NexAIoT Co., Ltd.

IoT Automation Solutions Business Group

Industrial Fanless Computer

NISE 3910-A Series

User Manual

NexAIoT Co., Ltd.
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PREFACE

Copyright

Disclaimer

The information in this document is subject to change without prior notice and does not represent commitment from NexAIoT Co., Ltd. However, users may update their knowledge of any product in use by constantly checking its manual posted on our website: http://www.nexaiot.com. NexAIoT shall not be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of any product, nor for any infringements upon the rights of third parties, which may result from such use. Any implied warranties of merchantability or fitness for any particular purpose is also disclaimed.

Acknowledgements

NISE 3910-A series products are trademarks of NexAIoT 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 A 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 A 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

NexAIoT RoHS Environmental Policy and Status Update

NexAIoT 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, NexAIoT 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 NexAIoT development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NexAIoT 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 NexAIoT 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 NexAIoT naming convention.

Warranty and RMA

NexAIoT Warranty Period

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

NexAIoT Return Merchandise Authorization (RMA)

- Customers shall enclose the "NexAIoT 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 "NexAIoT 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, NexAIoT 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 NexAIoT 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

NexAIoT 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: NexAIoT 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 NexAIoT 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, NexAIoT will return it to the customer without any charge.

Board Level

- Component fee: NexAIoT 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, NexAIoT 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.

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.

Field wiring shall be conducted by skilled persons
- Insert the positive and negative wires into the V+ and V- contacts on the terminal block connector.
- Tighten the wire-clamps screws to prevent the DC wires coming loose.

Take into consideration the following guidelines before wiring the device
- The Input connector is suitable for 30-12 AWG (min.10A). Torque value 5 lb-in.
- Please choose Copper wire.

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.

- Danger of explosion if battery is incorrectly replaced. Replace with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
- Before equipment installation begins, ensure that a skilled personnel has attached an appropriate power cable supplied.
- Risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

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 equipment is intended to be supplied by DC mains, input voltage tolerance should be within 9-30Vdc and without PE connection.

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.

18. Direct contact to metal enclosure should be less than 1 second time.

Technical Support and Assistance

1. For the most updated information of NexAIoT products, visit NexAIoT's website at www.nexaiot.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.

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.

Safety Warning: This equipment is intended for installation in a Restricted Access Location only.

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Package Contents

Before continuing, please verify the contents of the product package. The items included are listed in the table below.

	No.	Part Number	Item	Description	Qty
NISE3910E-A	1	60233AT108X0E	7P+15P SATA CABLE S-MAO (60233AT108X00)	SATA22P TO SATA7P 90D(26AWG)L: 70mm & JST 2P 2.5mm(24AWG)L: 80mm	1
	2	5060601171X0E	(H)2.5 HDD MYLAR S-MAO (5060600171X00)	96.2x70x0.1mm	1
	3	4NCPM01302X0E	(T)TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPM00302X00)	5.08mm MALE DIP GREEN	1
	4	4NCPF00310X0E	TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPF00310X00)	3.81mm FEMALE DIP GREEN	1
	5	5061600245X00	WASHER KANGYANG: TW-320-01	10.4x6.4mm T=1mm NYLON BLACK	12
	6	5061711760X0E	MINI PCI-E BRACKET VER: A S-MAO (5061711760X00)	30x29x2.1mm SPCC T=1.0mm	1
	7	5044441181X0E	CERAMIC THERMAL PAD S-MAO (5044440181X00)	10x10x2mm+8.5x8.5x0.25mm (One-side application of gum)	2
	8	50311P0001X00	PRICE FOR PLASTIC SCREW	HS6-75P 75mm	1
	9	50322P0002X00	PLASTIC NUT GIN LIAN: M6HW	10mmx6mm	1
	10	50311P0020X00	F HEAD SCREW KANG YANG: M3-6F(B)	M3x6mm PLASTICS	4
	11	50311F0330X00	ROUND HEAD SCREW LONG FEI: P2x3 ISO+NYLON	P2x3 NI NYLOK	2
	12	50311F0295X00	FLAT HEAD SCREW LONG FEI: F2x4 NYLOK NIGP	F2x4 NIGP NYLOK	1
	13	50344C0379X00	COPPER POST FOR NISE53 SERIES VER: A LONG FEI	WITH FEMALE/MALE (FEMALE)6mmx(MALE)5mmxM3	1
	14	50311F0396X00	I HEAD SCREW LONG FEI: I3x3 ISO+NYLOK BLACK	I3x3 ISO+NYLOK BLACK	1
	15	50311F0213X00	FLAT HEAD SCREW LONG FEI: F3x4ISO+NYLOK NIGP	F3x4 NI NYLOK	4
	16	50311F0144X00	I HEAD SCREW LONG FEI:	M3x4mm NI NYLOK	2
	17	5050300264X0E	HEAT SINK FOR NISE3910 SERIES VER.A S-MAO (5050300264X00)	20x20x6mm BLACK	1
	18	5060200111X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200111X00)	18x18x1.5mm K=5w/mk TP-H500	1
	19	5060200685X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200685X00)	40x20x4.5mm K=3.5 W/mK TP-H350	1

	No.	Part Number	Item	Description	Qty
NISE3910P2-A NISE3910E2-A NISE3910P2E-A NISE3910E16-A	1	60233AT108X0E	7P+15P SATA CABLE S-MAO (60233AT108X00)	SATA22P TO SATA7P 90D(26AWG)L: 70mm & JST 2P 2.5mm(24AWG)L: 80mm	1
	2	5060601171X0E	(H)2.5 HDD MYLAR S-MAO (5060600171X00)	96.2x70x0.1mm	1
	3	4NCPM01302X0E	(T)TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPM00302X00)	5.08mm MALE DIP GREEN	1
	4	4NCPF00310X0E	TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPF00310X00)	3.81mm FEMALE DIP GREEN	1
	5	5061600245X00	WASHER KANGYANG: TW-320-01	10.4x6.4mm T=1mm NYLON BLACK	12
	6	5061711760X0E	MINI PCI-E BRACKET VER: A S-MAO (5061711760X00)	30x29x2.1mm SPCC T=1.0mm	1
	7	5044441181X0E	CERAMIC THERMAL PAD S-MAO (5044440181X00)	10x10x2mm+8.5x8.5x0.25mm (One-side application of gum)	2
	8	50311P0001X00	PRICE FOR PLASTIC SCREW	HS6-75P 75mm	2
	9	50322P0002X00	PLASTIC NUT GIN LIAN: M6HW	10mmx6mm	2
	10	50311P0020X00	F HEAD SCREW KANG YANG: M3-6F(B)	M3x6mm PLASTICS	4
	11	50311F0330X00	ROUND HEAD SCREW LONG FEI: P2x3 ISO+NYLON	P2x3 NI NYLOK	2
	12	50311F0295X00	FLAT HEAD SCREW LONG FEI: F2x4 NYLOK NIGP	F2x4 NIGP NYLOK	1
	13	50344C0379X00	COPPER POST FOR NISE53 SERIES VER: A LONG FEI	WITH FEMALE/MALE (FEMALE)6mmx(MALE)5mmxM3	1
	14	50311F0396X00	I HEAD SCREW LONG FEI: I3x3 ISO+NYLOK BLACK	I3x3 ISO+NYLOK BLACK	1
	15	50311F0213X00	FLAT HEAD SCREW LONG FEI: F3x4ISO+NYLOK NIGP	F3x4 NI NYLOK	4
	16	50311F0144X00	I HEAD SCREW LONG FEI:	M3x4mm NI NYLOK	2
	17	5050300264X0E	HEAT SINK FOR NISE3910 SERIES VER.A S-MAO (5050300264X00)	20x20x6mm BLACK	1
	18	5060200111X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200111X00)	18x18x1.5mm K=5w/mk TP-H500	1
	19	5060200685X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200685X00)	40x20x4.5mm K=3.5 W/mK TP-H350	1

	No.	Part Number	Item	Description	Qty
NISE3910R-A	1	4NCPM01302X0E	(T)TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPM00302X00)	5.08mm MALE DIP GREEN	1
	2	4NCPF00310X0E	TERMINAL BLOCKS 3P PHOENIX CONTACT S-MAO (4NCPF00310X00)	3.81mm FEMALE DIP GREEN	1
	3	5061600245X00	WASHER KANGYANG: TW-320-01	10.4x6.4mm T=1mm NYLON BLACK	12
	4	5061711760X0E	MINI PCI-E BRACKET VER: A S-MAO (5061711760X00)	30x29x2.1mm SPCC T=1.0mm	1
	5	5044441181X0E	CERAMIC THERMAL PAD S-MAO (5044440181X00)	10x10x2mm+8.5x8.5x0.25mm (One-side application of gum)	2
	6	50311P0020X00	F HEAD SCREW KANG YANG: M3-6F(B)	M3x6mm PLASTICS	8
	7	50311F0330X00	ROUND HEAD SCREW LONG FEI: P2x3 ISO+NYLON	P2x3 NI NYLOK	2
	8	50311F0295X00	FLAT HEAD SCREW LONG FEI: F2x4 NYLOK NIGP	F2x4 NIGP NYLOK	1
	9	50344C0379X00	COPPER POST FOR NISE53 SERIES VER:A LONG FEI	WITH FEMALE/MALE (FEMALE)6mmx(MALE)5mmxM3	1
	10	50311F0396X00	I HEAD SCREW LONG FEI: I3x3 ISO+NYLOK BLACK	I3x3 ISO+NYLOK BLACK	1
	11	5050300264X0E	HEAT SINK FOR NISE3910 SERIES VER.A S-MAO (5050300264X00)	20x20x6mm BLACK	1
	12	5060200111X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200111X00)	18x18x1.5mm K=5w/mk TP-H500	1
	13	5060200685X0E	THERMAL PAD FOR NISE3910 SERIES VER:A S-MAO (5060200685X00)	40x20x4.5mm K=3.5 W/mK TP-H350	1

Ordering Information

Refer to the list below for the ordering information.

- **Barebone**

NISE 3910E-A (P/N: 10J00391011XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with one PCIe x4 expansion

NISE 3910E16-A (P/N: 10J00391013XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with one PCIe x16 expansion

NISE 3910E2-A (P/N: 10J00391012XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with two PCIe x4 expansion

NISE 3910P2-A (P/N:10J00391014XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with two PCI expansion

NISE 3910P2E-A (P/N:10J00391015XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with one PCI & one PCIe x4 expansion

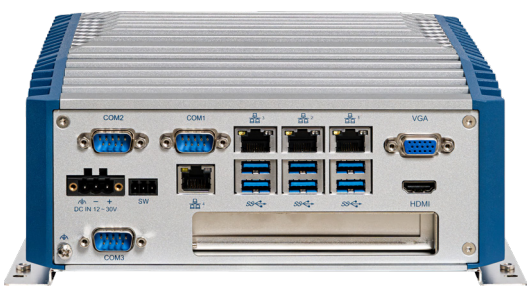
NISE 3910R-A (P/N: 10J00391016XE)
Intel® 14th/13th/12th Gen Core™ i9/i7/i5/i3 fanless system with two outside accessible 2.5” HDD/SSD tray, support RAID 0/1

- **24V, 120W AC to DC power adapter w/o power cord (P/N: 7400120029X00)**
- **24V, 180W AC to DC power adapter w/o power cord (P/N: 7400180012X00)**

Chapter 1: Product Introduction

NISE 3910E-A

Front View



Rear View

Key Features

- Support 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 LGA1700 socket typeth/ embedded processor
- Intel® Q670E PCH
- Support 2 x DDR5 SO-DIMM, up to 64GB
- 4 x Intel® i226-IT LAN port, supports WoL and PXE
- 1 x DP, 1 x HDMI®, and 1 x VGA with independent display
- 1 x M.2 3042/3052 Key, B supports LTE/5G module
- 1 x Outside accessible M.2 2242 Key M with PCIe x4, supports NVMe
- 6 x USB 3.2 Gen 1, 4 x USB 2.0
- 2 x Isolated RS-232/422/485 with auto-flow and 1 x RS-232
- 1 x Mini PCIe slot, supports optional Wi-Fi, 3.5G, 4G LTE
- 1 x 2.5” SATA HDD/SSD
- Support +24V DC input, supports ATX power mode
- TPM 2.0 default onboard

Hardware Specifications

Processor

- Support 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (embedded)
  - Intel® Core™ i7-14700T, 8P+12E, 1.3GHz, 33M Cache
  - Intel® Core™ i5-14500T, 6P+8E, 1.7GHz, 24M Cache
  - Intel® Core™ i3-14100T, 4P+4E, 2.7GHz, 12M Cache
  - Intel® Core™ i9-13900TE, 8P+16E, 1.0GHz, 36M Cache
  - Intel® Core™ i7-13700TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i5-13500TE, 6P+8E, 1.3GHz, 24M Cache
  - Intel® Core™ i3-13100TE, 4P+4E, 2.4GHz, 12M Cache
  - Intel® Core™ i9-12900TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i7-12700TE, 8P+4E, 1.4GHz, 25M Cache
  - Intel® Core™ i5-12500TE, 6P+6E, 1.9GHz, 18M Cache
  - Intel® Core™ i3-12100TE, 4P+4E, 2.1GHz, 12M Cache

Memory

- DDR5 4800 SO-DIMM, supports up to 64GB

Display Option

- Three independent display: HDMI®, DP, VGA

Audio

- HD Audio Codec, Realtek ALC897

I/O Interface Front

- 1 x ATX power on/off switch
- LED indicators:
  - 4 x LAN active
  - 1 x GPO status
  - 4 x COM Tx/Rx
  - 1 x HDD/SSD status
  - 1 x Battery low
  - 1 x M.2
- 1 x DP
- 2 x Antenna hole
- 1 x Outside accessible M.2 2242 Key M (PCIe x4, SATA)
- 1 x SIM card holder
- 4 x USB 2.0 Type-A (500mA/port)
- 1 x Line out and 1 x Mic in

I/O Interface Rear

- 1 x HDMI®
- 1 x VGA port
- 6 x USB 3.2 Gen1 Type-A (900mA per each)
- 4 x 2.5GbE RJ45 port, Intel® I226-IT, supports WoL & PXE
- 2 x Isolated RS-232/422/485
- 1 x RS-232
- 1 x 3-pin DC input, supports +12 to 30V DC input
- 1 x 3-pin remote power on/off switch

I/O Interface Internal

- 8 x GPI and 8 x GPO (5V, TTL type)
- 1 x M.2 Key B 2242/3042/3052 (PCIe x2, USB 3.0)
- 1 x Mini PCIe (PCIe x1, USB 3.0)

Storage Device

- 1 x 2.5” HDD/SSD
- 1 x M.2 2242 Key M
- 1 x M.2 2242 Key B

Expansion Slot

- 1 x PCIe x4 up to 25W/slot, 169mm max. length
- 1 x Mini PCIe (PCIe x1, USB 3.0)

Power Supply

- AT/ATX power mode (Default ATX mode)
- Power input: +12~30 V DC

Dimensions

- 215mm (W) x 272mm (D) x 102mm (H) without wall-mount bracket (8.46” x 10.7” x 4.02”)(8.46” x 10.7” x 3.7”)

Weight

- Net Weight: 5.2kg
- Gross Weight: 7.1kg

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature: Ambient with air flow: -20°C~60°C (according to IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14)
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~95% (non-condensing)
- Shock protection:
  - HDD: 20G@wallmount, half sine, 11ms (operation), IEC 600682-27
  - SSD: 50G@wallmount, half sine, 11ms (operation), IEC 600682-27
- Vibration protection:
  - Random: 0.5Grms@5~500Hz, IEC 60068-2-64
  - Sinusoidal: 0.5Grms@5~500Hz, IEC 60068-2-6

Certifications

- CE
- FCC Class A

Operating System

- Windows 11
- Windows 10 Enterprise, 64-bit

Physical Features

Front Panel

1. Antenna Hole

Used to mount and connect optional external antennas.

