NEXCOM International Co., Ltd.

Intelligent Digital Security
Video Intelligent Surveillance
NViS 57XX4 Series
User Manual

www.nexcom.com

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PREFACE

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Acknowledgements

NViS 57164 and NViS 57244 products are trademarks 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 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. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

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.

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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 qualified service personnel.

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.

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.

3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

4. The ITE is to be connected only to PoE networks without routing to the outside plant.

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 system's package you received is complete. Your package should have all the items listed in the following table.

No.	Item	Details
1	System	
2	CPU Cooler Box	Box
		CPU Cooler
3	Accessories	Box
		PE Zipper Bag #3
		Terminal Block 10Pin
		Flat Head Screw:F6#32Tx5mmNylok NIGP *8pcs
4	EPE Top*2pcs	
5	EPE Bottom*2pcs	

Ordering Information

The following information below provides ordering information for the NViS 57164 and NViS 57244.

NViS 57164 (P/N: 10C00571600X0)
1U rack workstation NVR

NViS 57244 (P/N: 10C00572400X0)
1U rack workstation NVR

Chapter 1: Product Introduction

NViS 57164 Overview

Key Features

- System 1U Rackmount

- 14th/13th Gen Intel® Core™

- HDD 4 Bays 3.5", supports RAID 0, 1, 5, 10

- 1 x NVME SSD, 1 x M.2 2242 SATA SSD

- 1 x Display DP1.4, 1 x HDMI 2.0b

- DDR4, up to 64GB

- 2 x 2.5 GbE Intel® Ethernet

- 16 X 10/100 PoE, 240W max PSE

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NViS 57244 Overview

Key Features

- System 1U Rackmount
- 14th/13th Gen Intel® Core™
- HDD 4 Bays 3.5", supports RAID 0, 1, 5, 10
- 1 x NVME SSD, 1 x M.2 2242 SATA SSD
- 1 x Display DP1.4, 1 x HDMI 2.0b
- DDR4, up to 64GB
- 2 x 2.5 GbE Intel® Ethernet
- 24 X 10/100 PoE, 240W max PSE

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NViS 57XX4 Series User Manual

Hardware Specifications

CPU Support

▪ Intel® I9-13900E / I7-13700E / I5-13500E / I3-13100E

Main Memory

▪ 2 x DDR4 SO-DIMM non-ECC support, up to 64GB

Platform Control Hub

▪ Intel® Q670E

I/O Interface-Front

▪ 4 x Hot swappable 3.5" HDD bays (Intel RST 0, 1, 5, 10)
▪ Option 4 HDDs support in HW RAID 5, 10
▪ 2 x USB 2.0 Type-A, output Max 500mA per port

I/O Interface-Rear

▪ 4 x USB 3.2 Gen1x1, Type-A, output Max 900mA per port
▪ 1 x DP 1.4 (4K60)
▪ 1 x HDMI 2.0b (4K60)
▪ 2 x 2.5GbE RJ45 LAN port
  – LAN1: Intel® I225-LM 2.5 Gbps with Intel Vpro
  – LAN2: Intel® I225-V 2.5 Gbps
▪ 16 X 10/100 PoE, 240W max PSE (NViS 57164)
▪ 16 X 10/100 PoE, 240W max PSE, optional 360W PSE (NViS 57244)

Storage

▪ 4 x Hot swappable 3.5" HDD, up to 22TB
▪ M.2 Key M 2280, supports NVMe Gen4
▪ M.2 Key B2242, supports SATA3

Power Input

▪ Single PSU 600W

Dimensions

▪ 482.45mm (W) x 43.5mm (H) x 576.63mm (D)

Environment

▪ Operating temperature:
▪ Ambient with air flow: 0°C ~ 40°C
▪ Storage temperature: -20°C ~ 70°C
▪ Relative humidity: 0% ~ 90% (non-condensing)

Certifications

▪ CE approval
▪ FCC Class A
▪ CB/UL Option

Knowing Your NViS 57xx4 Series

Front Panel
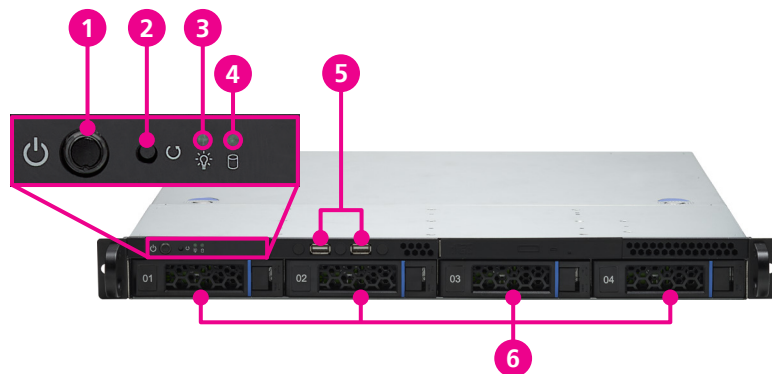
1. Power Button

Press to power on/off the system.

2. Reset Pin Hole

Reset the system by using a paper clip to push the pin hole.

3. Power LED Indicator

Lights up green when power is on.

4. Hard Disk Drive LED Indicator

Lights up green when the hard disk drives are activated.

5. Dual USB 2.0 Ports

Connect to USB 2.0 devices.

6. Swappable 3.5" HDD Bays

Connect to 3.5" hard disk drives. The HDD LED indicator on the HDD tray is blue when powered on and turns green when activated.

Rear Panel
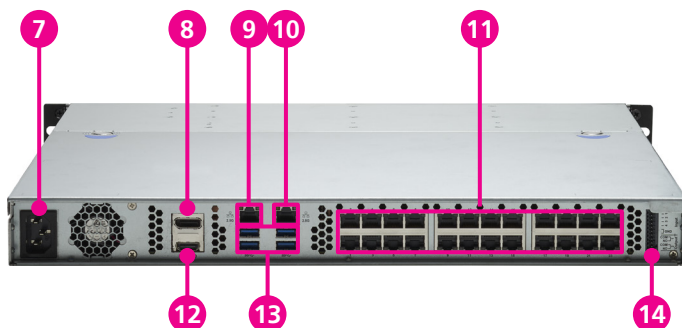
The image shown above use NViS 57244 as an example. The only difference between the series is the number of supported RJ45 ports.

7. ATX Power Connector

Plug to the power cord.

8. DisplayPort 1.4 Connector

Connect to a DP1.4 or backward-compatible display.

9. RJ45 LAN Port (I225-LM)

Connect the system to a local area network with speeds of up to 2.5Gbps.

10. RJ45 LAN Port (I225-V)

Connect the system to a local area network with speeds of up to 2.5Gbps.

11. 10/100 PoE LAN Ports

Connect to devices via RJ45 ports with PoE support, both models have a default 240W maximum PSE. NViS 57164 supports up to 16 ports, while NViS 57244 supports up to 24 ports and has an optional 360W PSE.

12. HDMI 2.0b Connector

Connect to HDMI 2.0 or backward-compatible display.

13. USB 3.2 Gen 1x1 Type-A Connectors

Connect to USB devices, with each port supporting speeds of up to 5Gbps.

14. GPIO Terminal Block (Optional)

Connect to an external terminal device with a maximum load of 24V, 1.0A.

Mechanical Dimensions

NViS 57164
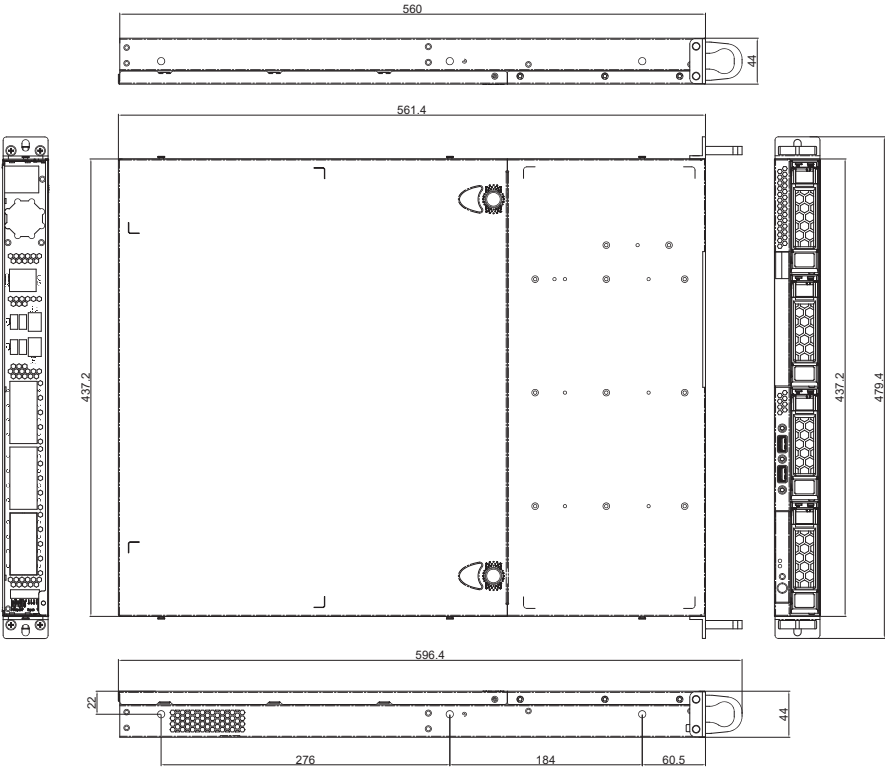
NViS 57244
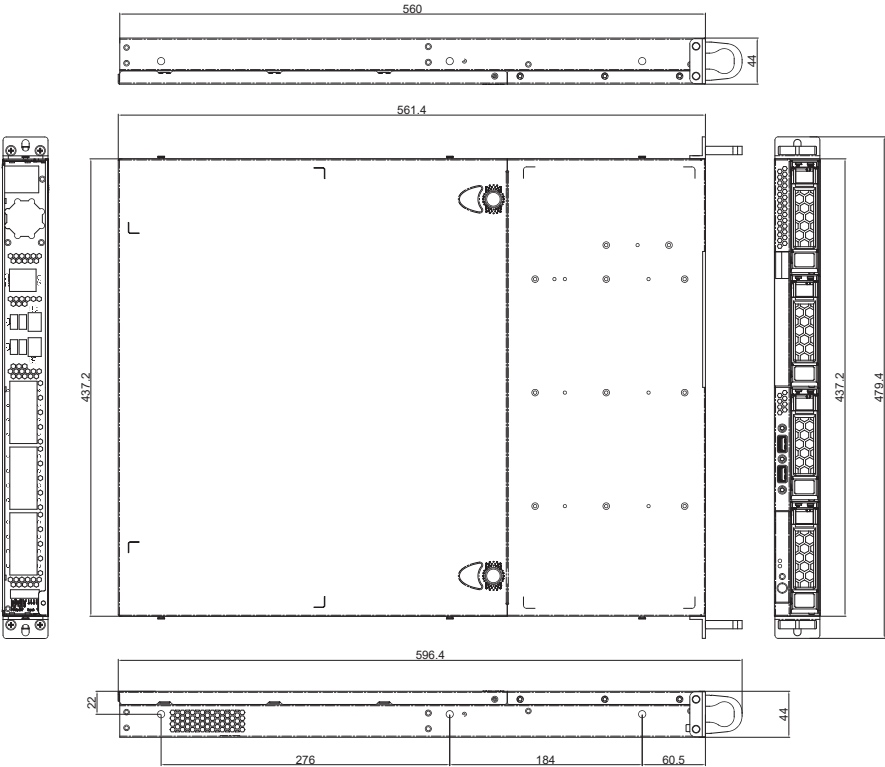
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NViS 57xx4 series motherboards.

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)
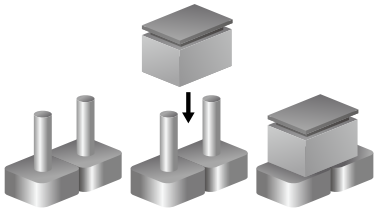
Three-Pin Jumpers: Pins 1 and 2 are Short
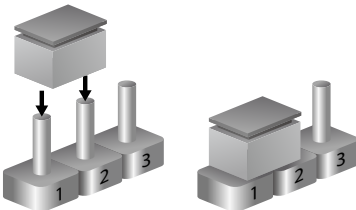
Locations of the NViS57XX4 Mainboard Jumpers and Connectors

The figure below shows the locations of the NViS57XX4 mainboard jumpers and connectors. For detailed information on the pin settings and definitions highlighted in pink, please refer to this chapter.
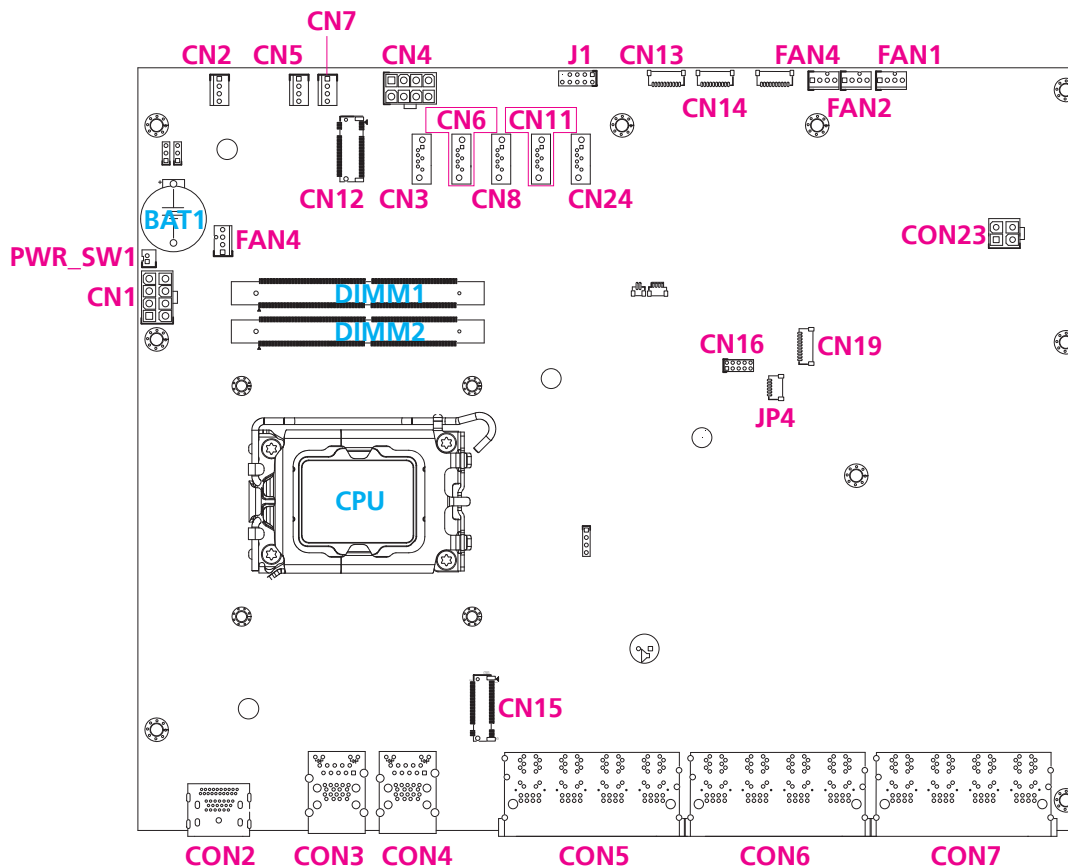
External I/O Interfaces
DisplayPort 1.4 and HDMI 2.0b Connectors

Connector location: CON2
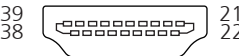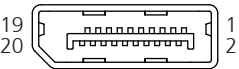
Pin	Definition	Pin	Definition
1	DP14_TX_CM_P0	2	GND1
3	DP14_TX_CM_N0	4	DP14_TX_CM_P1
5	GND2	6	DP14_TX_CM_N1
7	DP14_TX_CM_P2	8	GND3
9	DP14_TX_CM_N2	10	DP14_TX_CM_P3
11	GND4	12	DP14_TX_CM_N3
13	DP14_OB_AUX_EN	14	GND
15	DP14_AUXP_SNK	16	GND5
17	DP14_AUXN_SNK	18	DP14_HPD_SNK
19	GND	20	V3P3_DP14

Pin	Definition	Pin	Definition
21	HDMI20_CRLS_DP2	23	HDMI20_CRLS_DN2
22	GND	24	HDMI20_CRLS_DP1
26	HDMI20_CRLS_DN1	25	GND
27	HDMI20_CRLS_DP0	29	HDMI20_CRLS_DN0
28	GND	30	HDMI20_CRLS_CKP
32	HDMI20_CRLS_CKN	31	GND
33	CEC	34	NC
35	HDMI20_CRLS_SCL	36	HDMI20_CRLS_SDA
37	GND	38	V5P0_HDMI1
39	HDMI20_RT_HPD_SNK		

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LAN1 and USB 3.2 Gen 1x1 Ports

Network chipset: I225-LM
Connector location: CON3
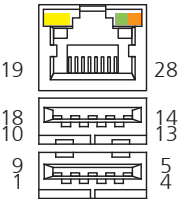
Pin	Definition	Pin	Definition
1	V5P0_USB3_P12	2	USB2_1_DN_CM
3	USB2_1_DP_CM	4	GND9
5	USB31_1_RXN_CM	6	USB31_1_RXP_CM
7	GND11	8	USB31_1_TXN_CM
9	USB31_1_TXP_CM	10	V5P0_USB3_P12
11	USB2_2_DN_CM	12	USB2_2_DP_CM
13	GND10	14	USB31_2_RXN_CM
15	USB31_2_RXP_CM	16	GND12
17	USB31_2_TXN_CM	18	USB31_2_TXP_CM
19	GND	20	LAN1_PHY_P0
21	LAN1_PHY_N0	22	LAN1_PHY_P1
23	LAN1_PHY_N1	24	LAN1_PHY_P2
25	LAN1_PHY_N2	26	LAN1_PHY_P3
27	LAN1_PHY_N3	28	GND13
29	V3P3A_LAN1	30	LAN1_PHY_LED_ACT_N_R
31	LAN1_PHY_LED_1000_N_R	32	LAN1_PHY_LED_2500_N_R

Act	Status
Blinking Yellow	Data activity
Off	No activity

Link	Status
Steady Green	2.5Gbp/s network link
Steady Orange	1Gbp/s network link

LAN2 and USB 3.2 Gen 1x1 Ports

Network chipset: I225-V
Connector location: CON4
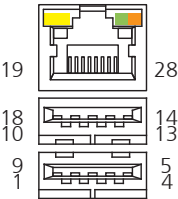
Pin	Definition	Pin	Definition
1	V5P0_USB3_P34	2	USB2_3_DN_CM
3	USB2_3_DP_CM	4	GND9
5	USB31_3_RXN_CM	6	USB31_3_RXP_CM
7	GND11	8	USB31_3_TXN_CM
9	USB31_3_TXP_CM	10	V5P0_USB3_P34
11	USB2_4_DN_CM	12	USB2_4_DP_CM
13	GND10	14	USB31_4_RXN_CM
15	USB31_4_RXP_CM	16	GND12
17	USB31_4_TXN_CM	18	USB31_4_TXP_CM
19	GND	20	LAN2_PHY_P0
21	LAN2_PHY_N0	22	LAN2_PHY_P1
23	LAN2_PHY_N1	24	LAN2_PHY_P2
25	LAN2_PHY_N2	26	LAN2_PHY_P3
27	LAN2_PHY_N3	28	GND13
29	V3P3A_LAN2	30	LAN2_PHY_LED_ACT_N_R
31	LAN2_PHY_LED_1000_N_R	32	LAN2_PHY_LED_2500_N_R

