NEXCOM International Co., Ltd.

IoT Automation Solutions Business Group
Fan-less Computer
NISE 108
User Manual

www.nexcom.com

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PREFACE

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Acknowledgements

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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

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.

NEXCOM Return Merchandise Authorization (RMA)

▪ Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.

▪ Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.

▪ Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.

▪ Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."

▪ Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

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

System Level

▪ Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.

▪ Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.

▪ Replace with 3rd party products if needed.

▪ If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

▪ Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.

▪ If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

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

Cautions

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

Safety Information

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

- Read all instructions carefully.

- Do not place the unit on an unstable surface, cart, or stand.

- Follow all warnings and cautions in this manual.

- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.

- Avoid using the system near water, in direct sunlight, or near a heating device.

- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.

- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION! 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.

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. The equipment is intended to be supplied by DC mains, it will not tolerate voltage supplied below 24Vdc, and without PE connection.

15. 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.

16. Do not place heavy objects on the equipment.

17. 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.

18. 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.

Technical Support and Assistance

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

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

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

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

Conventions Used in this Manual

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

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NISE 108 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Description	Qty
1	4NCPF00309X00	Terminal Blocks 3P Phoenix Contact:1827716	3.81mm Female DIP Green	1
2	4NCPM00302X00	Terminal Blocks 3P Phoenix Contact:1777992	5.08mm Male DIP Green	1
3	50311F0295X00	Flat Head Screw Long Fei:F2x4 Nylok NIGP	F2x4 NIGP Nylok	1
4	50311F0326X00	Flat Head Screw Long Fei:F3x5 Nylok NI+Heat Treatment	F3x5 Nylok NI+Heat Treatment	4
5	50311F0330X00	Round Head Screw Long Fei:P2x3 ISO+Nylon	P2x3 NI Nylok	2
6	50311F0530X00	I Head Screw Long Fei:I3x6 ISO	I3x6 ISO w/Spring+Washer NI	1
7	5060900226X00	Mini PCIe Bracket Chyuan-JYH	29x30x2.1mm SPCC t=1.0mm NI	1
8	5061600107X00	Transistor Washer for VTC 1020 Kang Yang TW-39	A5.46 B3.43 C2.95 D0.81 E1.02 PBT Natural	3
9	6012200052X00	PE Zipper Bag #8	170x240mm, w/China RoHS Symbol	1
10	6012200053X00	PE Zipper Bag #3	100x70mm, w/China RoHS Symbol	2
11	60177A0724X00	NISE 108-J3455 Series Quick Reference Guide VER:A	KRAMER Size: A4	1
12	602DCD1614X00	NISE 108-J3455 DVD Driver VER:1.0	JCL	1

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Ordering Information

The following information below provides ordering information for NISE 108.

NISE 108 (P/N: 10J00010800X0)
Intel® Celeron® processor J3455 quad core, 1.50GHz fanless system

- **24V, 60W AC/DC power adapter w/o power cord (P/N: 7400060032X00)**

Chapter 1: Product Introduction

NISE 108 Overview

Key Features

- Onboard Intel® Celeron® processor J3455 quad core, 1.50GHz

- Dual independent display from DP1 & DP2

- 2 x Intel® I210-IT GbE LAN ports; support WoL, teaming and PXE

- 2 x USB 2.0 & 2 x USB 3.0

- 3 x COM ports (COM3 with RS232/422/485, jumper-free setting)

- Support both 2.5" HDD and M.2

- Support -5~55 degree C operating temperature

- Support 24 VDC input

Hardware Specifications

CPU Support

- Onboard Intel® Celeron® processor J3455 quad core, 1.50GHz

Main Memory

- 1 x DDR3L SO-DIMM socket, support DDR3L1866 8GB RAM max., un-buffered and non-ECC

Display Option

- Dual independent display: DP1 & DP2

I/O Interface - Front

- ATX power on/off switch
- 1 x Power status/1 x HDD access/1x programming LEDs
- 2 x USB 3.0 (900mA per each)
- 2 x USB 2.0 (500mA per each)
- 2 x Intel® I210-IT GbE LAN ports; support WoL,teaming and PXE
- 1 x DB9 for COM3, it supports RS232/422/485 with auto flow control
  – Jumper-free setting on RS232/422/485 by BIOS
- 2 x DB9 for COM1 & COM2, support RS232 only
  – COM1 supports ring function
  – COM2 supports 5V/12V/ring function via jumper setting, default setting is ring.
- 1 x 3-pin DC input, support 24 VDC input
- 1 x Antenna hole for optional Wi-Fi/3.5G antenna
- 1 x 3-pin remote power on/off switch

I/O Interface - Rear

- 1 x Antenna hole for optional Wi-Fi/3.5G antenna

Storage Device

- 1 x M.2 (SATA 2.0)
- 1 x 2.5" HDD (SATA 2.0)

Expansion Slot

- 1 x mini-PCIe socket for optional Wi-Fi/3.5G/4G module (For 3.5G/4G function, mini-PCIe module must have a SIM card holder)

Power Requirements

- Power input: DC input: 24V
- 1 x Optional 24V, 60W power adapter

Dimensions

- 185 mm (W) x 131mm (D) x 54 mm (H) without wall-mount bracket

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature:
  Ambient with air flow: -5°C to 55°C with industrial grade device (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 95% (non-condensing)
- Shock protection:
  – HDD: 20G, half sine, 11ms, IEC60068-2-27
  – CFast: 50G, half sine, 11ms, IEC60068-2-27

- Vibration protection w/ HDD condition:
  - Random: 0.5Grms @ 5~500 Hz, IEC60068-2-64
  - Sinusoidal: 0.5Grms @ 5~500 Hz, IEC60068-2-6
- Vibration protection w/ SSD condition:
  - Random: 2Grms @ 5~500 Hz, IEC60068-2-64
  - Sinusoidal: 2Grms @ 5~500 Hz, IEC60068-2-6

Certifications

- CE
- FCC Class A

OS Support List

- Windows 10 IoT Enterprise, 64-bit
- Linux kernel version 4.1

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Knowing Your NISE 108

Front Panel

LAN1 & LAN2
USB 3.0 **USB 2.0**
DisplayPort2 & DisplayPort1
LED Indicators
Power Switch
24V DC Input **COM3** **COM2** **COM1** **Remote On/Off** **Antenna Hole**

Rear Panel

Antenna Hole
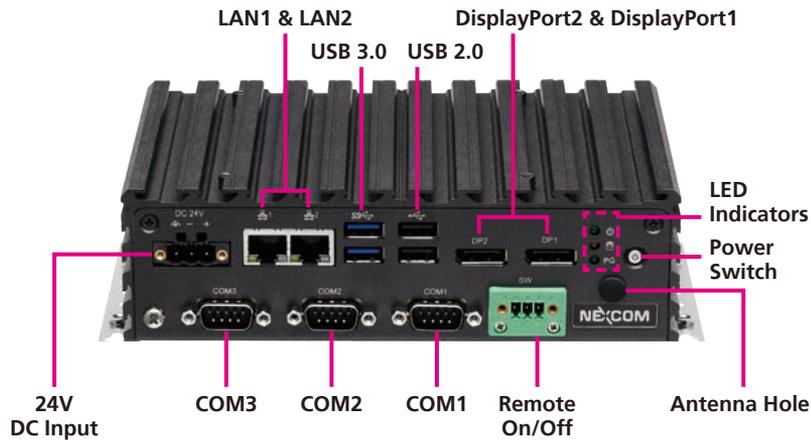
24V DC Input
Used to plug a DC power cord.