2. Line out

Used to connect a headphone or a speaker.

3. Mic in

Used to connect an external microphone.

4. USB 2.0

Used to connect USB 2.0/1.1 devices.

5. DisplayPort

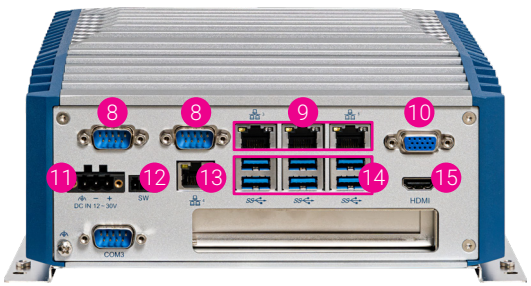
Used to connect a DisplayPort monitor.

6. LED Indicators

7. Power Switch

Press to power the system on or off.

Rear Panel



8. COM1 and COM2 (DB9)

Used to connect RS-232, RS-422, or RS-485 devices. The serial port mode can be configured in the BIOS.

9. LAN3/LAN2/LAN1 (left to right)

Used to connect the system to a local area network. These LAN ports support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

10. VGA

Used to connect a VGA monitor.

11. 12V-30V DC Input

Used to plug a DC power cord.

12. Remote On/Off Switch

Used to connect a remote to power on/off the system.

13. LAN4

Used to connect the system to a local area network. This LAN port supports the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting - as well as Wake-on-LAN (WoL) functionality and Intel Active Management Technology (iAMT).

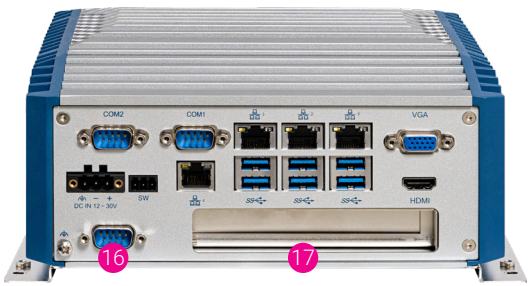
14. USB 3.2 Gen 1

Used to connect USB 3.2/2.0 devices.

15. HDMI®

Used to connect an HDMI® monitor.

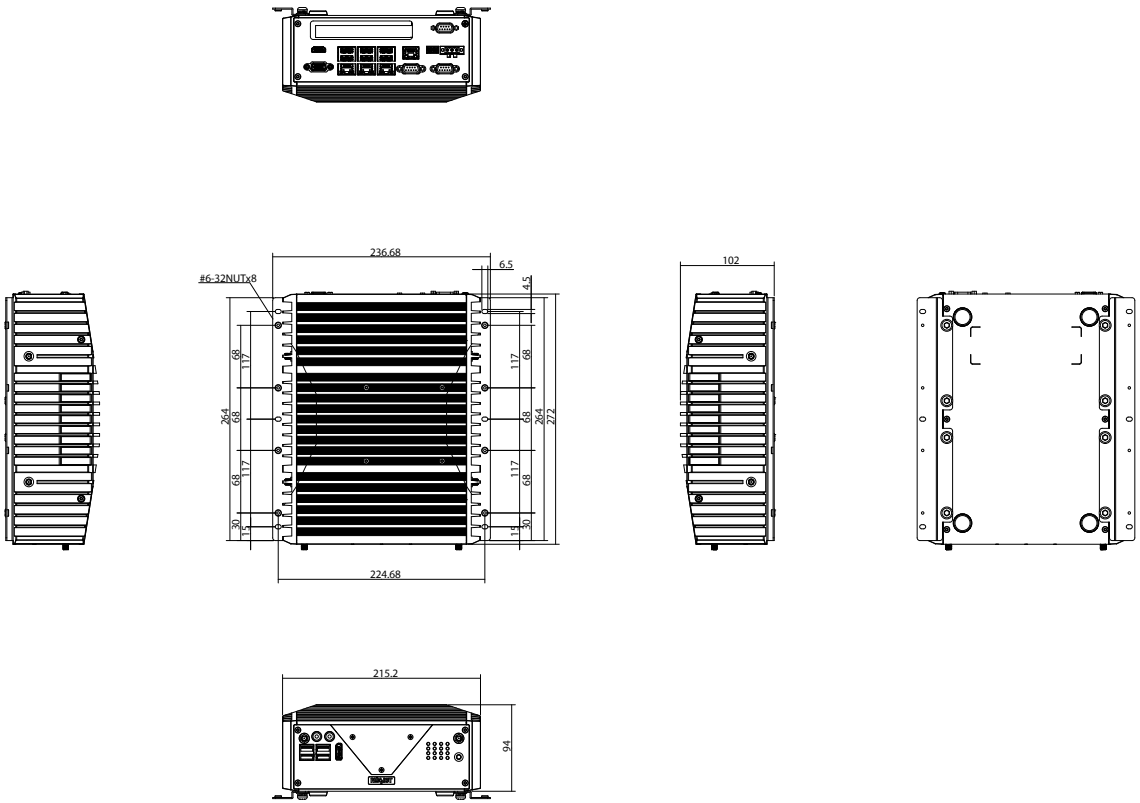
Rear Panel



16. COM3 (DB9)
Used to connect RS-232 device.

17. PCIe Expansion Slot Bracket Cover
Used to install a PCIe add-on card.

Mechanical Dimensions



NISE 3910E16/E2/P2/P2E-A

Front View

Rear View

Key Features

- Support 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 LGA1700 socket type embedded processor
- Intel® Q670E PCH
- Support 2 x DDR5 SO-DIMM, up to 64GB
- 4 x Intel® i226-IT LAN port, supports WoL and PXE
- 1 x DP, 1 x HDMI®, and 1 x VGA with independent display
- 1 x M.2 3042/3052 Key B, supports LTE/5G module
- 1 x Outside accessible M.2 2242 Key M with PCIe x4, supports NVMe
- 6 x USB 3.2 Gen 1, 4 x USB 2.0
- 2 x Isolated RS-232/422/485 with auto-flow and 2 x RS-232
- 1 x Mini PCIe slot, supports optional Wi-Fi, 3.5G, 4G LTE
- 1 x 2.5” SATA HDD/SSD (additional 1 x 2.5” SATA upon request)
- TPM 2.0 default onboard

Hardware Specifications

Processor

- Support 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (embedded)
  - Intel® Core™ i7-14700T, 8P+12E, 1.3GHz, 33M Cache
  - Intel® Core™ i5-14500T, 6P+8E, 1.7GHz, 24M Cache
  - Intel® Core™ i3-14100T, 4P+4E, 2.7GHz, 12M Cache
  - Intel® Core™ i9-13900TE, 8P+16E, 1.0GHz, 36M Cache
  - Intel® Core™ i7-13700TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i5-13500TE, 6P+8E, 1.3GHz, 24M Cache
  - Intel® Core™ i3-13100TE, 4P+4E, 2.4GHz, 12M Cache
  - Intel® Core™ i9-12900TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i7-12700TE, 8P+4E, 1.4GHz, 25M Cache
  - Intel® Core™ i5-12500TE, 6P+6E, 1.9GHz, 18M Cache
  - Intel® Core™ i3-12100TE, 4P+4E, 2.1GHz, 12M Cache

Memory

- DDR5 4800 SO-DIMM, supports up to 64GB

Display Option

- Three independent display: HDMI®, DP, VGA

Audio

- HD Audio Codec, Realtek ALC897

I/O Interface Front

- 1 x ATX power on/off switch
- LED indicators:
  - 4 x LAN active
  - 1 x GPO status
  - 4 x COM Tx/Rx
  - 1 x HDD/SSD status
  - 1 x Battery low
  - M.2
- 1 x DP
- 2 x Antenna hole
- 1 x Outside accessible M.2 2242 Key M (PCIe x4, SATA)
- 1 x SIM card holder
- 4 x USB 2.0 Type-A (500mA/port)
- 1 x Line out and 1 x Mic in

I/O Interface Rear

- 1 x HDMI®
- 1 x VGA port
- 6 x USB 3.2 Gen1 Type-A (900mA per each)
- 4 x 2.5GbE RJ45 port, Intel® I226-IT, supports WoL & PXE
- 2 x Isolated RS-232/422/485
- 2 x RS-232
- 1 x 3-pin DC input, supports +12 to 30V DC input
- 1 x 3-pin remote power on/off switch

I/O Interface Internal

- 8 x GPI and 8 x GPO (5V, TTL type)
- 1 x M.2 Key B 2242/3042/3052 (PCIe x2, USB 3.0)
- 1 x Mini PCIe (PCIe x1, USB 3.0)

Storage Device

- 1 x 2.5” HDD/SSD (Additional 1 x 2.5” tray upon request)
- 1 x M.2 2242 Key M
- 1 x M.2 2242 Key B

Expansion Slot

- 1 x PCIe 3.0 x16 (NISE 3910E16-A), up to 75W, 240mm max. length
- 2 x PCIe x4 (NISE 3910E2-A), up to 10W/slot, 169mm & 240mm max. length
- 2 x PCI (NISE 3910P2-A), up to 10W/slot, 169mm & 240mm max. length
- 1 x PCIe x4 + 1 x PCI (NISE 3910P2E-A), up to 10W/slot, 169mm & 240mm max. Length
- 1 x Mini PCIe (PCIe x1, USB 3.0)

Power Supply

- AT/ATX power mode (Default ATX mode)
- Power input: +12~30 V DC

Dimensions

- 215mm (W) x 272mm (D) x 123mm (H) without wall-mount bracket (8.46” x 10.7” x 4.8”)

Weight

- Net Weight: 5.5kg (NISE 3910E2/P2/P2E-A), 5.6kg (NISE 3910E16-A)
- Gross Weight: 7kg (NISE 3910E2/P2/P2E-A), 7.4kg (NISE 3910E16-A)

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature: Ambient with air flow: -20°C~60°C (according to IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14)
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~95% (non-condensing)
- Shock protection:
  - HDD: 20G@wallmount, half sine, 11ms (operation), IEC 600682-27
  - SSD: 50G@wallmount, half sine, 11ms (operation), IEC 600682-27
- Vibration protection:
  - Random: 0.5Grms@5~500Hz, IEC 60068-2-64
  - Sinusoidal: 0.5Grms@5~500Hz, IEC 60068-2-6

Certifications

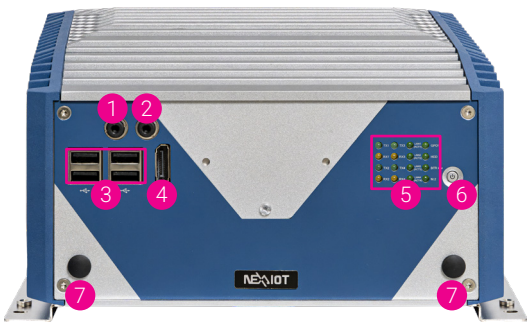
- CE
- FCC Class A

Operating System

- Windows 11
- Windows 10 Enterprise, 64-bit

Physical Features

Front Panel



1. Line out

Used to connect a headphone or a speaker.

2. Mic in

Used to connect an external microphone.

3. USB 2.0

Used to connect USB 2.0/1.1 devices.

4. DisplayPort

Used to connect a DisplayPort monitor.

5. LED Indicators

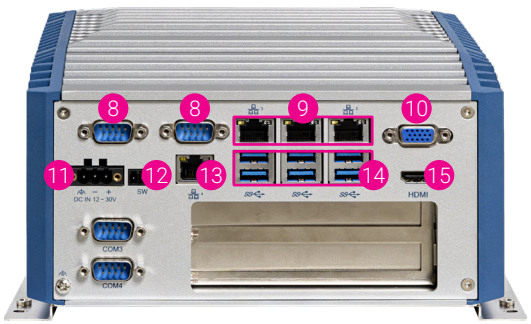
6. Power Switch

Press to power the system on or off.

7. Antenna Hole

Used to mount and connect optional external antennas.

Rear Panel



8. COM1 and COM2 (DB9)

Used to connect RS-232, RS-422, or RS-485 devices. The serial port mode can be configured in the BIOS.

9. LAN3/LAN2/LAN1 (left to right)

Used to connect the system to a local area network. These LAN ports support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

10. VGA

Used to connect a VGA monitor.

11. 12V-30V DC Input

Used to plug a DC power cord.

12. Remote On/Off Switch

Used to connect a remote to power on/off the system.

13. LAN4

Used to connect the system to a local area network. This LAN port supports the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting - as well as Wake-on-LAN (WoL) functionality and Intel Active Management Technology (iAMT).

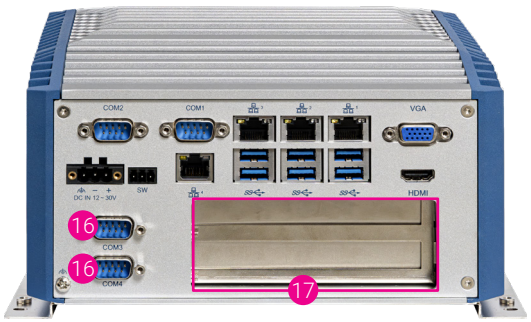
14. USB 3.2 Gen 1

Used to connect USB 3.2/2.0 devices.

15. HDMI®

Used to connect an HDMI® monitor.