Act	Status
Blinking Yellow	Data activity
Off	No activity

Link	Status
Steady Green	2.5Gbp/s network link
Steady Orange	1Gbp/s network link

RJ45 PoE Ports

Connector location: CON5
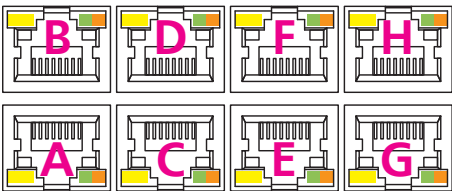
Link	Status
Steady Green	Network link
Blinking Orange	Data activity

Pin	Definition	Pin	Definition
A2	V54_POE	B2	V54_POE
A3	POE_PORTN_OUT0	B3	POE_PORTN_OUT1
A6	POE_P1RXN	B6	POE_P2RXN
A7	POE_P1RXP	B7	POE_P2RXP
A8	POE_P1TXN	B8	POE_P2TXN
A9	POE_P1TXP	B9	POE_P2TXP
A10	POE_P1_CT	B10	POE_P2_CT
A11	V3P3_LED_POE0	B11	V3P3_LED_POE0
A12	POE_P1LINK_ACT_CN	B12	POE_P2LINK_ACT_CN
A13	V3P3_LED_POE0	B13	V3P3_LED_POE0
A14	POE_P1_STATE_CN	B14	POE_P2_STATE_CN

Pin	Definition	Pin	Definition
C2	V54_POE	D2	V54_POE
C3	POE_PORTN_OUT2	D3	POE_PORTN_OUT3
C6	POE_P3RXN	D6	POE_P4RXN
C7	POE_P3RXP	D7	POE_P4RXP
C8	POE_P3TXN	D8	POE_P4TXN
C9	POE_P3TXP	D9	POE_P4TXP
C10	POE_P3_CT	D10	POE_P4_CT
C11	V3P3_LED_POE0	D11	V3P3_LED_POE0
C12	POE_P3LINK_ACT_CN	D12	POE_P4LINK_ACT_CN
C13	V3P3_LED_POE0	D13	V3P3_LED_POE0
C14	POE_P3_STATE_CN	D14	POE_P4_STATE_CN

Pin	Definition	Pin	Definition
E2	V54_POE	F2	V54_POE
E3	POE_PORTN_OUT4	F3	POE_PORTN_OUT5
E6	POE_P5RXN	F6	POE_P6RXN
E7	POE_P5RXP	F7	POE_P6RXP
E8	POE_P5TXN	F8	POE_P6TXN
E9	POE_P5TXP	F9	POE_P6TXP
E10	POE_P5_CT	F10	POE_P6_CT
E11	V3P3_LED_POE0	F11	V3P3_LED_POE0
E12	POE_P5LINK_ACT_CN	F12	POE_P6LINK_ACT_CN
E13	V3P3_LED_POE0	F13	V3P3_LED_POE0
E14	POE_P5_STATE_CN	F14	POE_P6_STATE_CN
G2	V54_POE	H2	V54_POE
G3	POE_PORTN_OUT6	H3	POE_PORTN_OUT7
G6	POE_P7RXN	H6	POE_P8RXN
G7	POE_P7RXP	H7	POE_P8RXP

Pin	Definition	Pin	Definition
G8	POE_P7TXN	H8	POE_P8TXN
G9	POE_P7TXP	H9	POE_P8TXP
G10	POE_P7_CT	H10	POE_P8_CT
G11	V3P3_LED_POE0	H11	V3P3_LED_POE0
G12	POE_P7LINK_ACT_CN	H12	POE_P8LINK_ACT_CN
G13	V3P3_LED_POE0	H13	V3P3_LED_POE0
G14	POE_P7_STATE_CN	H14	POE_P8_STATE_CN
MH1	Chassis_GND		
MH2	Chassis_GND		
MH3	Chassis_GND		
MH4	Chassis_GND		
MH5	Chassis_GND		
MH6	Chassis_GND		
NH1	X		
NH2	X		

RJ45 PoE Ports

Connector location: CON6

Link	Status
Steady Green	Network link
Blinking Orange	Data activity
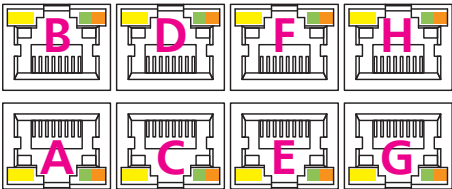
Pin	Definition	Pin	Definition
A2	V54_POE	B2	V54_POE
A3	POE_PORTN_OUT8	B3	POE_PORTN_OUT9
A6	POE_P9RXN	B6	POE_P10RXN
A7	POE_P9RXP	B7	POE_P10RXP
A8	POE_P9TXN	B8	POE_P10TXN
A9	POE_P9TXP	B9	POE_P10TXP
A10	POE_P9_CT	B10	POE_P10_CT
A11	V3P3_LED_POE1	B11	V3P3_LED_POE1
A12	POE_P9LINK_ACT_CN	B12	POE_P10LINK_ACT_CN
A13	V3P3_LED_POE1	B13	V3P3_LED_POE1
A14	POE_P9_STATE_CN	B14	POE_P10_STATE_CN

Pin	Definition	Pin	Definition
C2	V54_POE	D2	V54_POE
C3	POE_PORTN_OUT10	D3	POE_PORTN_OUT11
C6	POE_P11RXN	D6	POE_P12RXN
C7	POE_P11RXP	D7	POE_P12RXP
C8	POE_P11TXN	D8	POE_P12TXN
C9	POE_P11TXP	D9	POE_P12TXP
C10	POE_P11_CT	D10	POE_P12_CT
C11	V3P3_LED_POE1	D11	V3P3_LED_POE1
C12	POE_P11LINK_ACT_CN	D12	POE_P12LINK_ACT_CN
C13	V3P3_LED_POE1	D13	V3P3_LED_POE1
C14	POE_P11_STATE_CN	D14	POE_P12_STATE_CN

Continued on the next page

Pin	Definition	Pin	Definition
E2	V54_POE	F2	V54_POE
E3	POE_PORTN_OUT12	F3	POE_PORTN_OUT13
E6	POE_P13RXN	F6	POE_P14RXN
E7	POE_P13RXP	F7	POE_P14RXP
E8	POE_P13TXN	F8	POE_P14TXN
E9	POE_P13TXP	F9	POE_P14TXP
E10	POE_P13_CT	F10	POE_P14_CT
E11	V3P3_LED_POE1	F11	V3P3_LED_POE1
E12	POE_P13LINK_ACT_CN	F12	POE_P14LINK_ACT_CN
E13	V3P3_LED_POE1	F13	V3P3_LED_POE1
E14	POE_P13_STATE_CN	F14	POE_P14_STATE_CN
G2	V54_POE	H2	V54_POE
G3	POE_PORTN_OUT14	H3	POE_PORTN_OUT15
G6	POE_P15RXN	H6	POE_P16RXN
G7	POE_P15RXP	H7	POE_P16RXP

Pin	Definition	Pin	Definition
G8	POE_P15TXN	H8	POE_P16TXN
G9	POE_P15TXP	H9	POE_P16TXP
G10	POE_P15_CT	H10	POE_P16_CT
G11	V3P3_LED_POE1	H11	V3P3_LED_POE1
G12	POE_P15LINK_ACT_CN	H12	POE_P16LINK_ACT_CN
G13	V3P3_LED_POE1	H13	V3P3_LED_POE1
G14	POE_P15_STATE_CN	H14	POE_P16_STATE_CN
MH1	Chassis_GND		
MH2	Chassis_GND		
MH3	Chassis_GND		
MH4	Chassis_GND		
MH5	Chassis_GND		
MH6	Chassis_GND		
NH1	X		
NH2	X		

RJ45 PoE Ports

Connector location: CON7 (NViS57244 only)
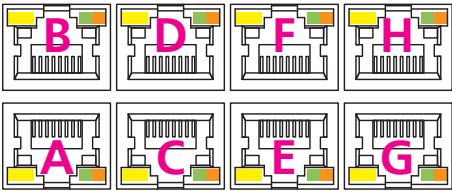
Link	Status
Steady Green	Network link
Blinking Orange	Data activity

Pin	Definition	Pin	Definition
A2	V54_POE	B2	V54_POE
A3	POE_PORTN_OUT16	B3	POE_PORTN_OUT17
A6	POE_P17RXN	B6	POE_P18RXN
A7	POE_P17RXP	B7	POE_P18RXP
A8	POE_P17TXN	B8	POE_P18TXN
A9	POE_P17TXP	B9	POE_P18TXP
A10	POE_P17_CT	B10	POE_P18_CT
A11	V3P3_LED_POE2	B11	V3P3_LED_POE2
A12	POE_P17LINK_ACT_CN	B12	POE_P18LINK_ACT_CN
A13	V3P3_LED_POE2	B13	V3P3_LED_POE2
A14	POE_P17_STATE_CN	B14	POE_P18_STATE_CN

Pin	Definition	Pin	Definition
C2	V54_POE	D2	V54_POE
C3	POE_PORTN_OUT18	D3	POE_PORTN_OUT19
C6	POE_P19RXN	D6	POE_P20RXN
C7	POE_P19RXP	D7	POE_P20RXP
C8	POE_P19TXN	D8	POE_P20TXN
C9	POE_P19TXP	D9	POE_P20TXP
C10	POE_P19_CT	D10	POE_P20_CT
C11	V3P3_LED_POE2	D11	V3P3_LED_POE2
C12	POE_P19LINK_ACT_CN	D12	POE_P20LINK_ACT_CN
C13	V3P3_LED_POE2	D13	V3P3_LED_POE2
C14	POE_P19_STATE_CN	D14	POE_P20_STATE_CN

Continued on the next page

Pin	Definition	Pin	Definition
E2	V54_POE	F2	V54_POE
E3	POE_PORTN_OUT20	F3	POE_PORTN_OUT21
E6	POE_P21RXN	F6	POE_P22RXN
E7	POE_P21RXP	F7	POE_P22RXP
E8	POE_P21TXN	F8	POE_P22TXN
E9	POE_P21TXP	F9	POE_P22TXP
E10	POE_P21_CT	F10	POE_P22_CT
E11	V3P3_LED_POE2	F11	V3P3_LED_POE2
E12	POE_P21LINK_ACT_CN	F12	POE_P22LINK_ACT_CN
E13	V3P3_LED_POE2	F13	V3P3_LED_POE2
E14	POE_P21_STATE_CN	F14	POE_P22_STATE_CN
G2	V54_POE	H2	V54_POE
G3	POE_PORTN_OUT22	H3	POE_PORTN_OUT23
G6	POE_P23RXN	H6	POE_P24RXN
G7	POE_P23RXP	H7	POE_P24RXP

Pin	Definition	Pin	Definition
G8	POE_P23TXN	H8	POE_P24TXN
G9	POE_P23TXP	H9	POE_P24TXP
G10	POE_P23_CT	H10	POE_P24_CT
G11	V3P3_LED_POE2	H11	V3P3_LED_POE2
G12	POE_P23LINK_ACT_CN	H12	POE_P24LINK_ACT_CN
G13	V3P3_LED_POE2	H13	V3P3_LED_POE2
G14	POE_P23_STATE_CN	H14	POE_P24_STATE_CN
MH1	Chassis_GND		
MH2	Chassis_GND		
MH3	Chassis_GND		
MH4	Chassis_GND		
MH5	Chassis_GND		
MH6	Chassis_GND		
NH1	X		
NH2	X		

Internal I/O Interfaces

12V Power In Connector

Connector location: CN1, CN4
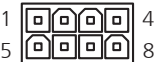
Pin	Definition	Pin	Definition
1	GND1	2	GND2
3	GND3	4	GND4
5	V12P0A_2_1	6	V12P0A_2_2
7	V12P0A_2_3	8	V12P0A_2_4

SATA Power Connectors

Connector location: CN2, CN5, CN7

CN2

Pin	Definition	Pin	Definition
1	V12P0_HDD0	2	GND
3	GND	4	V5P0_HDD0

CN5

Pin	Definition	Pin	Definition
1	V12P0_HDD1	2	GND
3	GND	4	V5P0_HDD1

CN7

Pin	Definition	Pin	Definition
1	V12P0_HDD2	2	GND
3	GND	4	V5P0_HDD2

SATA Connectors

Connector location: CN3, CN6, CN8, CN11, CN24

CN8 (Port2)

Pin	Definition	Pin	Definition
1	GND1	2	RSATA_CON2_TXP
3	RSATA_CON2_TXN	4	GND2
5	RSATA_CON2_RXN	6	RSATA_CON2_RXP
7	GND3		
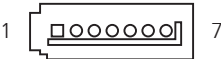
CN3 (Port0)

Pin	Definition	Pin	Definition
1	GND1	2	RSATA_CON0_TXP
3	RSATA_CON0_TXN	4	GND2
5	RSATA_CON0_RXN	6	RSATA_CON0_RXP
7	GND3		

CN11 (Port3)

Pin	Definition	Pin	Definition
1	GND1	2	RSATA_CON3_TXP
3	RSATA_CON3_TXN	4	GND2
5	RSATA_CON3_RXN	6	RSATA_CON3_RXP
7	GND3		

CN6 (Port1)

Pin	Definition	Pin	Definition
1	GND1	2	RSATA_CON1_TXP
3	RSATA_CON1_TXN	4	GND2
5	RSATA_CON1_RXN	6	RSATA_CON1_RXP
7	GND3		

CN24 (Port4)

Pin	Definition	Pin	Definition
1	GND1	2	RSATA_CON5_TXP
3	RSATA_CON5_TXN	4	GND2
5	RSATA_CON5_RXN	6	RSATA_CON5_RXP
7	GND3		

M.2 Key B Slot

Connector type: M.2 Key B 2242 slot (SATA/USB3.0)
Connector location: CN12
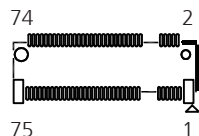
Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	M2B_CONFIG_3	2	V3P3_M2B_1	43	M2B_PER0N	44	GPIO_2
3	GND1	4	V3P3_M2B_2	45	GND7	46	GPIO_3
5	GND2	6	M2B_SSD_FULL_PWR_OFF_N	47	M2B_PET0N	48	GPIO_4
7	M2B_USB2_DP	8	M2B_PLN_N	49	M2B_PET0P	50	M2B_PCI_RST_N
9	M2B_USB2_DN	10	M2B_SATA_LED_N	51	GND8	52	CLKREQ#
11	GND3	20	GPIO_5/RFU_1.8V	53	REFCLKn	54	PCIE_WAKE#
21	M2B_CONFIG_0	22	GPIO_6/RFU_1.8V	55	REFCLKp	56	M2B_SMDAT
23	WAKE_ON_WWA#_1.8V	24	GPIO_7/RFU_1.8V	57	GND9	58	M2B_SMCLK
25	DPR_1.8V	26	W_DISABLE2#_1.8V	59	ANTCTL0_1.8V	60	COEX3_1.8V
27	GND4	28	GPIO_8/RFU_1.8V	61	ANTCTL1_1.8V	62	COEX_TXD_1.8V
29	M2B_PER1N	30	UIM-RESET	63	ANTCTL2_1.8V	64	COEX_RXD_1.8V
31	M2B_PER1P	32	UIM-CLK	65	ANTCTL3_1.8V	66	SIM_DETECT
33	GND5	34	UIM-DATA	67	LTE_RST#_1.8V	68	M2B_SUSCLK
35	M2B_PET1N	36	UIM-PWR	67	M2B_CONFIG_1	70	V3P3_M2B_3
37	M2B_PET1P	38	DEVSLP	71	GND10	72	V3P3_M2B_4
39	GND6	40	GPIO_0	73	GND11	74	V3P3_M2B_5
41	M2B_PER0P	42	GPIO_1	75	M2B_CONFIG_2		

Front Panel Connector

Connector location: CN13

1 [connector diagram] 10

Pin	Definition	Pin	Definition
1	V3P3A	2	V3P3_DSW
3	GND	4	RSTBTN_N
5	PWRBTN_N_S2	6	GND
7	LED_HDD_PU	8	LED_HDD_LOGIC_N
9	LED_PWR_PU	10	LED_PWR_LOGIC_N

DB9 Output

Connector location: CN14

1 [connector diagram] 10

Pin	Definition	Pin	Definition
1	GND	2	HDR_RI_N
3	HDR_CTS_N	4	HDR_RTS_N
5	HDR_DSR_N	6	GND
7	HDR_DTR_N	8	HDR_TXD
9	HDR_RXD	10	HDR_DCD_N

M.2 Key M

Connector type: M.2 Key M 2280 (PCIe Gen4 x4)
Connector location: CN15
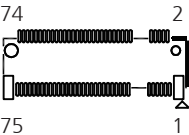
Pin	Definition	Pin	Definition
1	GND1	2	V3P3A_M2M_1
3	GND2	4	V3P3A_M2M_2
5	NVME_RXN3	6	M2M_FULL_PWROFF_N
7	NVME_RXP3	8	M2M_PLN_N
9	GND3	10	M2M_LED_OC
11	NVME_TXN3	12	V3P3A_M2M_6
13	NVME_TXP3	14	V3P3A_M2M_7
15	GND4	16	V3P3A_M2M_8
17	NVME_RXN2	18	V3P3A_M2M_9
19	NVME_RXP2	20	NC2
21	GND5	22	NC3
23	NVME_TXN2	24	NC4
25	NVME_TXP2	26	NC5
27	GND6	28	NC6
29	NVME_RXN1	30	NC7
31	NVME_RXP1	32	NC8
33	GND7	34	NC9

Pin	Definition	Pin	Definition
35	NVME_TXN1	36	NC10
37	NVME_TXP1	38	M2M_DEVSLP
39	GND8	40	M2M_SMBCLK_V1P8
41	NVME_RXN0	42	M2M_SMBDAT_V1P8
43	NVME_RXP0	44	M2M_ALERT_N_V1P8
45	GND9	46	NC14
47	NVME_TXN0	48	NC15
49	NVME_TXP0	50	M2M_PERST_N
51	GND10	52	M2M_NVME_PCH_CLKREQ_N
53	NVME_CLKN	54	M2M_WAKE_N
55	NVME_CLKP	56	NC16
57	GND11	58	NC17
67	NC26	68	M2M_SUSCLK
69	M2M_SSD_DETECT	70	V3P3A_M2M_3
71	GND12	72	V3P3A_M2M_4
73	GND13	74	V3P3A_M2M_5
75	M2M_Mount_Detect		

GPIO Connector

Connector location: CN16
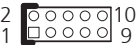
Pin	Definition	Pin	Definition
1	V5P0_4I4O	2	GND
3	PIO_IN_80	4	PIO_OUT_84
5	PIO_IN_81	6	PIO_OUT_85
7	PIO_IN_82	8	PIO_OUT_86
9	PIO_IN_83	10	PIO_OUT_87

Port 80H Connector

Connector location: CN19

Pin	Definition	Pin	Definition
1	V3P3A	2	DBG_ESPI_RST0_N
3	DBG_ESPI_IO0	4	DBG_ESPI_IO1
5	DBG_ESPI_IO2	6	DBG_ESPI_IO3
7	DBG_ESPI_CS0_N	8	DBG_ESPI_CLK
9	DBG_PLTRST_N	10	GND

ATX Power

Connector location: CN23
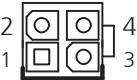
Pin	Definition	Pin	Definition
1	P_GND	2	DC_JACK_IN_P
3	P_GND6	4	DC_JACK_IN_P