LAN1 & LAN2
Used to connect the system to a local area network.

USB 3.0
Used to connect USB 3.0/2.0 devices.

USB 2.0
Used to connect USB 2.0/1.1 devices.

DisplayPort1 & DisplayPort2
Used to connect a DisplayPort interface monitor.

LED Indicators
Two LEDs used to indicate the power status and storage activity of the system. The third LED is user programmable.

Power Switch
Press to power-on or power-off the system.

COM1 to COM3
Three DB9 ports used to connect RS232 compatible devices. COM3 supports RS232/422/485 connection.

Remote On/Off Switch
Used to connect a remote to power on/off the system.

Antenna Hole
The external antenna mounting holes are used to mount and connect optional Wi-Fi antennas.

Mechanical Dimensions
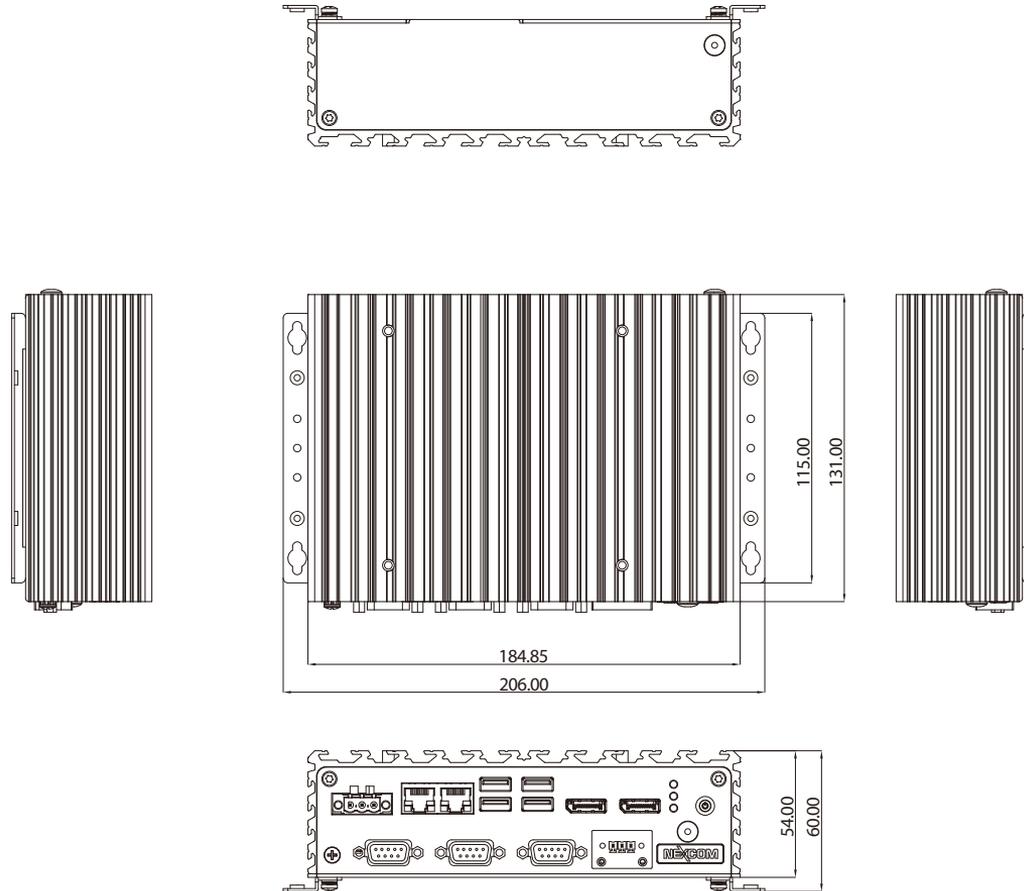
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NISE 108 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.

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Jumper Settings

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

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

Two-Pin Jumpers: Open (Left) and Short (Right)
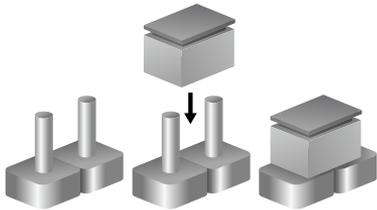
Three-Pin Jumpers: Pins 1 and 2 are Short
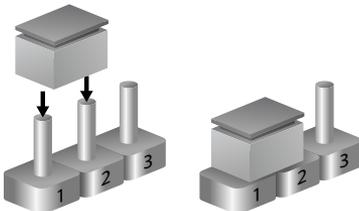
Locations of the Jumpers and Connectors for NISB 108

NISB 108

The following figures are the top and bottom view of the NISB 108 main board which is the main board used in NISE 108. It shows the locations of the jumpers and connectors.