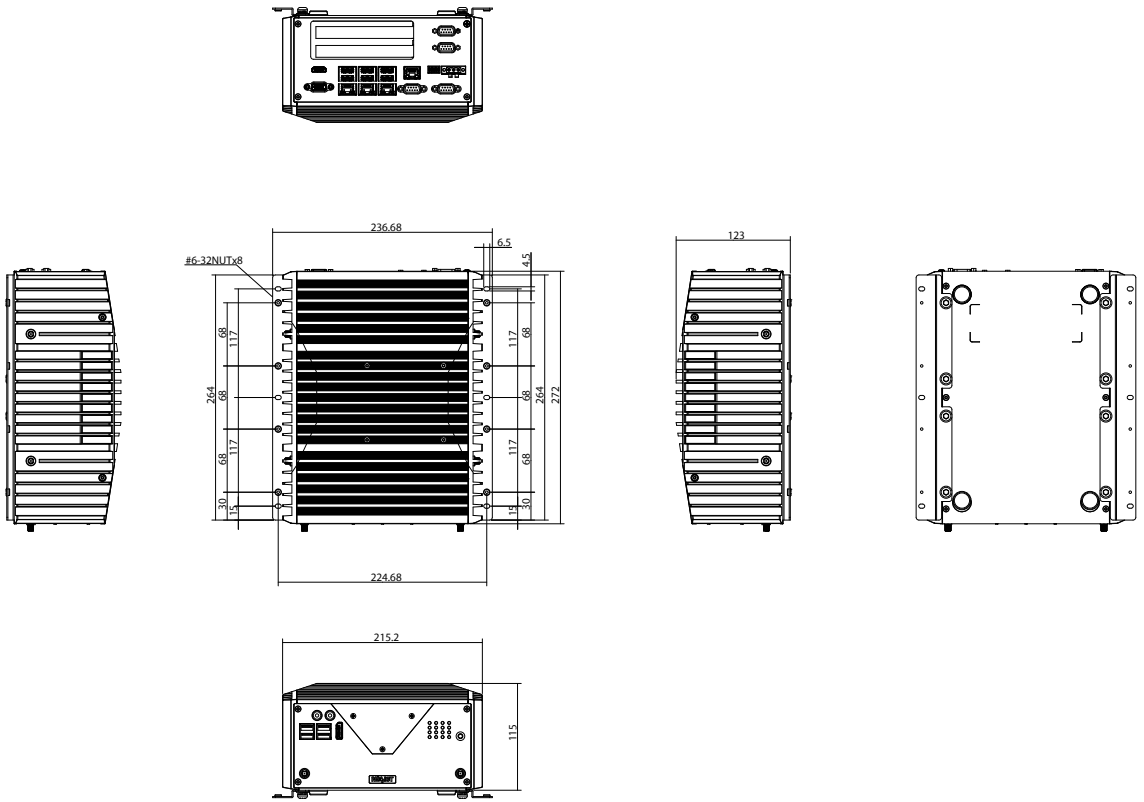
Rear Panel



16. COM3 and COM4 (DB9)
Used to connect RS-232 device.

17. PCIe Expansion Slot Bracket Cover
Used to install a PCIe add-on card.

Mechanical Dimensions



NISE 3910R-A

Front View

Rear View

Key Features

- Support 14th/13th/12th Gen Intel® Core™ i3/i5/i7/i9 LGA1700 socket type embedded processor
- Intel® Q670E PCH
- Support 2 x DDR5 SO-DIMM, up to 64GB
- 4 x Intel® i226-IT LAN ports, supports WoL and PXE
- 1 x DP, 1 x HDMI®, and 1 x VGA with independent display
- 1 x M.2 3042/3052 Key B, supports LTE/5G module
- 1 x Outside accessible M.2 2242 Key M with PCIe x4, supports NVMe
- 6 x USB 3.2 Gen 1, 4 x USB 2.0
- 2 x Isolated RS-232/422/485 with auto-flow
- 1 x Mini PCIe slot, supports optional Wi-Fi, 3.5G, 4G LTE
- 2 x 2.5” SATA HDD/SSD
- Support +24V DC input; supports ATX power mode
- TPM 2.0 default onboard

Hardware Specifications

Processor

- Support 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 processor (embedded)
  - Intel® Core™ i7-14700T, 8P+12E, 1.3GHz, 33M Cache
  - Intel® Core™ i5-14500T, 6P+8E, 1.7GHz, 24M Cache
  - Intel® Core™ i3-14100T, 4P+4E, 2.7GHz, 12M Cache
  - Intel® Core™ i9-13900TE, 8P+16E, 1.0GHz, 36M Cache
  - Intel® Core™ i7-13700TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i5-13500TE, 6P+8E, 1.3GHz, 24M Cache
  - Intel® Core™ i3-13100TE, 4P+4E, 2.4GHz, 12M Cache
  - Intel® Core™ i9-12900TE, 8P+8E, 1.1GHz, 30M Cache
  - Intel® Core™ i7-12700TE, 8P+4E, 1.4GHz, 25M Cache
  - Intel® Core™ i5-12500TE, 6P+6E, 1.9GHz, 18M Cache
  - Intel® Core™ i3-12100TE, 4P+4E, 2.1GHz, 12M Cache

Memory

- DDR5 4800 SO-DIMM, supports up to 64GB

Display Option

- Three independent display: HDMI®, DP, VGA

Audio

- HD Audio Codec, Realtek ALC897

I/O Interface Front

- 1 x ATX power on/off switch
- LED indicators:
  - 4 x LAN active
  - 1 x GPO status
  - 4 x COM Tx/Rx
  - 1 x HDD/SSD status
  - 1 x Battery low
  - M.2
- 1 x DP
- 2 x Antenna hole
- 1 x Outside accessible M.2 2242 Key M (PCIe x4, SATA)
- 1 x SIM card holder
- 4 x USB 2.0 Type-A (500mA/port)
- 1 x Line out and 1 x Mic in

I/O Interface Rear

- 1 x HDMI®
- 1 x VGA port
- 6 x USB 3.2 Gen1 Type-A (900mA per each)
- 4 x 2.5GbE RJ45 port, Intel® I226-IT, supports WoL & PXE
- 2 x Isolated RS-232/422/485
- 1 x 3-pin DC input, supports +12 to 30V DC input
- 1 x 3-pin remote power on/off switch

I/O Interface Internal

- 8 x GPI and 8 x GPO (5V, TTL type)
- 1 x M.2 Key B 2242/3042/3052 (PCIe x2, USB 3.0)
- 1 x Mini PCIe (PCIe x1, USB 3.0)

Storage Device

- 2 x 2.5” SATA HDD/SSD
- 1 x M.2 2242 Key M,
- 1 x M.2 2242 Key B

Expansion Slot

- 1 x Mini PCIe (PCIe x1, USB 3.0)

Power Supply

- AT/ATX power mode (Default ATX mode)
- Power input: +12~30 V DC

Dimensions

- 215mm (W) x 272mm (D) x 102mm (H) without wall-mount bracket (8.46” x 10.7” x 4.02”)

Weight

- Net Weight: 5.3kg
- Gross Weight: 7.2kg

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature: Ambient with air flow: -20°C~60°C (according to IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14)
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~95% (non-condensing)
- Shock protection:
  - HDD: 20G@wallmount, half sine, 11ms (operation), IEC 600682-27
  - SSD: 50G@wallmount, half sine, 11ms (operation), IEC 600682-27
- Vibration protection:
  - Random: 0.5Grms@5~500Hz, IEC 60068-2-64
  - Sinusoidal: 0.5Grms@5~500Hz, IEC 60068-2-6

Certifications

- CE
- FCC Class A

Operating System

- Windows 11
- Windows 10 Enterprise, 64-bit

Physical Features

Front Panel

1. Antenna Hole

Used to mount and connect optional external antennas.

2. Line out

Used to connect a headphone or a speaker.

3. Mic in

Used to connect an external microphone.

4. USB 2.0

Used to connect USB 2.0/1.1 devices.

5. DisplayPort

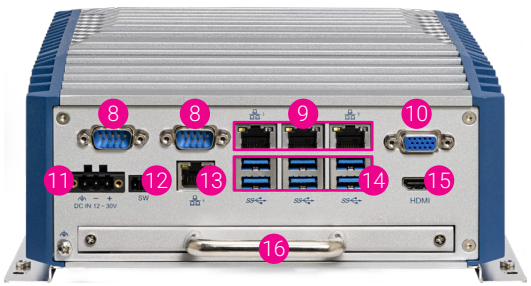
Used to connect a DisplayPort monitor.

6. LED Indicators

7. Power Switch

Press to power the system on or off.

Rear Panel



8. COM1 and COM2 (DB9)

Used to connect RS-232, RS-422, or RS-485 devices. The serial port mode can be configured in the BIOS.

9. LAN3/LAN2/LAN1 (left to right)

Used to connect the system to a local area network. These LAN ports support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

10. VGA

Used to connect a VGA monitor.

11. 12V-30V DC Input

Used to plug a DC power cord.

12. Remote On/Off Switch

Used to connect a remote to power on/off the system.

13. LAN4

Used to connect the system to a local area network. This LAN port supports the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting - as well as Wake-on-LAN (WoL) functionality and Intel Active Management Technology (iAMT).

14. USB 3.2 Gen 1

Used to connect USB 3.2/2.0 devices.

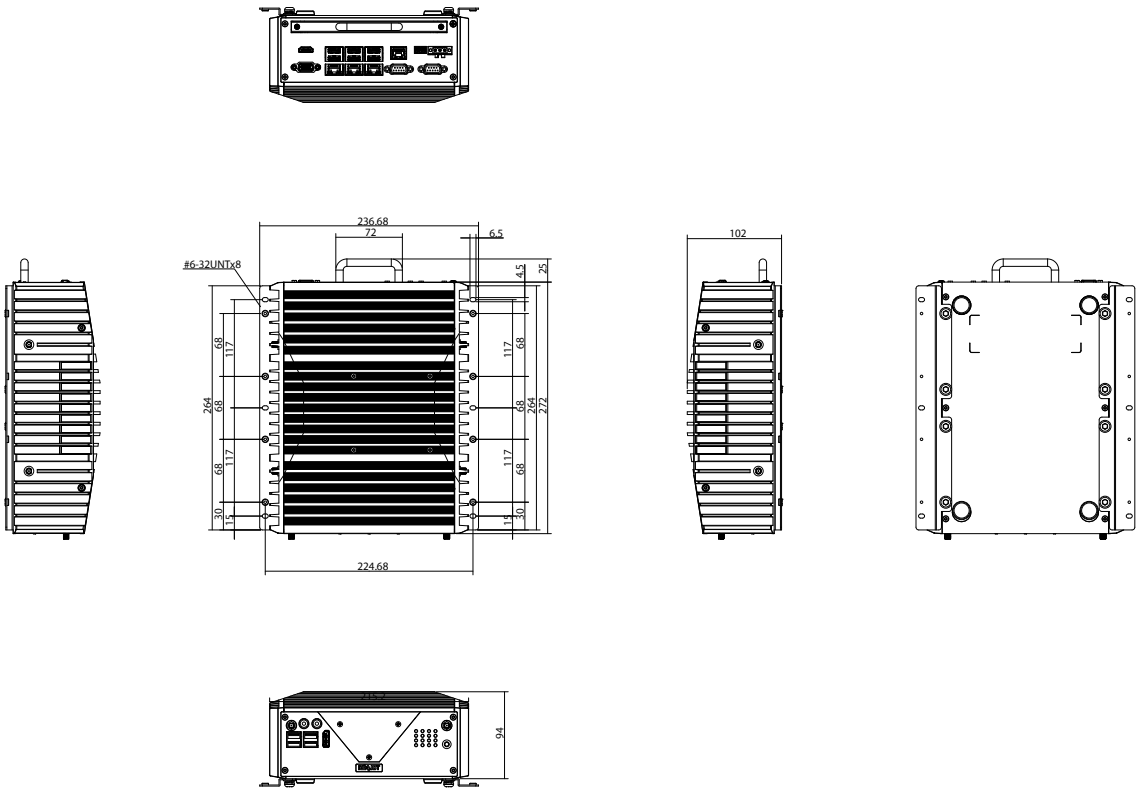
15. HDMI®

Used to connect an HDMI® monitor.

16. PCIe Expansion Slot Bracket Cover

Used to install a PCIe add-on card.

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NISE 3910-A series motherboard.

Before You Begin

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

Precautions

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

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

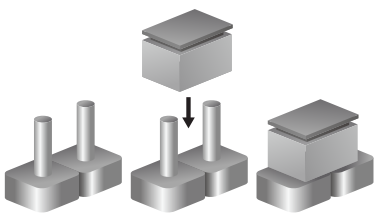
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

Jumper Settings

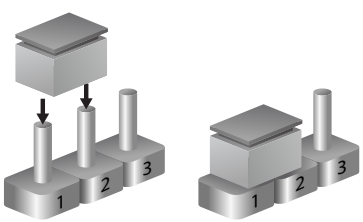
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

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

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



Three-Pin Jumpers: Pins 1 and 2 are Short

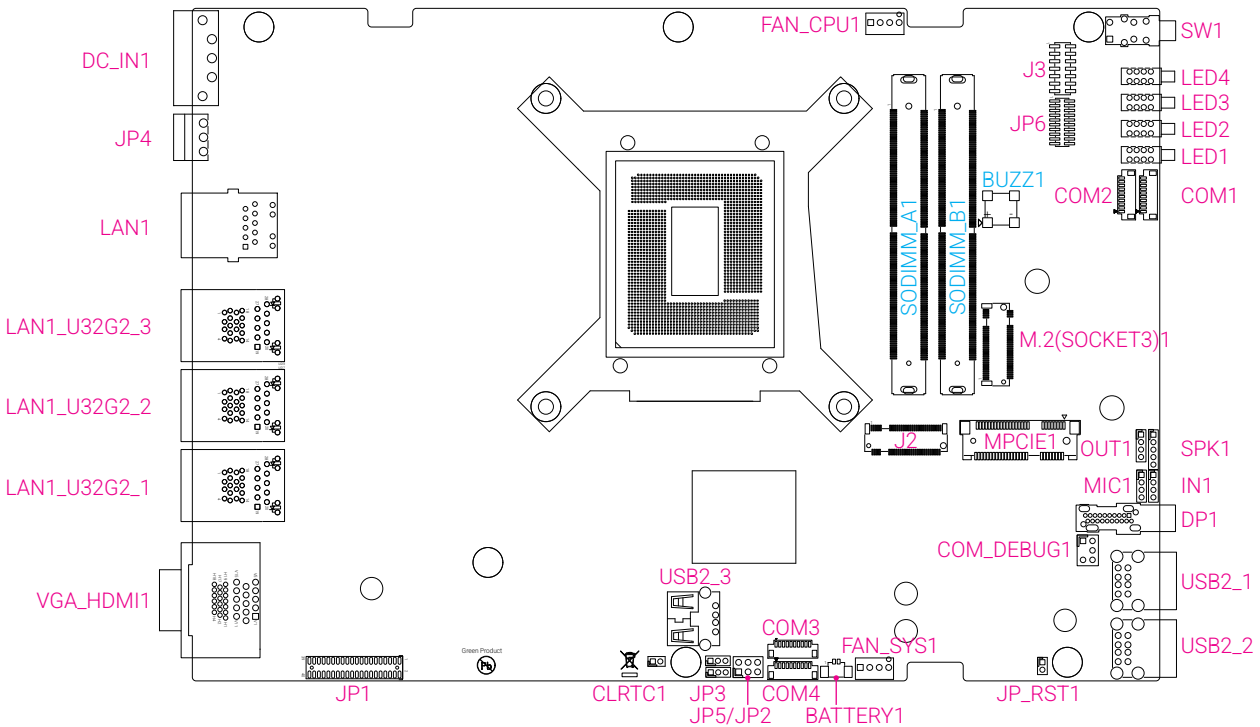


System Motherboard Overview

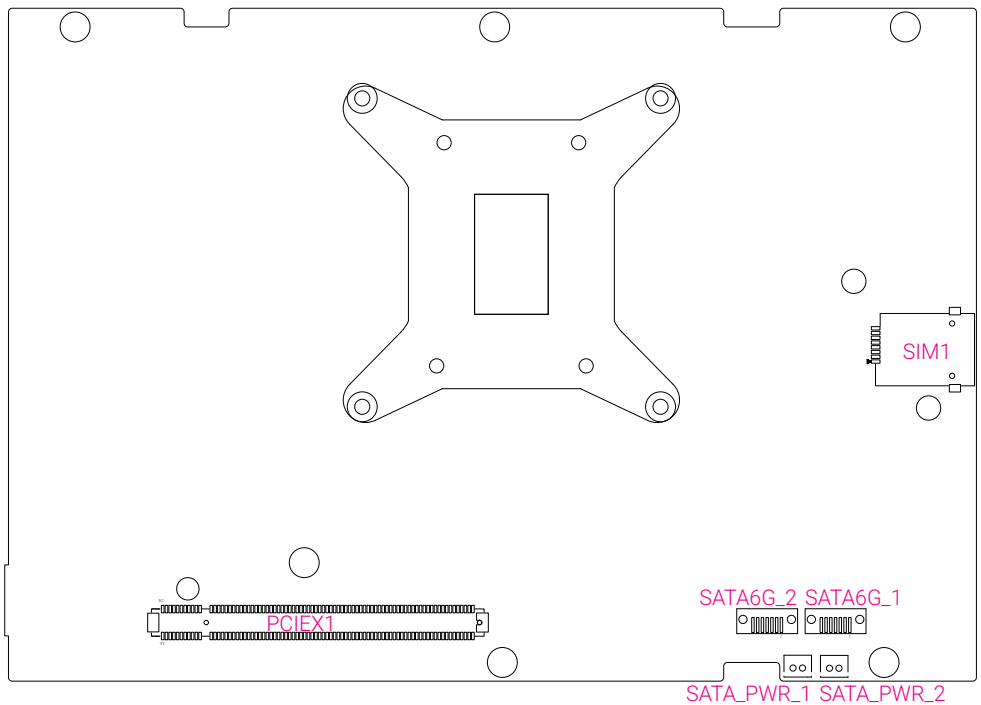
This chapter outlines the location and pin assignments of jumpers and connectors, with reference illustrations (not to scale) and pink-marked pin definitions to aid understanding.

