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Manual

Nexcom

NDiS V1100

Fanless Embedded Box PC Powered by 11th Gen Intel® Core™ Processor

NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Digital Signage Platform
NDiS V1100
User Manual

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PREFACE

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Acknowledgements

NDiS V1100 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class 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.

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.

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Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

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

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

5. Keep this equipment away from humidity.

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

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

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

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

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

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

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

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

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

15. Do not place heavy objects on the equipment.

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

17. The unit is intended only for use in a RESTRICTED ACCESS AREA for Standard 60950-1 used only.

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

    CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

19. The instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor (for example, by means of a power cord connected to a socket-outlet with earthing connection).

20. This product is intended to be supplied by a Listed (Certificate) power adapter, rated 12Vdc minimum, 10A minimum Tma 45 degree C minimum and altitude 2000m, if further assistance is needed, please contact NEXCOM International Co., Ltd. further information.

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 NDiS V1100 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	5060200638X00	Thermal Pad	Thermal Pad For Neu-X300-Q370-F65 Ver:A S.W	1
2	7400096008X00	Power Adapter	Power Adapter FSP:FSP096-AHAN3(9NA0961432)	1

Ordering Information

The following below provides ordering information for NDiS V1100.

- **NDiS V1100-i3 (P/N: 10W00110000X0)**
  11th Gen Intel® Core™ i3-1115G4E processor fanless system,
  0°C~45°C

- **NDiS V1100-i5 (P/N: 10W00110001X0)**
  11th Gen Intel® Core™ i5-1145G7E processor fanless system,
  0°C~45°C

CHAPTER 1: PRODUCT INTRODUCTION

NDiS V1100

Overview

Key Features

- 11th Gen Intel® Core™ (Tiger Lake UP3) processor SoC

- Dual non-ECC DDR4 3200 SO-DIMM, support up to 32Gb

- 4 x HDMI 2.0, support 4K@60Hz

- Dual LAN ports and 3 x USB 3.0 ports

- Onboard M.2 2280 Key M with PCIe x4 signal for storage modules

- Onboard mini-PCIe for optional Wi-Fi or LTE modules

- Fanless design

Hardware Specifications

CPU Support

- Onboard 11th Gen Intel® Core™ i3-1115G4E processor, dual core, 2.2 GHz, 6M cache
- Onboard 11th Gen Intel® Core™ i5-1145G7E processor, quad core, 1.5 GHz, 8M cache
- Onboard 11th Gen Intel® Core™ i7-1185G7E processor, quad core, 1.8 GHz, 12M cache (by request)

Chipset

- SoC (codenamed Tiger Lake UP3)

Main Memory

- 2 x 260-pin DDR4 SO-DIMM, supports non-ECC, un-buffered memory up to 64G

Graphics & Display

- Intel® UHD graphics on i3 processor
- Intel® Iris® X^e graphics on i5 and i7 processor
- 4 x HDMI, support 4096 x 2160@60Hz

Interface-Rear

- 1 x power button with LED
- 1 x HDD LED
- 2 x DB9
  - COM1: RS232/422/485
  - COM2: RS232

I/O Interface-Rear

- 1 x 4-pin DC Jack, 12V
- 4 x HDMI
- 2 x RJ45 Intel® Gigabit LAN port
  - 1 x Intel® I219-LM GbE PHY
  - 1 x Intel® I225-V GbE LAN
- 3 x USB 3.0
- 1 x USB 2.0

I/O Interface-Internal

- 4 x USB 2.0, internal connector
- 1 x Mic-in/Line out, internal connector
- 1 x Speaker out with 2W/4Ω amplifier, internal connector
- 8 x GPIO pin header for 4 x GPI and 4 x GPO
- 1 x 4-pin connector for PWM smart fan
- Onboard TPM2.0

Expansion

- 1 x M.2 3052 Key B, support optional 5G modules
- 1 x mini-PCIe, support optional 4G/Wi-Fi/Bluetooth modules

Storage

- 1 x M.2 2280 Key M (PCIe Gen4 x4, SATA III), support optional storage modules
- 1 x SATA & SATA power connector

Power Supply

- 1 x External 96W AC/DC power adapter
- Input: 100V AC to 240V AC
- Output: DC+12VDC

Environment

- Operating temperature: 0°C to 45°C
- Storage temperature: -20°C to 80°C
- Humidity: 10 to 90% (non-condensing)

Certification

- CE Approval
- FCC Class A

Dimensions

- 190mm (W) x 165mm (D) x 51.1mm (H) (without wall mount bracket)