Top View
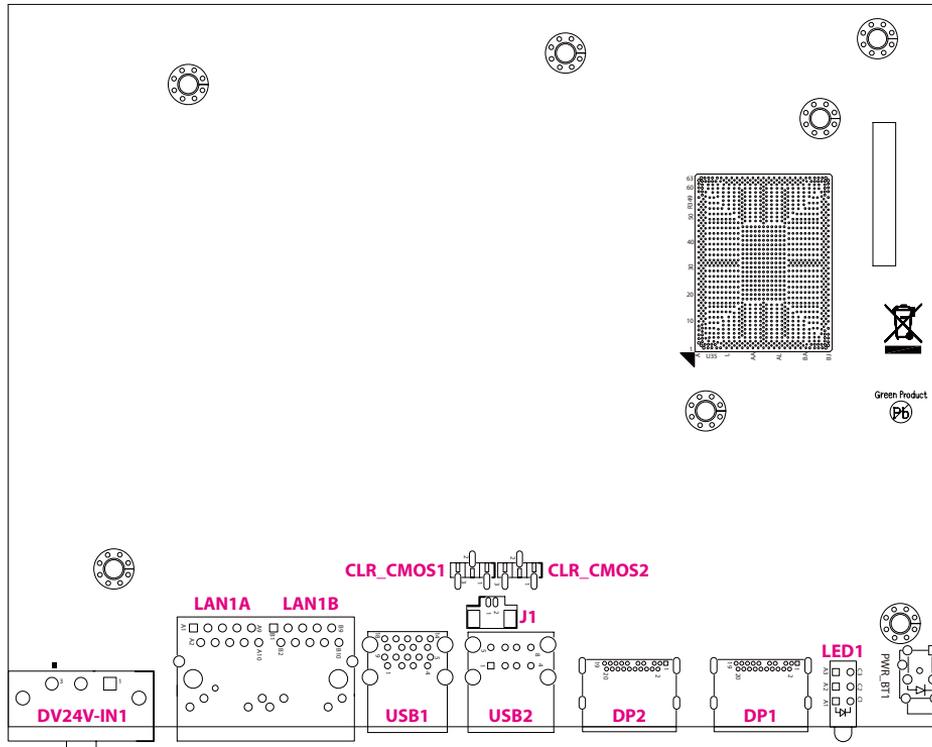
Bottom View
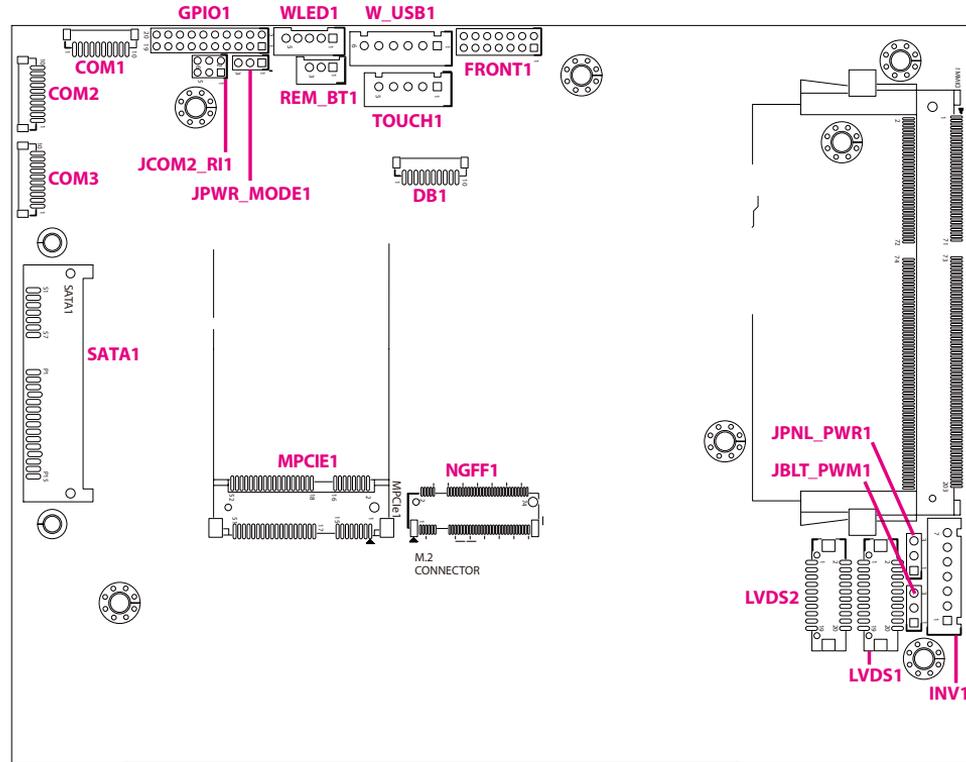
Jumpers

LVDS Panel Power Selection

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JPNL_PWR1

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	+3V3
2-3 On	+5V

Backlight Volume Selection

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JBLT_PWM1

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	+3V3
2-3 On	+5V

Clear CMOS

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: CLR_CMOS1 and CLR_CMOS2

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	Normal
2-3 On	Clear

ATX/AT Mode Selection

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JPWR_MODE1

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	ATX
2-3 On	AT

COM2 Port Power Setting

Connector type: 2x3 6-pin header, 2.0mm pitch
Connector location: JCOM2_RI1

```
2 | ○ ○ ○ | 6
1 | □ ○ ○ | 5
```
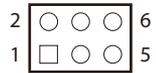
Pin	Settings
1-2 On	+12V
3-4 On	Ring
5-6 On	+5V

Connector Pin Definitions

External I/O Interfaces

LED Indicators

Connector location: LED1
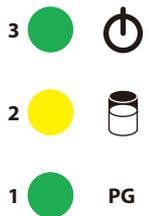
LED	Description
1	GPIO LED (Green, user defined)
2	SATA LED (Yellow)
3	Power LED (Green)

DisplayPorts

Connector type: DisplayPort
Connector location: DP1 and DP2
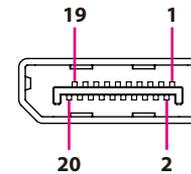
Pin	Definition	Pin	Definition
1	LANE0_P	2	GND
3	LANE0_N	4	LANE1_P
5	GND	6	LANE1_N
7	LANE2_P	8	GND
9	LANE2_N	10	LANE3_P
11	GND	12	LANE3_N
13	CONFIG1	14	CONFIG2
15	AUX_P	16	GND
17	AUX_N	18	HPD
19	DP_RETURN	20	DP_PWR

USB 2.0 Ports

Connector type: Dual USB 2.0 port
Connector location: USB2

5 ——— 9

1 ——— 4
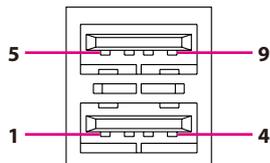
Pin	Definition	Pin	Definition
1	+5V	2	USB_2N_C
3	USB_2P_C	4	GND
5	+5V	6	USB_3N_C
7	USB_3P_C	8	GND

USB 3.0 Ports

Connector type: Dual USB 3.0 port
Connector location: USB1

10 18 ——— 14 13

1 9 ——— 5 4
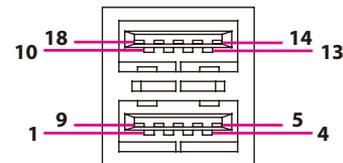
Pin	Definition	Pin	Definition
1	+5V	2	USB_0N_C
3	USB_0P_C	4	GND
5	USB3_RX0_N_C	6	USB3_RX0_P_C
7	GND	8	USB3_TX0_N_C
9	USB3_TX0_P_C	10	+5V
11	USB_1N_C	12	USB_1P_C
13	GND	14	USB3_RX1_N_C
15	USB3_RX1_P_C	16	GND
17	USB3_TX1_N_C	18	USB3_TX1_P_C