System Fan Connectors

Connector location: FAN1, FAN2, FAN3, FAN4

1 ▯○○○ 4

FAN1

Pin	Definition	Pin	Definition
1	GND	2	V12P0_FANG1
3	SYS2_FAN_TACO	4	SYS2_FAN_PWM

FAN2

Pin	Definition	Pin	Definition
1	GND	2	V12P0_FANG1
3	SYS1_FAN_TACO	4	SYS1_FAN_PWM

FAN3

Pin	Definition	Pin	Definition
1	GND	2	V12P0S
3	CPU_FAN_TACO	4	CPU_FAN_PWM

FAN4

Pin	Definition	Pin	Definition
1	GND	2	V12P0_FANG2
3	SYS3_FAN_TACO	4	SYS3_FAN_PWM

USB 2.0

Connector location: J1

FW Update

Connector location: JP4
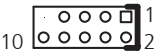
Pin	Definition	Pin	Definition
1	V5P0_USB2_HDR	2	V5P0_USB2_HDR
3	USB2_5_DN_CM	4	USB2_6_DN_CM
5	USB2_5_DP_CM	6	USB2_6_DP_CM
7	GND	8	GND
9	X	10	N/C
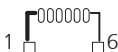
Pin	Definition	Pin	Definition
1	BIOS_SPI_IO0	2	BIOS_SPI_IO1
3	BIOS_SPI_CLK	4	BIOS_SPI_CS_N
5	GND	6	GND

Power SW Connector

Connector location: PWR_SW1

Pin	Definition	Pin	Definition
1	GND	2	PWRBTN_N

Block Diagram
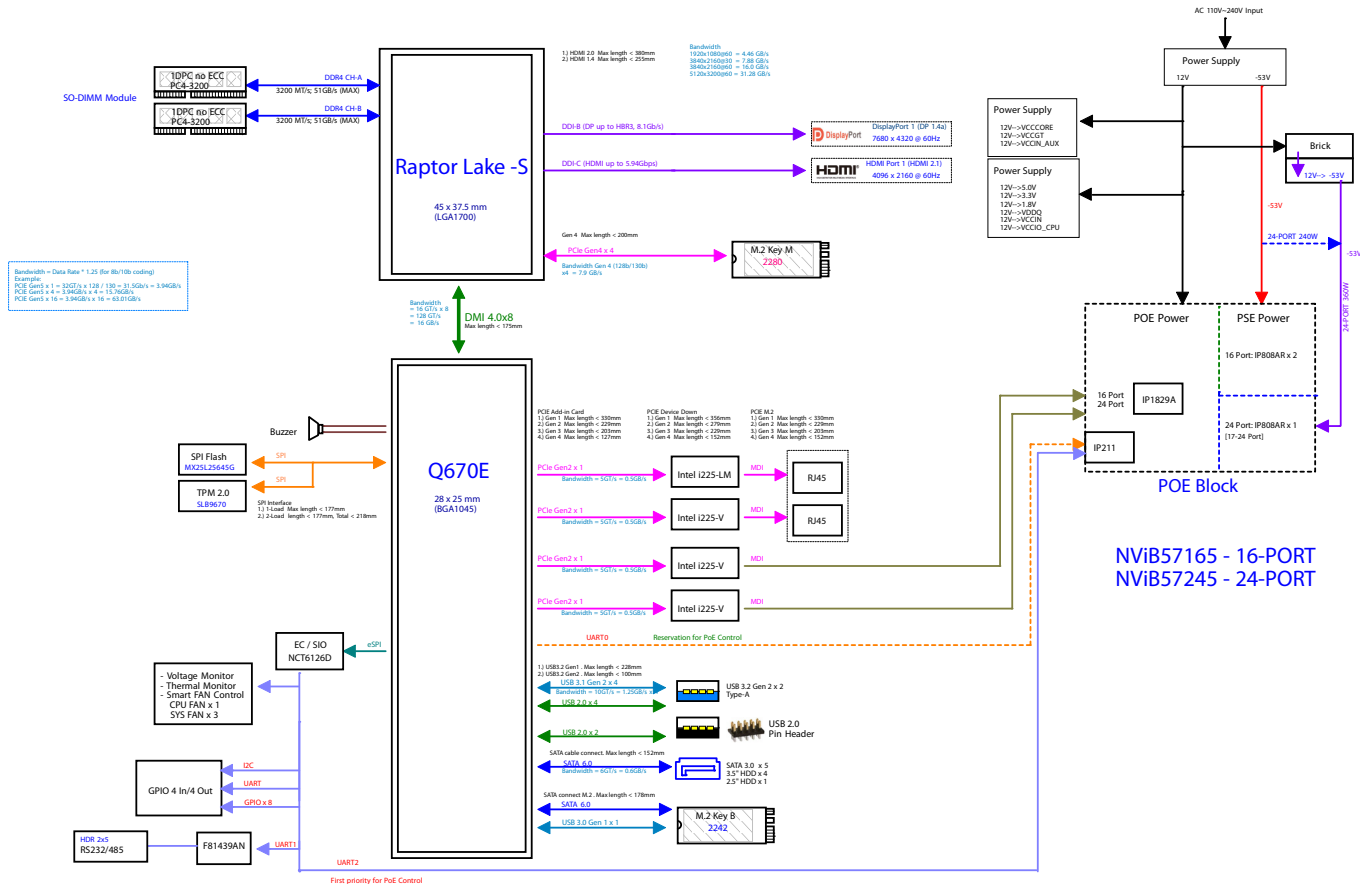
CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

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

1. Unscrew the F#6-32 screws on both side panels (refer to the images below for their locations).

2. Press the buttons indicated below, then slide the top cover outward and lift it up to fully open the chassis.
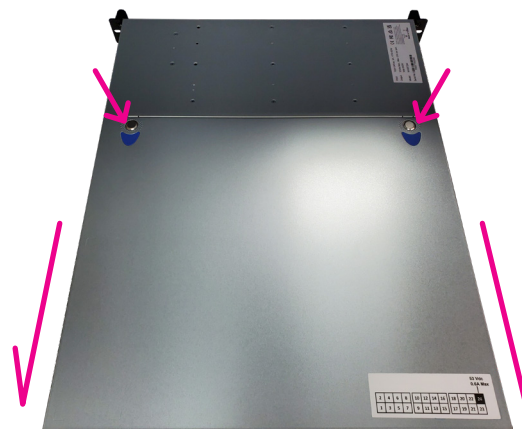
3. Once the top cover is removed, it will look like the image below.

Installing a CPU

1. Locate the CPU sockets on the mainboard.
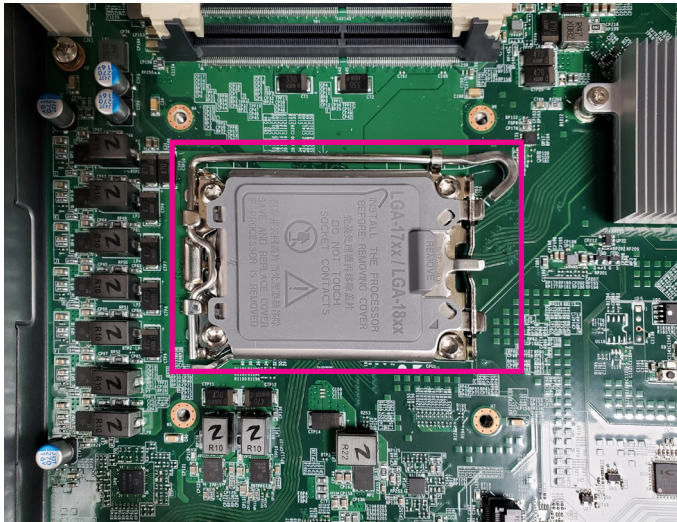
2. Release the load lever by pushing it down from the retention tab, then pull it up.
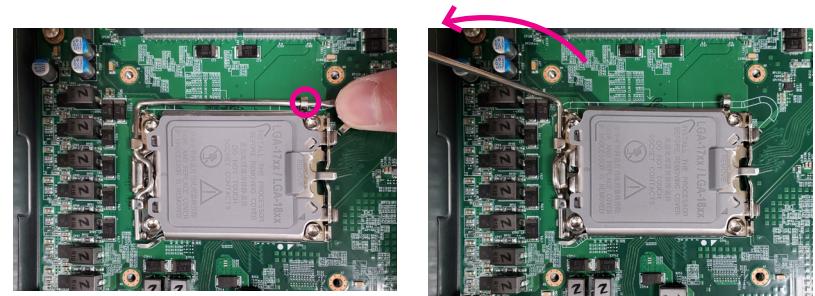
3. Lift the CPU load plate up to open the socket completely.
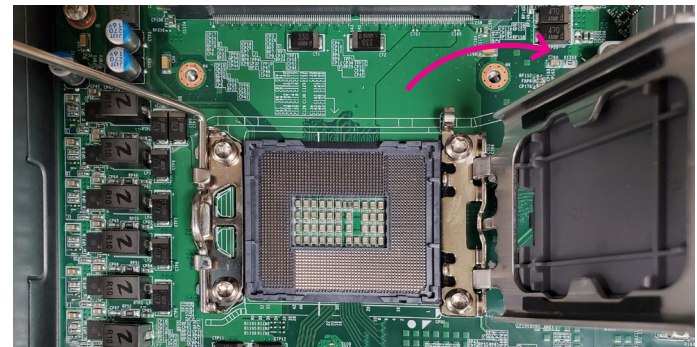
4. Insert the CPU into the CPU load bracket, ensuring that you align the triangle and notches on the CPU with the corresponding triangle marker and notches on the CPU load bracket.

5. Gently push the load lever down until it locks under the retention tab.
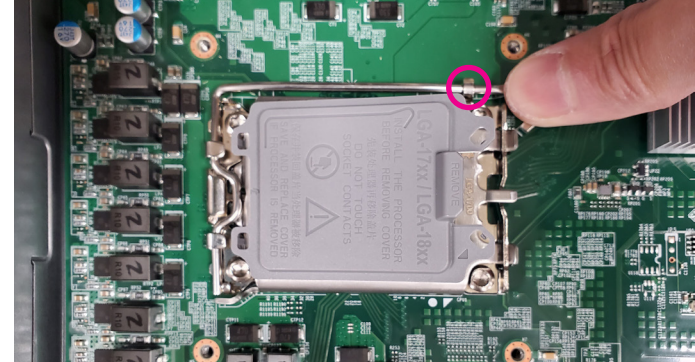
6. Remove the plastic cover from the load plate.
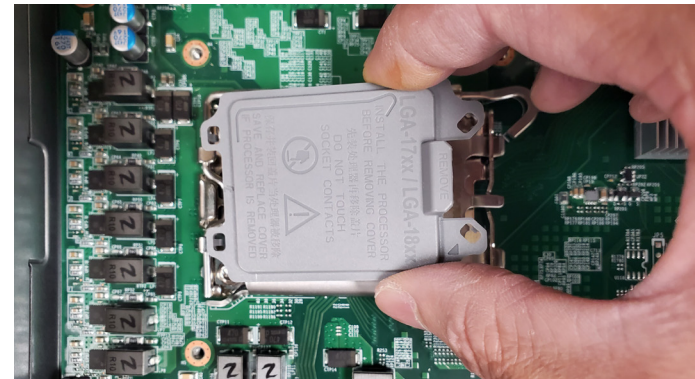
Installing a CPU Cooler

1. Refer to the previous section for CPU installation, and make sure the CPU is installed properly.

2. Retrieve the CPU cooler from the accessory box. To maintain optimal heat dissipation effectiveness, avoid touching the thermal paste located at the bottom of the cooler.
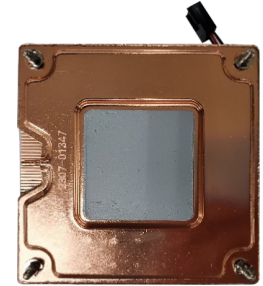
3. Ensure proper airflow direction by orienting the exhaust side towards the I/O panel of the system, and follow the sequence marked below the image.

4. Plug the cooler power into the FAN3 on the mainboard (ensure the pins are fully and properly plugged).
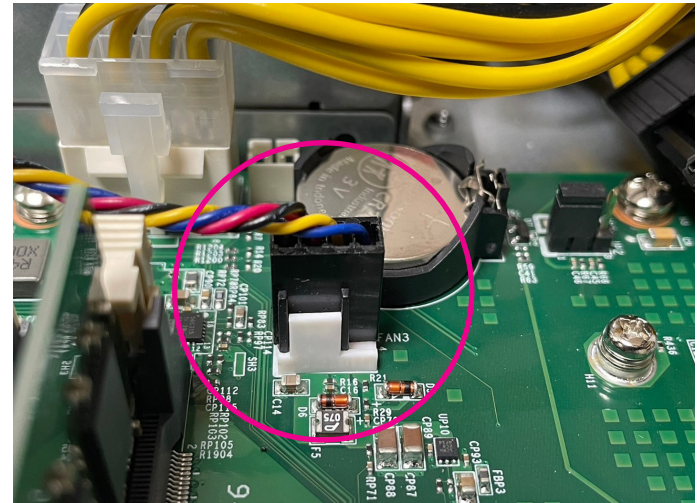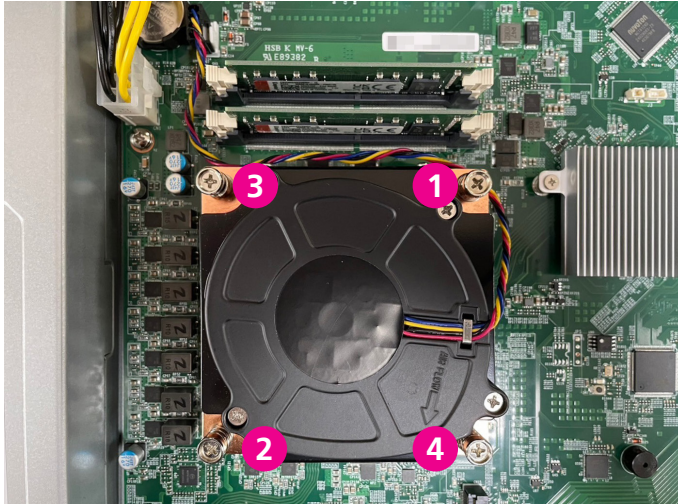
Installing SO-DIMM DDR4 Memory Modules

1. Locate the SO-DIMM sockets on the mainboard.

2. Gently push the locks outward on both ends of the memory slot.
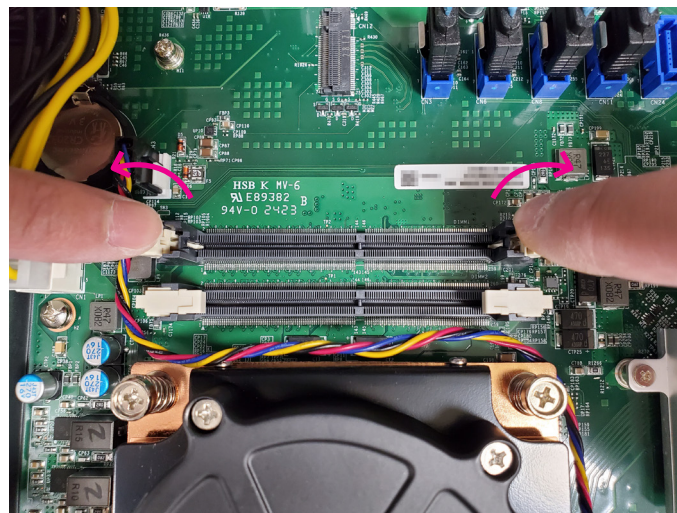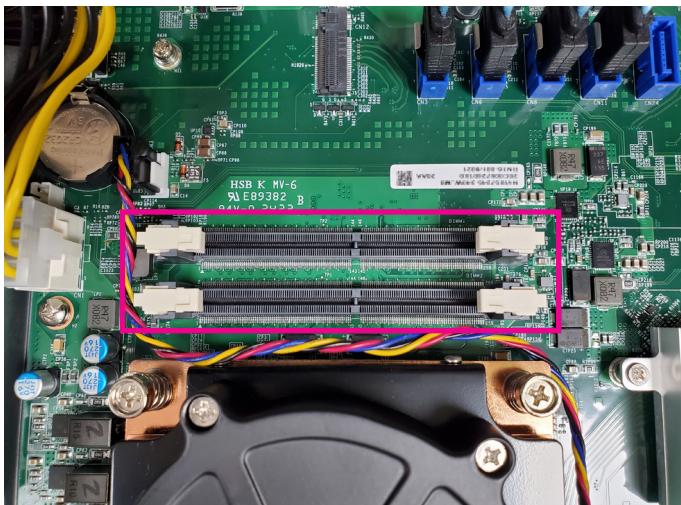
1. There is no specific installation order when inserting the memory module. Users can install the memory in either DIMM 1 or DIMM 2 according to their requirements, with each DIMM supporting up to 32GB of memory.
2. Note that the memory sockets are designed with fool-proof measures. Do not force-plug the memory module(s) if they are not oriented correctly.

3. Insert the module into the socket at an 90 degree angle. Apply firm even pressure to each end of the module until it slips into the slot. While pushing the module into position, the locks will close automatically.
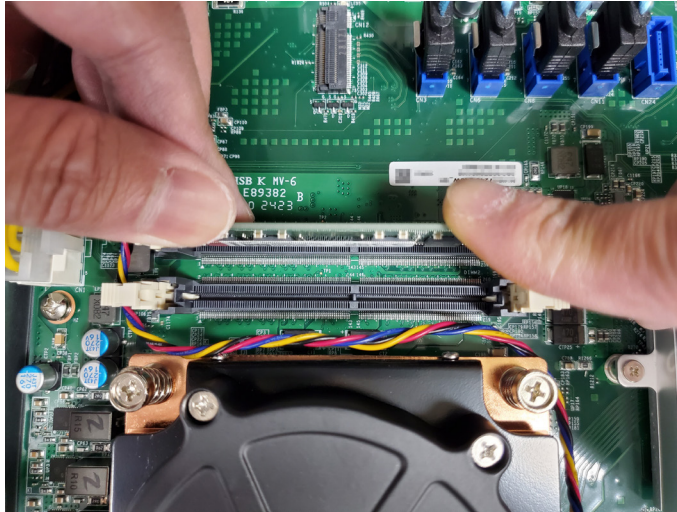
4. Repeat steps 2 and 3 to install the second memory module if required.
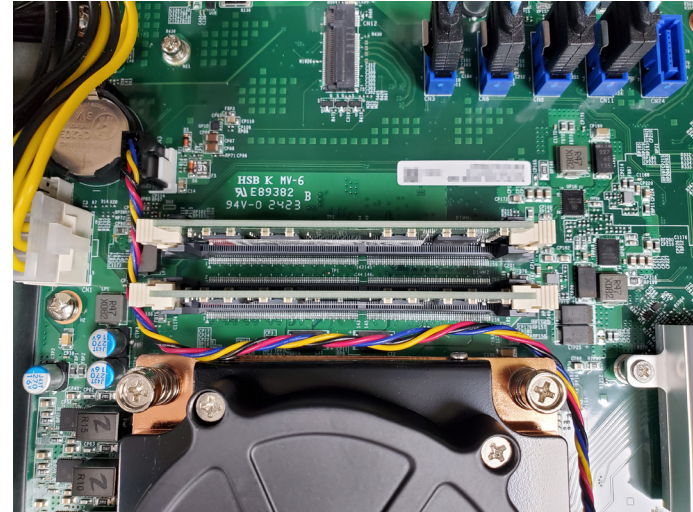
Installing an M.2 Module (Key M 2280)

1. Loosen the screw on the mainboard and set it aside for later use.

2. Insert the M.2 module into the M.2 Key M slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.

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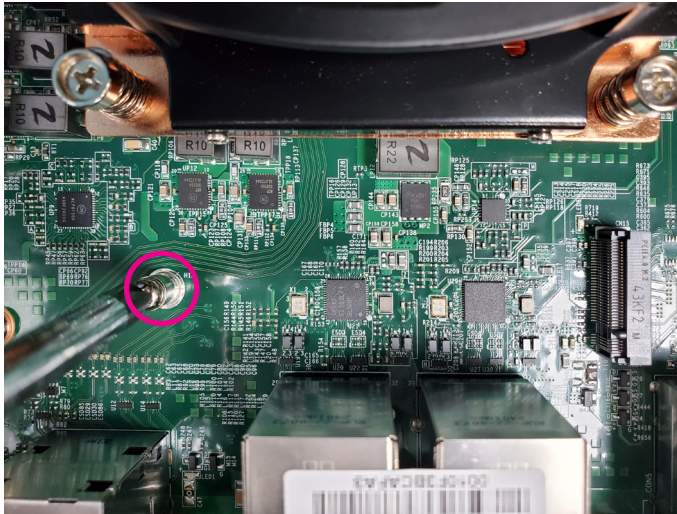
3. Push the M.2 module down and secure it with the screw that was removed from step 1.

