolled and the system is in User mode. The mode change requires platform reset.

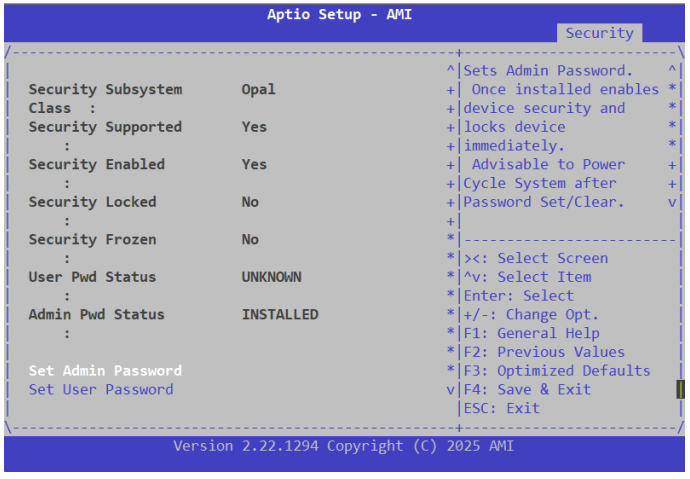
Secure Boot Mode
Standard Fixed secure boot policy.
Custom Secure boot policy variables can be configured by a physically present user without full authentication.

Restore Factory Keys
Allow you to install factory default secure boot key databases.

Reset to Setup Mode
Delete all Secure Boot Key databases from NVRAM.

Expert Key Management
Enable experienced users to modify Secure Boot variables.

TCG Storage Security Configuration



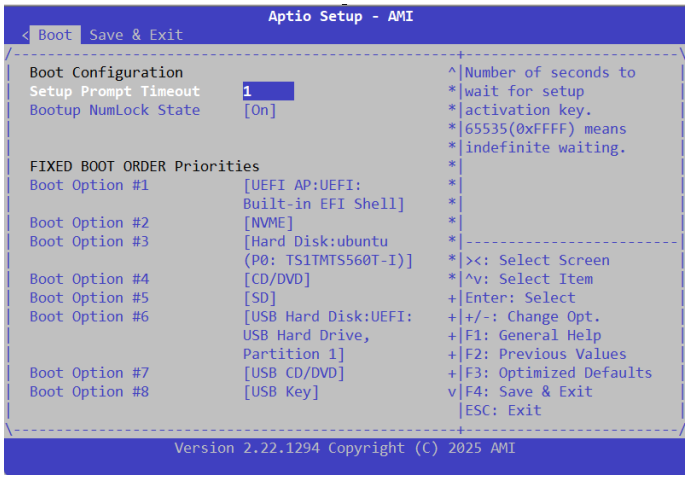
Set Admin Password

Set admin password. Once installed enables device security and locks device immediately. Advisable to power cycle system after password set/clear.

Set User Password

Set the TCG Storage User Password. User Password can be created only when admin password is installed. User password acts as an optional credential to unlock the Device in the Select Screen POST.

Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

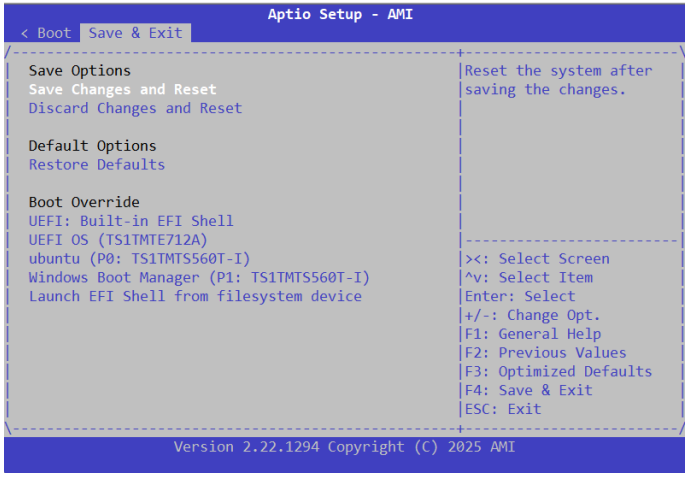
Bootup NumLock State

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

FIXED BOOT ORDER Priorities

Adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

Save & Exit



Save Changes and Reset

To save the changes and reset, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes and Reset

To exit the Setup utility and reset without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting.

Restore Defaults

To restore the BIOS to default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Boot Override

To bypass the boot sequence from the Boot Option List and boot from a particular device, select the desired device and press <Enter>.