LAN1 Port

Connector type: RJ45 port with LEDs
Connector location: LAN1A
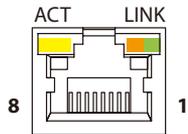
Act	Status
Flashing Yellow	Data activity
Off	No activity

Link	Status
Steady Green	1G network link
Steady Orange	100Mbps network link
Off	10Mbps or no link

Pin	Definition	Pin	Definition
1	MDI_PLUS0	2	MDI_MINUS0
3	MDI_PLUS1	4	MDI_MINUS1
5	MDI_PLUS2	6	MDI_MINUS2
7	MDI_PLUS3	8	MDI_MINUS3

LAN2 Port

Connector type: RJ45 port with LEDs
Connector location: LAN1B
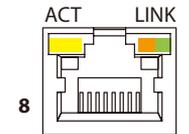
Act	Status
Flashing Yellow	Data activity
Off	No activity

Link	Status
Steady Green	1G network link
Steady Orange	100Mbps network link
Off	10Mbps or no link

Pin	Definition	Pin	Definition
1	MDI_PLUS0	2	MDI_MINUS0
3	MDI_PLUS1	4	MDI_MINUS1
5	MDI_PLUS2	6	MDI_MINUS2
7	MDI_PLUS3	8	MDI_MINUS3

24V DC Power Input

Connector type: Phoenix Contact 1x3 3-pin terminal block
Connector location: DC24V_IN1
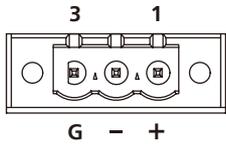
Pin	Definition
1	+24V
2	GND
3	CHASSIS GND

Internal Connectors

Debug Connector

Connector type: 1x10 10-pin header, 1.0mm pitch
Connector location: DB1

LED Connector

Connector type: 1x5 5-pin header, 2.0mm pitch
Connector location: WLED1
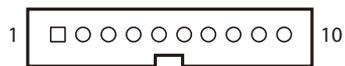
Pin	Definition	Pin	Definition
1	GND	2	LPC_PLTRST#
3	LPC_CLK	4	LPC_LFRAME#
5	LPC_LAD3	6	LPC_LAD2
7	LPC_LAD1	8	LPC_LAD0
9	LPC_SERIRQ	10	+3.3V
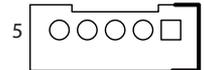
Pin	Definition	Pin	Definition
1	HDD_LED-	2	HDD_LED+
3	GND	4	STBY_LED+
5	POWER_LED+	6	

LVDS Connector

Connector type: 2x10 20-pin header, 1.25mm pitch
Connector location: LVDS1

Pin	Definition	Pin	Definition
1	CH7511_GPIO0	2	CH7511_GPIO1
3	+VCC_LCD	4	LVDSA_LDC0P
5	LVDSA_LDC3P	6	LVDSA_LDC0N
7	LVDSA_LDC3N	8	+VCC_LCD
9	GND	10	LVDSA_LDC1P
11	LVDSA_LL1CP	12	LVDSA_LDC1N
13	LVDSA_LL1CN	14	GND
15	GND	16	+V_INV
17	LVDSA_LDC2P	18	+V_INV
19	LVDSA_LDC2N	20	GND

LVDS Connector

Connector type: 2x10 20-pin header, 1.25mm pitch
Connector location: LVDS2

Pin	Definition	Pin	Definition
1	CH7511_GPIO2	2	CH7511_GPIO3
3	+VCC_LCD	4	LVDSB_LDC4P
5	LVDSB_LDC7P	6	LVDSB_LDC4N
7	LVDSB_LDC7N	8	+VCC_LCD
9	GND	10	LVDSB_LDC5P
11	LVDSB_LL2CP	12	LVDSB_LDC5N
13	LVDSB_LL2CN	14	GND
15	GND	16	+V_INV
17	LVDSB_LDC6P	18	+V_INV
19	LVDSB_LDC6P	20	GND

LVDS Inverter Connector

Connector type: 1x7 7-pin header, 2.5mm pitch
Connector location: INV1

Front Panel Connector

Connector type: 2x7 14-pin header, 2.0mm pitch
Connector location: FRONT1
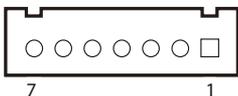
Pin	Definition	Pin	Definition
1	+5V	2	+12V
3	+12V	4	BKCTRL
5	GND	6	GND
7	BKLEN		
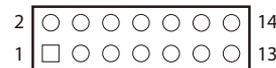
Pin	Definition	Pin	Definition
1	PWR_LED#	2	PWR_LED
3	HDD_LED#	4	HDD_LED
5	MAIN_SMBCLK	6	+3V3
7	MAIN_SMBDATA	8	GND
9	SLP_S3#	10	PS_ON
11	PWR_BTN#	12	GND
13	RST _BTN#	14	GND

Internal USB 2.0 Connector

Connector type: 1x6 6-pin header, 2.5mm pitch
Connector location: W_USB1
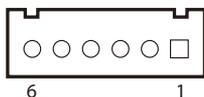
Pin	Definition	Pin	Definition
1	+5V	2	USB_4N_C
3	USB_4P_C	4	
5		6	GND

Touch Screen Connector

Connector type: 1x5 5-pin header, 2.5mm pitch
Connector location: TOUCH1
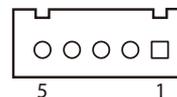
Pin	Definition	Pin	Definition
1	UR	2	LR
3	Sense	4	UL
5	LL		

Remote On/Off Connector

Connector type: 1x3 3-pin header, 2.0mm pitch
Connector location: REM_BT1

Pin	Definition
1	REMOTE_S3
2	GND
3	REMOTE_ PWRBT#

GPIO Connector

Connector type: 2x10 20-pin header, 2.0mm pitch
Connector location: GPIO1
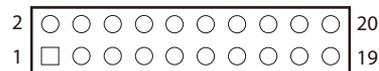
Pin	Definition	Pin	Definition
1	+5V	2	+5V
3	GPO_0	4	GPI_0
5	GPO_1	6	GPI_1
7	GPO_2	8	GPI_2
9	GPO_3	10	GPI_3
11	GPO_4	12	GPI_4
13	GPO_5	14	GPI_5
15	GPO_6	16	GPI_6
17	GPO_7	18	GPI_7
19	GND	20	GND

COM3 Connector (RS232/422/485)

Connector type: 1x10 10-pin header
Connector location: COM3

1 □ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10

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

COM1 and COM2 Connectors (RS232)