Installing an M.2 Module (Key M 2242)

1. Loosen the screw on the mainboard and set it aside for later use.

2. Insert the M.2 module into the M.2 Key M slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.

3. Push the M.2 module down and secure it with the screw that was removed from step 1.
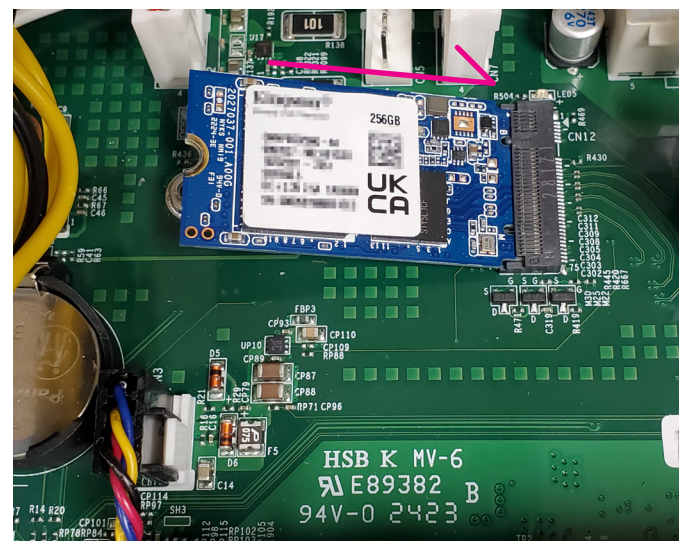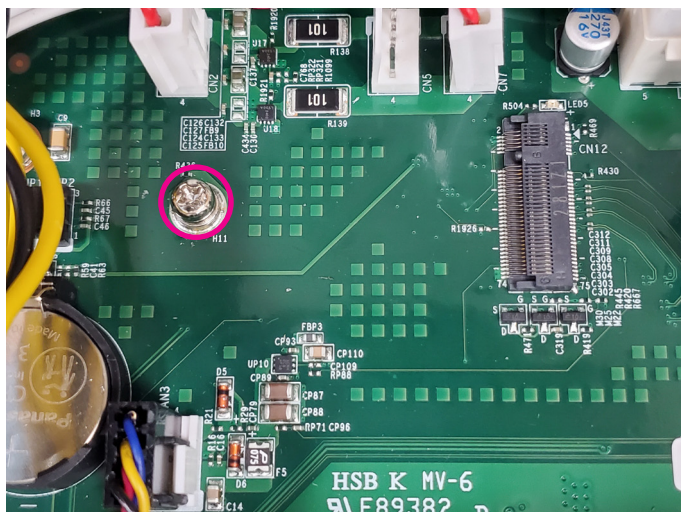
Installing 3.5" HDD Device(s)

1. Press the release button (**A**) next to the HDD bay tray to withdraw the HDD tray (**B**) .

2. Insert an HDD following the orientation shown below into the HDD tray (**C**), then push the HDD forward until it clicks into place (**D**).

3. Secure the HDD using F#6-32 screws with a clockwise orientation on both sides of the HDD tray.

4. Insert the HDD tray with the installed HDD back into the HDD bay of the system, repeating the steps to install additional HDDs if needed.

Removing 3.5" HDD Device(s)

1. Loosen the F#6-32 screws on both sides of the panels using a screwdriver with a counterclockwise orientation.

2. Push the latch upward until it reaches 90 degrees using your fingers.

3. Push the 3.5" HDD forward (**A**), then lift it upwards with your fingers to remove it (**B**).

Reassembling the Chassis

1. Install the top cover back to its original position.

2. Secure the screws back to their original positions.

Installing the Front Bezel

1. To install the front bezel, align the two tabs on the left side of the front bezel with the mounting holes on the chassis ear of the system. Refer to the location of the mounting holes shown in the image below.

Front Bezel

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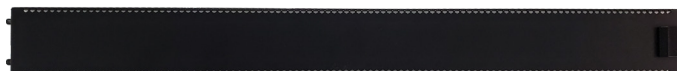
2. Once the installation on the left side is complete, press down the latch of the front bezel on the right side as indicated below, then align and snap it into place in the mounting hole of the chassis ear.
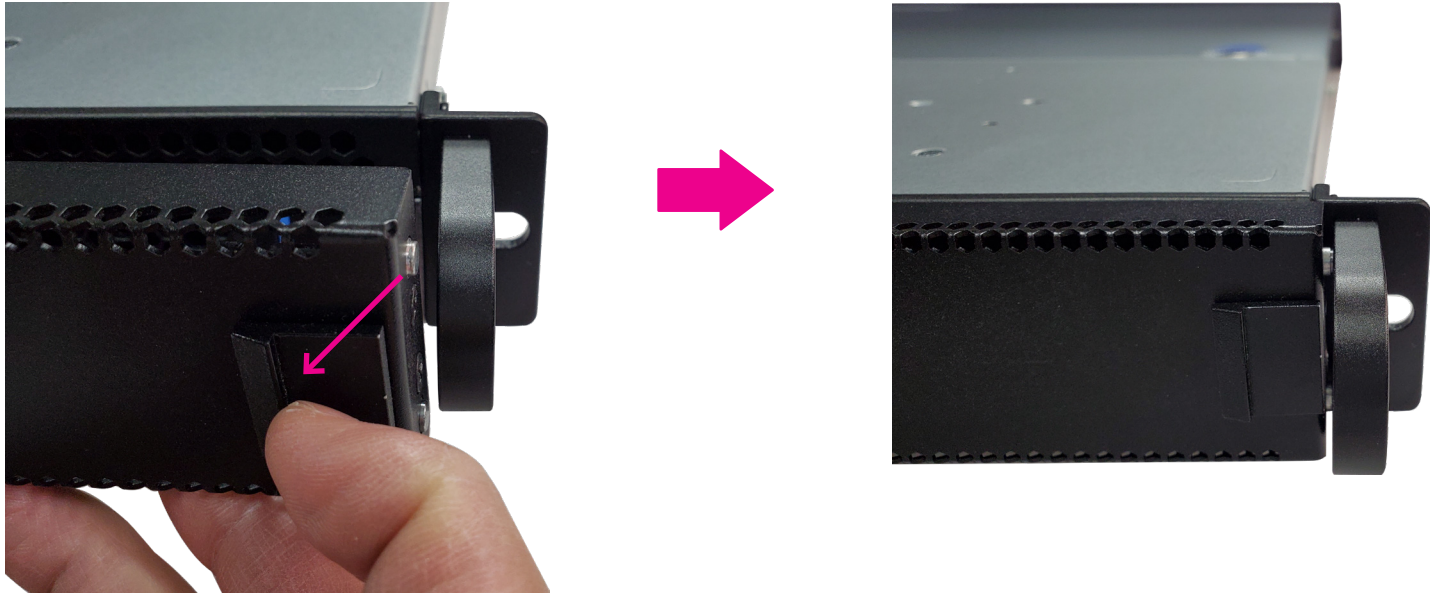
3. The installation is complete.

4. To pull out the front bezel, press to release the latch on the right side.
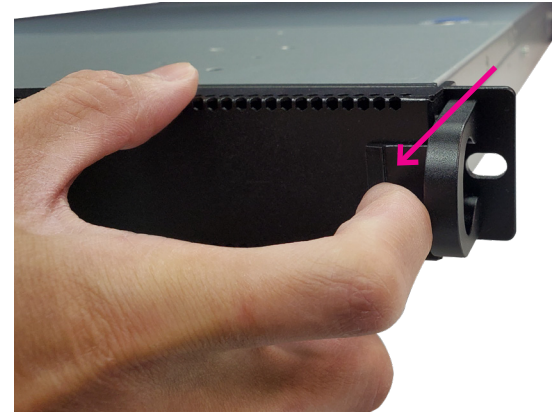
Removing the Ethernet Cable

To remove the Ethernet cable, please use a flat tool such as a ruler or a flathead screwdriver to press the arc latch of the connector.

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for the NViS 57xx4 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 such items 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
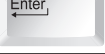
When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

▪ 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 <Del> allows you to enter Setup.

Press the [Del] key to enter Setup:

Legends

Key	Function
← →	Moves the highlight left or right to select a menu.
↑ ↓	Moves the highlight up or down between sub-menus or fields.
Esc	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.
Tab	Selects a field.
F1	Displays General Help.
F2	Load previous values.
F3	Load optimized default values.
F4	Saves and exits the Setup program.
Enter	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 Enter .

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 Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 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.

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

  ▶ PCH-FW Configuration                              Network Stack Settings
  ▶ Intel(R) Time Coordinated Computing
  ▶ Trusted Computing
  ▶ ACPI Settings
  ▶ NCT6126D Super IO Configuration
  ▶ Hardware Monitor
  ▶ USB Configuration
  ▶ Network Stack Configuration
  ▶ NVMe Configuration




                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit



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```

PCH-FW Configuration

This section is used to view CPU status and configure CPU parameters.
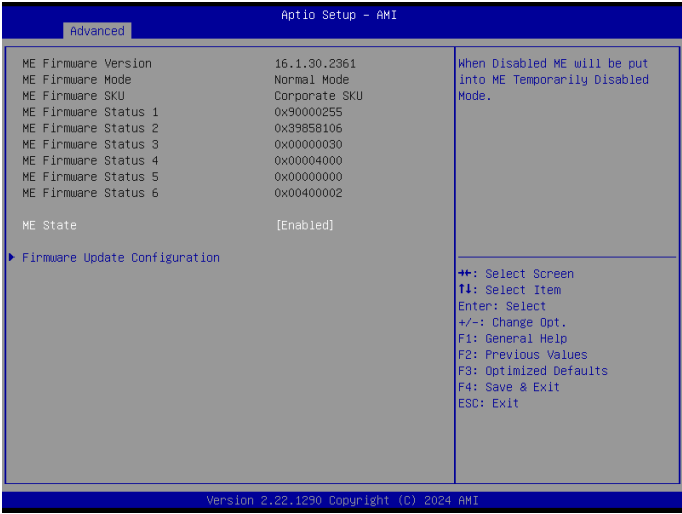
ME State

When disabled ME will be put into ME Temporarily Disabled Mode.

Firmware Update Configuration

Enter the Firmware Update Configuration sub-menu.

Firmware Update Configuration
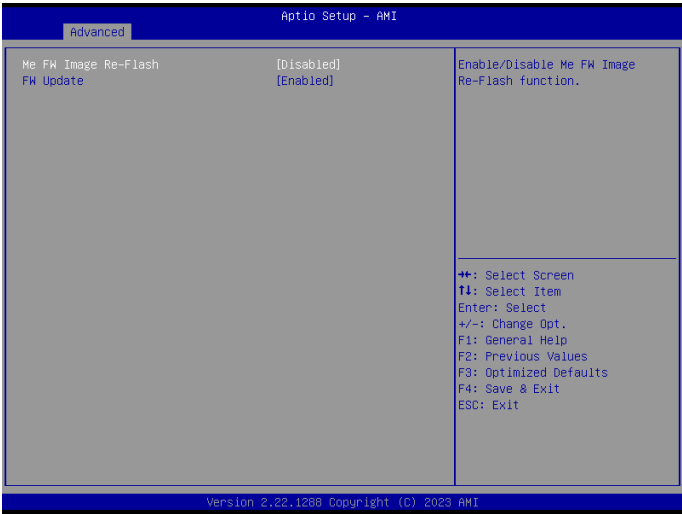
ME FW Image Re-Flash

Enable or disable ME FW Image Re-Flash function.

FW Update

Enable or disable FW Update.

Intel(R) Time Coordinated Computing

```
                      Aptio Setup – AMI
  Advanced

  Intel(R) Time Coordinated Computing (Intel(R) TCC)     Enable/Disable CPU Power
  ▶ C states                                             Management. Allows CPU to go
  ▶ Hyper-Threading                                      to C states when it's not 100%
                                                         utilized.




                                                         ⭾: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/–: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit


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```
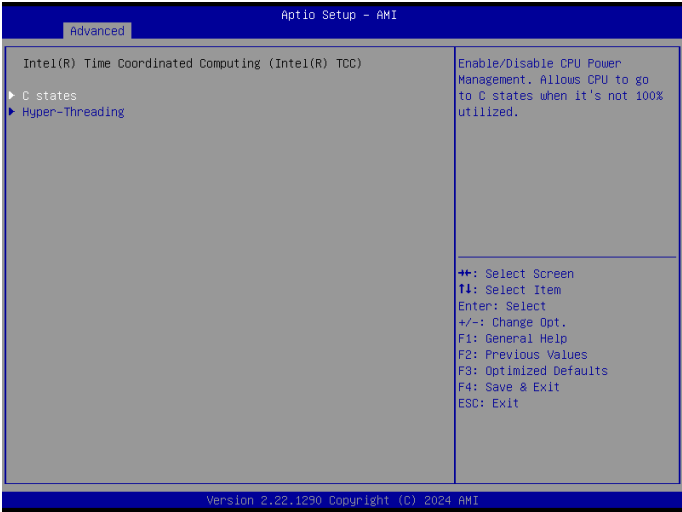
C states
Enter the C states sub-menu.

Hyper-Threading
Enter the Hyper-Threading sub-menu.

C States

```
                      Aptio Setup – AMI
  Advanced

  CPU – Power Management Control                         Enable/Disable CPU Power
                                                         Management. Allows CPU to go
  Boot performance mode          [Turbo Performance]     to C states when it's not 100%
  Intel(R) SpeedStep(tm)         [Enabled]               utilized.
    Turbo Mode                   [Enabled]
  C states                       [Enabled]




                                                         ⭾: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/–: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit


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```

Boot performance mode
Configure the performance mode of the CPU.

Intel(R) SpeedStep(tm)
Enable or disable Intel SpeedStep technology.

Turbo Mode
Enable or disable turbo mode.

C states
Enable or disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

Hyper-Threading

Trusted Computing
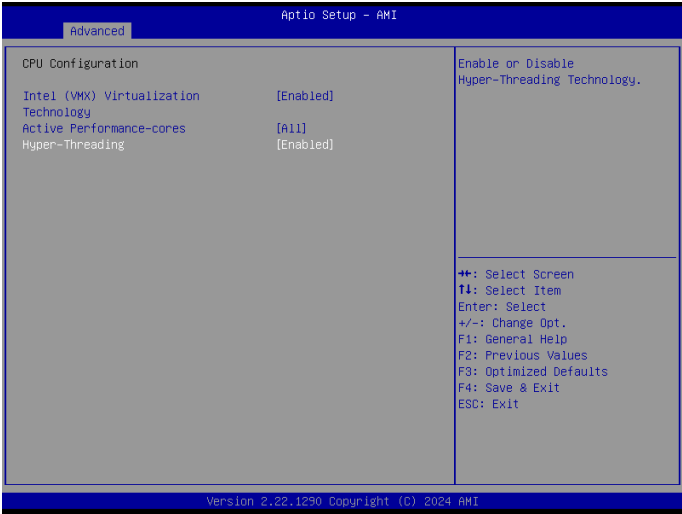
Intel (VMX) Virtualization Technology

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

Active Performance-cores

Select the quantity of performance cores to enable in each processor package.

Hyper-Threading

Enable or disable Hyper-Threading Technology.
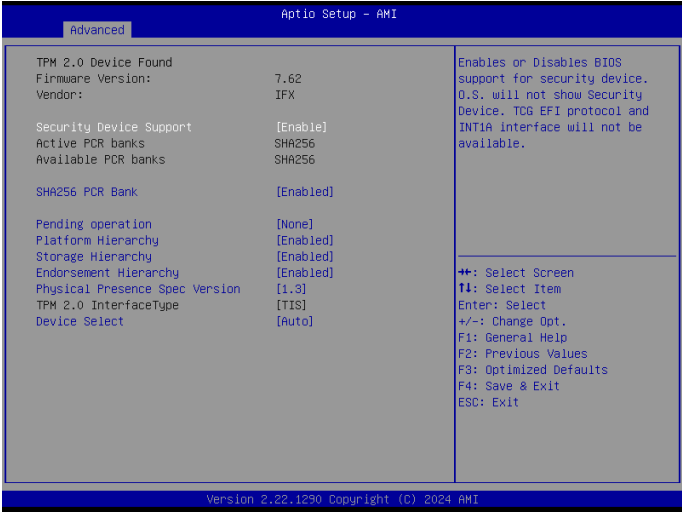
Security Device Support

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.

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.

Physical Presence Spec Version
Configure 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.

ACPI Settings
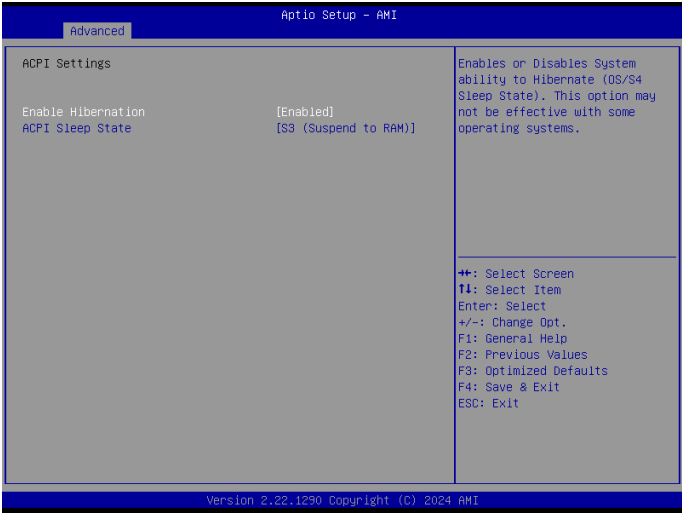
Enable Hibernation
Enable or disable system ability to hibernation (OS/S4 Sleep State). This option may not be effective with some operating systems.

ACPI Sleep State
Select the highest ACPI sleep state the system will enter when the suspend button is pressed.