Operating System Support

- Win10/Linux

Physical Features

Front Panel

Antenna Hole

Antenna Hole

Antenna Hole

Antenna Hole

Power Button

COM Port

Line Out

Storage LED

Mic In

Rear Panel

Antenna Hole

USB 2.0

12V DC Input

HDMI

LAN

USB 3.1
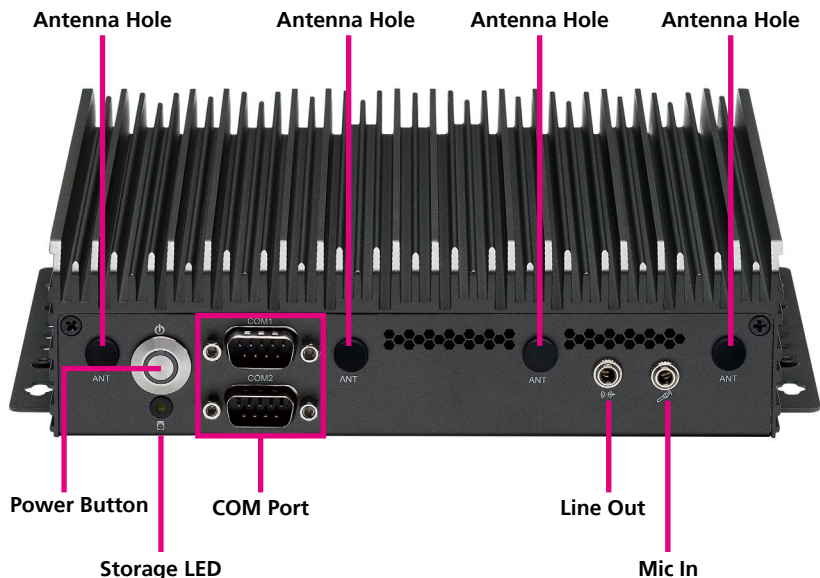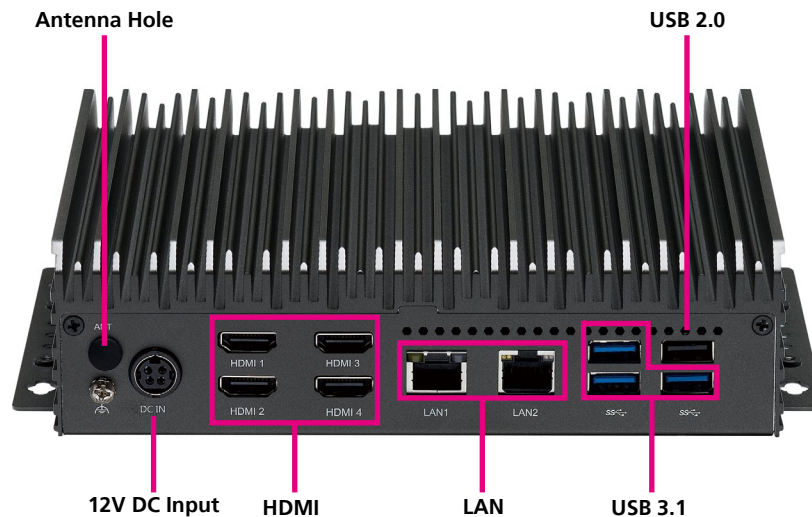
Mechanical Dimensions
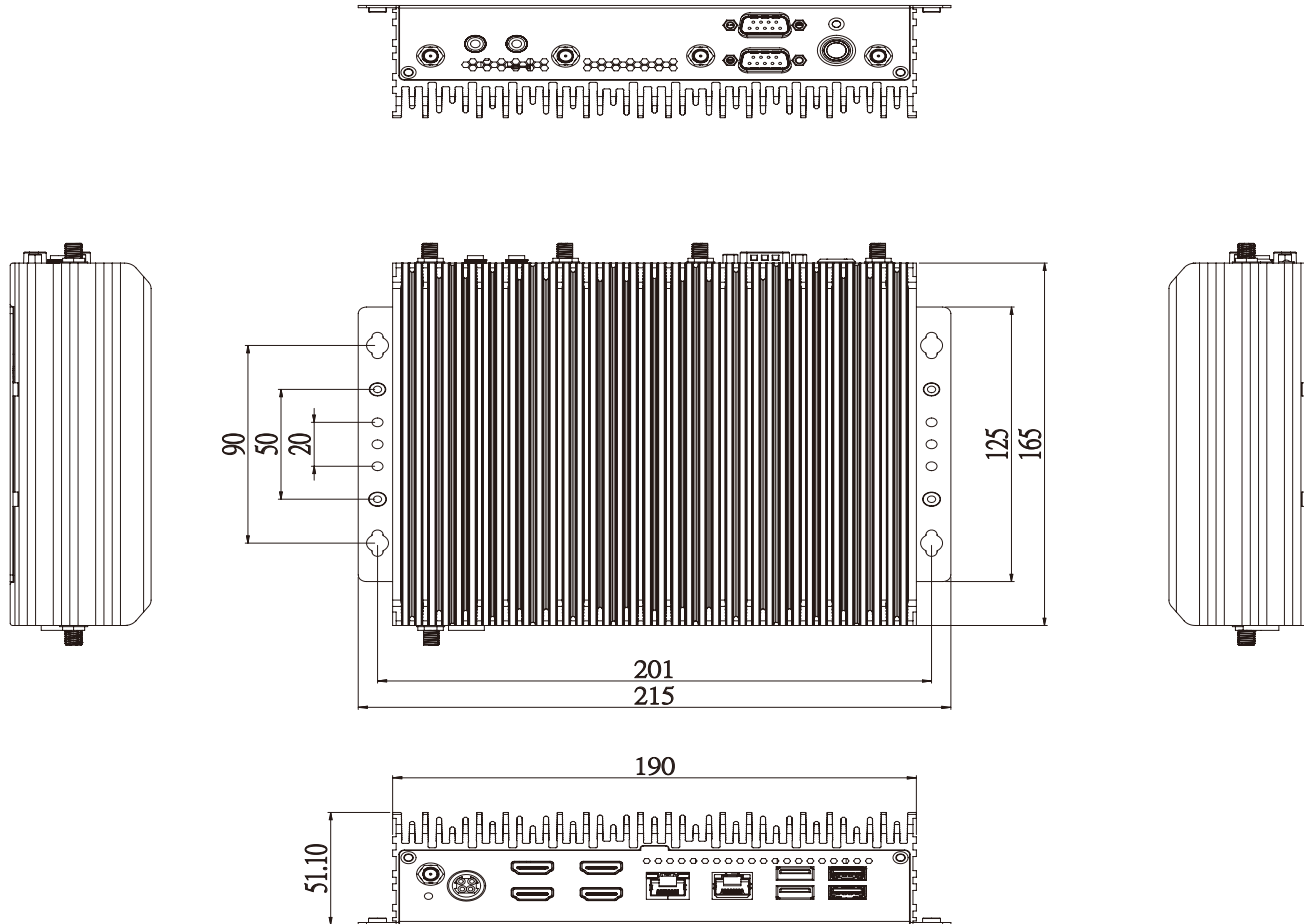
Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NDiS V1100 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)
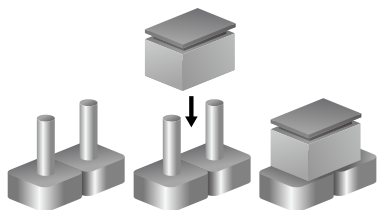
Three-Pin Jumpers: Pins 1 and 2 are Short
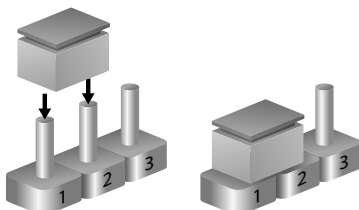
Locations of the Jumpers and Connectors

The figure below shows the locations of the jumpers and connectors.