Connector type: 1x10 10-pin header
Connector location: COM1 and COM2

1 □ ○ ○ ○ ○ ○ ○ ○ ○ ○ 10

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

SATA Connector (7-pin and 15-pin)

Connector type: Standard Serial ATA 7P and 15P
Connector location: SATA1

Battery Connector

Connector type: 1x2 2-pin header, 1.25mm pitch
Connector location: J1
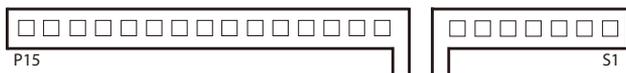
Pin	Definition	Pin	Definition
S1	GND	S2	SATA1_TXP
S3	SATA1_TXN	S4	GND
S5	SATA1_RXN	S6	SATA1_RXP
S7	GND		
P1	VCC3	P2	VCC3
P3	VCC3	P4	GND
P5	GND	P6	GND
P7	VCC5	P8	VCC5
P9	VCC5	P10	GND
P11	VCC5	P12	GND
P13	VCC12	P14	VCC12
P15	VCC12		

Pin	Definition
1	GND
2	+3V

Mini-PCIe Connector

Connector location: MPCIE1
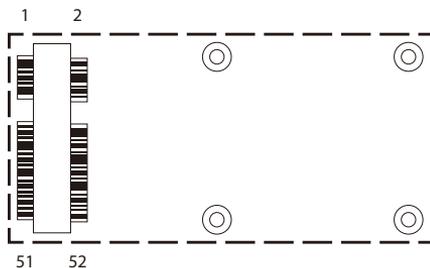
Pin	Definition	Pin	Definition
1	WAKE#	2	3.3VSB_3
3	COEX1	4	GND12
5	COEX2	6	1.5V_3
7	CLKREQ#	8	UIM_PWR
9	GND6	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND5	16	UIM_VPP
17	REV10/UIM_C8	18	GND11
19	REV9/UIM_C4	20	W_DISABLE#
21	GND4	22	PERST#
23	PERn0	24	3.3VSB_1
25	PERp0	26	GND10

Pin	Definition	Pin	Definition
27	GND3	28	1.5V_2
29	GND2	30	SMB_CLK
31	PETn0	32	SMB_DAT
33	PETp0	34	GND9
35	GND0	36	USB_D-
37	GND13	38	USB_D+
39	3.3VSB_4	40	GND8
41	3.3VSB_5	42	LED_WWAN#
43	GND14	44	LED_WLAN#
45	REV4	46	LED_WPAN#
47	REV3	48	1.5V_1
49	REV2	50	GND7
51	REV1	52	3.3VSB_2

M.2 Connector (B-Key)

Connector location: NGFF1
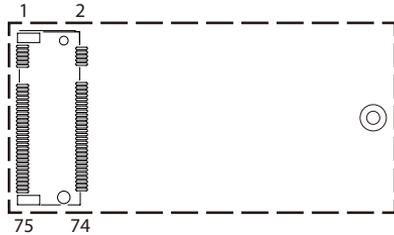
Pin	Definition	Pin	Definition
1	CONFIG_3	2	3.3V_1
3	GND1	4	3.3V_2
5	GND2	6	POWER_OFF#
7	USB_D+	8	W_DISABLE1#
9	USB_D-	10	GPIO_9/DAS/DSS#
11	REFCLK-	12	
17		18	
19		20	GPIO_5
21	CONFIG_0	22	GPIO_6
23	GPIO_11	24	GPIO_7
25	DPR	26	GPIO_10
27	GND3	28	GPIO_8
29	PERn1/USB3.0-Rx-/SSIC-RxN	30	UIM-RESET
31	PERp1/USB3.0-Rx+/SSIC-RxP	32	UIM-CLK
33	GND4	34	UIM-DATA
35	PETn1/USB3.0-Tx-/SSIC-TxN	36	UIM-PWR
37	PETn1/USB3.0-Tx+/SSIC-TxP	38	DEVSLP
39	GND5	40	GPIO_0

Pin	Definition	Pin	Definition
41	PERn0/SATA-B+	42	GPIO_1
43	PERp0/SATA-B-	44	GPIO_2
45	GND6	46	GPIO_3
47	PERn0/SATA-A-	48	GPIO_4
49	PERp0/SATA-A+	50	PERST#
51	GND7	52	CLKREQ#
53	REFCLKn	54	PEWAKE#
55	REFCLKp	56	NC_1
57	GND8	58	NC_2
59	ANTC TL0	60	COEX3
61	ANTC TL1	62	COEX2
63	ANTC TL2	64	COEX1
65	ANTC TL3	66	SIM_DETECT
67	RESET#	68	SUSCLK (32KhZ)
69	CONFIG_1	70	3.3V_3
71	GND9	72	3.3V_4
73	GND10	74	3.3V_5
75	CONFIG_2		

CHAPTER 3: SYSTEM SETUP

Removing the Chassis Bottom Cover

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

1. Locate the six mounting screws from the bottom cover.

2. Remove the six mounting screws from the bottom cover.
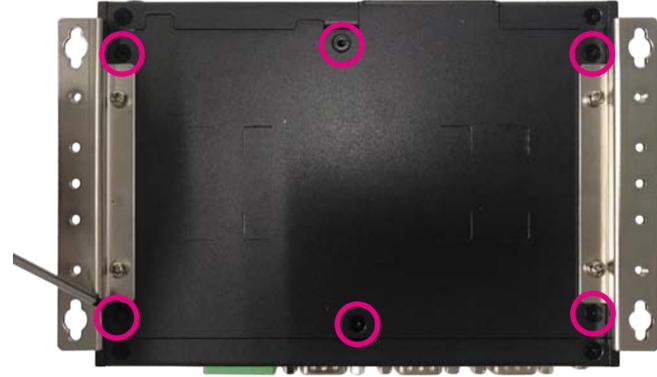
3. With the screws removed, lift up the cover and remove it from the chassis.

Installing a SO-DIMM Memory Module

Remove the bottom cover before installing a SO-DIMM.