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NViS 57XX4 Series User Manual

NCT6126D Super IO Configuration

```
                          Aptio Setup - AMI
   Advanced

   NCT6126D Super IO Configuration                    Set Parameters of Serial Port
                                                      1 (COMA)
   Super IO Chip                  NCT6126D
 ▶ Serial Port 1 Configuration
 ▶ Serial Port 2 Configuration




                                                      →←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

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```
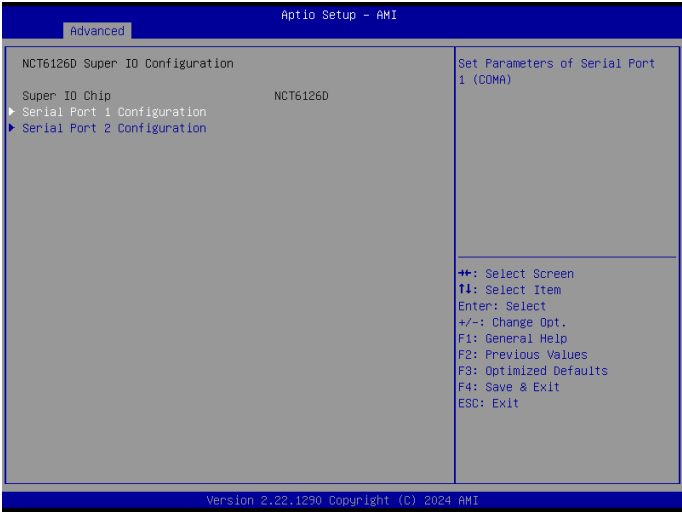
Serial Port 1/2 Configuration

Enter the Serial Port 1/2 Configuration sub-menu.

Serial Port 1 Configuration

```
                          Aptio Setup - AMI
   Advanced

   Serial Port 1 Configuration                        Enable or Disable Serial Port
                                                       (COM)
   Serial Port                   [Enabled]
   Device Settings               IO=3F8h; IRQ=4;
   Onboard Serial Port Mode      [RS232]

   Change Settings               [Auto]




                                                       →←: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit

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```
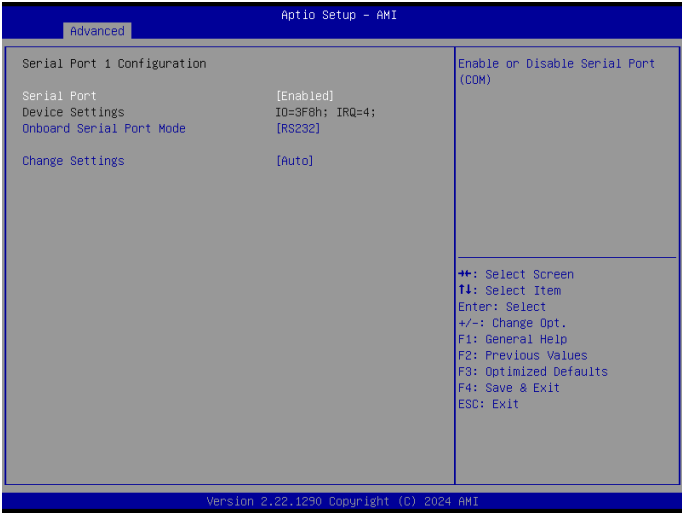
Serial Port

Enable or disable serial port (COM).

Onboard Serial Port Mode

Configure the serial port mode, it's RS232 by default.

Changes Settings

Select an optimal setting for the Super IO device.

Hardware Monitor

This section is used to monitor hardware such as temperature, fan speed, and voltages.

```
                        Aptio Setup - AMI
   Advanced

   Pc Health Status                               Smart Fan function setting

   CPU PECI Temperature          : +67 ℃
   System Temperature/BT2(SYSTIN) : +39 ℃
   Fan1/SYS1 Speed               : N/A
   Fan2/SYS2 Speed               : N/A
   Fan3 Speed                    : N/A
   Fan4/SYS3 Speed               : 3935 RPM
   +3.3V                         : +3.327 V
   +5V                           : +5.126 V
   +12V                          : +12.189 V
   VCORE                         : +0.904 V
 ▶ Smart Fan Function
                                                  ↔: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


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```

Smart Fan Function

Enter the Smart Fan Function sub-menu.

Smart Fan Function

```
                        Aptio Setup - AMI
   Advanced

 ▶ Fan1 Setting                                   Smart Fan function setting
 ▶ Fan2 Setting
 ▶ Fan3 Setting
 ▶ Fan4 Setting




                                                  ↔: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


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```
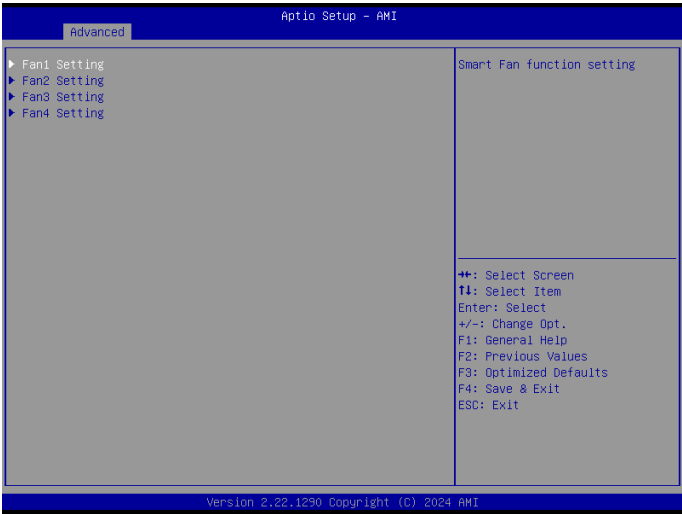
Fan1/2/3/4 Setting

Enter the Fan1/2/3/4 Setting sub-menu.

Smart Fan Function > Fan1/2/3/4 Setting

```
                          Aptio Setup - AMI
        Advanced

Fan1 Setting                                   Fan control mode select
Fan1 Mode                   [SMART FAN IV]
Step up time                1
Step down time              1
Temperature 1               25
Temperature 2               35
Temperature 3               45
Temperature 4               55
FD/RPM 1                    105
FD/RPM 2                    150
FD/RPM 3                    190
FD/RPM 4                    230
Critical temperature        60
Critical tolerance          0            →←: Select Screen
Enable critical duty        [Disabled]   ↑↓: Select Item
Tolerance value             0            Enter: Select
RPM Mode                    [Disabled]   +/-: Change Opt.
Fanout stepping             [Enabled]    F1: General Help
Fan1 Monitor                [BT2/SYSTIN] F2: Previous Values
                                         F3: Optimized Defaults
                                         F4: Save & Exit
                                         ESC: Exit


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```

Fan1/2/3/4 Mode
Configure the fan mode.

Step up time
The amount of time fan takes to increase its value by one step.

Step down time
The amount of time fan takes to decrease its value by one step.

Temperature 1/2/3/4 (Fan1/2/3/4)
Configure the temperature setting.

FD/RPM 1/2/3/4 (Fan1/2/3/4)
The value of Fan Duty/RPM when temperature is T1 to T4.

Critical temperature (Fan1/2/3/4)
Configure the time that fan out requires for reducing its value by one step.

Critical tolerance (Fan1/2/3/4)
Configure the tolerance of critical temperature.

Enable critical duty (Fan1/2/3/4)
Enables critical duty, if enabled, it will use critical duty value for fan out. If not will use full speed for fan out.

RPM Mode (Fan1/2/3/4)
Enable or disable Smart Fan IV close loop fan control RPM Mode.

Fanout stepping (Fan1/2/3)
Enable or disable Smart Fan IV stepping.

Fan1/2/3/4 Monitor (Fan1/2/3/4)
Select a mode for fan monitor.

USB Configuration

```
                        Aptio Setup – AMI
      Advanced

   USB Configuration                              Enables Legacy USB support.
                                                  AUTO option disables legacy
   USB Module Version          31                 support if no USB devices are
                                                  connected. DISABLE option will
   USB Controllers:                               keep USB devices available
        1 XHCI                                    only for EFI applications.
   USB Devices:
        1 Drive, 1 Keyboard, 2 Mice

   Legacy USB Support          [Enabled]
   XHCI Hand-off               [Enabled]
   USB Mass Storage Driver Support   [Enabled]

   USB hardware delays and time-outs:
   USB transfer time-out       [20 sec]           ↔: Select Screen
   Device reset time-out       [20 sec]           ↑↓: Select Item
   Device power-up delay       [Auto]             Enter: Select
                                                  +/–: Change Opt.
   Mass Storage Devices:                          F1: General Help
   JetFlashTranscend 16GB 1100   [Auto]           F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


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```

Legacy USB Support

Enabled   Enable legacy USB.
Auto   Disable support for legacy when no USB devices are connected.
Disabled Keep USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSs 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

Selects the USB mass storage device's start unit command timeout.

Device power-up delay

Maximum time the value 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.

Mass Storage Devices

Configure the mass storage device emulation type. AUTO enumerates devices according to their media format. Optical drives are emulated as CDROM, drives with no media will be emulated according to a drive type.

Network Stack Configuration

```
                            Aptio Setup - AMI
      Advanced

  Network Stack                    [Enabled]          Enable/Disable UEFI Network
  IPv4 PXE Support                 [Enabled]          Stack
  IPv4 HTTP Support                [Disabled]
  IPv6 PXE Support                 [Disabled]
  IPv6 HTTP 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
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit



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```

Network Stack
Enable or disable UEFI Network Stack.

IPv4 PXE Support
Enable or disable IPv4 PXE support. If disabled, the IPv4 boot option will not be created.

IPv4 HTTP Support
Enable or disable IPv4 HTTP support

IPv6 PXE Support
Enable or disable IPv6 PXE support. If disabled, the IPv6 boot option will not be created.

IPv6 HTTP Support
Enable or disable Ipv6 HTTP support.

PXE boot wait time
Configure the wait time to press the ESC key to abort the PXE boot.

Media detect count
Configure the number of times the media will be checked.

Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.

System Agent (SA) Configuration
Enter the System Agent (SA) Configuration sub-menu.

PCH-IO Configuration
Enter the PCH-IO Configuration sub-menu.

System Agent (SA) Configuration
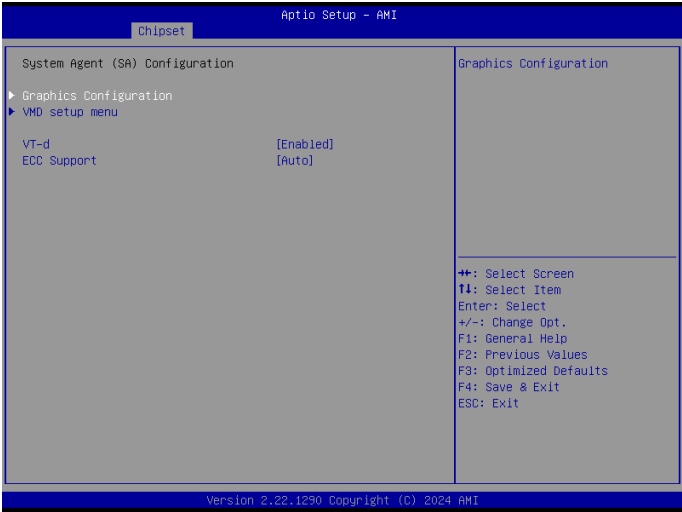
Graphics Configuration
Enter the Graphics Configuration sub-menu.

VMD setup menu
Enter the VMD setup menu sub-menu.

VT-d
Enable or disable Intel® VT-d technology.

ECC Support
Configure the ECC support.

Graphics Configuration

```
                          Aptio Setup - AMI
        Chipset

 Graphics Configuration                         Select DVMT 5.0 Pre-Allocated
                                                (Fixed) Graphics Memory size
 DVMT Pre-Allocated            [60M]            used by the Internal Graphics
                                                Device.




                                                →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit



                    Version 2.22.1290 Copyright (C) 2024 AMI
```
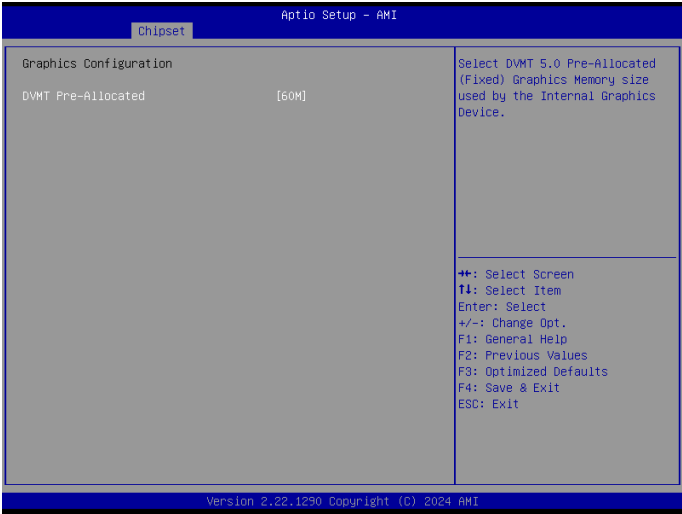
DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

VMD setup menu

```
                          Aptio Setup - AMI
        Chipset

 VMD Configuration                              Enable/Disable to VMD
                                                controller
 Enable VMD controller        [Disabled]




                                                →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit



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```
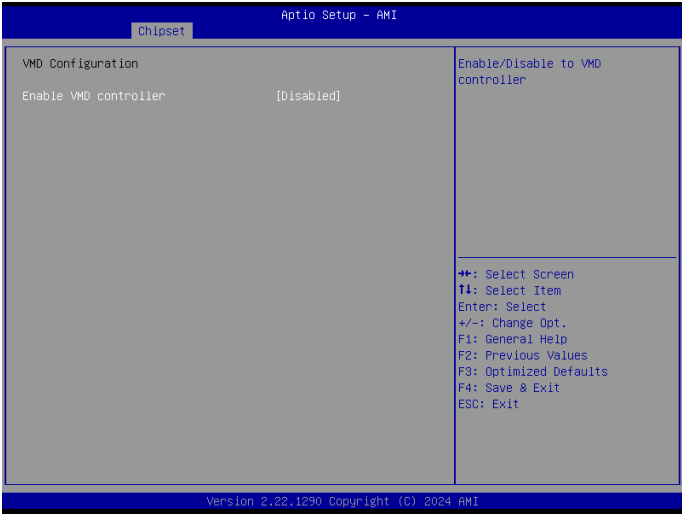
Enable VMD controller

Enable or disable to VMD controller.

PCH-IO Configuration

```
                        Aptio Setup - AMI
          Chipset

 PCH-IO Configuration                            SATA Device Options Settings

▶ SATA Configuration
  State After G3                   [S0 State]




                                                 ←→: Select Screen
                                                 ↑↓: Select Item
                                                 Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit



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```

SATA Configuration
Enter the SATA Configuration sub-menu.

State After G3
Configure the power state when power is re-applied after a power failure (G3 state).

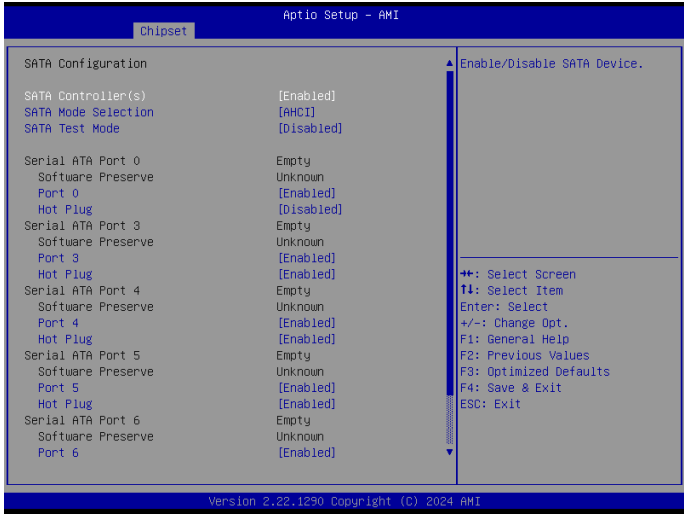## SATA Configuration

```
                        Aptio Setup - AMI
          Chipset

 SATA Configuration                          ▲   Enable/Disable SATA Device.

 SATA Controller(s)              [Enabled]
 SATA Mode Selection             [AHCI]
 SATA Test Mode                  [Disabled]

 Serial ATA Port 0               Empty
   Software Preserve             Unknown
   Port 0                        [Enabled]
   Hot Plug                      [Disabled]
 Serial ATA Port 3               Empty
   Software Preserve             Unknown
   Port 3                        [Enabled]
   Hot Plug                      [Enabled]     ←→: Select Screen
 Serial ATA Port 4               Empty          ↑↓: Select Item
   Software Preserve             Unknown        Enter: Select
   Port 4                        [Enabled]      +/-: Change Opt.
   Hot Plug                      [Enabled]      F1: General Help
 Serial ATA Port 5               Empty          F2: Previous Values
   Software Preserve             Unknown        F3: Optimized Defaults
   Port 5                        [Enabled]      F4: Save & Exit
   Hot Plug                      [Enabled]      ESC: Exit
 Serial ATA Port 6               Empty
   Software Preserve             Unknown
   Port 6                        [Enabled]  ▼

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```

SATA Controller(s)
Enable or disable the SATA controller.

SATA Mode Selection
Configure the SATA mode.
AHCI: This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

SATA Test Mode
Enable or disable SATA test mode.

Serial ATA Port 0/3/4/5/6/7
Port
Enable or disable SATA port.

Hot Plug
Enable or disable hot plugging feature.

Security

Secure Boot

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

Secure Boot
Enter the Secure Boot sub-menu.

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
Select to configure the secure boot mode.

Standard: Fixed secure boot policy.

Custom: Changeable Image Execution policy and Secure Boot key databases.
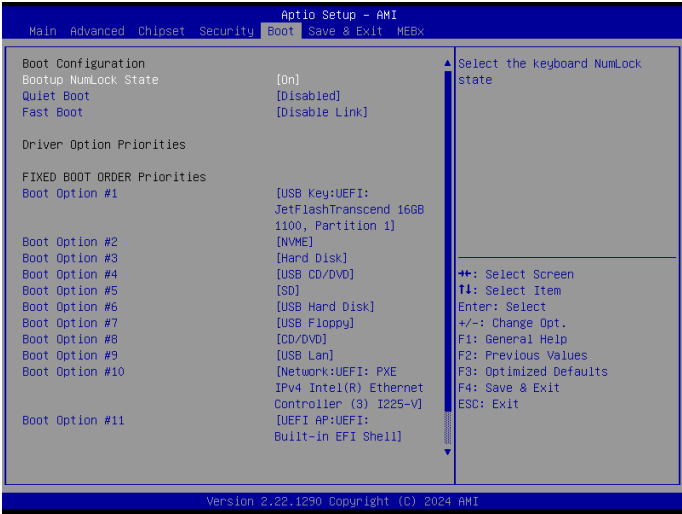
Restore Factory Keys
Enter the Restore Factory Keys sub-menu.

Key Management
Enter the Key Management sub-menu.

Boot

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

    Boot Configuration                                  ▲ Select the keyboard NumLock
    Bootup NumLock State         [On]                     state
    Quiet Boot                   [Disabled]
    Fast Boot                    [Disable Link]

    Driver Option Priorities

    FIXED BOOT ORDER Priorities
    Boot Option #1               [USB Key:UEFI:
                                 JetFlashTranscend 16GB
                                 1100, Partition 1]
    Boot Option #2               [NVME]
    Boot Option #3               [Hard Disk]               ◄►: Select Screen
    Boot Option #4               [USB CD/DVD]              ↑↓: Select Item
    Boot Option #5               [SD]                      Enter: Select
    Boot Option #6               [USB Hard Disk]           +/-: Change Opt.
    Boot Option #7               [USB Floppy]              F1: General Help
    Boot Option #8               [CD/DVD]                  F2: Previous Values
    Boot Option #9               [USB Lan]                 F3: Optimized Defaults
    Boot Option #10              [Network:UEFI: PXE        F4: Save & Exit
                                 IPv4 Intel(R) Ethernet    ESC: Exit
                                 Controller (3) I225-V]
    Boot Option #11              [UEFI AP:UEFI:
                                 Built-in EFI Shell]     ▼


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```

Bootup NumLock State
Set the system boot order.