Top View

Bottom View

M2M

DIMM2
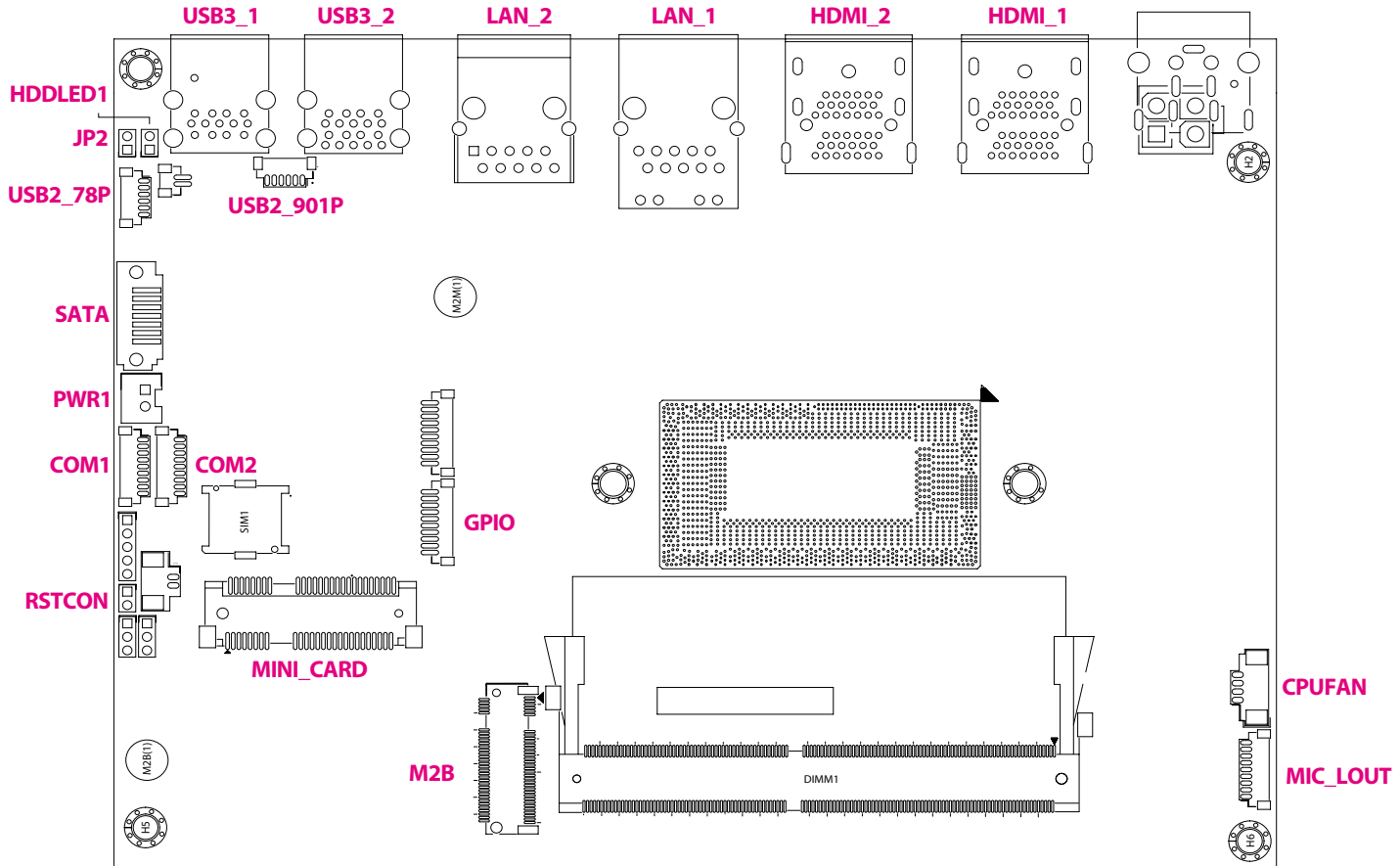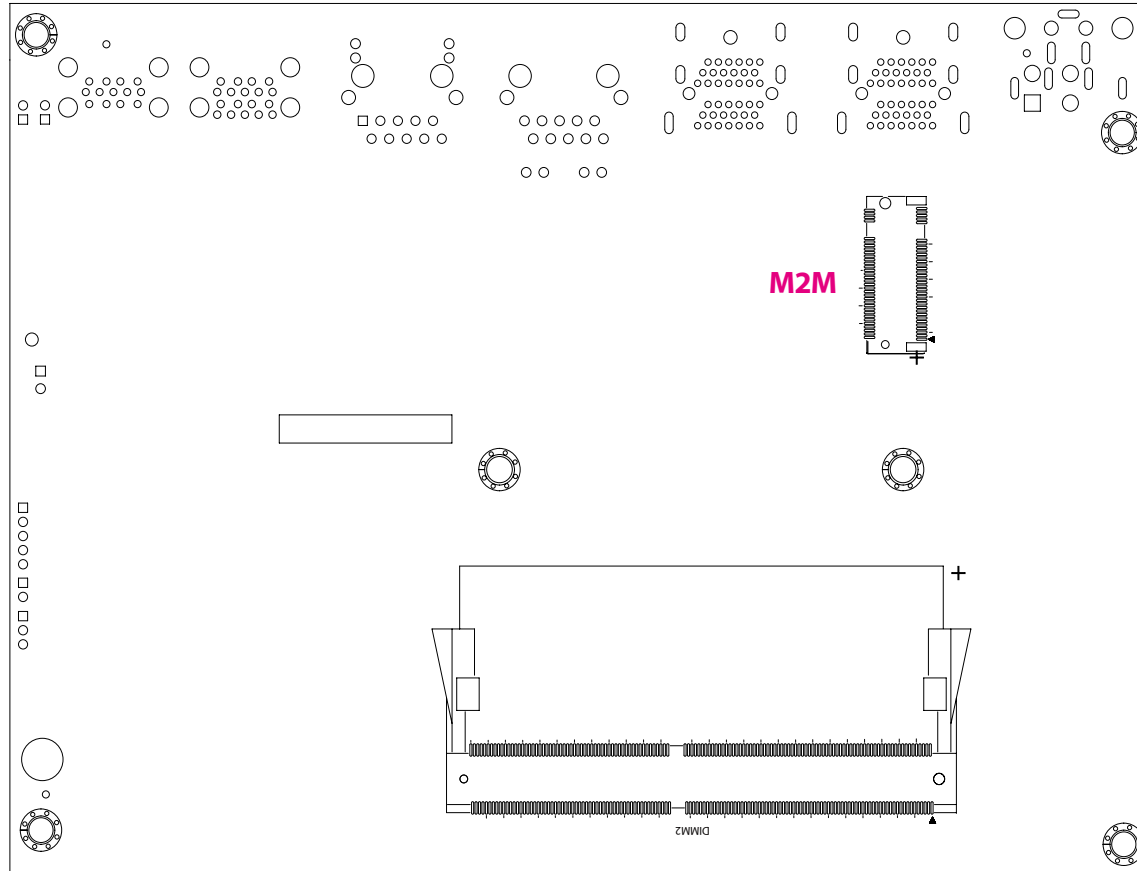
Jumpers

AT/ATX Mode Selection

Connector type: 1x3 3-pin header
Connector location: AT_ATX

1 □ ○ ○ 3
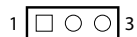
Pin	Settings
1-2 On	AT Mode
2-3 On	ATX Mode (Default)