Location of Jumpers and Connectors on the Motherboard

Top View



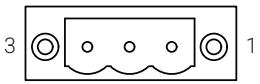
Bottom View



External I/O Interfaces

DC Input

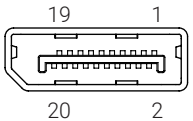
Connector location: DC_IN1



Pin	Definition
1	DCIN_PWR
2	power-
3	GND

DisplayPort

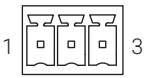
Connector location: DP1



Pin	Definition	Pin	Definition
1	ML_LANE_0P	11	GND
2	GND	12	ML_LANE_3N
3	ML_LANE_0N	13	CONFIG
4	ML_LANE_1P	14	CONFIG
5	GND	15	AUX_CH_(P)
6	ML_LANE_1N	16	GND
7	ML_LANE_2P	17	AUX_CH_(N)
8	GND	18	HOT_PLUG_DETECT
9	ML_LANE_2N	19	RETURN
10	ML_LANE_3P	20	DP_PWR

Remote Power On/Off

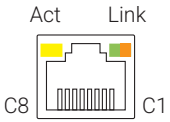
Connector location: JP4



Pin	Definition
1	PWRBTN#_SW#
2	GND
3	S_SLP_S3#_SW#

LAN Port 4

Connector location: LAN1



Act	Status
Flashing Yellow	Data activity
Off	No activity

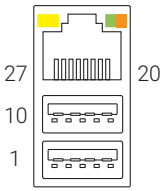
Link	Status
Steady Green	2.5G network link
Steady Orange	1G network link
Off	100/10Mbps

Pin	Definition	Pin	Definition
1	L4_MDI_P0	9	L4_MDI_P3
2	L4_MDI_N0	10	L4_MDI_N3
3	L4_MDI_P1	11	L4_ACTLEDP
4	L4_MDI_N1	12	L4_ACTLEDN
5	L4_CTR	13	L2_LINK100#
6	L4_CTR	14	L2_LINK2500#
7	L4_MDI_P2	15	GND
8	L4_MDI_N2	16	GND

LAN4 supports the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality and Intel Active Management Technology (iAMT).

LAN1 + USB 3.2 Gen 1 Ports

Connector location: LAN1_U32G2_1



Pin	Definition	Pin	Definition
1	+5V(VBUS)	11	DN2
2	DN1	12	DP2
3	DP1	13	GND
4	GND	14	STDA_SSRXN2
5	STDA_SSRXN1	15	STDA_SSRXP2
6	STDA_SSRXP1	16	GND
7	GND	17	STDA_SSTXN2
8	STDA_SSTXN1	18	STDA_SSTXP2
9	STDA_SSTXP1	19	L2_CTR(VCC)
10	+5V(VBUS)	20	TD1+

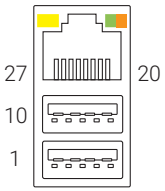
Pin	Definition	Pin	Definition
21	TD1-	31	L2_LINK100#
22	TD2+	32	L2_LINK2500#
23	TD2-	33	CHASIS_GND
24	TD3+	34	CHASIS_GND
25	TD3-	35	CHASIS_GND
26	TD4+	36	CHASIS_GND
27	TD4-	37	CHASIS_GND
28	GND	38	CHASIS_GND
29	LED+	39	CHASIS_GND
30	LED-	40	CHASIS_GND

LAN1 port support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

For more information of LAN port LED indicators, refer to the descriptions provided on the LAN port 4 page.

LAN2 + USB 3.2 Gen 1 Ports

Connector location: LAN1_U32G2_2



Pin	Definition	Pin	Definition
1	+5V(VBUS)	11	DN2
2	DN1	12	DP2
3	DP1	13	GND
4	GND	14	STDA_SSRXN2
5	STDA_SSRXN1	15	STDA_SSRXP2
6	STDA_SSRXP1	16	GND
7	GND	17	STDA_SSTXN2
8	STDA_SSTXN1	18	STDA_SSTXP2
9	STDA_SSTXP1	19	L2_CTR(VCC)
10	+5V(VBUS)	20	TD1+

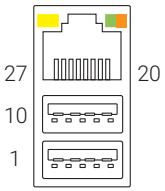
Pin	Definition	Pin	Definition
21	TD1-	31	L2_LINK100#
22	TD2+	32	L2_LINK2500#
23	TD2-	33	CHASIS_GND
24	TD3+	34	CHASIS_GND
25	TD3-	35	CHASIS_GND
26	TD4+	36	CHASIS_GND
27	TD4-	37	CHASIS_GND
28	GND	38	CHASIS_GND
29	LED+	39	CHASIS_GND
30	LED-	40	CHASIS_GND

LAN2 port support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

For more information of LAN port LED indicators, refer to the descriptions provided on the LAN port 4 page.

LAN3 + USB 3.2 Gen 1 Ports

Connector location: LAN1_U32G2_3



Pin	Definition	Pin	Definition
1	+5V(VBUS)	11	DN2
2	DN1	12	DP2
3	DP1	13	GND
4	GND	14	STDA_SSRXN2
5	STDA_SSRXN1	15	STDA_SSRXP2
6	STDA_SSRXP1	16	GND
7	GND	17	STDA_SSTXN2
8	STDA_SSTXN1	18	STDA_SSTXP2
9	STDA_SSTXP1	19	L2_CTR(VCC)
10	+5V(VBUS)	20	TD1+

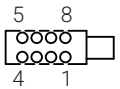
Pin	Definition	Pin	Definition
21	TD1-	31	L2_LINK100#
22	TD2+	32	L2_LINK2500#
23	TD2-	33	CHASIS_GND
24	TD3+	34	CHASIS_GND
25	TD3-	35	CHASIS_GND
26	TD4+	36	CHASIS_GND
27	TD4-	37	CHASIS_GND
28	GND	38	CHASIS_GND
29	LED+	39	CHASIS_GND
30	LED-	40	CHASIS_GND

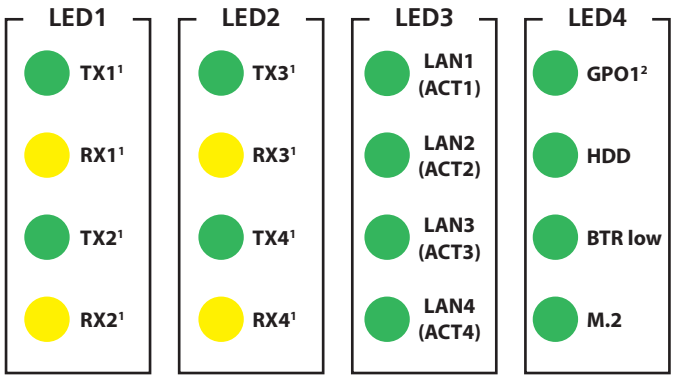
LAN3 port support the Preboot eXecution Environment (PxE) - which is disabled by default in the BIOS for LAN booting—as well as Wake-on-LAN (WoL) functionality.

For more information of LAN port LED indicators, refer to the descriptions provided on the LAN port 4 page.

LED Indicators

Connector location: LED1, LED2, LED3, LED4





1. TX1/RX1 represents the LED light for COM port1, and so on up to COM port 4.
2. When the system is powered on, the green GPO1 LED indicator remains on."

LED1

Pin	Definition	Pin	Definition
1	LED1_A1_10	5	COM1_TX_R
2	LED1_A2_10	6	COM1_RX_R
3	LED1_A3_10	7	COM2_TX_R
4	LED1_A4_10	8	COM2_RX_R

LED2

Pin	Definition	Pin	Definition
1	LED2_A1_10	5	COM3_TX_R
2	LED2_A2_10	6	COM3_RX_R
3	LED2_A3_10	7	COM4_TX_R
4	LED2_A4_10	8	COM4_RX_R

LED3

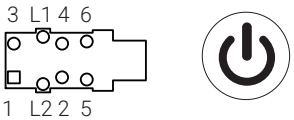
Pin	Definition	Pin	Definition
1	LED3_A1_10	5	L1_ACTLEDN_R
2	LED3_A2_10	6	L2_ACTLEDN_R
3	LED3_A3_10	7	L3_ACTLEDN_R
4	LED3_A4_10	8	L4_ACTLEDN_R

LED4

Pin	Definition	Pin	Definition
1	LED4_A1_10	5	GPO1_R
2	LED4_A2_10	6	HDLED-_R
3	LED4_A3_10	7	BAT_LOW_R
4	LED4_A4_10	8	M.2_LED_R

Power Button

Connector location: SW1



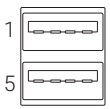
Pin	Definition	Pin	Definition
1	PWRBTN#_PANEL	4	GND
2	PWRBTN#_PANEL	5	GND
3	GND	6	GND
L1	PLED-	L2	PLED+

LED status

Action	Status
Power on	Blue light on
Power off	No light

USB 2.0 Ports

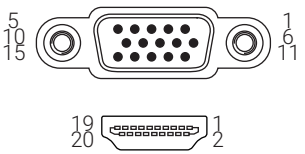
Connector location: USB2_1, USB2_2



Pin	Definition	Pin	Definition
1	VBUS1	7	D+2
2	D-1	8	GND
3	D+1	9	P_GND
4	GND	10	P_GND
5	VBUS2	11	P_GND
6	D-2	12	P_GND

VGA + HDMI®

Connector location: VGA_HDMI1A, VGA_HDMI1B



VGA

Pin	Definition	Pin	Definition
1	RED	9	VGA power
2	GREEN	10	GND
3	BLUE	11	ID0
4	ID2	12	ID1
5	GND	13	HSYNC
6	GND_R	14	VSYNC
7	GND_G	15	ID3
8	GND_B		

HDMI®

Pin	Definition	Pin	Definition
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock–
3	TMDS Data2–	13	CEC
4	TMDS Data1+	14	Reserved
5	TMDS Data1 Shield	15	SCL
6	TMDS Data1–	16	SDA
7	TMDS Data0+	17	DDC/CEC Ground
8	TMDS Data0 Shield	18	+5V Power
9	TMDS Data0–	19	HPD
10	TMDS Clock+	20	

Jumper Settings

Clear CMOS

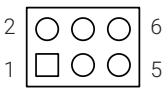
Connector location: CLRTC1

Pin	Settings
1-2 Off	Normal (default)
1-2 On	Clear CMOS

Pin	Settings
1	+3V_BAT_RTC
2	GND

COM3 Power Output Select

Connector location: JP2



Pin	Settings
1-2 On	12V
3-4 On	5V
5-6 On	RI

Pin	Definition
1	+12V
2	+VCC_RI3
3	+VCC_RI3
4	+5V
5	LS_COM3_RI1#
6	+VCC_RI3

SMBUS Connector

Connector location: JP3

Pin	Settings
1	S_SMBCLK_MAIN
2	S_SMBDATA_MAIN
3	GND#

AT/ATX Power Select

Connector location: JP5

Pin	Settings
1-2 On	ATX mode (default)
2-3 On	AT mode

Pin	Definition
1	+3VSB_ATX
2	O_AT_ATX_SET
3	GND

Internal I/O Interface

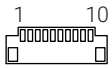
Battery Connector

Connector location: BATTERY1

Pin	Settings
1	+Bat
2	GND

COM Ports

Connector location: COM1, COM2, COM3, COM4



COM1/COM2

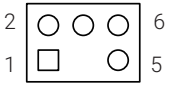
Pin	Definition	Pin	Definition
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND	10	GND

COM3/COM4

Pin	Definition	Pin	Definition
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	POWER
5	GND	10	GND

COM_Debug

Connector location: COM_DEBUG1



Pin	Definition	Pin	Definition
1	O_COMDBG_P80	4	GND
2	GND	5	+3V3
3	NC	6	GND

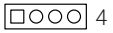
Fan Connectors

Connector location: FAN_CPU1, FAN_SYS1

Pin	Definition	Pin	Definition
1	GND	2	SENSE
2	+12V	4	PWM

Audio

Connector location: IN1, MIC1, OUT1



IN1

Pin	Definition	Pin	Definition
1	A_MIC1_L	3	A_JD_MIC1
2	AGND	4	A_MIC1_R

MIC1

Pin	Definition	Pin	Definition
1	A_FMIC1_L	3	A_JD_FMIC1
2	AGND	4	A_FMIC1_R

OUT1

Pin	Definition	Pin	Definition
1	A_HPOUT_L	3	A_JD_FRONT
2	AGND	4	A_HPOUT_R

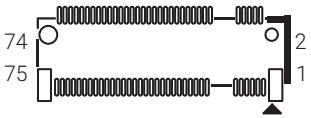
Connector location: SPK1

SPK1

Pin	Definition	Pin	Definition
1	SPK_L+	4	SPK_R+
2	SPK_L-	5	SPK_R-
3	AGND		

M.2 Key B

Connector location: J2



Pin	Definition	Pin	Definition
1	GND		
2	+3V3 Aux		
3	GND		
4	+3V3 Aux		
5	GND		
6	FULL_CARD_POWER_OFF#(O)(0/1.8V)		
7	USB_D+		
8	W_DISABLE#1(O)		
9	USB_D-	20	AUDIO0
10	LED#1/DAS/DSS#(I)	21	WWAN/SSD_IND(GND_WWAN/OC_SSD)
11	GND	22	AUDIO1

Pin	Definition	Pin	Definition
23	RESERVED	31	PERP1/USB3.0_RX+/SSIC_RXP
24	AUDIO2	32	UIM_CLK
25	RESERVED	33	GND
26	AUDIO3	34	UIM_DATA
27	GND	35	PETN1/USB3.0_TX-/SSIC_TXN
28	UIM_RFU	36	UIM_PWR
29	PERN1/USB3.0_RX-/SSIC_RXN	37	PETP1/USB3.0_TX+/SSIC_TXP
30	UIM_RESET	38	DEVSLP(O)(0/3.3V)

Continued on next page

Pin	Definition	Pin	Definition
39	GND	49	PETP0/SATA-A+
40	GNSS0	50	PERST#
41	PERN0/SATA-B+	51	GND
42	GNSS1	52	CLKREQ#
43	PERP0/SATA-B-	53	REFCLKN
44	GNSS2	54	PEWAKE#
45	GND	55	REFCLKP
46	GNSS3	56	NC
47	PETN0/SATA-A-	57	GND
48	GNSS4	58	NC

Pin	Definition	Pin	Definition
59	ANTCTL0(I)(0/1.8V)	69	PEDET
60	COEX3	70	+3V3
61	ANTCTL0(I)(0/1.8V)	71	GND
62	COEX2	72	+3V3
63	ANTCTL0(I)(0/1.8V)	73	GND
64	COEX1	74	+3V3
65	ANTCTL0(I)(0/1.8V)	75	USB3.0IND
66	SIM_DETECT	76	
67	RESET#		
68	SUSCLK		

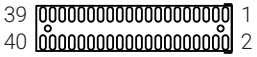
LED Connector

Connector location: J3

Pin	Definition	Pin	Definition
1	+5V	8	LAN3_LEDACTL
2	BAT_LOWL	9	LAN4_ACT#_LED_CON
3	LAN1_ACT#_LED_CON	10	LAN4_LEDACTL
4	LAN1_LEDACTL	11	SATALED#_P
5	LAN2_ACT#_LED_CON	12	I_SATALEDN
6	LAN2_LEDACTL	13	+5V
7	LAN3_ACT#_LED_CON	14	S_GP33