1. Locate the SO-DIMM socket.

SO-DIMM Socket

2. Insert the module into the socket at an approximately 30-degree angle. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

Memory Module

3. Push the module down until the clips on both sides of the socket lock into position.

Installing a Wireless LAN Module (Half-size)

1. Locate the mini-PCIe slot on the board.
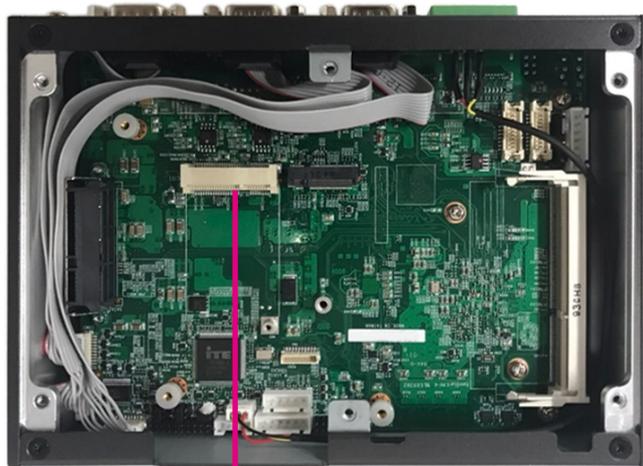
Mini-PCIe Slot

2. Install the mini-PCIe bracket to the mini-PCIe module.
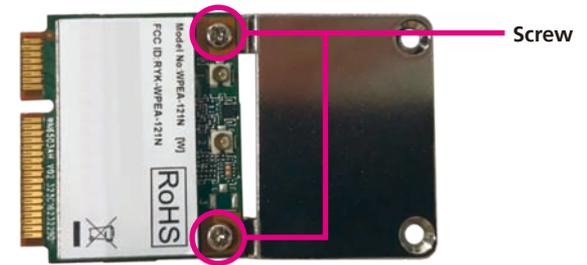
Screw

3. Insert the WLAN module into the mini-PCIe slot at 45-degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.

WLAN Module

4. Push the module down and secure it with a screw.

Installing an M.2 Storage Module (2242)

1. Locate the M.2 B-key slot on the board.

M.2 B-Key Slot

2. Make sure the gold-plated six-pin connector on the edge of the module is on the left, while the five-pin connector is on the right.

Six-Pin ———— ———— **Five-Pin**
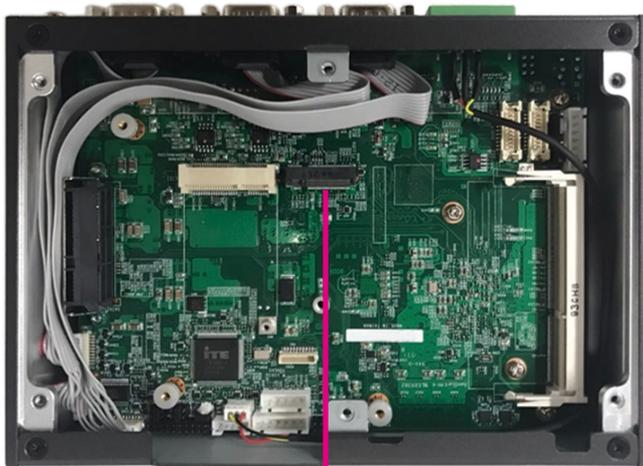
3. Insert the M.2 module into the M.2 slot at 45-degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.

M.2 Module

4. Push the module down and secure it with a screw.

Screw

Installing a SATA Storage Drive

Remove the bottom cover before installing a SATA drive.

1. Locate the internal storage bracket and remove all the three screws on the storage bracket.
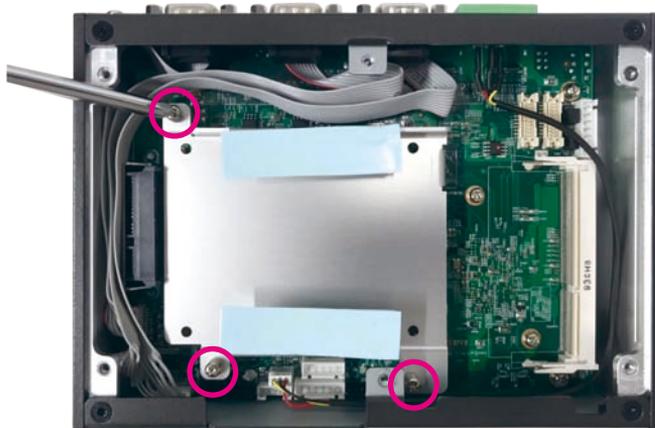
2. Place the 2.5" storage drive into the internal storage bracket then use the screws to secure the 2.5" storage drive in place.
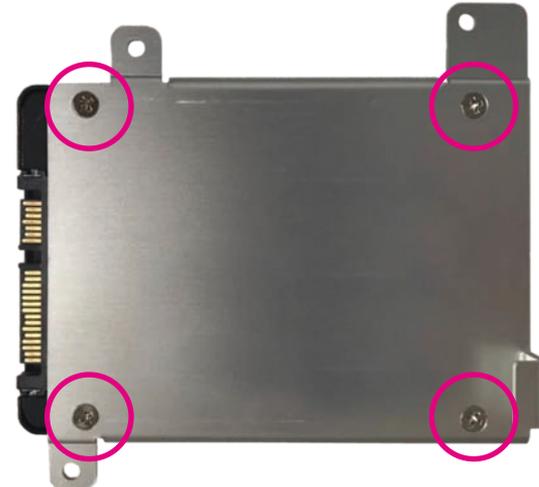
3. Place the internal storage bracket back to its original position. Before securing the bracket with screws, make sure the washers are aligned on top of the mounting holes.

4. Secure the internal storage bracket with screws.

Wall Mounting Instructions

To mount the system on to a wall or some other surface using the two mounting brackets, please follow the steps below.

1. Turn the system over. Align the two retention screw holes in each bracket with the retention screw holes on the sides of the bottom surface.

2. Secure the brackets to the system by inserting two retention screws into each bracket.

3. Drill holes in the intended installation surface.

4. Align the mounting holes on the sides of the mounting brackets with the predrilled holes on the mounting surface.

5. Insert four retention screws, two in each bracket, to secure the system to the wall.
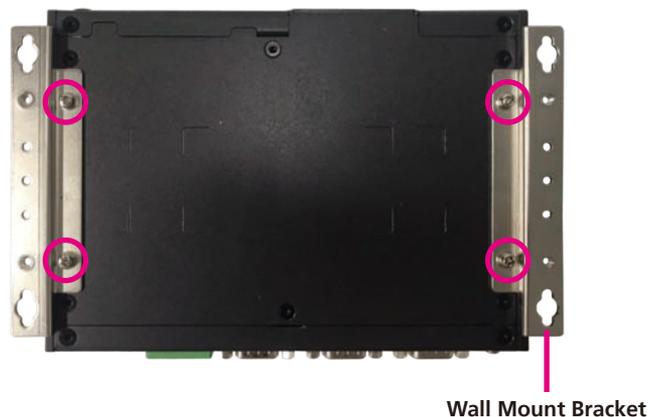
Wall Mount Bracket