Clear CMOS

Connector type: 1x3 3-pin header
Connector location: CLRCMOS

1 □ ○ ○ 3
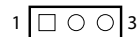
Pin	Settings
1-2 On	Normal (Default)
2-3 On	Clear CMOS

Internal Connectors
System Reset

Connector type: 1x2 2-pin header
Connector location: RSTCON

1 ☐ ○ 2
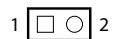
Pin	Definition
1	GND
2	RESET#

HDD LED Header

Connector type: 1x2 2-pin header
Connector location: HDDLED1

1 ☐ ○ 2
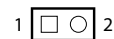
Pin	Definition
1	HDD_LED+
2	HDD_LED-

Power LED Header

Connector type: 1x2 2-pin header
Connector location: JP2

1 ☐ ○ 2

Pin	Definition
1	PWR_LED-
2	PWR_LED+

RI Connector

Connector type: 1x5 5-pin header
Connector location: JP1

1 ☐ ○ ○ ○ ○ 5
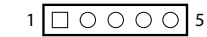
Pin	Definition	Pin	Definition
1	RI1	2	COM1_RI
3	+5V	4	COM1_RI
5	+12V		

MIC & Line Out Connector

Connector type: 1x9 9-pin header
Connector location: MIC_LOUT

System Power Button

Connector type: 1x2 2-pin header
Connector location: J1
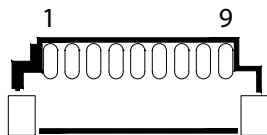
Pin	Definition	Pin	Definition
1	LOUT_R	2	LOUT_JD
3	GND	4	LOUT_L
5	GND	6	MIC_R
7	MIC_JD	8	MIC_L
9	GND		
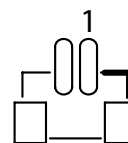
Pin	Definition
1	GND
2	PWRBTN#

Fan Connector

Connector type: 1x4 4-pin header
Connector location: CPUFAN

COM Port Connector

Connector type: 1x9 9-pin header
Connector location: COM1, COM2
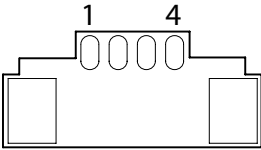
Pin	Definition	Pin	Definition
1	GND	2	+12V
3	FAN SPEED DETECT	4	FAN SPEED CONTROL
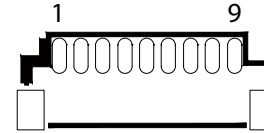
Pin	Definition	Pin	Definition
1	RI	2	CTS
3	RTS	4	DSR
5	GND	6	DTR
7	TXD	8	RXD
9	RXD	10	DCD

Internal USB2.0 x2 Port

Connector type: 1x6 6-pin header
Connector location: USB2_78P, USB2_910P

SATA Connector

Connector location: SATA
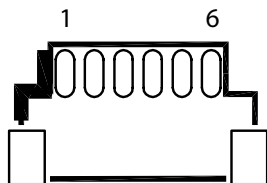
Pin	Definition	Pin	Definition
1	GND	2	USB2N
3	USB2P	4	USB1N
5	USB1P	6	+5V
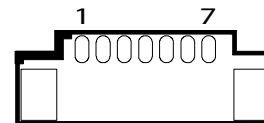
Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP
3	SATA_TXN	4	GND
5	SATA_RXN	6	SATA_RXP
7	GND		

GPIO Connector

Connector type: 1x10 10-pin header
Connector location: GPIO1

SATA Power Connector

Connector type: 1x2 2-pin header
Connector location: PWR1
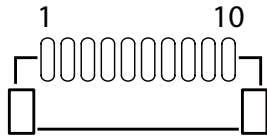
Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPIO_PIN3	4	GPIO_PIN4
5	GPIO_PIN5	6	GPIO_PIN6
7	GPIO_PIN7	8	GPIO_PIN8
9	GPIO_PIN9	10	GPIO_PIN10
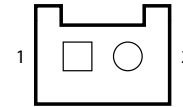
Pin	Definition
1	+5V
2	GND

80 Debug Port Connector

Connector type: 1x10 10-pin header
Connector location: 80PORT

Battery Connector

Connector type: 1x2 2-pin header
Connector location: BAT
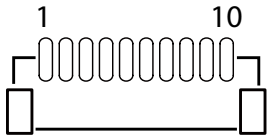
Pin	Definition	Pin	Definition
1	GND	2	PLTRST#
3	ESPI_CLK	4	ESPI_CS#
5	ESPI_IO3	6	ESPI_IO2
7	ESPI_IO1	8	ESPI_IO0
9	ESPI_RST#	10	3.3V
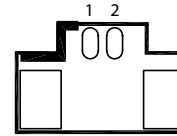
Pin	Definition
1	GND
2	BAT

M.2 2280_2242 Connector (M-key)

Connector location: M2M
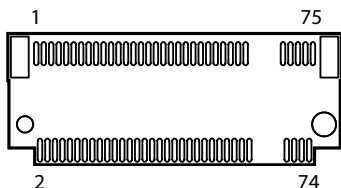
Pin	Definition	Pin	Definition
1	GND	2	+3VSB
3	GND	4	+3VSB
5	PCIE4_RXN	6	NC
7	PCIE4_RXP	8	NC
9	GND	10	M2M_LED#
11	PCIE4_RXN	12	+3VSB
13	PCIE4_RXP	14	+3VSB
15	GND	16	+3VSB
17	PCIE3_RXN	18	+3VSB
19	PCIE3_RXP	20	NC
21	GND	22	NC
23	PCIE3_RXN	24	NC
25	PCIE3_RXP	26	NC
27	GND	28	NC
29	PCIE2_RXN	30	NC
31	PCIE2_RXP	32	NC
33	GND	34	NC
35	PCIE2_RXN	36	NC

Pin	Definition	Pin	Definition
37	PCIE2_RXP	38	DEVSLP
39	GND	40	NC
41	SATA_RXP(PCIE1_RXP)	42	NC
43	SATA_RXN(PCIE1_RXN)	44	NC
45	GND	46	NC
47	SATA_TXN(PCIE1_TXN)	48	NC
49	SATA_TXP(PCIE1_TXP)	50	RESET#
51	GND	52	CLKREQ#
53	CLK_PCIEN	54	WAKE#
55	CLK_PCIEP	56	NC
57	GND	58	NC
67	NC	68	
69	M2M_PEDET	70	+3VSB
71	GND	72	+3VSB
73	GND	74	+3VSB
75	GND		

M.2 2242 Connector (B-key)