AUX Connector

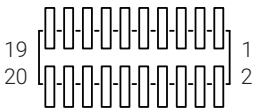
Connector location: JP1



Pin	Definition	Pin	Definition
1	A/D_DOCK_IN	21	GND
2	A/D_DOCK_IN	22	GND
3	A/D_DOCK_IN	23	GND
4	A/D_DOCK_IN	24	GND
5	A/D_DOCK_IN	25	UART3_TXD
6	A/D_DOCK_IN	26	UART3_RXD
7	NC	27	S_SLP_S3#
8	NC	28	PM_DETECTL
9	GND	29	PWRBTN#_PANEL
10	GND	30	NC
11	GND	31	+12V_PCIE
12	GND	32	+12V_PCIE
13	GND	33	+12V_PCIE
14	GND	34	+12V_PCIE
15	GND	35	+12V_PCIE
16	GND	36	+12V_PCIE
17	GND	37	+12V_PCIE
18	GND	38	+12V_PCIE
19	GND	39	+12V_PCIE
20	GND	40	+12V_PCIE

GPIO Connector

Connector location: JP6



Pin	Definition	Pin	Definition
1	+5V_GPIO	11	SGPI5
2	+5V_GPIO	12	SGPO5
3	SGPI1	13	SGPI6
4	SGPO1	14	SGPO6
5	SGPI2	15	SGPI7
6	SGPO2	16	SGPO7
7	SGPI3	17	SGPI8
8	SGPO3	18	SGPO8
9	SGPI4	19	GND
10	SGPO4	20	GND

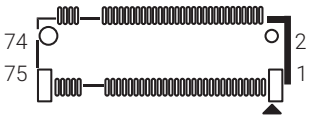
System Reset

Connector location: JP_RST1

Pin	Settings
1	O_RSTCON#_PR
2	GND

M.2 Key M

Connector location: M.2(SOCKET3)1



Pin	Definition	Pin	Definition
1	GND	11	PETn3
2	+3V3	12	+3V3
3	GND	13	PETp3
4	+3V3	14	+3V3
5	PERp3	15	GND
6	NC	16	+3V3
7	PERn3	17	PERn2
8	NC	18	+3V3
9	GND	19	PERp2
10	DAS/DSS#(I)(OD)	20	NC

Pin	Definition	Pin	Definition
21	GND	30	NC
22	NC	31	PERp1
23	PETn2	32	NC
24	NC	33	GND
25	PETp2	34	NC
26	NC	35	PETn1
27	GND	36	NC
28	NC	37	PETp1
29	PERn1	38	DEVSLP(O)(0/3.3V)

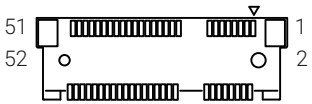
Continued on next page

Pin	Definition	Pin	Definition
39	GND	49	PETP0/SATA-A+
40	SMB_CLK	50	PERST#
41	PERN0/SATA-B+	51	GND
42	SMB_DAT	52	CLKREQ#
43	PERP0/SATA-B-	53	REFCLKN
44	ALERT#	54	PEWAKE#
45	GND	55	REFCLKP
46	NC	56	NC
47	PETN0/SATA-A-	57	GND
48	NC	58	NC

Pin	Definition	Pin	Definition
59		68	SUSCLK
60		69	PEDET
61		70	+3V3
62		71	GND
63		72	+3V3
64		73	GND
65		74	+3V3
66		75	GND
67	NC	76	

Mini PCIe

Connector location: MPCIE1

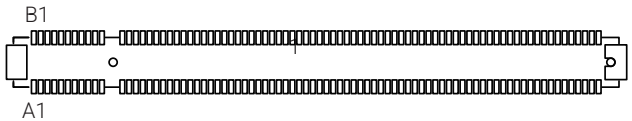


Pin	Definition	Pin	Definition
1	WAKE#	14	UIM_RESET
2	+3V3	15	GND
3	Reserved	16	UIM_VPP
4	GND	17	Reserved
5	Reserved	18	GND
6	+1V5	19	Reserved
7	CLKREQ#	20	W_DISABLE#
8	UIM_PWR	21	GND
9	GND	22	PERST#
10	UIM_DATA	23	PERn0
11	REFCLK-	24	+3V3 aux
12	UIM_CLK	25	PERp0
13	REFCLK+	26	GND

Pin	Definition	Pin	Definition
27	GND	40	GND
28	+1V5	41	Reserved
29	GND	42	LED_WWAN#
30	SMB_CLK	43	Reserved
31	PETn0	44	LED_WLAN#
32	SMB_DAT	45	Reserved
33	PETp0	46	LED_WPAN#
34	GND	47	Reserved
35	GND	48	+1V5
36	USB_D-	49	Reserved
37	Reserved	50	GND
38	USB_D+	51	Reserved
39	Reserved	52	+3V3

PCIe x16 Slot

Connector location: PCIEX1



Pin	Definition	Pin	Definition
A1	PRSNT1#	A22	PERn1
A2	+12V	A23	GND
A3	+12V	A24	GND
A4	GND	A25	PERp2
A5	JTAG	A26	PERn2
A6	JTAG	A27	GND
A7	JTAG	A28	GND
A8	JTAG	A29	PERp3
A9	+3V3	A30	PERn3
A10	+3V3	A31	GND
A11	PERST#	A32	RSVD
A12	GND	A33	RSVD
A13	REFCLK+	A34	GND
A14	REFCLK-	A35	PERp4
A15	GND	A36	PERn4
A16	PERp0	A37	GND
A17	PERn0	A38	GND
A18	GND	A39	PERp5
A19	RSVD	A40	PERn5
A20	GND	A41	GND
A21	PERp1	A42	GND

Pin	Definition	Pin	Definition
A43	PERp6	A63	GND
A44	PERn6	A64	PERp11
A45	GND	A65	PERn11
A46	GND	A66	GND
A47	PERp7	A67	GND
A48	PERn7	A68	PERp12
A49	GND	A69	PERn12
A50	RSVD	A70	GND
A51	GND	A71	GND
A52	PERp8	A72	PERp13
A53	PERn8	A73	PERn13
A54	GND	A74	GND
A55	GND	A75	GND
A56	PERp9	A76	PERp14
A57	PERn9	A77	PERn14
A58	GND	A78	GND
A59	GND	A79	GND
A60	PERp10	A80	PERp15
A61	PERn10	A81	PERn15
A62	GND	A82	GND

Continued on next page

Pin	Definition	Pin	Definition
B1	+12V	B22	GND
B2	+12V	B23	PETp2
B3	+12V	B24	PETn2
B4	GND	B25	GND
B5	SMBCLK	B26	GND
B6	SMBDAT	B27	PETp3
B7	GND	B28	PETn3
B8	+3V3	B29	GND
B9	JTAG	B30	PWRBRK#
B10	3V3 Aux	B31	PRSNT2_2#
B11	WAKE#	B32	GND
B12	CLKREQ#	B33	PETp4
B13	GND	B34	PETn4
B14	PETp0	B35	GND
B15	PETn0	B36	GND
B16	GND	B37	PETp5
B17	PRSNT2_1#	B38	PETn5
B18	GND	B39	GND
B19	PETp1	B40	GND
B20	PETn1	B41	PETp6
B21	GND	B42	PETn6

Pin	Definition	Pin	Definition
B43	GND	B63	PETn11
B44	GND	B64	GND
B45	PETp7	B65	GND
B46	PETn7	B66	PETp12
B47	GND	B67	PETn12
B48	PRSNT2_3#	B68	GND
B49	GND	B69	GND
B50	PETp8	B70	PETp13
B51	PETn8	B71	PETn13
B52	GND	B72	GND
B53	GND	B73	GND
B54	PETp9	B74	PETp14
B55	PETn9	B75	PETn14
B56	GND	B76	GND
B57	GND	B77	GND
B58	PETp10	B78	PETp15
B59	PETn10	B79	PETn15
B60	GND	B80	GND
B61	GND	B81	PRSNT2_4#
B62	PETp11	B82	RSVD

SATA Connectors

Connector location: SATA6G_1, SATA6G_2

Pin	Definition	Pin	Definition
1	GND	5	B-
2	A+	6	B+
3	A-	7	GND
4	GND	8	

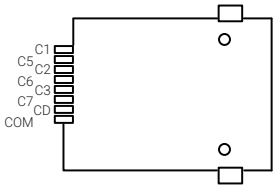
SATA Power Connectors

Connector location: SATA_PWR_1, SATA_PWR_2

Pin	Definition	Pin	Definition
1	+5v	2	GND

SIM Card Slot

Connector location: SIM1



Pin	Definition	Pin	Definition
C1	VCC	C5	GND
C2	RESET	C6	VPP
C3	CLOCK	C7	DATA

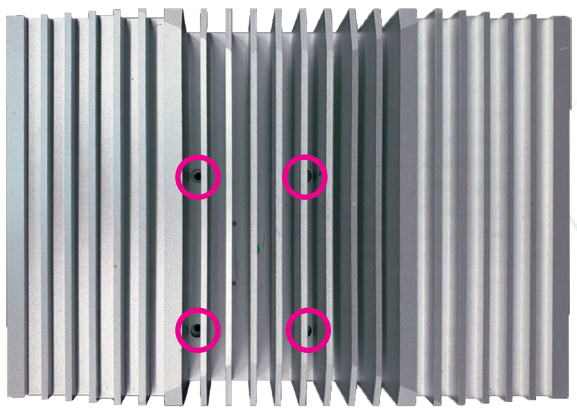
Chapter 3: System Setup

Removing the Top Cover

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.

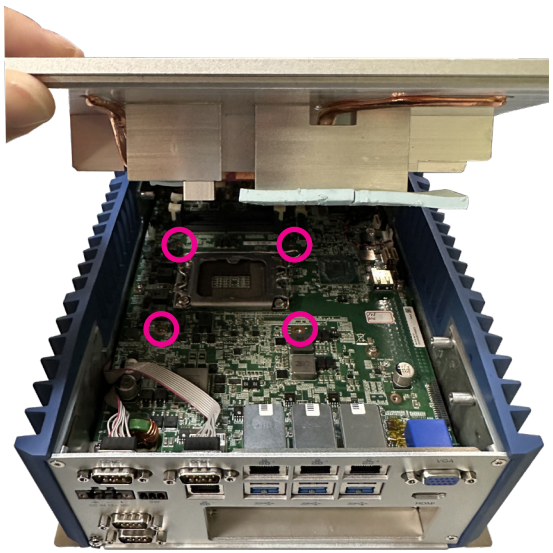
1. Remove the 4 screws on the sides.

2. Remove the 4 screws on the top.



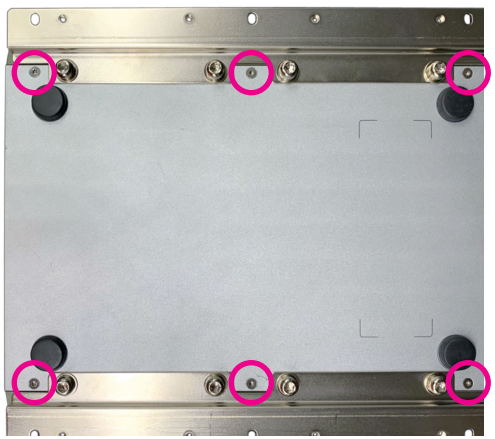
3. With the screws removed, lift up the cover and remove it from the chassis.

4. When reinstalling the top cover to the system, ensure that the 4 mounting holes on the top cover is aligned correctly to the four copper standoffs around the CPU socket.

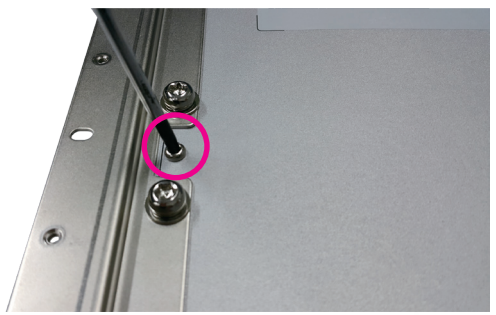


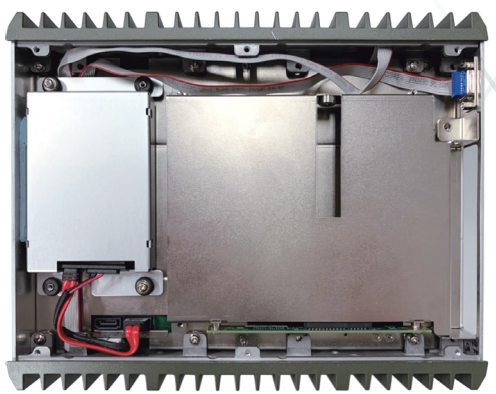
Removing the Bottom Cover

1. Locate the 6 screws on the bottom cover.



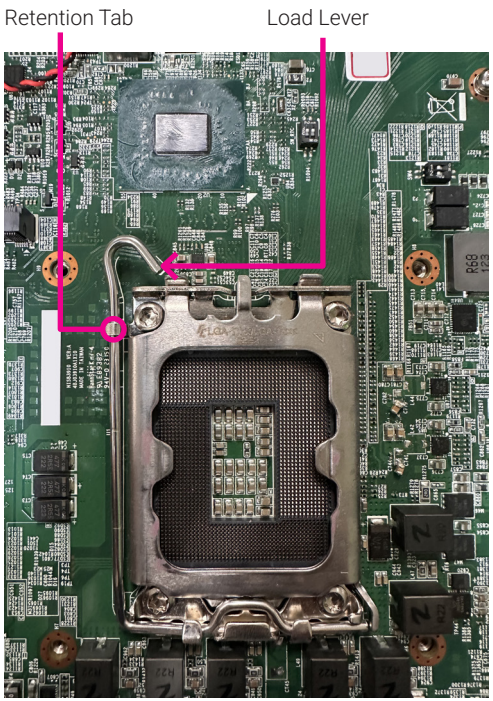
2. Remove the screws, then lift up the bottom cover and remove it from the chassis.



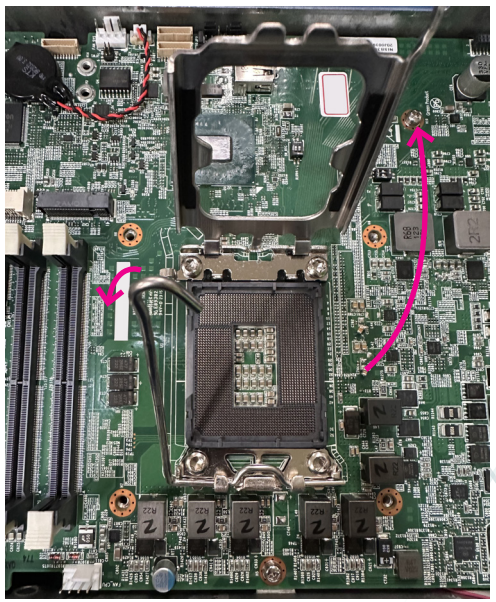


Installing a CPU

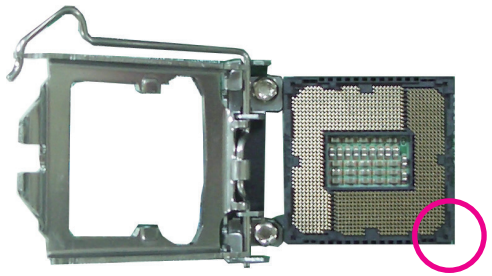
1. Locate the CPU socket on the board. Unlock the socket by pushing the load lever down, moving it sideways until it is released from the retention tab.