Quiet Boot
Enable or disable the quiet boot function.

Fast Boot
Enable or disable boot with initialization of a minimal set of devices required to launch active boot option. This doesn't affect the BBS boot options.
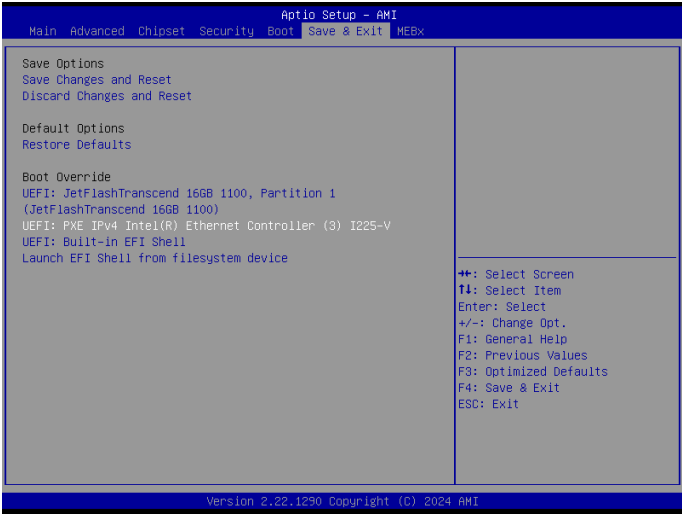
FIXED BOOT ORDER PRIORITIES
Boot Option 1~11
Adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be Boot Option #2 and so forth.

UEFI NVMe Drive BBS Priorities / UEFI Application Boot Priorities / UEFI USB Key Drive BBS Priorities
Configure the boot device priority sequence from available UEFI key drives.

Save & Exit

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

   Save Options
   Save Changes and Reset
   Discard Changes and Reset

   Default Options
   Restore Defaults

   Boot Override
   UEFI: JetFlashTranscend 16GB 1100, Partition 1
   (JetFlashTranscend 16GB 1100)
   UEFI: PXE IPv4 Intel(R) Ethernet Controller (3) I225-V
   UEFI: Built-in EFI Shell
   Launch EFI Shell from filesystem device
                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit



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```

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>

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.

MEBx

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

 Configuration locked after
 EndOfPost

                                            ↔: Select Screen
                                            ↑↓: Select Item
                                            Enter: Select
                                            +/-: Change Opt.
                                            F1: General Help
                                            F2: Previous Values
                                            F3: Optimized Defaults
                                            F4: Save & Exit
                                            ESC: Exit

                 Version 2.22.1290 Copyright (C) 2024 AMI
```
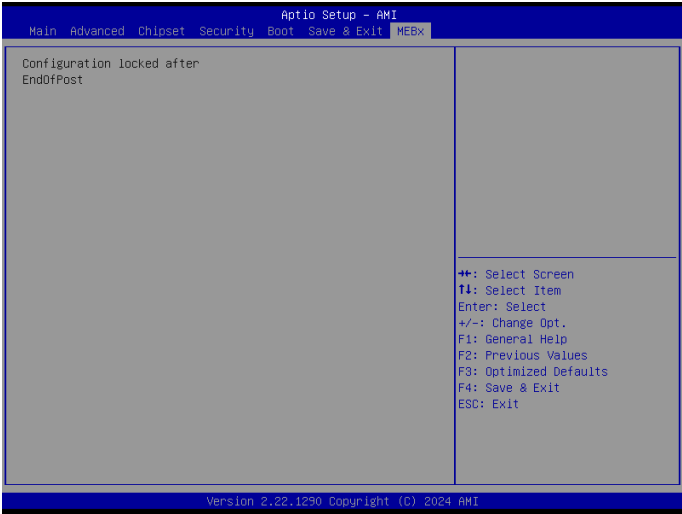
Intel(R) ME Password

Press to enter the Intel(R) ME Password sub-menu. Refer to Appendix A for more detailed configurations.

Intel(R) Rapid Storage Technology

The Intel® Rapid Storage Technology tab appears when the VMD function is enabled. For more detailed instructions, refer to the Appendix C.

```
                        Aptio Setup - AMI
    Main  Advanced  Chipset  Security  Boot  Save & Exit  MEBx  Intel(R) Rapid Storage Technology

    Intel(R) RST 19.5.0.5676 RST VMD Driver              This page allows you to create
                                                         a RAID volume
  ▶ Create RAID Volume


    Non-RAID Physical Disks:
  ▶ SATA 0.0, KINGSTON OM4P0S3128Q-A0 50026B7685F0FCD9, 119.2GB
  ▶ SATA 0.4, WDC WD80PUZX-64NEAY0 R6G5J20Y, 7.2TB
  ▶ SATA 0.5, WDC WD80PUZX-64NEAY0 VJGS8J0X, 7.2TB
  ▶ SATA 0.6, WDC WD80PUZX-64NEAY0 R6G4NUUY, 7.2TB
  ▶ SATA 0.7, WDC WD80PUZX-64NEAY0 R6G5K15Y, 7.2TB

                                                         ↔: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit



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```

APPENDIX A: INTEL AMT CONFIGURATION

1. Press the <Delete> button to enter the BIOS when turning on or rebooting the system. Navigate to the MEBx tab within the BIOS menu. Press <Enter> button to access this feature. By default, the password is "admin."

2. You may change the password by going to **Change ME Password**. The password must be at least 8 characters long and include a combination of uppercase letters, lowercase letters, numbers, and symbols. For example, !QAZ1qaz
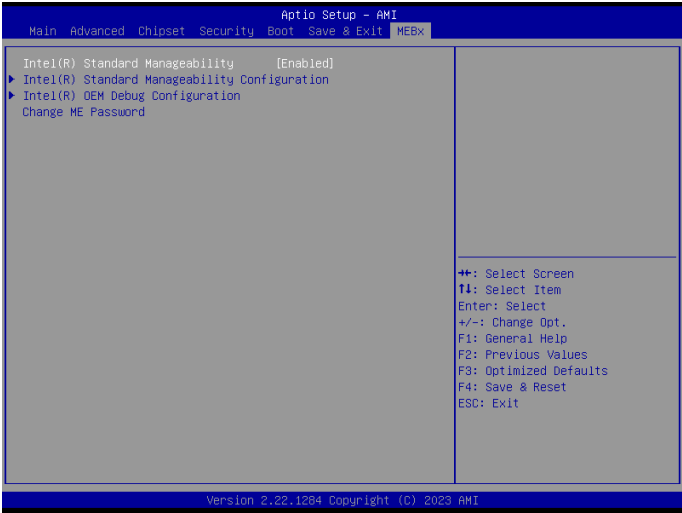
3. Follow these steps to navigate the configuration items: **Intel(R) Standard Manageability Configuation** > **User Consent** > **User Opt-in**, then select **All**.

```
                        Aptio Setup - AMI
                              MEBx

 User Opt-in                  [NONE]           Configure When User Consent
 Opt-in Configurable from Remote IT  [Enabled] Should be Required



                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Reset
                                               ESC: Exit


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```

4. Follow these steps to navigate the configuration items: **Intel(R) Intel (R) Standard Manageability Configuation** > **Network Access State**, then change the option to **Network Active**.

```
                        Aptio Setup - AMI
                              MEBx

 ▶ Redirection features                        Changes network state of ME.
 ▶ User Consent                                When disabling, it will also
   Password Policy            [Anytime]        clear some other settings.
 ▶ Network Setup
   Network Access State       [Network Active]
 ▶ Remote Setup And Configuration
 ▶ Power Control

              ┌─ Network Access State ─┐
              │ Network Active          │
              │ Network Inactive        │      →←: Select Screen
              │ Full Unprovision        │      ↑↓: Select Item
              └─────────────────────────┘      Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Reset
                                               ESC: Exit


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```

5. Return to the BIOS main menu, navigate to the **Save & Exit** tab, and click **Save Changes and Reset** to apply the settings.

6. Enter the operating system and log in to the IAMT configuration web page using https://ipaddress_of_PC:16993
For example:
6-1. https://10.14.5.53:16993
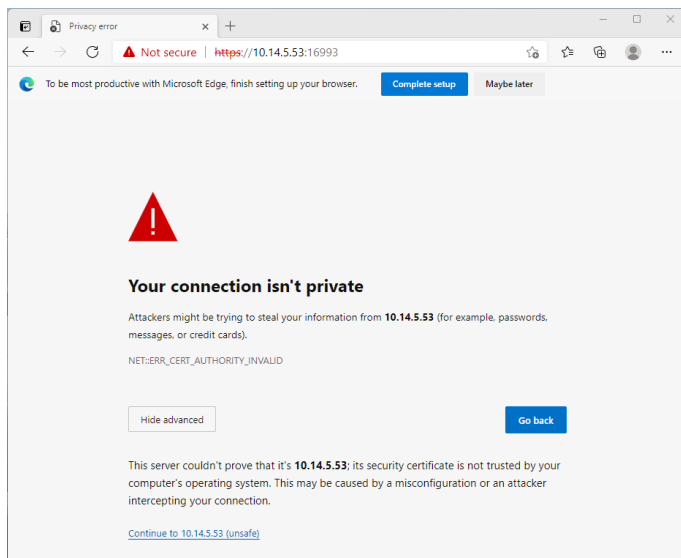
Click the **Continue** if a warning message appears to remind you that the connection isn't private.
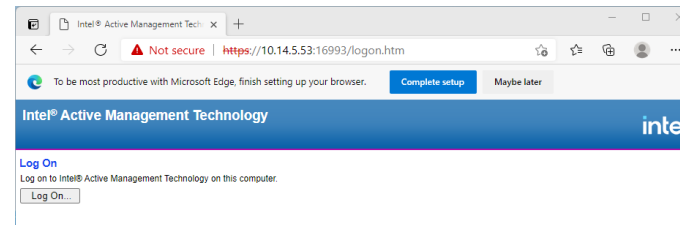
6-2. Account: adimin
6-3. Password: The password you have changed in step 1.
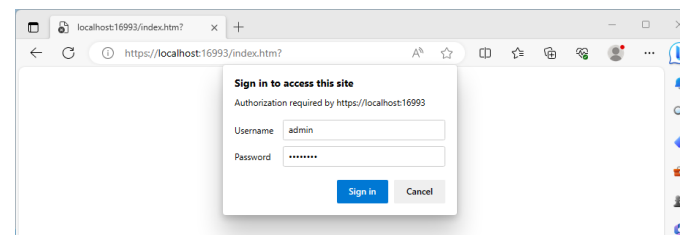
Alternatively, you can access IAMT configuration page by https://127.0.0.1:16993 or https://localhost:16993 on local side.

7. The screen should look like the image shown below after a successful login.

8. Follow the same login procedure as outlined in step 6 using the same address, account, and password. Ensure that the remote control system is in the same network segment as the target system.

9. Once logged in successfully, you will see the remote control page shown below.
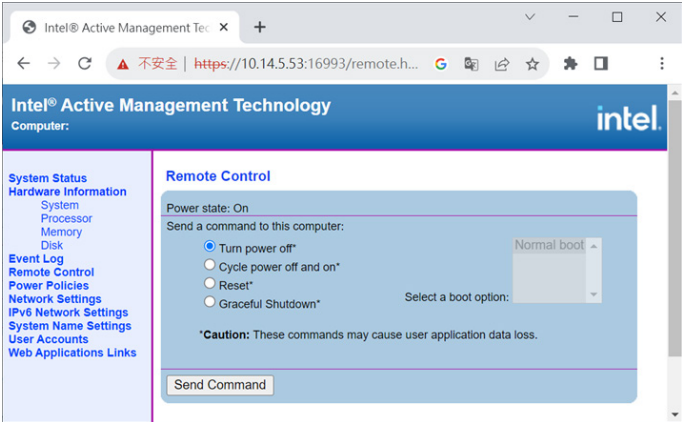
APPENDIX B: GPIO INSTRUCTION

Locating the GPIO Connector

The GPIO function is an optional feature. If available, the GPIO expansion board comes pre-installed on the system by default.

- This device boasts a 10-pin GPIO pin conveniently located on its rear panel. This versatile digital pin, controlled by software, can function as an input, output, or both, allowing you to customize its behavior and connect with various external devices.

Understanding GPIO Pin Definitions
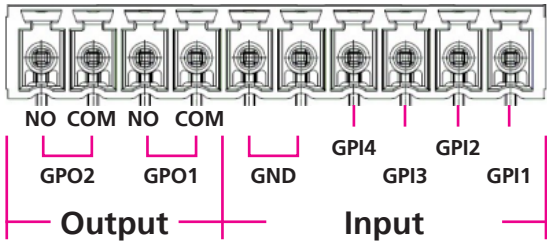
ISO GPIO 4in_2out Block Diagram
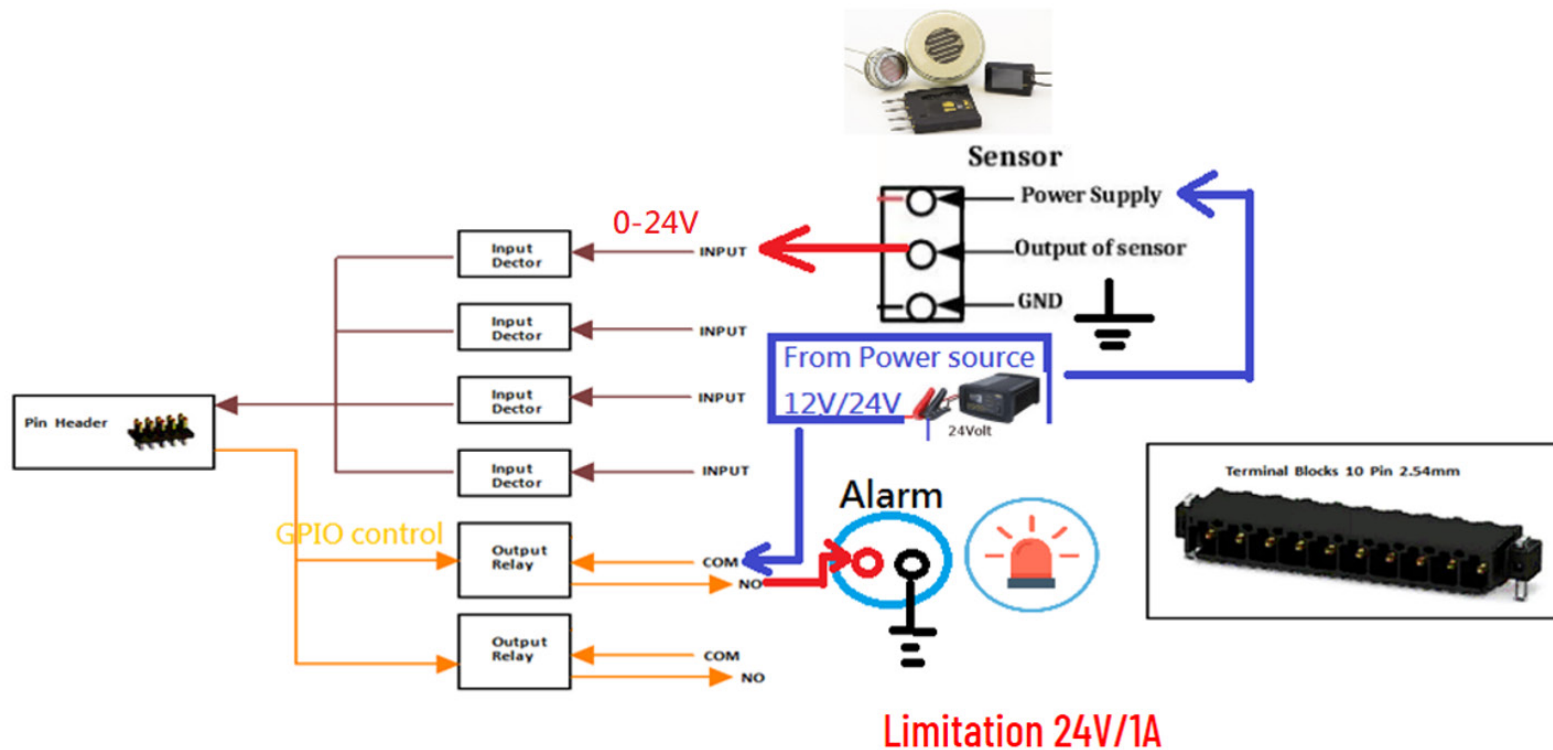
Installing GPIO SDK

1. Unzip the file and then copy the Nexcom folder from the Driver folder into: C:\Windows\System32\drivers.

2. Execute the Command Prompt selecting "run as administrator" and then run "Driver\install.bat." When the installation is successful, the screen will shown "Drivers installed successfully".
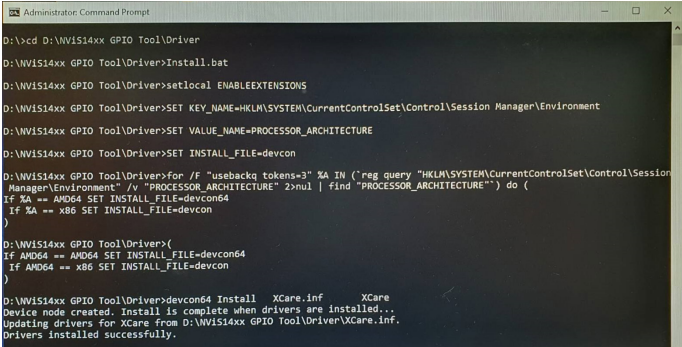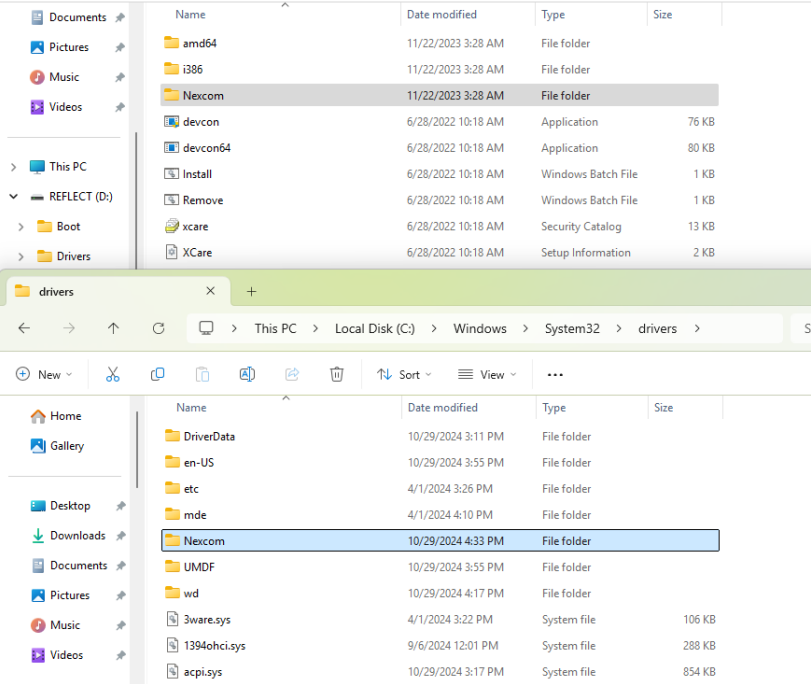
3. Open Computer Management and check Device Manager to see whether the Nexcom XCare Driver driver is enabled.
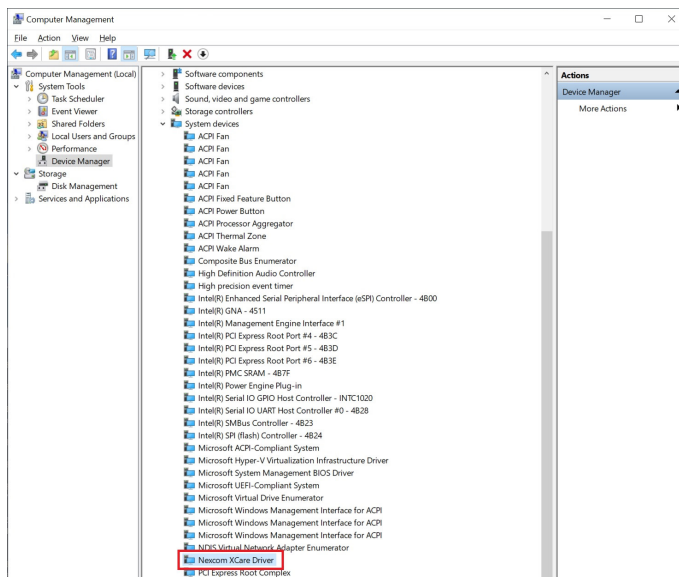
4. Once enabled, refer to the next section for basic configurations.