Connector location: M2B
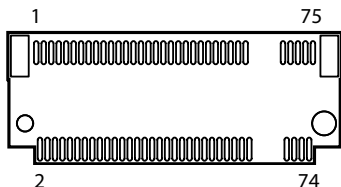
Pin	Definition	Pin	Definition
1	CONFIG3	2	3.3V
3	GND	4	3.3V
5	GND	6	3.3V
7	USB2_5P	8	WIFI_DIS#
9	USB2_5N	10	NC
11	NC		
	PCIE4_RXP	14	+3VSB
		20	NC
21	CONFIG0	22	NC
23	NC	24	NC
25	NC	26	WWAN_GPS_ON
27	GND	28	NC
29	USB3_RXN	30	UIM_RESET
31	USB3_RXP	32	UIM_CLK
33	GND	34	UIM_DATA
35	USB3_TXN	36	UIM_PWR
37	USB3_TXP	38	DEVSLP
39	GND	40	NC

Pin	Definition	Pin	Definition
41	PCIE_RXN	42	NC
43	PCIE_RXP	44	NC
45	GND	46	NC
47	PCIE_TXN	48	NC
49	PCIE_TXP	50	RESET(3.3V)
51	GND	52	CLKREQ#
53	CLK_DN	54	WAKE#
55	CLK_DP	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	NC
67	RESET(1.8V)	68	SUS_CLK
69	CONFIG1	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	CONFIG2		

Mini PCIe Card

Connector location: MINI_CARD

Pin	Definition	Pin	Definition
1	WAKE#	2	3.3V
3	NC	4	GND
5	NC	6	1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	CLKN0	12	UIM_CLK
13	CLKP0	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	W_DIS#
21	GND	22	RESET#
23	PCIE5_RXN	24	3.3V
25	PCIE5_RXP	26	GND
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	PCIE5_TXN	32	SMB_DATA
33	PCIE5_TXP	34	GND
35	GND	36	USB2_6DN

Pin	Definition	Pin	Definition
37	GND	38	USB2_6DP
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	1.5V
49	NC	50	GND
51	3.3V	52	3.3V

External Connectors

DC Power Input Jack (+12V Only)

Connector location: DCIN1
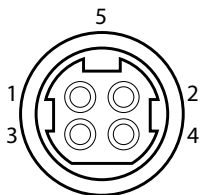
Pin	Definition	Pin	Definition
1	+12VSUS	2	+12VSUS
3	GND	4	GND
5	CGND		

DP Connector

Connector type:HDMI CON DUAL 38P SMT
Connector location: HDMI1, HDMI2
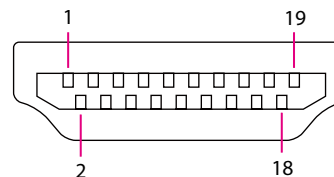
Pin	Definition	Pin	Definition
A1	HDMI2_TX2P	B1	HDMI1_TX2P
A2	GND	B2	GND
A3	HDMI2_TX2N	B3	HDMI1_TX2N
A4	HDMI2_TX1P	B4	HDMI1_TX1P
A5	GND	B5	GND
A6	HDMI2_TX1N	B6	HDMI1_TX1N
A7	HDMI2_TX0P	B7	HDMI1_TX0P
A8	GND	B8	GND
A9	HDMI2_TX0N	B9	HDMI1_TX0N
A10	HDMI2_CLKP	B10	HDMI1_CLKP
A11	GND	B11	GND
A12	HDMI2_CLKN	B12	HDMI1_CLKN
A13	NC	B13	NC
A14	NC	B14	NC
A15	HDMI2_SCL	B15	HDMI1_SCL
A16	HDMI2_SDA	B16	HDMI1_SDA
A17	GND	B17	GND
A18	+5V	B18	+5V
A19	HDMI2_HPD	B19	HDMI1_HPD

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LAN Connector

Connector type: LAN Jack W/LED R/A DIP
Connector location: LAN1

ACT   LINK

8 | | 1
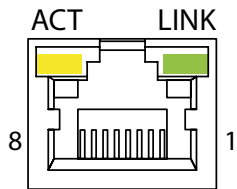
Act	Status
Flashing Yellow	Data activity
Off	No activity

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

Pin	Definition	Pin	Definition
1	MDI_0P	2	MDI_0N
3	MDI_1P	4	MDI_1N
5	CT1	6	CT2
7	MDI_2P	8	MDI_2N
9	MDI_3P	10	MDI_3N
11	LINK1000#	12	LINK100#
13	ACTLED#	14	+3VSB

LAN Connector

Connector type: LAN Jack W/LED R/A DIP
Connector location: LAN2
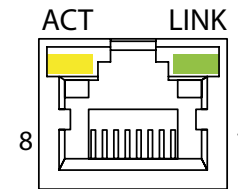
ACT   LINK

8 | | 1

Act	Status
Flashing Yellow	Data activity
Off	No activity

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

Pin	Definition	Pin	Definition
1	MDI_0P	2	MDI_0N
3	MDI_1P	4	MDI_1N
5	CT1	6	CT2
7	MDI_2P	8	MDI_2N
9	MDI_3P	10	MDI_3N
11	+3VSB	12	ACTLED#
13	LINK1000#	14	LINK100#

USB 3.0 Connector

Connector type: USB 3.0 CON Dual Port
Connector location: USB3_2
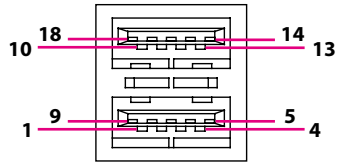
Pin	Definition	Pin	Definition
1	+5V	2	USB2_1N
3	USB2_1P	4	GND
5	USB3_RX1N	6	USB3_RX1P
7	GND	8	USB3_TX1N
9	USB3_TX1P	10	+5V
11	USB2_2N	12	USB2_2P
13	GND	14	USB3_RX2N
15	USB3_RX2P	16	GND
17	USB3_TX2N	18	USB3_TX2P

USB 3.0 Connector

Connector type: USB 3.0 Connector
Connector location: USB3_1
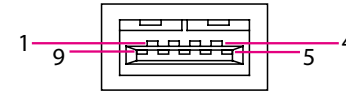
Pin	Definition	Pin	Definition
1	+5V	2	USB2_3N
3	USB2_3P	4	GND
5	USB3_RX3N	6	USB3_RX3P
7	GND	8	USB3_TX3N
9	USB3_TX3P	10	+5V
11	USB2_4N	12	USB2_4P
13	GND		