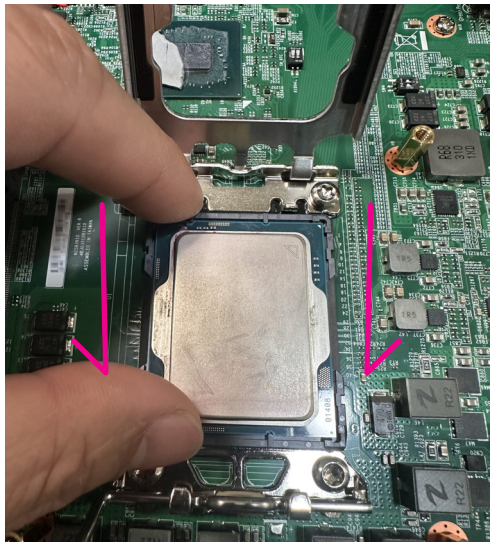


2. Lift the load lever up to open the CPU retention bracket.

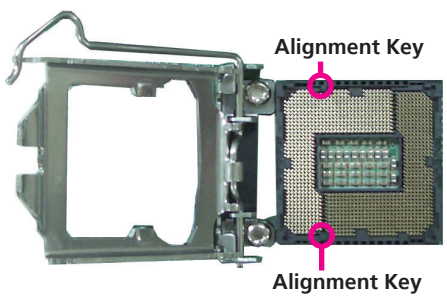


3. Insert the CPU into the socket. The triangular edge on the CPU must align with the corner of the CPU socket shown on the photo.



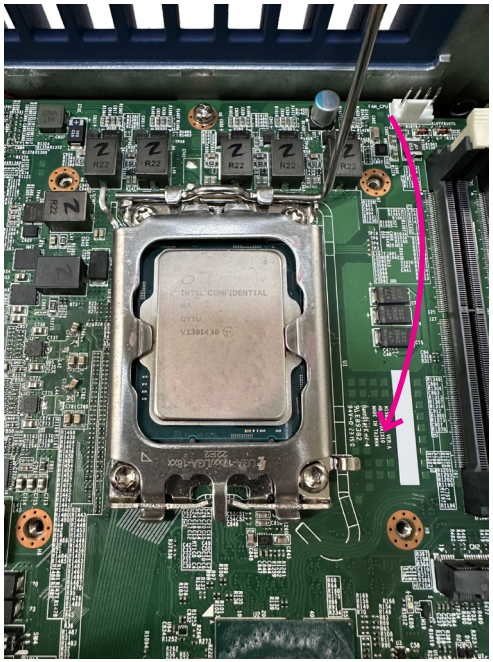


The CPU's notch will at the same time fit into the socket's alignment key.



- Handle the CPU by its edges and avoid touching the pins.
- The CPU will fit in only one orientation and can easily be inserted without exerting any force.

4. Close the load plate and then hook the load lever under the retention.

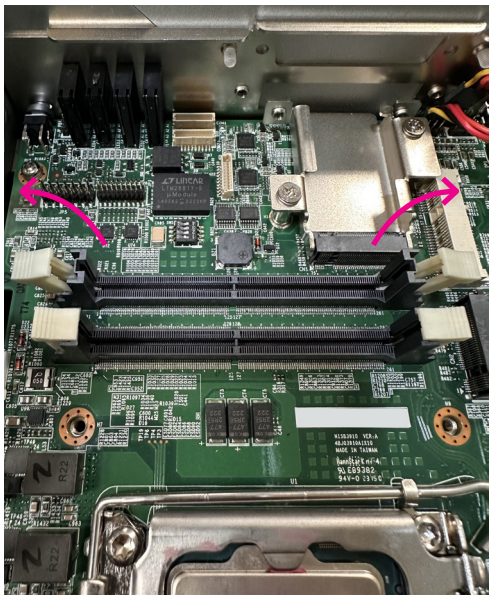


CAUTION!

Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.

Installing a SO-DIMM Memory Module

1. Locate the SO-DIMM sockets and release the locks.

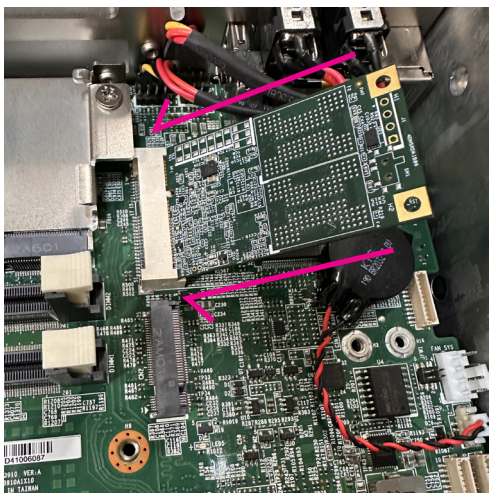


2. Insert the SO-DIMM module into the socket and apply even pressure to both ends of the module until it slips into the socket. While pushing the module into position, the locks will close automatically.

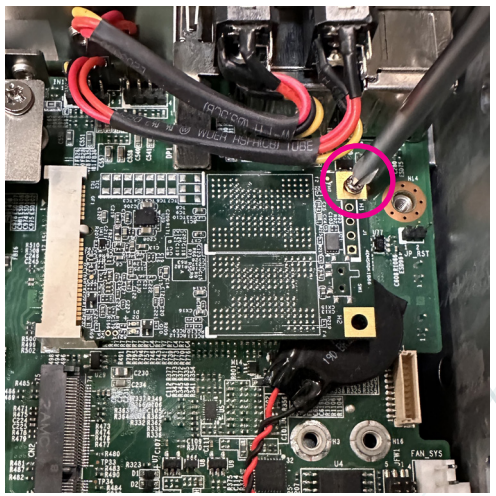
3. Repeat steps 1 and 2 to install the second memory module if you wish to add more memory.

Installing a Mini PCIe Module

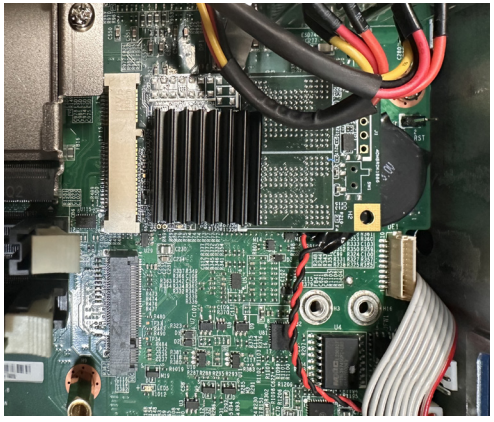
1. Locate the mini-PCIe slot on the board.
2. Insert a mini-PCIe module into the slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



3. Push the module down and tighten a screw into the mounting hole on the module to secure it.



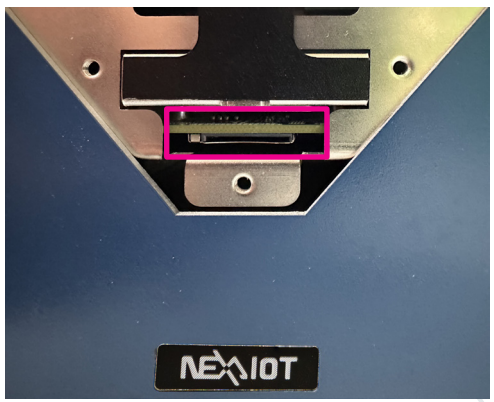
4. Attach the heatsink which has double-sided tape applied onto the M.2 card.



Installing a SIM Card

1. The SIM card is located on the front panel and covered with a panel. To insert the SIM card, refer to the image below to loosen the screws.

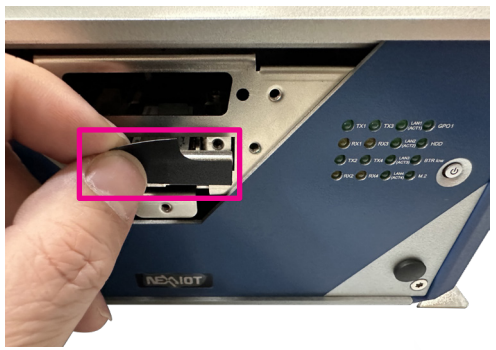
2. Place the SIM card directly into the card slot. To remove the SIM card, gently push on its bottom edge.



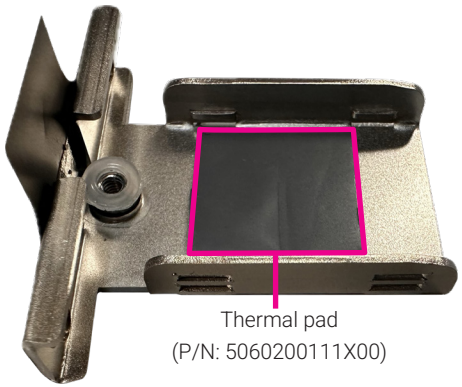
Installing an M.2 Module (External)

1. The external M.2 slot is located on the front panel and covered with a panel. To insert an M.2 module, refer to the image below to loosen the screws.

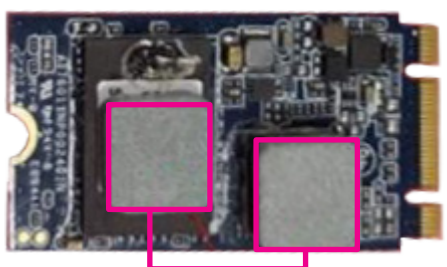
2. Follow the location indicated below to pull out the M.2 bracket.



3. Stick thermal pad (P/N: 5060200111X00) onto the M.2 bracket, and stick ceramic thermal pads (P/N: 5044440181X00) onto the chipsets of the M.2 module respectively

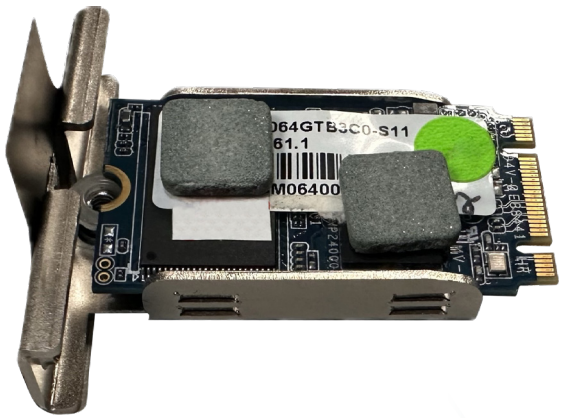


Thermal pad
(P/N: 5060200111X00)



Ceramic thermal pad
(P/N: 5044440181X00)

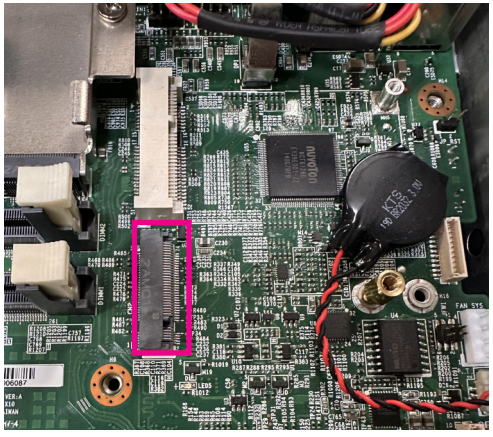
4. Slide the M.2 module onto the mounting plate of the M.2 bracket, and secure it with a screw.



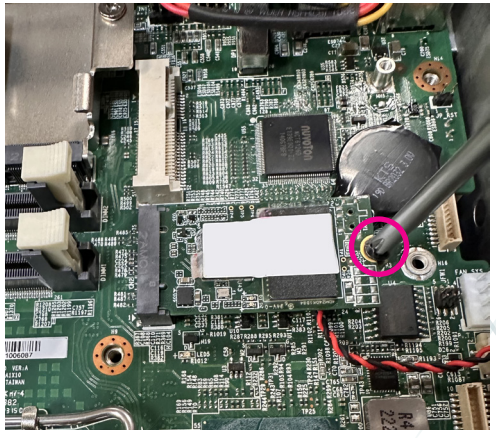
5. Install the M.2 bracket back to its original position. Make sure the connector on the edge of the module is plugged firmly into the connector on the board.

Installing an M.2 Module (Internal)

1. Locate the M.2 slot on the board.

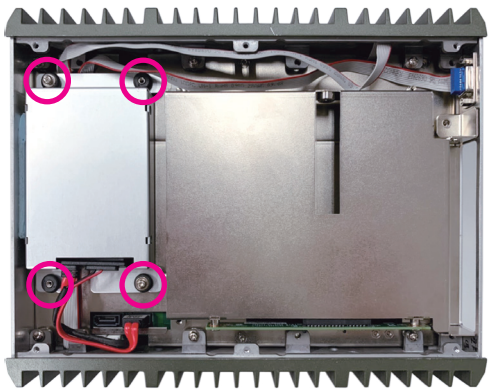


2. Insert the M.2 module into the slot at a 30-degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Push the module down and then secure it with a mounting screw.



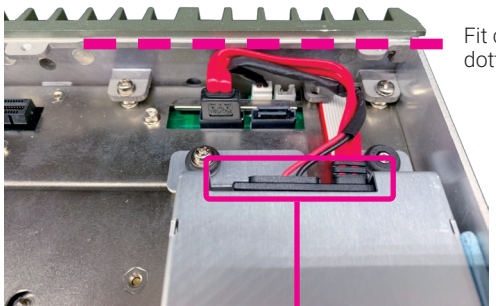
Installing an Internal SATA Storage Drive (NISE 3910E/E16/E2/P2/P2E-A)

1. With the bottom cover of the chassis removed, loosen the screws securing the storage bracket, and lift it up.



2. Place the storage drive into the bracket and secure the drive with screws.

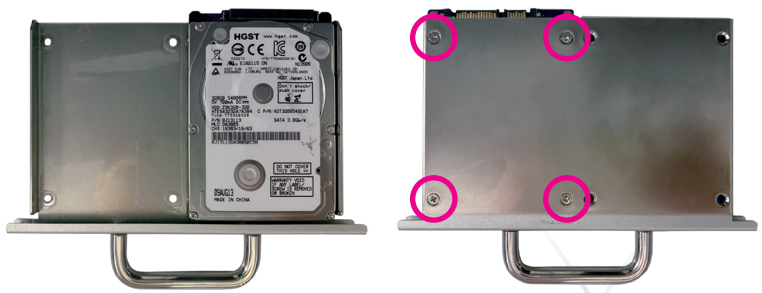
3. Plug the SATA connector into the storage drive and secure the storage bracket back to its original location. If the SATA power and data cables are higher than the chassis, please rearrange the cables so that they are inside the chassis, as shown by the dotted line below.



Installing an Internal SATA Storage Drive (NISE 3910R-A)

1. On the rear panel of NISE 3910R, loosen the screws on the SSD/HDD drive bay, then hold the drive bay handle to pull it out.

2. Insert the storage drive into the drive bay with the SATA data and power connector facing towards the end. Then, while supporting the storage drive, turn the bracket to the other side. From the outside of the storage bracket, secure the drive in place with screws.