Specification of the wall mount screw:
Round Head Screw Long Fei:P6#32Tx 1/4/SW7*0.8 w/Spring+Flat Washer

Fasten screws to mount the system to the wall
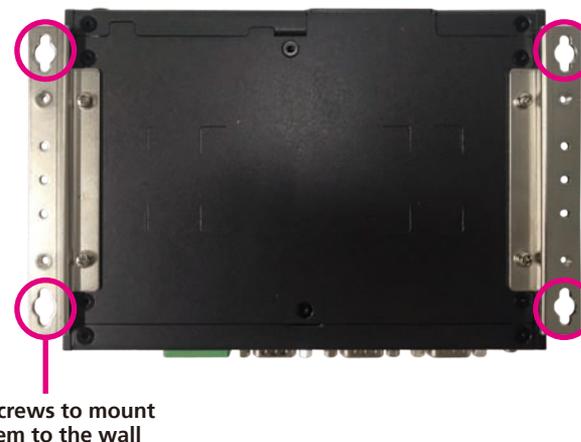
CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NISE 108. 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 2005 to 2099.

System Time

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

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
   Main     Advanced    Chipset    Security      Boot      Save & Exit

   BIOS Information                                        Set the Date. Use Tab to
   BIOS Vendor              American Megatrends            switch between Date elements.
   Core Version             5.12                           Default Ranges:
   Compliancy               UEFI 2.5; PI 1.4               Year: 2005-2099
   Project Version          N108A008 x64                   Months: 1-12
   Build Date and Time      08/30/2019 13:34:03            Days: dependent on month
   Access Level             Administrator

   Platform firmware Information
   BXT SOC                  F1
   TXE FW                   3.0.13.1144
   GOP                      10.0.1036

   Memory Information                                      →←: Select Screen
   Total Memory             8192 MB                        ↑↓: Select Item
   Memory Speed             1866 MHz                        Enter: Select
                                                           +/-: Change Opt.
                                                           F1: General Help
   System Date              [Fri 11/29/2019]               F2: Previous Values
   System Time              [16:14:43]                     F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

            Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

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 Utility - Copyright (C) 2019 American Megatrends, Inc.
    Main      Advanced      Chipset      Security      Boot      Save & Exit

  ► ACPI Settings                                      System ACPI Parameters.
  ► IT8786E Super IO Configuration
  ► Hardware Monitor
  ► CPU Configuration
  ► Network Stack Configuration
  ► NVMe Configuration
  ► Trusted Computing
  ► USB 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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```

ACPI Settings

This section is used to configure ACPI settings.

```
                Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
    Advanced

  ACPI Settings                                        Enables or Disables System
                                                       ability to Hibernate (OS/S4
  Enable Hibernation              [Enabled]            Sleep State). This option may
  ACPI Sleep State                [S3 (Suspend to RAM)] be not effective with some OS.



                                                       →←: 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 Hibernation
Enables or disables system ability to hibernate (OS/S4 Sleep State). This option may not be effective with some OS.

ACPI Sleep State
Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled and S3 (Suspend to RAM).

IT8786E Super IO Configuration

This section is used to configure the I/O functions supported by the onboard Super I/O chip.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  IT8786E Super IO Configuration                    Set Parameters of Serial Port
                                                    1 (COMA)
  Super IO Chip                    IT8786E
▶ Serial Port 1 Configuration
▶ Serial Port 2 Configuration
▶ Serial Port 3 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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```

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

Serial Port 1 Configuration

This section is used to configure serial port 1.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

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



                                                    →←: 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
Enables or disables the serial port.

Serial Port 2 Configuration

This section is used to configure serial port 2.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  Serial Port 2 Configuration                         Enable or Disable Serial Port
                                                      (COM)
  Serial Port                    [Enabled]
  Device Settings                IO=2F8h; IRQ=5;



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


       Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

Serial Port
Enables or disables the serial port.

Serial Port 3 Configuration

This section is used to configure serial port 3.

```
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  Advanced

  Serial Port 3 Configuration                         Enable or Disable Serial Port
                                                      (COM)
  Serial Port                    [Enabled]
  Device Settings                IO=3E8h; IRQ=11;
  Onboard Serial Port Mode       [RS232]
  Terminal resistor              [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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```

Serial Port
Enables or disables the serial port.

Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422 or RS485.

Terminal Resistor
Enables or disables the terminal resistor.

Hardware Monitor

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

```
             Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
   Advanced

   Pc Health Status

   CPU temperature(DTS)          : +29 °c
   System temperature            : +29 °c
   VCore                         : +0.828 V
   VCC3                          : +3.366 V
   VCC12                         : +12.096 V
   VCC5                          : +4.980 V


                                                        →←: 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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```

CPU temperature(DTS)
Detects and displays the current CPU temperature.

System temperature
Detects and displays the current system temperature.

VCore to VCC3
Detects and displays the output voltages.

CPU Configuration

This section is used to configure the CPU.

```
             Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
   Advanced

   CPU Configuration                                    Socket specific CPU Information

►  Socket 0 CPU Information

   Speed                         1500 MHz
   64-bit                        Supported

►  CPU Power Management
   Active Processor Cores        [Disabled]
   Intel Virtualization Technology [Disabled]
   VT-d                          [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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```

Active Processor Cores
Select the number of cores to enable in each processor package.

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

VT-d
Enables or disables VT-d function on MCH.

Socket 0 CPU Information

Display information on the CPU installed on socket 0.

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  Socket 0 CPU Information

  Intel(R) Celeron(R) CPU J3455 @ 1.50GHz
  CPU Signature              506CA
  Microcode Patch            1A
  Max CPU Speed              1500 MHz
  Min CPU Speed              800 MHz
  Processor Cores            4
  Intel HT Technology        Not Supported
  Intel VT-x Technology      Supported

  L1 Data Cache              24 kB x 4
  L1 Code Cache              32 kB x 4            →←: Select Screen
  L2 Cache                   1024 kB x 2         ↑↓: Select Item
  L3 Cache                   Not Present         Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit


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```

CPU Power Management

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  CPU Power Management Configuration            Enable/Disable Intel SpeedStep
  EIST                          [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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```

EIST
Enables or disables Intel® SpeedStep.

Network Stack Configuration

This section is used to configure the network stack.

```
        Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
 Advanced

 Network Stack                  [Disabled]            Enable/Disable UEFI Network
                                                      Stack






                                                      →←: 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
Enables or disables UEFI network stack.

NVMe Configuration

This section is used to display information on the NVMe devices installed.