Block Diagram

NDiB V1100
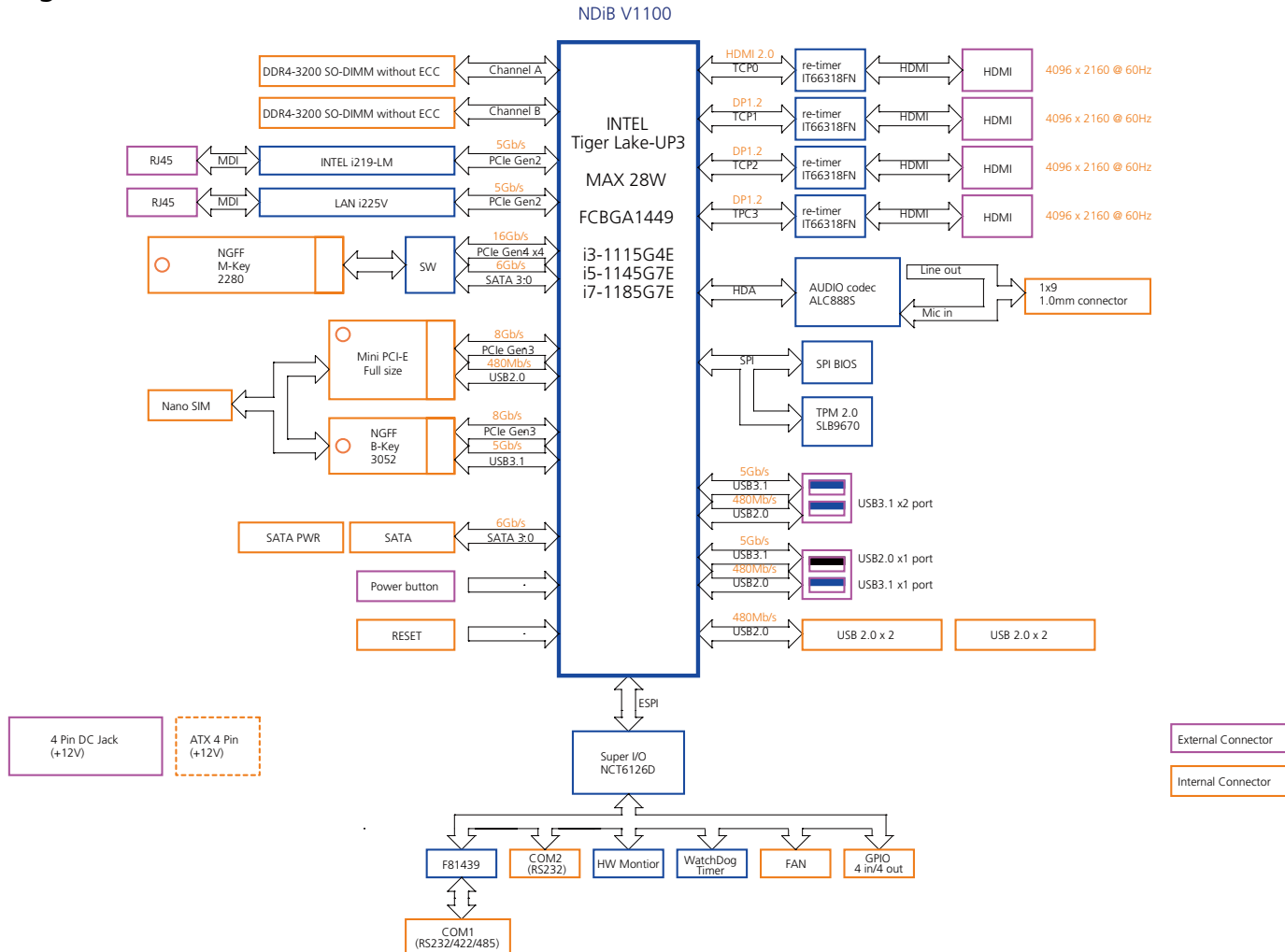
CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

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

1. The screws on the bottom, front and rear sides are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.
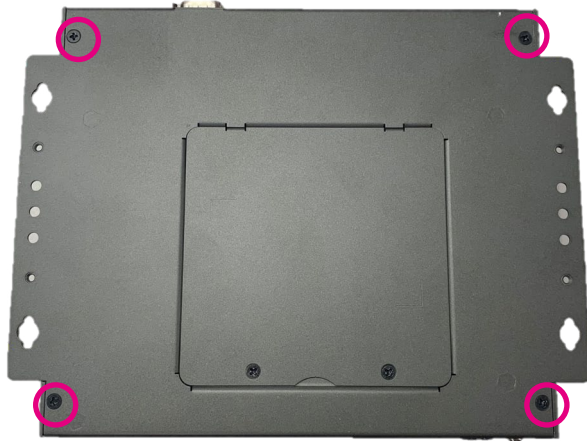
Front

Bottom

Rear

2. Open the memory cover on the bottom by removing two screws, then remove the other two screws on the main board inside it.
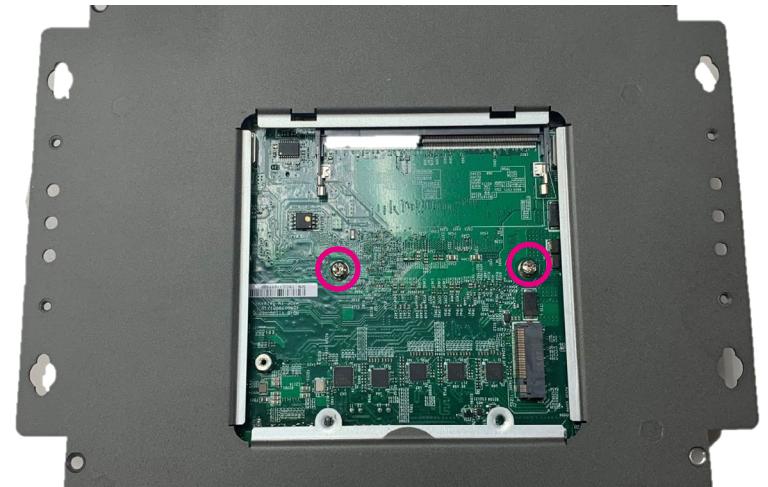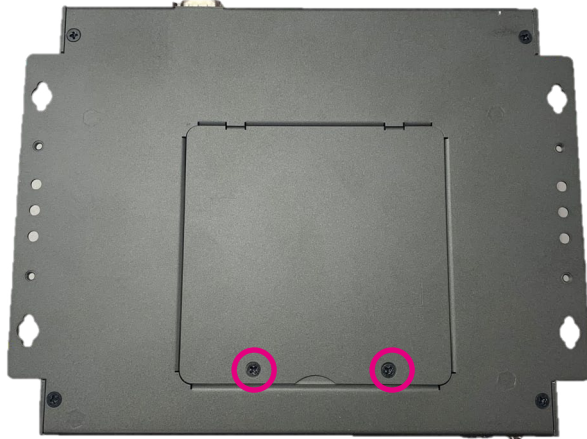
3. With the screws removed, lift up the cover and remove it from the chassis.