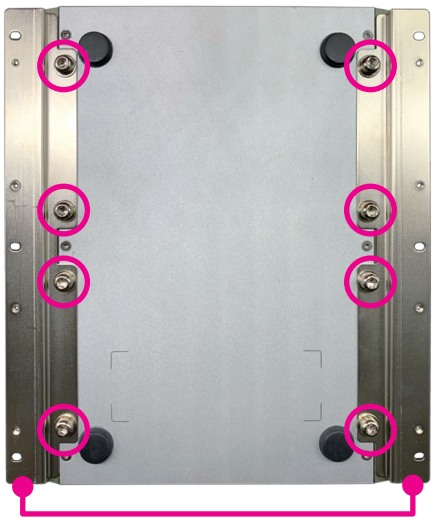


3. Insert the drive bay back in the SSD/HDD slot and tighten the screws to secure it in place.

Wallmount Brackets

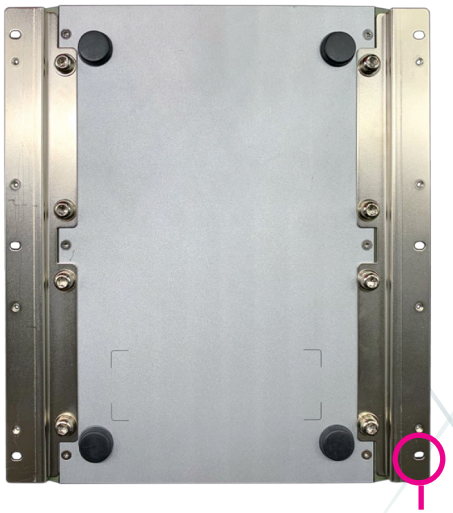
The wallmount brackets provide a convenient and economical way of mounting the system on the wall.

1. The mounting holes are located at the bottom of the system. Secure the brackets on each side of the system using the provided mounting screws (M6*10mm).



Wallmount bracket

2. Secure the system to the wall by fastening screws through the mounting holes of the bracket.



Fasten screws to mount the system to the wall

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NISE 3910-A 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 NexAIoT website at www.nexaiot.com.

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 

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.

Exits the BIOS Setup Utility.

Scrolls forward through the values or options of the highlighted field.

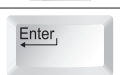
Scrolls backward through the values or options of the highlighted field.

Selects a field.

Displays General Help.

Load previous values.

Load optimized default values.

Saves and exits the Setup program.

Press <Enter> to enter the highlighted sub-menu.

Scroll Bar

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

Submenu

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

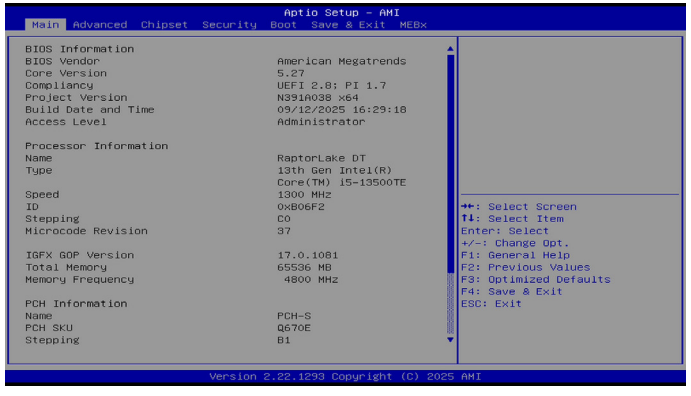
.

BIOS Setup Utility

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

Main

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



System Language
Selects the language of the system.

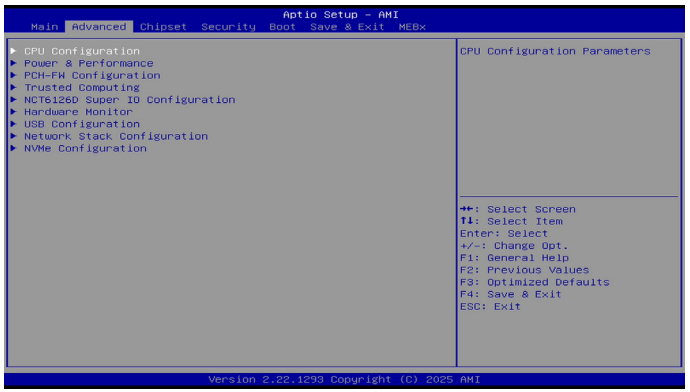
System Date
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

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.

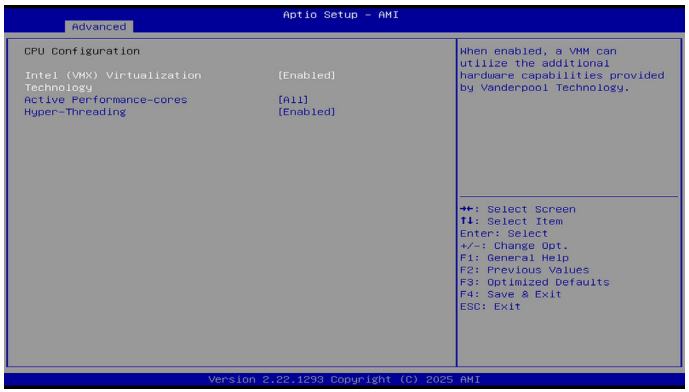
Advanced

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.



CPU Configuration



Intel (VMX) Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool technology.

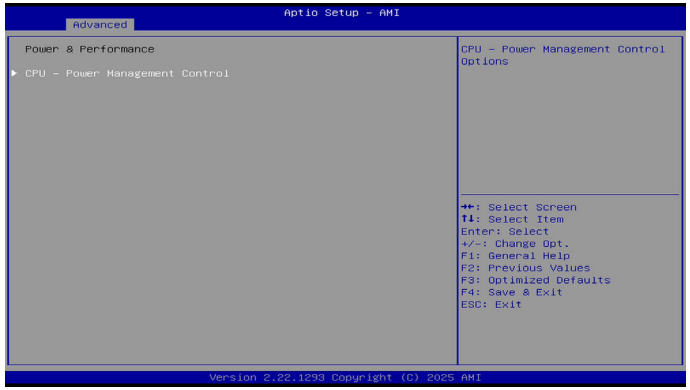
Active Processors Cores

Number of P-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are [0,0] Pcode will enabled all cores.

Hyper-Threading

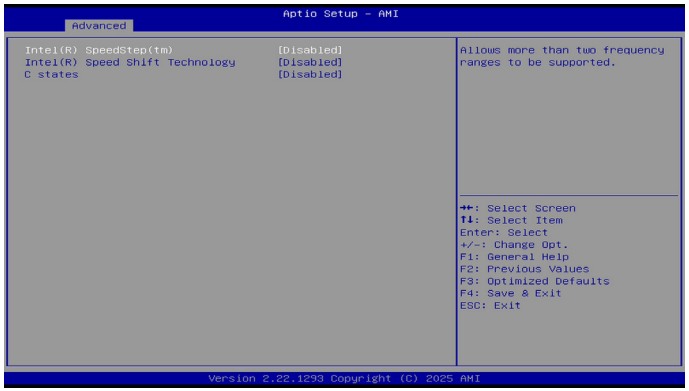
Enable or disable hyper-threading technology.

Power & Performance



CPU - Power Management Control
Press <Enter> to open the submenu.

CPU - Power Management Control

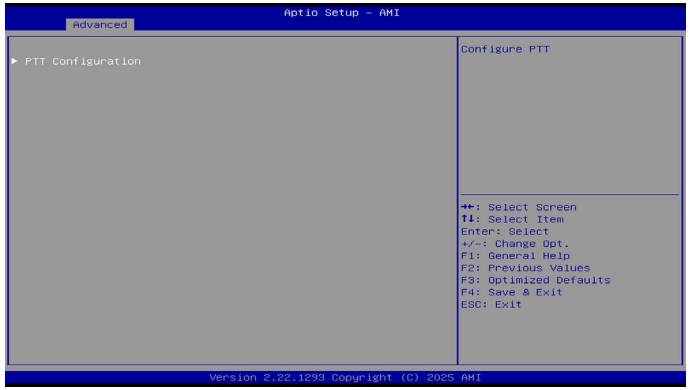


Intel(R) SpeedStep(tm)
Allows more than two frequency ranges to be supported.

Intel(R) Speed Shift Technology
Enable or disable Intel(R) Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow hardware controlled P-states.

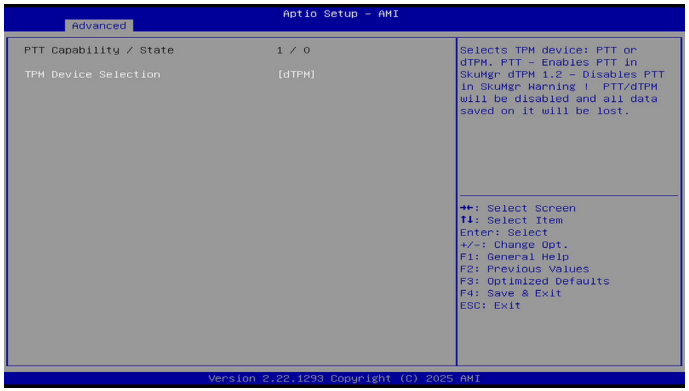
C states
Enable or disable CPU power management. Allows CPU to go to C states when it's not 100% utilized.

PCH-FW Configuration



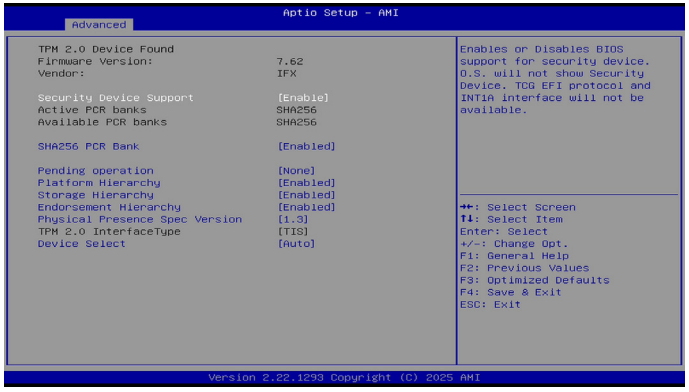
PTT Configuration
Press <Enter> to open the submenu.

PTT Configuration



TPM Device Selection
Selects TPM devices: PTT or dTPM.
PTT - enables PTT in SkuMgr
dTPM 1.2 - disables PTT in SkuMgr Warning!
PTT/dTPM will be disabled and all data saved on it will be lost.

Trusted Computing



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

SHA256 PCR Bank
Enable or disable SHA256 PCR Bank.

Pending operation
Schedule an operation for the security device. Note: Your computer will reboot during restart in order to change states of secure device.

Platform Hierarchy
Enable or disable platform hierarchy.

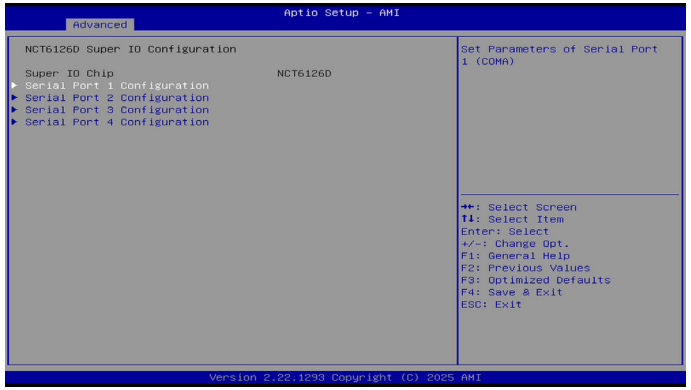
Storage Hierarchy
Enable or disable storage hierarchy.

Endorsement Hierarchy
Enable or disable endorsement hierarchy.

Physical Presence Spec Version
Select to tell O.S to support PPI spec version 1.2 or 1.3. Note some HCK tests might not support 1.3.

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 with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated.

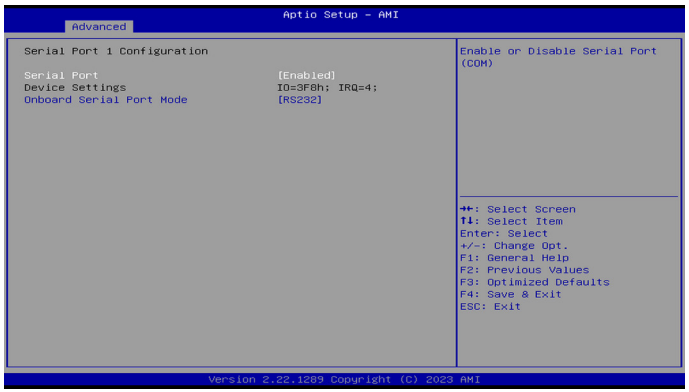
NCT6126D Super IO Configuration



Serial Port 1/2/3/4 Configuration
Press <Enter> to open each submenu.

Serial Port 1/2/3/4 Configuration

This section is used to configure serial port 1/2/3/4.

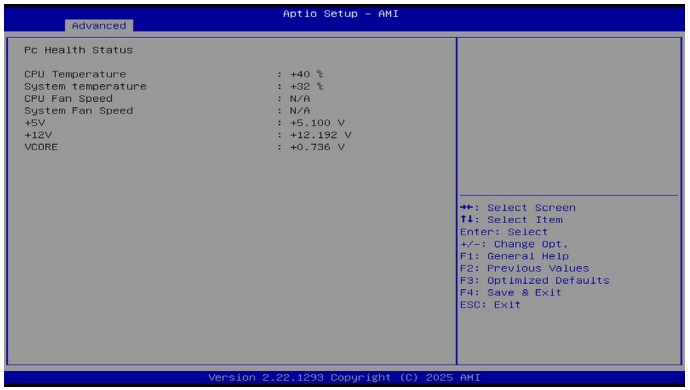


Serial Port 1/2/3/4
Enable or disable the serial port.

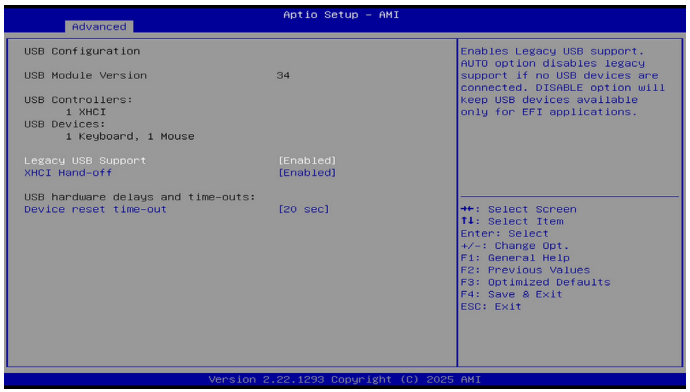
Onboard Serial Port Mode 1/2
Change the serial port mode. Select <RS-232> or <RS-422> or <RS-485> mode.

Hardware Monitor

This section allows monitoring of hardware parameters such as temperature, fan speed, and voltage levels.



USB Configuration



Legacy USB Support

Enabled Enables Legacy USB.

Auto Disables support for Legacy when no USB devices are connected.

Disabled Keeps USB devices available only for EFI applications.

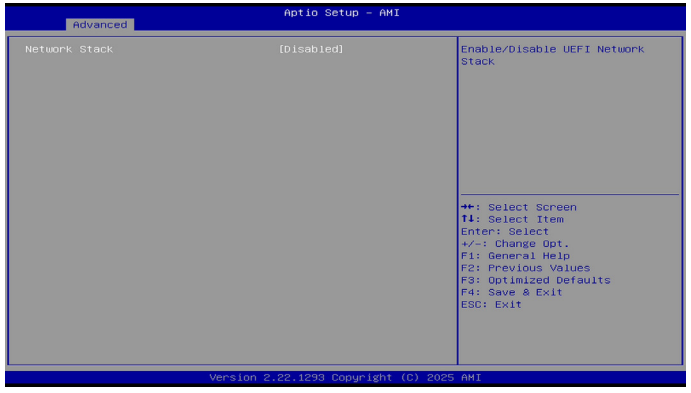
XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.