```
        Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
 Advanced

 NVMe controller and Drive information

 No NVME Device Found






                                                      →←: 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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```

Trusted Computing

This section is used to configure Trusted Platform Module (TPM) settings.

```
        Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
    Advanced

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




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


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```

Security Device Support

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

USB Configuration

This section is used to configure the USB.

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
                    Advanced

        USB Configuration                                  This is a workaround for OSes
                                                           without XHCI hand-off support.
        USB Module Version            17                   The XHCI ownership change
                                                           should be claimed by the XHCI
                                                           driver.
        USB Controllers:
            1 XHCI
        USB Devices:
            1 Keyboard, 2 Mice

        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.
                                                           F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit



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```

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
Enables or disables 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.

Chipset

This section is used to configure the system based on the specific features of the chipset.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Main      Advanced     Chipset     Security      Boot      Save & Exit

 ► South Bridge
 ► South Cluster 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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```

⚠️ Setting incorrect field values may cause the system to malfunction.

South Bridge

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
      Chipset

 SMBus Support                    [Enabled]           Enable/Disable SMBus Support


                                              →←: 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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```

SMBus Support
Enables or disables SMBus support.

South Cluster Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	
► **HD-Audio Configuration** ► **SATA Drives** ► **USB Configuration** ► **Miscellaneous Configuration**	HD-Audio Configuration Settings →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.	

HD-Audio Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	
HD-Audio Configuration **HD-Audio Support** [Enable]	Enable/Disable HD-Audio Support →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.	

HD-Audio Support
Enables or disables HD Audio support.

SATA Drives

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	

SATA Drives		Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).
Chipset-SATA Controller Configuration		
Chipset SATA	[Enable]	
SATA Port 0	2.5" SATA SSD (64.0GB)	
Port 0	[Enabled]	
SATA Port 1	M.2 (S42) 3ME4 (32.0GB)	
Port 1	[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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Chipset SATA
Enables or disables the SATA controller chipset. The SATA controller chipset supports the 2 black internal SATA ports (up to 3Gb/s supported per port).

Port 0
Enables or disables SATA port 0.

Port 1
Enables or disables SATA port 1.

USB Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	

xHCI Mode	[Enable]	Once disabled, XHCI controller would be function disabled, none of the USB devices are detectable and usable during boot up and in OS. Do not disable it unless for debug purposes.
		→←: 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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xHCI Mode
Enables or disables XHCI mode. Once disabled, XHCI controller function will be disabled and all the USB devices will not be detectable and usable during boot up and in OS. Please do not disable it unless for debugging purposes.

Miscellaneous Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	

Miscellaneous Configuration		Enable or Disable the High
High Precision Timer	[Enable]	Precision Event Timer
State After G3	[S0 State]	
USB0/1 Power State in S5	[ON]	
USB2/3 Power State in S5	[ON]	
USB4 Power State in S5	[ON]	
		→←: 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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High Precision Timer
Enables or disables high precision event timer.

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

USB Power State in S5
Configures the USB power state in S5 for USB0/1, USB2/3 and USB4.

Security

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.					
Main	**Advanced**	**Chipset**	**Security**	**Boot**	**Save & Exit**

Password Description	Set Setup Administrator Password
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User Will have Administrator rights. The password length must be in the following range:	
Minimum length 3	
Maximum length 20	
Setup Administrator Password	→←: Select Screen
User Password	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit

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

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

Boot

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.					
Main	Advanced	Chipset	Security	**Boot**	Save & Exit

```
Boot Configuration                                          Select the keyboard NumLock
Bootup NumLock State        [On]                            state
Quiet Boot                  [Disabled]

Boot Option Priorities
Boot Option #1              [Windows Boot Manage. . .]
Boot Option #2              [Windows Boot Manage. . .]
Boot Option #3              [UEFI: Built-in EFI      . . .]
Fast Boot                   [Disable]




                                                           →←: 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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```

Bootup NumLock State

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

Quiet Boot

Enabled	Displays OEM logo instead of the POST messages.
Disabled	Displays normal POST messages.

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

Enables or disables 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 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 reboot the system 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.

APPENDIX A: POWER CONSUMPTION

Power Consumption Management

Purpose

The purpose of the power consumption test is to verify the power dissipation of the system, and the loading of the power supply.

Test Equipment / Software

1. DUT: NISE 108-J3455
2. CPU: Intel® Celeron® Processor J3455, quad core, 2.3 GHz
3. Memory: Innodisk 8GB DDR3L SO-DIMM
4. HDD: Innodisk 2.5"SATA SSD M3E4 1TB
5. M.2: Innodisk 128GB 3ME4 M.2
6. Wi-Fi: SPARKLAN WPEQ- 261ACNI
7. Power Supply: DC Power Supply 62006P-100-25

Test Procedure

1. Power up the DUT, boot into Windows 10 x64.
2. Enter standby mode (SSD power down).
3. Measure the power consumption and record it.
4. Run burn-in test program and apply 100% full loading.
5. Measure the power consumption and record it.

Test Result

Power Consumption					
Model	Voltage	Max Load Current(A)	Max Load Watt (W)	Standby Current(A)	Standby Watt (W)
NISE 108-J3455	28.8V	1.2A	34.6	0.08A	2.4
	19.2V	1.8A	34.6	0.11A	2.2
	24V	1.4A	33.6	0.1A	2.4

APPENDIX B: GPI/O PROGRAMMING GUIDE

GPI/O (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPI/O pins in NISE 108. The pin definition is shown in the following table:

Pin	GPI/O Mode	PowerOn Default	Address	Pin	GPI/O Mode	Address
1	VCC	-	-	2	GND	-
3	GPO0	Low	A04h (Bit6)	4	GPI0	A06h (Bit0)
5	GPO1	Low	A04h (Bit7)	6	GPI1	A06h (Bit1)
7	GPO2	Low	A05h (Bit0)	8	GPI2	A06h (Bit2)
9	GPO3	Low	A05h (Bit1)	10	GPI3	A06h (Bit3)
11	GPO4	Low	A07h (Bit4)	12	GPI4	A06h (Bit4)
13	GPO5	Low	A07h (Bit5)	14	GPI5	A06h (Bit5)
15	GPO6	Low	A07h (Bit6)	16	GPI6	A06h (Bit6)
17	GPO7	Low	A07h (Bit7)	18	GPI7	A06h (Bit7)
19	GND	-	-	20	GND	-

The bit is Set/Clear indicated output High/Low.

Appendix C: Led Programming Guide

LEDs are provided for custom system design. This appendix provides definitions and its default setting for the LEDs in NISE 108.
The LED definition is shown in the following table:

Pin	PowerOn Default	Address
LED1-C3	High	A03h (Bit0)

The bit is Set/Clear indicated output High/Low.