Installing a SO-DIMM Memory Module

1. Locate two SO-DIMM sockets on the TOP side and back side of the board.

SO-DIMM

2. Insert the module into the socket at a 30-degree angle. Then push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive "click" sound, indicating the module is correctly locked into position.
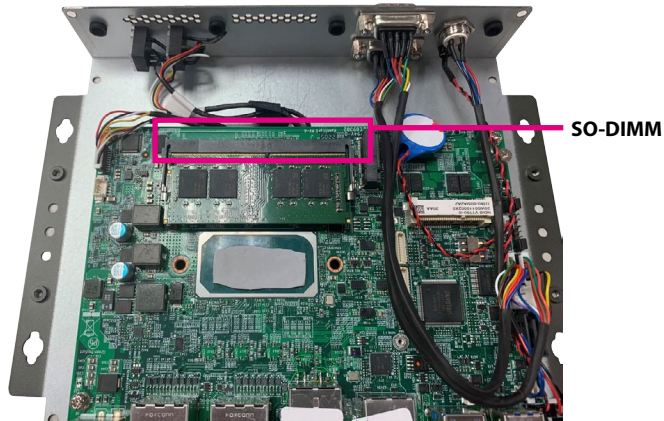
Installing an M.2 Storage Module (M Key 2280)

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

M.2 M Key Slot

2. Remove the screw on the board. Store the screw in a safe place for later use.

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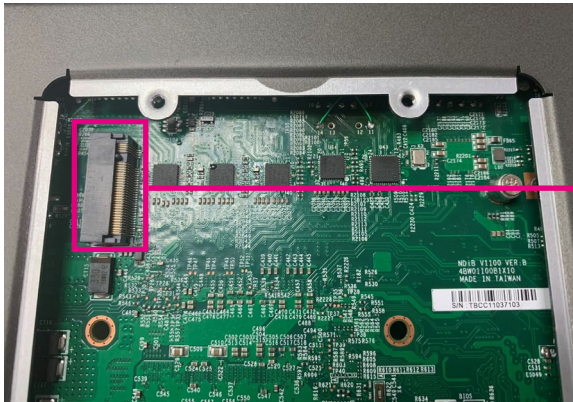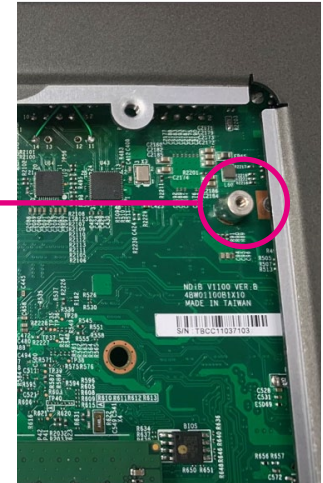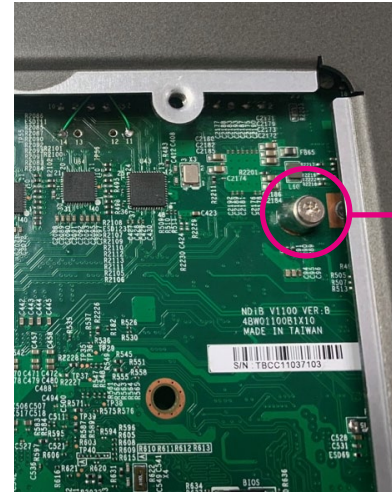
3. Insert the M.2 module into the M.2 slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears into the slot. Then push the module down and secure it with the screw removed in step 2.

Installing an M.2 5G/4G Module (B Key 3052 or 3042 w/ bracket)

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

2. Remove the screw on the board. Store the screw in a safe place for later use.
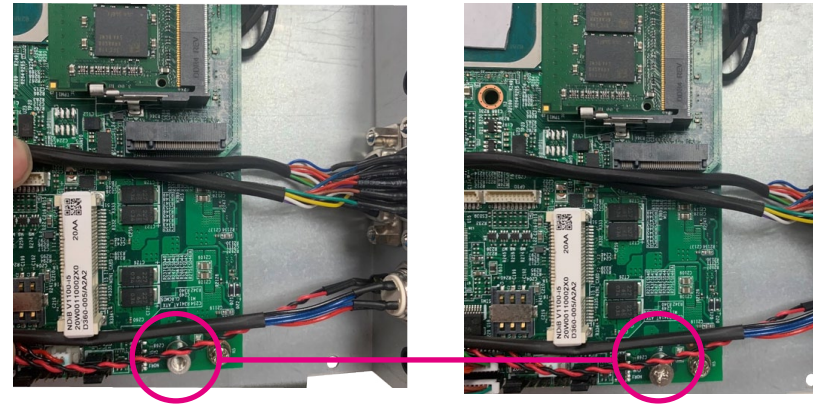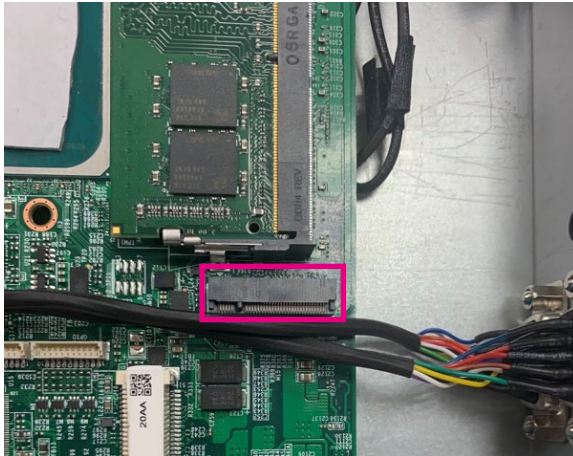
3. Insert the 4G/5G module into the M.2 slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot, then push the module down and then secure it with the mounting screw.
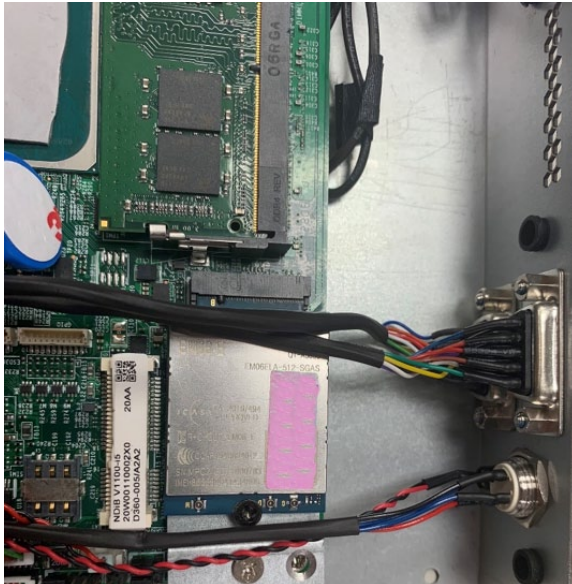
Installing a Wi-Fi and Bluetooth card (miniPCIe)