Device reset time-out

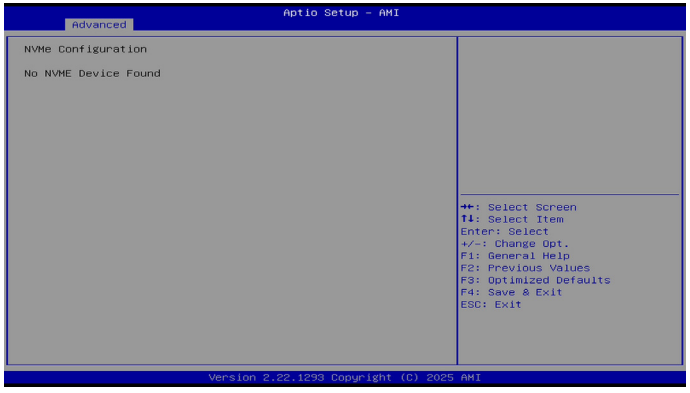
USB mass storage device start unit command time-out.

Network Stack Configuration



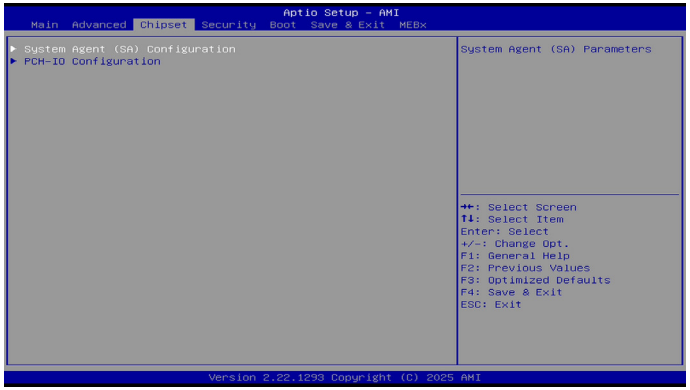
Network Stack
Enable or disable UEFI network stack.

NVMe Configuration



NVMe Configuration
See detailed information about the installed NVMe device, if plugged in.

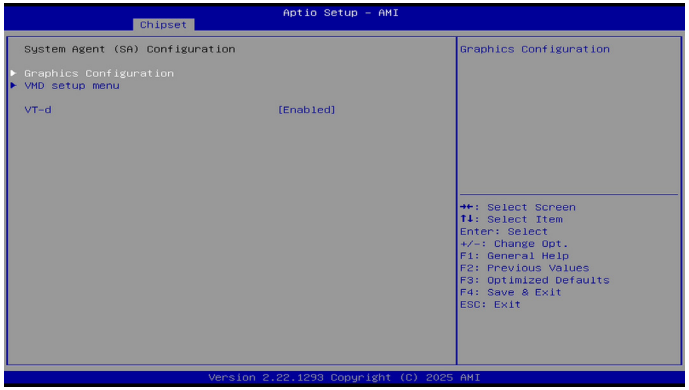
Chipset



System Agent (SA) Configuration
Press <Enter> to open the submenu.

PCH-IO Configuration
Press <Enter> to open the submenu.

System Agent (SA) Configuration

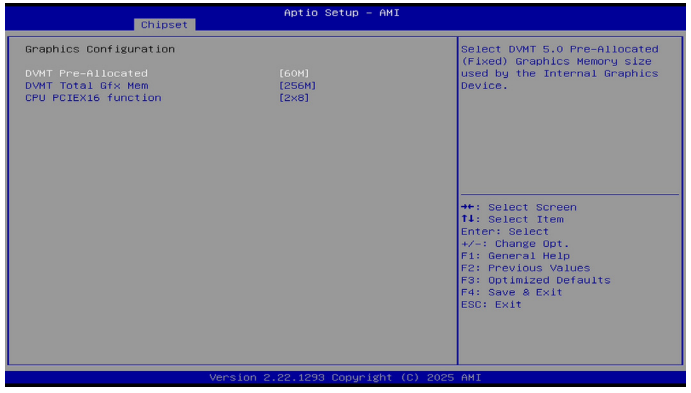


Graphic Configuration
Press <Enter> to open the submenu.

VMD setup menu
Press <Enter> to open the submenu.

VT-d
Enable or disable VT-d capability.

Graphic Configuration

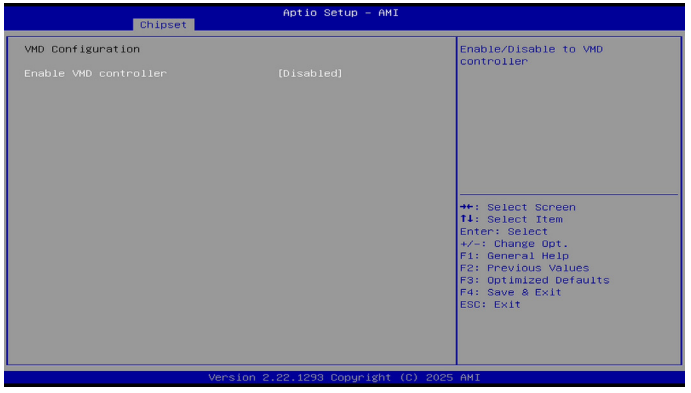


DVMT Pre-Allocated
Select DVMT 5.0 Pre-Allocated (Fixed) graphic memory size used by the internal graphic device.

DVMT Total Gfx Mem
Select DVMT 5.0 total graphic memory size used by the internal graphic device.

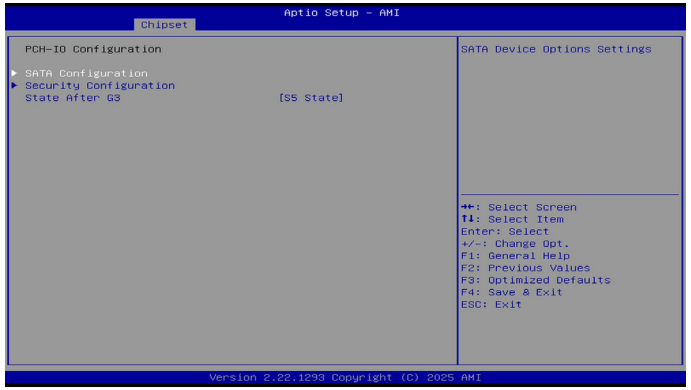
CPU PCIEX16 function
Select PEG 1x16 or 2x8.

VMD Configuration



Enable VMD controller
Enable or disable the VMD controller.

PCH-IO Configuration

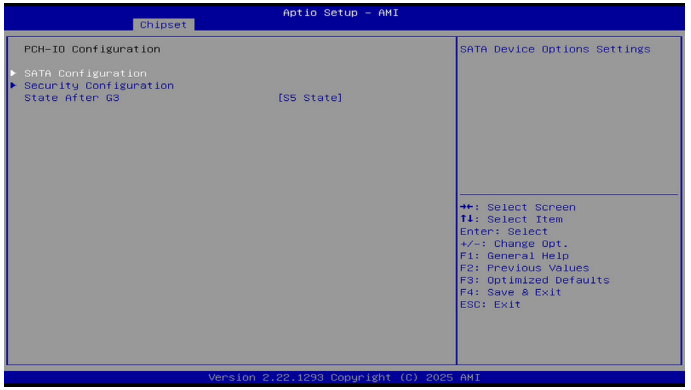


SATA Configuration
Press <Enter> to open the submenu.

Security Configuration
Press <Enter> to open the submenu.

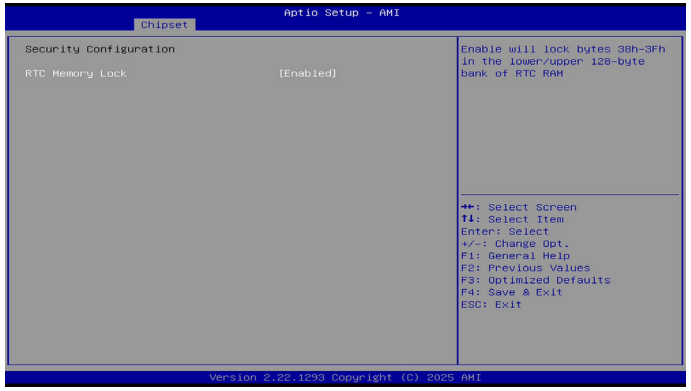
State After G3
Specify what state to go to when power is re-applied after a power failure (G3 state).

SATA Configuration



SATA Controller(s)
Enable or disable SATA device.

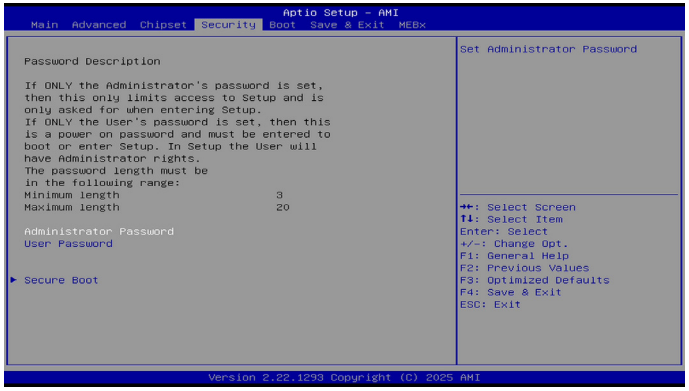
Security Configuration



RTC Memory Lock

Enable will lock bytes 38h-3Fh in the lower/upper 128-byte bank of RTC RAM.

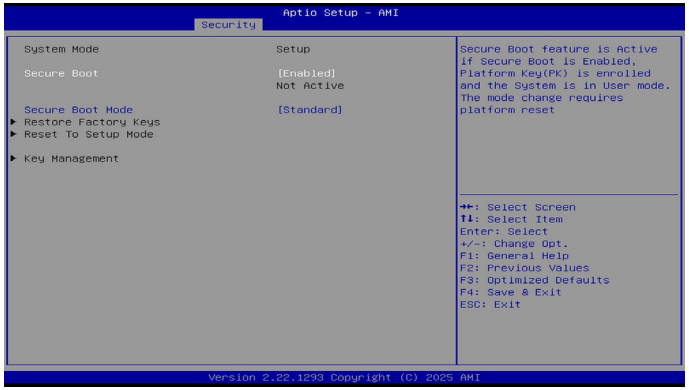
Security



Administrator Password
Set administrator password.

User Password
Set user password.

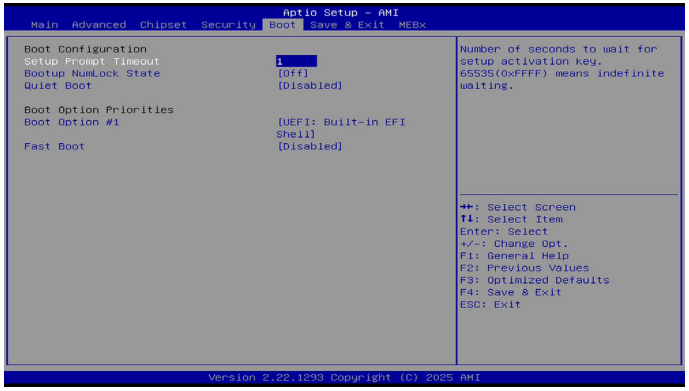
Secure Boot



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

Secure Boot Mode
Secure Boot mode options: Standard or Custom.
In Custom Mode, secure boot policy variable can be configured by a physically present use without full authentication.

Boot



Setup Prompt Timeout
Number of seconds to wait for setup activation key. 65535(0xFFFF) denotes indefinite waiting.

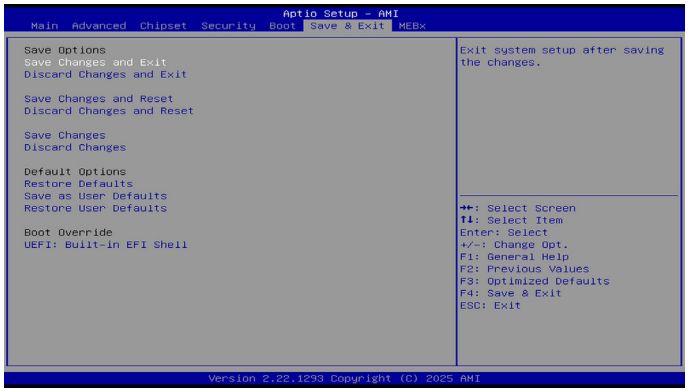
Bootup NumLock State
Select the keyboard NumLock state.

Quiet Boot
Enabled or disabled Quiet Boot option.

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

Fast Boot
Enable or disable boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Save & Exit



Save Changes and Exit
To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

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

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.

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

Discard Changes
To discard the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes to discard all changes made and restore the previously saved settings.

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

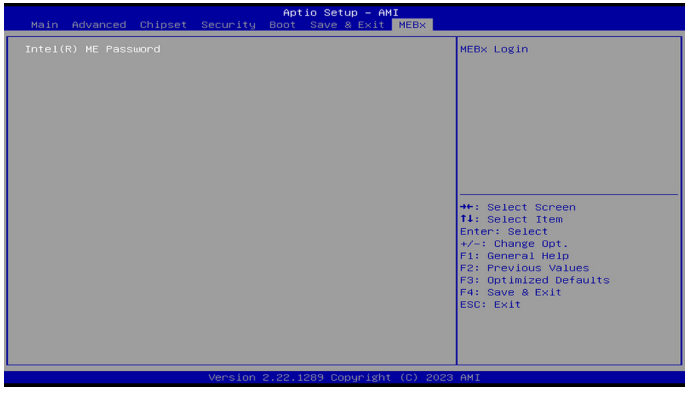
Save as User Defaults
To use the current configurations as user default settings for the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

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

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

MEBx

This MEBx menu is allowed you to view and changed the MEBx congfuration.



Intel(R) ME Password

MEBx Login and configure AMT BIOS features.

APPENDIX: MODEL COMPARISON OVERVIEW

No.	NISE3910	NISE3910-A
1	Mini-PCIe (PCIe x1, USB 3.0, SATA)	Mini-PCIe (PCIe x1, USB 3.0) (No SATA signal)
2	M.2 Key B 2242/3042/3052 (PCIe x2, SATA, USB 3.0)	M.2 Key B 2242/3042/3052 (PCIe x2, USB 3.0) (No SATA signal)
3	Riser Card default settings are adjusted by jumper.	Riser Card default settings are adjusted by BIOS.
4	BIOS: • Hardware Monitor • PCH-IO Configuration • SATA Configuration: SATA connector All SKUs have the same BIOS	BIOS: • Hardware Monitor (No 3.3V) • PCH-IO Configuration (No USB Power Control) • SATA Configuration: SATA connector (The names are slightly different) BIOS PCIe x16 (Default) E/E16/R BIOS PCIe x8 (Default) E2/P2/P2E
5	LAN Status LED Indicators: • 2.5G/1G: Green • 100M: Orange • 10M: Off	LAN Status LED Indicators: • 2.5G: Green • 1G: Orange • 100M/10M: Off
6	Audio Codec Realtek® ALC888	Audio Codec Realtek® ALC897
7	Drivers/User Manual for NISE3910 Series	Drivers/User Manual for NISE3910–A Series
8	Certifications: CE, FCC Class A, UL	Certifications: CE, FCC Class A (No UL)
9	Packaging: All carton, no EPE	Packaging: With EPE
10	The wall mount bracket is included in the accessories box.	The wall mount bracket is pre-installed on the unit.

No.	NISE3910	NISE3910-A
11	LED Status Indicator GPO1: When the GPO is active, the green GPO1 LED indicator remains on	LED Status Indicator GPO1: When system is powered on, the green GPO1 LED indicator remains on
12	LED Port Sequence on the Rear Panel: Left to Right LED1, LAN2, LAN3, LAN4	LED Port Sequence on the Rear Panel: Left to Right LED4, LAN3, LAN2, LAN1
13	iAMT supported on LAN1	iAMT supported on LAN4
14	Power Button LED Indicator: Blue – System is powered on, Red – System is powered off	Power Button LED Indicator: Blue – System is powered on, No light – System is powered off