Basic Configuration

1. Download the software from the official website, unzip the file and run the **RN15_GPIO_Sample.exe** file.
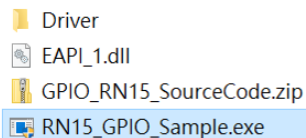
2. Follow the images below for configuring the GPIO.
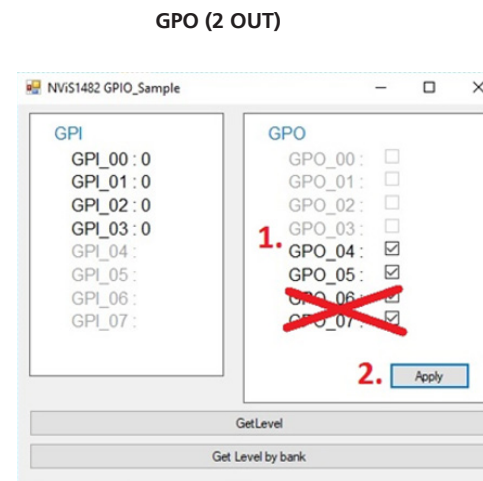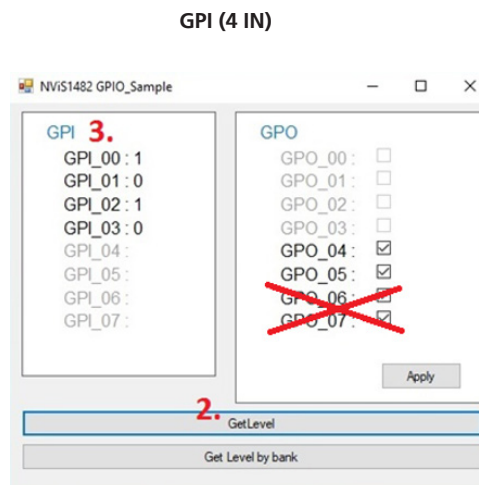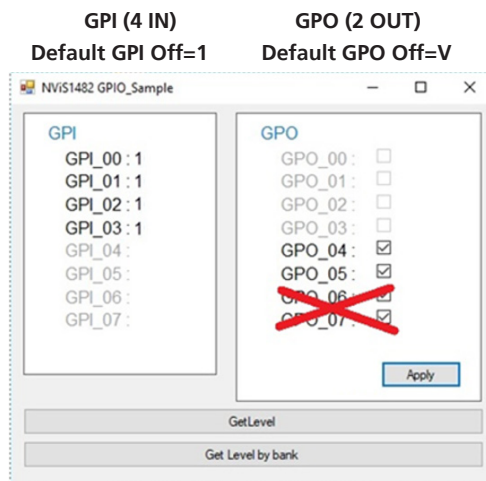
APPENDIX C: RAID CONFIGURATION

1. Press the <Delete> button to access the BIOS during the boot-up process. Once in the BIOS, navigate to the **Chipset** tab.

2. Within the Chipset tab, find the **System Agent (SA) Configuration** and then go to the VMD Setup menu.

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

     ▶ System Agent (SA) Configuration          System Agent (SA) Parameters
     ▶ PCH-IO Configuration







                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit


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```

```
                           Aptio Setup - AMI
                              Chipset

     System Agent (SA) Configuration            Graphics Configuration

     ▶ Graphics Configuration
     ▶ VMD setup menu

     X16 Mode Select              [1X16]
     VT-d                         [Enabled]




                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit


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```

3. Enable the VMD controller.

```
                          Aptio Setup - AMI
        Chipset

VMD Configuration                              Enable/Disable to VMD
                                               controller
Enable VMD controller              [Disabled]




                                               →←: Select Screen
                                               ↑↓: Select Item
                                               Enter: Select
                                               +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit


              Version 2.22.1288 Copyright (C) 2023 AMI
```
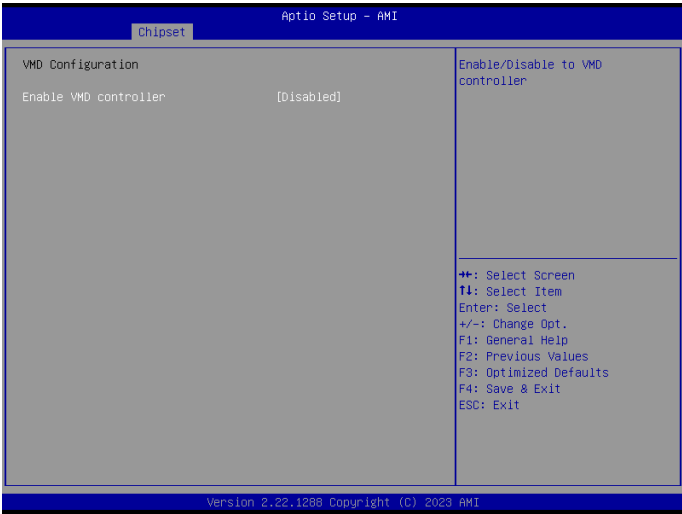
4. Once enabled, save the changes and exit the BIOS to apply the settings.

```
                          Aptio Setup - AMI
          Chipset

VMD Configuration                              Enable/Disable to VMD
                                               controller
Enable VMD controller              [Enabled]

Enable VMD Global Mapping          [Enabled]
Map this Root Port under VMD       [Disabled]
Root Port BDF details              0/6/0

Map this Root Port under VMD       [Disabled]
Root Port BDF details              SATA Controller

RAID0                              [Enabled]
RAID1                              [Enabled]
RAID5                              [Enabled]         →←: Select Screen
RAID10                             [Enabled]         ↑↓: Select Item
Intel Rapid Recovery Technology    [Enabled]         Enter: Select
RRT volumes can span internal and  [Enabled]         +/-: Change Opt.
eSATA drives                                         F1: General Help
Intel(R) Optane(TM) Memory         [Enabled]         F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit


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```

5. Enter the BIOS again and navigate to the **Intel(R) Rapid Storage Technology** tab, then select **Create RAID Volume**.

6. Select the desired RAID level under the **RAID LEVEL** option.
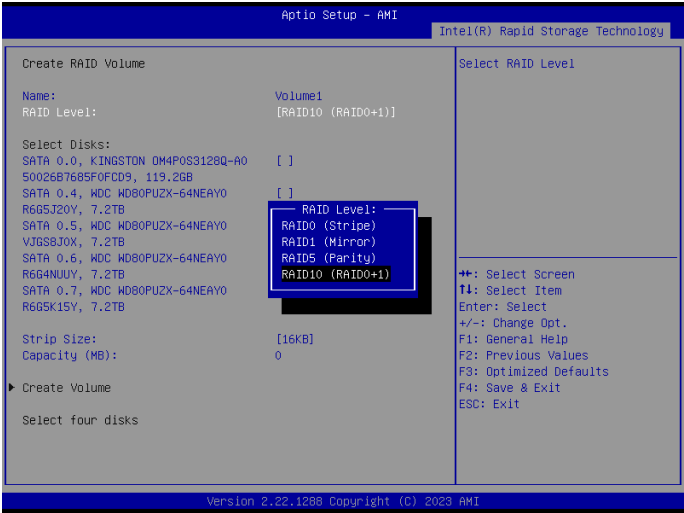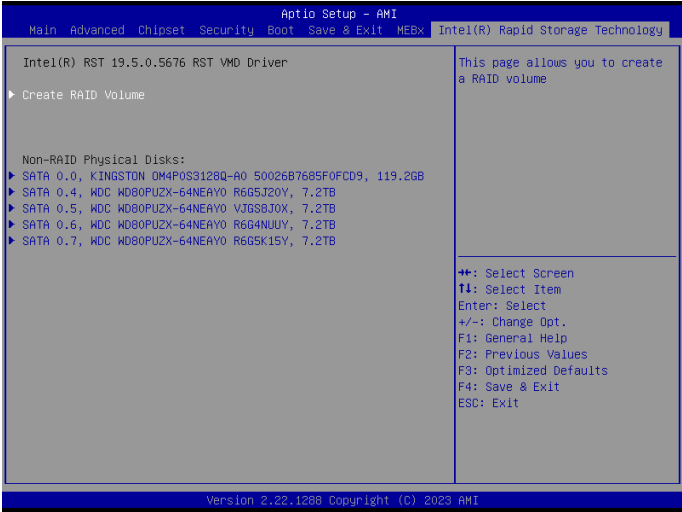
7. Once you have completed the previou step, select **Create Volume** and press <Enter> to create RAID volum.

8. The Volume 1 appears when the RAID volume is created. You can select Volume1 and press <Enter> to view the status or perform additional operations.

```
                          Aptio Setup - AMI
                                    Intel(R) Rapid Storage Technology

  Create RAID Volume                        Create a volume with the
                                            settings specified above
  Name:                      Volume1
  RAID Level:                [RAID10 (RAID0+1)]

  Select Disks:
  SATA 0.0, KINGSTON OM4P0S3128Q-A0  [ ]
  50026B7685F0FCD9, 119.2GB
  SATA 0.4, WDC WD80PUZX-64NEAY0     [X]
  R6G5J20Y, 7.2TB
  SATA 0.5, WDC WD80PUZX-64NEAY0     [X]
  VJGS8J0X, 7.2TB
  SATA 0.6, WDC WD80PUZX-64NEAY0     [X]     ↔: Select Screen
  R6G4NUUY, 7.2TB                            ↑↓: Select Item
  SATA 0.7, WDC WD80PUZX-64NEAY0     [X]     Enter: Select
  R6G5K15Y, 7.2TB                            +/-: Change Opt.
                                            F1: General Help
  Strip Size:                [64KB]          F2: Previous Values
  Capacity (MB):             15261766        F3: Optimized Defaults
                                            F4: Save & Exit
  ▶ Create Volume                            ESC: Exit




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```

```
                          Aptio Setup - AMI
    Main  Advanced  Chipset  Security  Boot  Save & Exit  MEBx  Intel(R) Rapid Storage Technology

  Intel(R) RST 19.5.0.5676 RST VMD Driver          Select to see more information
                                                   about the RAID Volume

  RAID Volumes:
  ▶ Volume1, RAID10 (RAID0+1), 14.5TB, Normal

  Non-RAID Physical Disks:
  ▶ SATA 0.0, KINGSTON OM4P0S3128Q-A0 50026B7685F0FCD9, 119.2GB

                                                   ↔: Select Screen
                                                   ↑↓: Select Item
                                                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit



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```

9. Use the up or down arrow keys to navigate, review, or operate the options.

```
                              Aptio Setup – AMI
                                         Intel(R) Rapid Storage Technology

    RAID VOLUME INFO

    Volume Actions
  ▶ Delete


    Name:                       Volume1
    RAID Level:                 RAID10 (RAID0+1)
    Strip Size:                 64KB
    Size:                       14.5TB
    Status:                     Normal
    Bootable:                   Yes

    RAID Member Disks:                            →←: Select Screen
  ▶ SATA 0.4, WDC WD80PUZX-64NEAY0 R6G5J20Y, 7.2TB ↑↓: Select Item
  ▶ SATA 0.5, WDC WD80PUZX-64NEAY0 VJGS8J0X, 7.2TB Enter: Select
  ▶ SATA 0.6, WDC WD80PUZX-64NEAY0 R6G4NUUY, 7.2TB +/-: Change Opt.
  ▶ SATA 0.7, WDC WD80PUZX-64NEAY0 R6G5K15Y, 7.2TB F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit




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```

APPENDIX D: SMART POE UTILITY

Installing the Utility

1. Extract SmarPoE_win.zip.
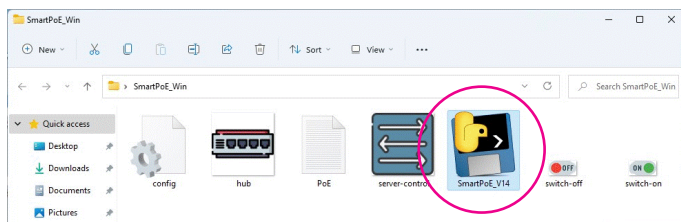
2. General configurations for Smart_PoE are controlled by config.ini.
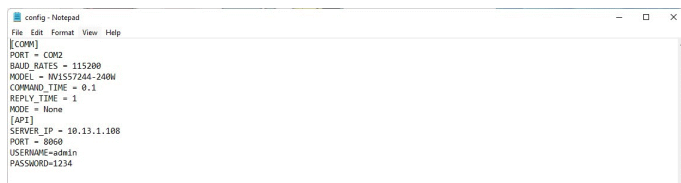
[COMM]
Port = COM2: Communication port between CPU and MCU.
BAUD_RATES = 115200: UART Baud rate.
MODEL = NViS57244-240W: Decide on the UI for the 24-port or 16-port models (NViS57164-240W).
COMMAND_TIME = 0.1: CLI command interval time.

REPLY_TIME = 1: CLI command reply time.
MODE = None: There are three types of modes:
    None: SmartPoE for local machine only.
    Server: Set the application as SmartPoE Server which can be connected by SmartPoE Client.
    Client: Set the application as SmartPoE Client, which can connect to SmartPoE server IP address in [API] Server_IP section.

[API]
Server_IP = 10.13.1.108: SmartPoE server IP address. If IP=0.0.0.0, allow all devices in the same network segment to connect to SmartPoE server. If IP=127.0.0.1, allow applications on local machine to get/modify data and configurations via API command.
Port = 8060: API communication port.
USERNAME = admin: Authentication of API communication.
PASSWORD = 1234: Authentication of API communication.

USERNAME and PASSWORD can be removed if authentication is not needed for API communications.

Once config.ini was modified, the user should restart SmartPoE Utility to apply the changes.

3. Run SmartPoE_V14.exe to start the PoE control.

Configuring the Utility

- When Smart PoE Utility is launched, you will see the interface screen captured on the right side. Note that the only difference between the 16-port and 24-port models is the number of ports. The example used in this section is the 24-port model, but all functionalities are the same as those of the 16-port model.

1. Enable/disable DHCP Server

1.1 Click to enable or disable the DHCP Server. By default, it's disabled.

1.2 To assign an IP address, enter a value in the **DHCP IP Address Start** (Ⓐ) column and click ⬜ Save button to apply the changes. IP addresses will be allocated in port order, and the assigned IP address must fall within the range of xxx.xxx.xxx.10 to xxx.xxx.xxx.220. (for example, 192.168.2.11~192.168.2.34)

2. PoE On/Off (All Port)

Click to turn the power of all ports on or off at once.

3. PoE On/Off (Per Port)

Click to turn the power on or off individually for each port. Note that this function is only valid for power supply and not for network connection.

4. IP Address

Show the IP address for each port when the DHCP Server is enabled. If the DHCP Server is disabled, the IP address will be blank.

5. MAC Address

Show the MAC address of the device connected to the relevant ports.

6. Accumulated Rate

Show the network traffice for each port. The up arrow (⇑) indicates data flowing from the device to the CPU, while the down arrow (⇓) indicates data flowing from the CPU to the device.

7. PD Class

Show the PD Class information if a device connected.

8. Current Watt

Show the current wattage for each port in real time.

9. Total Consumption

Show the total power usage for all ports. When total power consumption reaches 240W, it should be displayed in red. See the example shown below.

Total Consumption: 240W
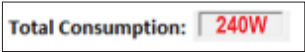
10. MAC Binding

Click the checkbox to bind the detected MAC address to the port, then click Save button to apply the changes. Once the MAC address is bound, the port will only allow communication with the bound MAC address.

Here is an example: if the device with MAC-A is already bound to port 3 and then moved to port 7, the user will not be able to communicate with the device through port 7 until they uncheck the bound MAC-A on port 3.

Mac Binding
AA:BB:CC:DD:EE:FF V
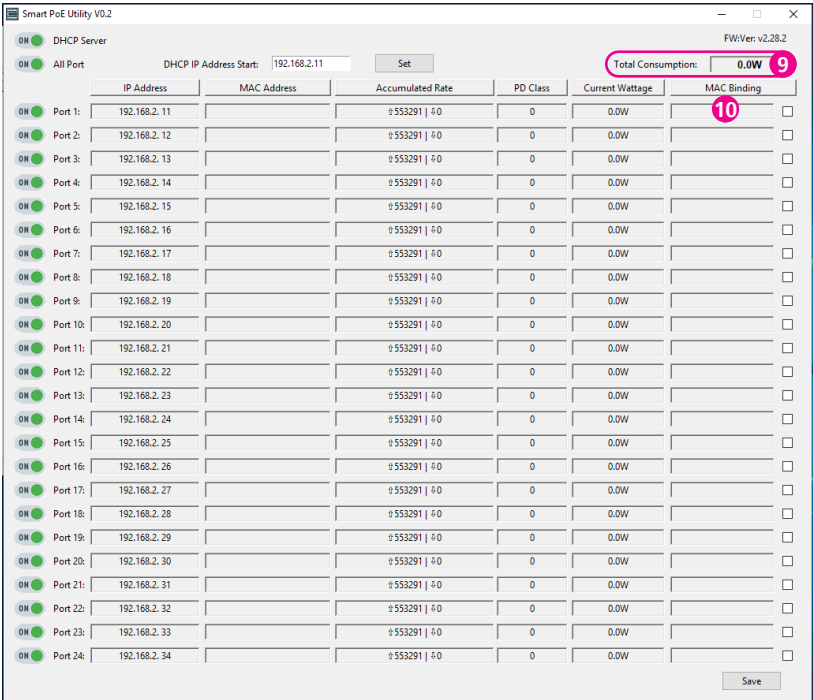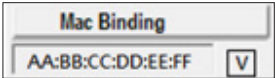
Appendix E: Installing the System in a Rack

## For Racks with a Depth Between 600~800mm

> Before starting the installation, verify that the following screws are included: 4 x M4*6mm, 2 x M5*15mm, and 8 x M5*10mm screws. Note that these screws are part of the side rail kit package, not the system package described in Preface chapter.

Outer Sliding Rail Installation

1. The slide rail kit consists of an inner and outer rail. Before starting the installation, detach the inner sliding rail from the outer one, and separate the inner and outer sliding rails.

2. Loosen the screws marked in the red dashed square in the image below on the outer sliding rails, but do not completely remove them. Then, remove the screws on both sides. (left and right sides).

Outer sliding rail
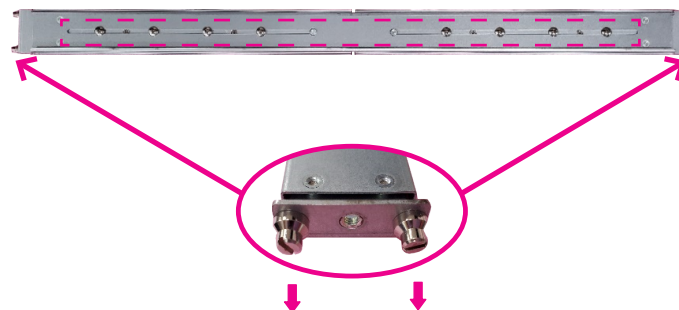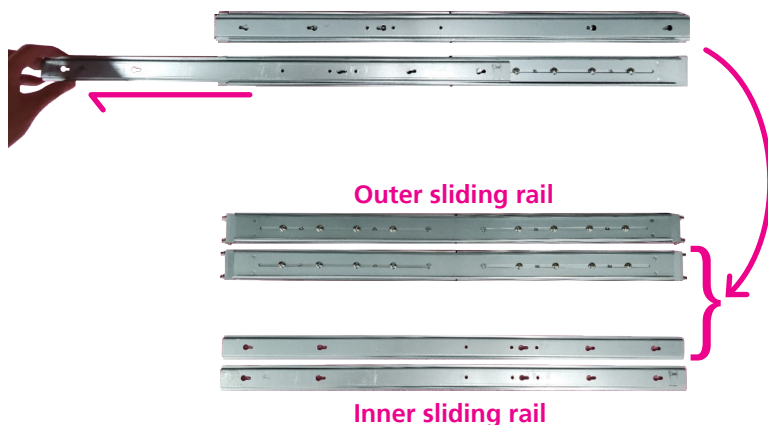
Inner sliding rail

3. Pull the outer sliding rails apart and extend them to match the depth of the rack, then lock the front and rear screws.

4. Tighten the screws that were loosened in step 2 to complete the installation, then repeat the same step to install the outer sliding rail on the other side.
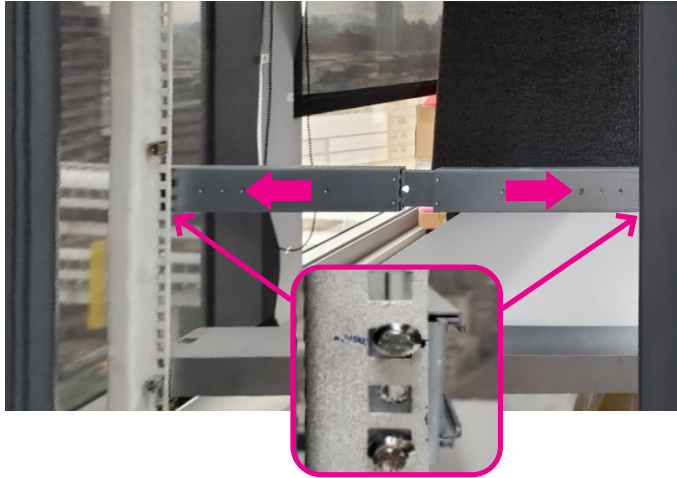
5.   The outer sliding rail installation is complete.

Inner Sliding Rail Installation

1. Attach the inner sliding rail by aligning it with the three flush rivets on the system and inserting it through the larger mounting holes, then pull the rail backward until it clicks into place in the smaller holes.
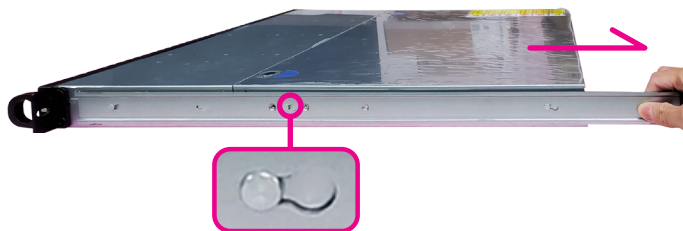
2. Tighten the inner sliding rail using M4 screws, then repeat the same step to install the inner sliding rail on the other side.
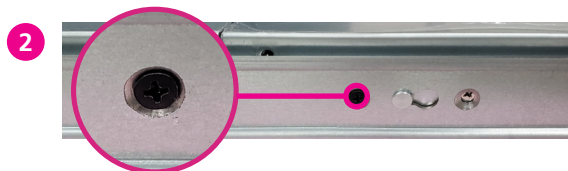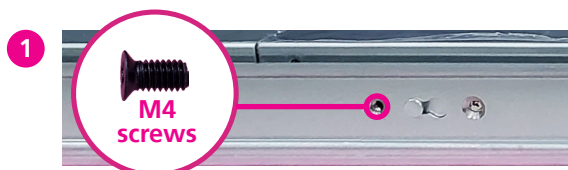
3. The inner sliding rail installation is completed.
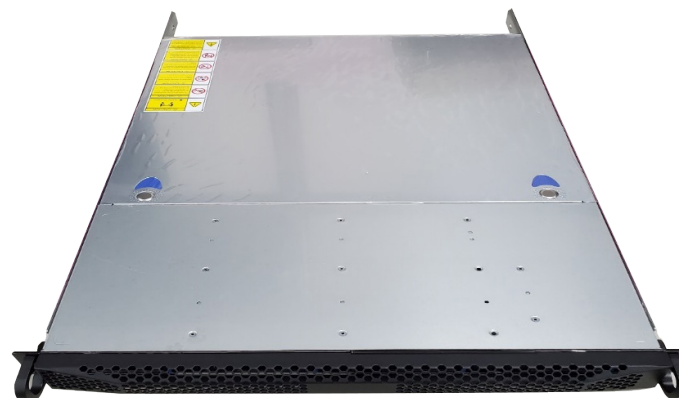
System Installation on Rack

1. Align the inner sliding rails installed on both sides of the system with the outer sliding rails installed on both sides of the rack, then gently slide the system into the rack.

2. The system installation on rack is completed.
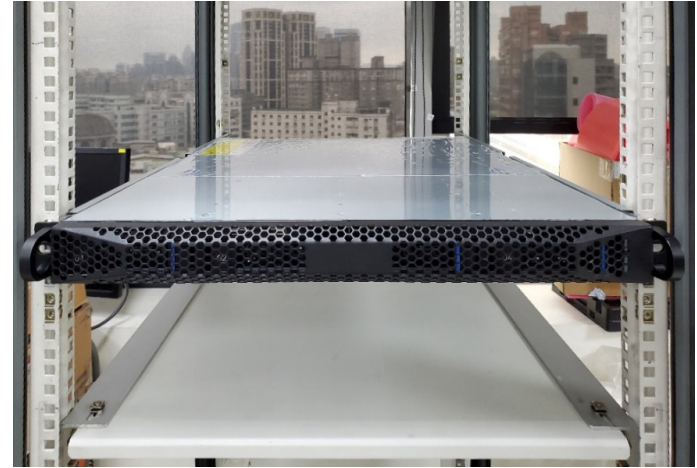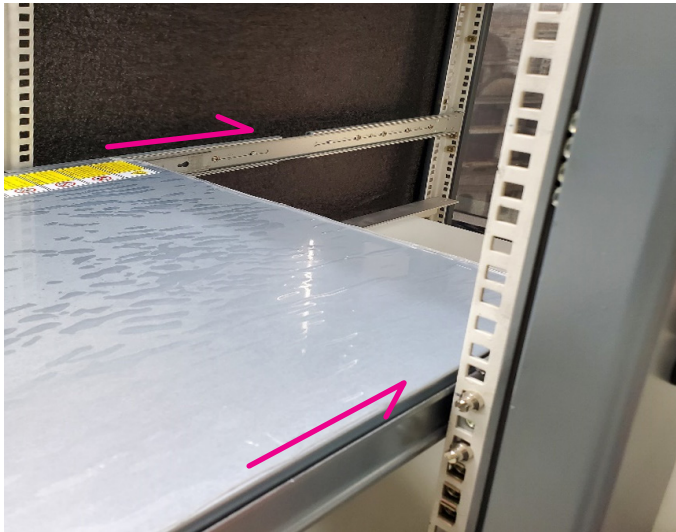
For Racks with a Depth Over 800mm

Before starting the installation, verify that the following screws are included: 2 x M4*11mm, 4 x M5*18mm screws. Note that these screws are part of the side rail kit package, not the system package described in Preface chapter.

Outer Sliding Rail Installation

1. The slide rail kit consists of an inner and outer rail. Before starting the installation, detach the inner sliding rail from the outer one by pressing the release button on the outer rail and pulling it out.
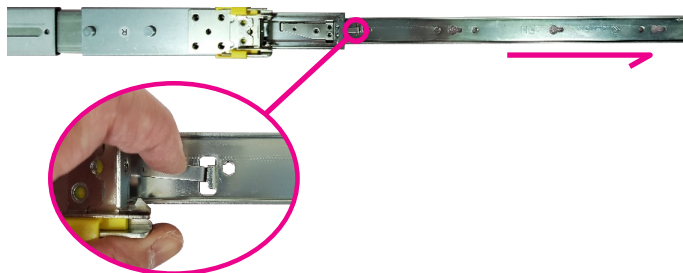
2. See the image below for inner vs. outer rails differences.

Outer sliding rail - Left

Inner sliding rail - left

Outer sliding rail - right

Inner sliding rail - right
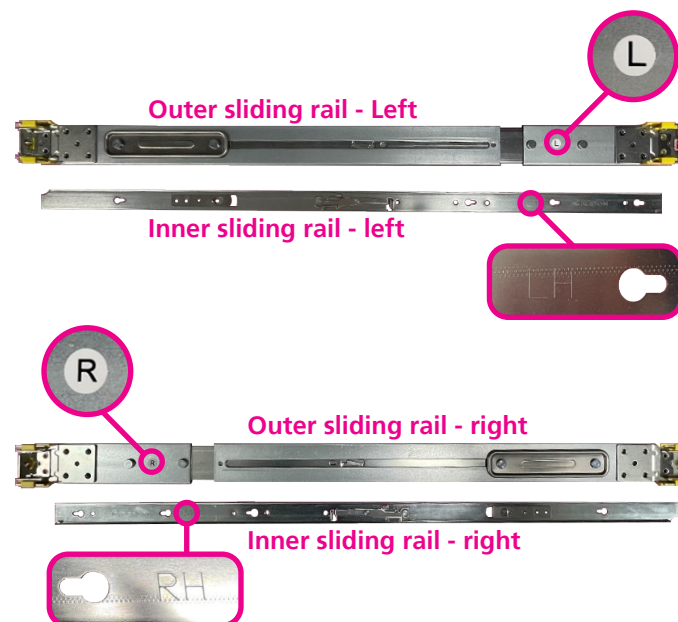
3. Install the left outer rail: Extend the left rail to match the rack depth, push the yellow safety clips at the front and rear ends inwards, align the tabs with the rack square holes, and insert it.

Rack depth

The ball bearing retainer needs to be at the front end.

4. Push the yellow safety clips at the front and rear ends outward until they lock in place.
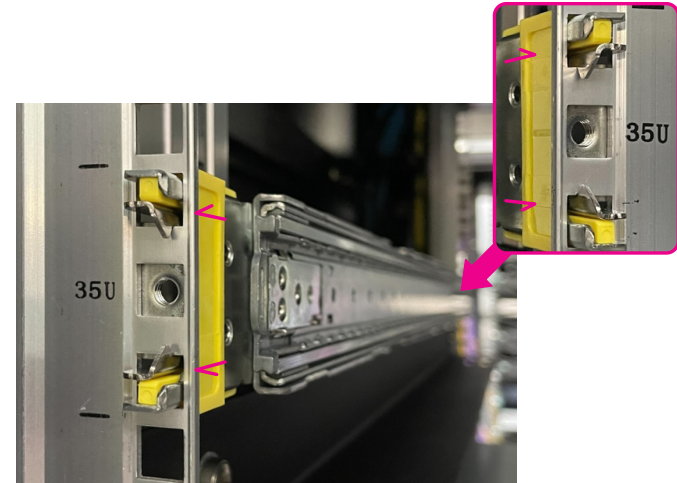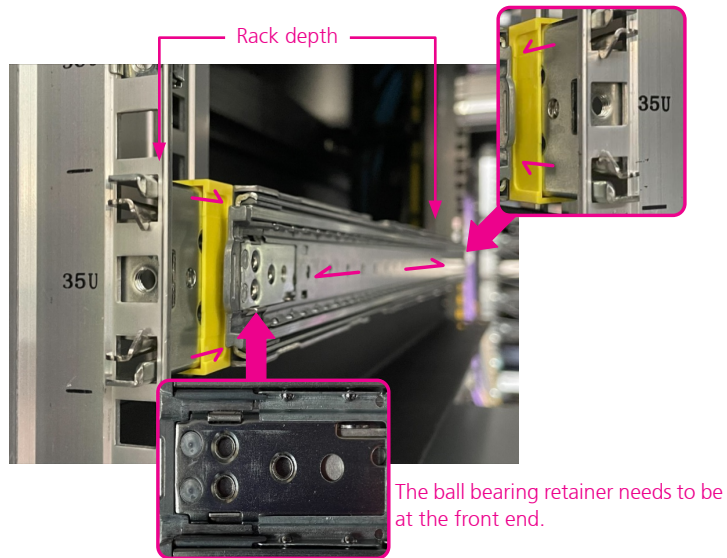
5. Secure the outer rail at the front and rear with M5*18mm screws. Once you have completed securing the left outer rail, repeat the same procedure to lock the right outer rail.

6. The outer rail installation is complete.
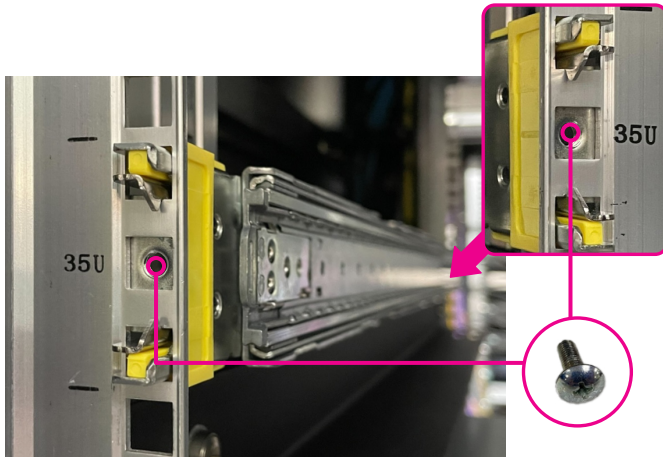
Inner Sliding Rail Installation and Detachment

1. Install the inner sliding rail by aligning it with the three flush rivets on the system and inserting it through the mounting holes. Before aligning the flush rivet at the rear side of the system, use your finger to press the spring clip on the inner rail, as demonstrated below (left top circle), to release the latch and engage the rear flush rivet. Pull the rail backward until it clicks into place in the smaller holes.

2. Tighten the inner sliding rail using M4*11mm screws, then repeat the same step to install the inner sliding rail on the other side.
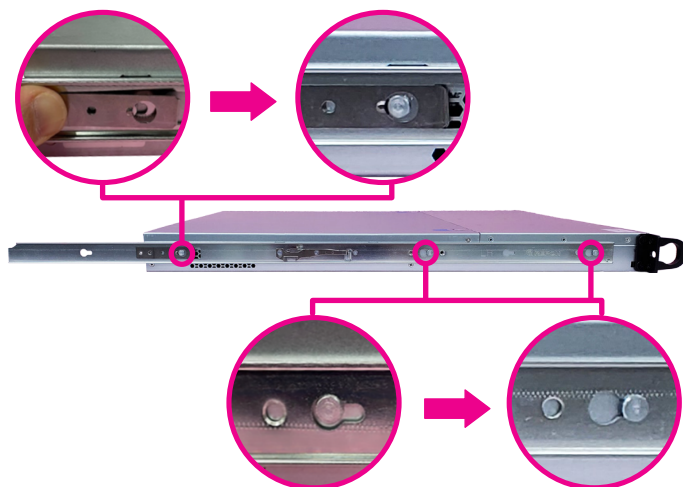
3. The inner sliding rail installation is completed.
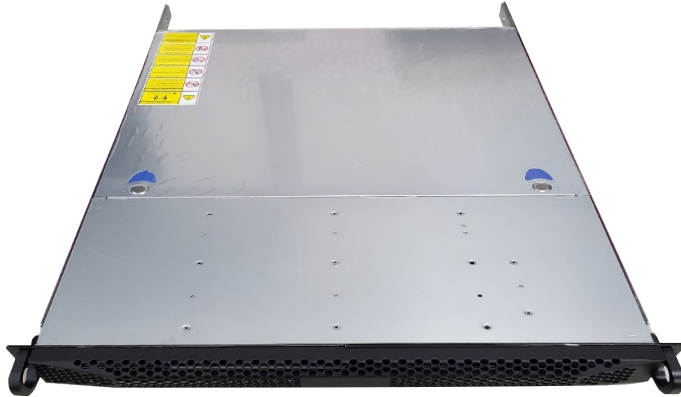
4. To remove the installed inner rail from system, push the spring clip outward (**1**) and then pull it inward (**2**) to detach it.
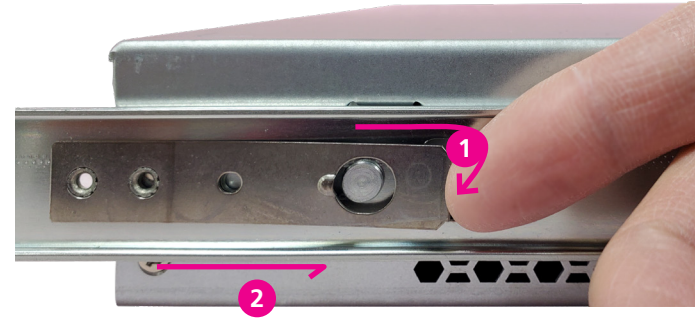
System Installation on Rack

1. Pull out the installed outer rail from the server rack

2. Align the system with both the installed inner rail and the outer rail within the server rack on both sides, then insert the system into the outer rail.
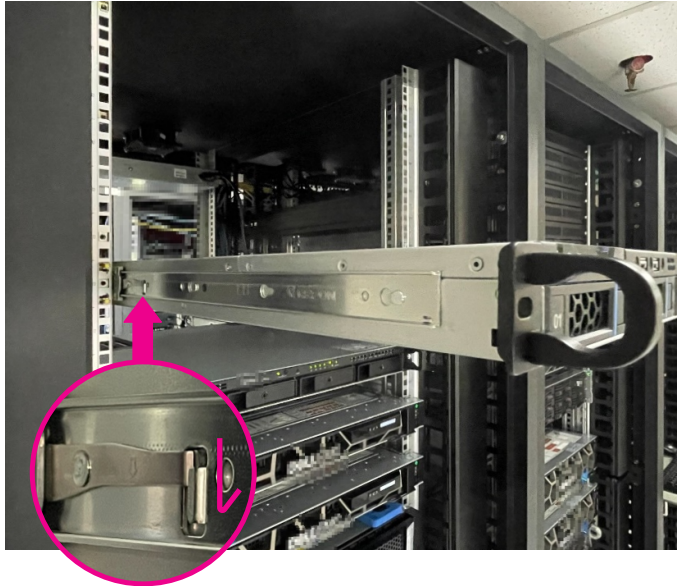
3. Toggle the latches on both sides of the outer rails.

4. Insert the system into the rack until it can no longer be pushed in.

5. Press the latches on both sides of the inner rails, then push the system that was not completely inserted into the rack in the previous step until it is fully inserted.

6. The system installation on rack is completed.