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

2. Remove the screw on the board. Store the screw in a safe place for later use.
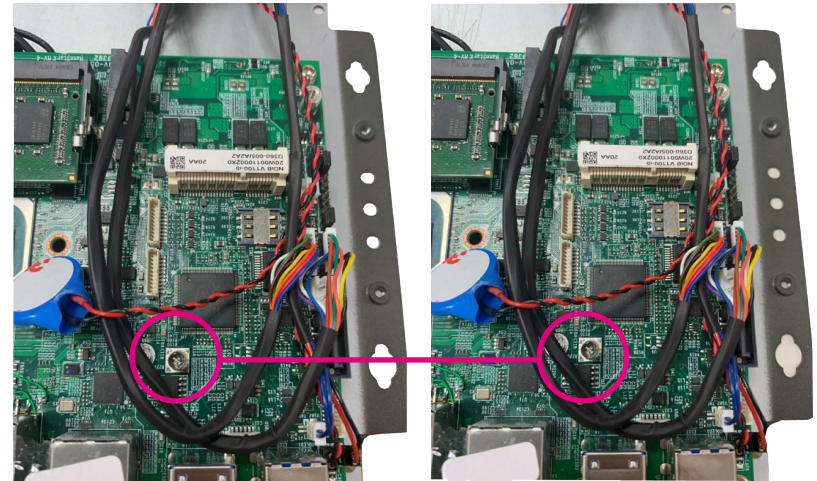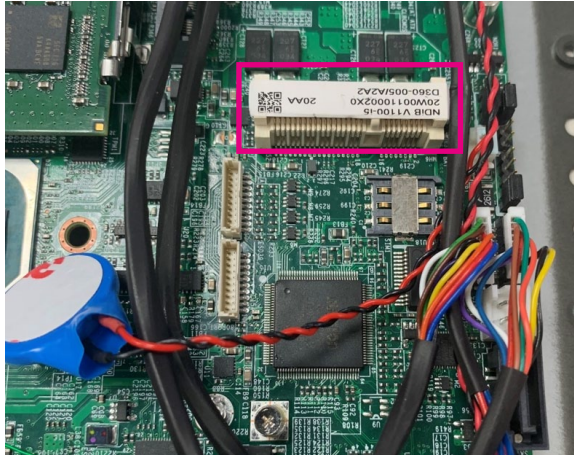
3. Insert the Wi-Fi/BT module into the mini-PCIe slot at a 45-degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot, then push the module down and then secure it with the mounting screw.

Wall Mount Installation

> Note: The bottom cover of the system also serves as the wall mount bracket. Before wall mounting the system, please ensure the top cover is secured with 8 screws.

1. Align the M4 mounting holes on the chassis cover to the desired installation location. Then mount the system by fastening 4 screws through the mounting holes.

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for NDiS V1100. 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.

```
                          Aptio Setup - AMI
   Main     Advanced    Security    Boot    Save & Exit
─────────────────────────────────────────────────────────────────
  BIOS Information                               Set the Date. Use Tab to switch
  BIOS Vendor              American Megatrends   between Date elements.
  Product Name             NDiS-V1100            Default Ranges:
  Project Version          D110-002 x64          Year: 1998-9999
  Build Date and Time      01/03/2022 11:31:54   Months: 1-12
                                                 Days: Dependent on month
  Processor Information                          Range of Years may vary.
  Name                     TigerLake ULT
  11th Gen Intel(R) Core(TM) i3-1115G4E @ 3.00GHz
  Stepping                 B0
  Microcode Revision       8A

  IGFX GOP Version         17.0.1068             →←: Select Screen
  ME FW Version            15.0.23.1706          ↑↓: Select Item
  Total Memory             8192 MB               Enter: Select
  Memory Speed             3200 MT/s             +/-: Change Opt.
                                                 F1: General Help
  PCH Information                                F2: Previous Values
  Name                     TGL PCH-LP            F3: Optimized Defaults
  PCH SKU                  U Premium             F4: Save & Exit
  Stepping                 B0                    ESC: Exit

─────────────────────────────────────────────────────────────────
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```

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 1998 to 9999.

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 - AMI
   Main     Advanced    Security    Boot    Save & Exit
─────────────────────────────────────────────────────────────────
  IGFX GOP Version         17.0.1068             Set the Date. Use Tab to switch
  ME FW Version            15.0.23.1706          between Date elements.
  Total Memory             8192 MB               Default Ranges:
  Memory Speed             3200 MT/s             Year: 1998-9999
                                                 Months: 1-12
  PCH Information                                Days: Dependent on month
  Name                     TGL PCH-LP            Range of Years may vary.
  PCH SKU                  U Premium
  Stepping                 B0

  System Date              [Mon 6/20/2022]
  System Time              [16:01:34]
                                                 →←: 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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```

Advanced

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

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

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

   ATX mode                                            Specify what state to go to
   State After G3                    [S0 State]        when power is re-applied after a
     Wake on LAN Enable              [Enabled]         power failure (G3 state).
   USB Power State in S5             [OFF]
   ► CPU Configuration
   ► SATA and RST Configuration
   ► Trusted Computing
   ► ACPI Settings
   ► NCT6126D Super IO Configuration
   ► Hardware Monitor
   ► USB Configuration
   ► Network Stack Configuration
   ► NVMe Configuration

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

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```

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

   AT mode                                             Enable/Disable integrated LAN
   State After G3                    [S0 State]        to wake the system.
   Wake on LAN Enable                [Enabled]
   USB Power State in S5             [OFF]

   ► CPU Configuration
   ► SATA and RST Configuration
   ► Trusted Computing
   ► ACPI Settings
   ► NCT6126D Super IO Configuration
   ► Hardware Monitor
   ► USB Configuration
   ► Network Stack Configuration
   ► NVMe Configuration

     MAC:0010F39AE072-IPv4 Network Configuration
     MAC:0010F39AE072-IPv6 Network Configuration       →←: Select Screen
     MAC: 888888888788-IPv4 Network Configuration      ↑↓: Select Item
     MAC: 888888888788-IPv6 Network Configuration      Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit

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```

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

Wake on LAN Enable
Enables or disables integrated LAN to wake the system.
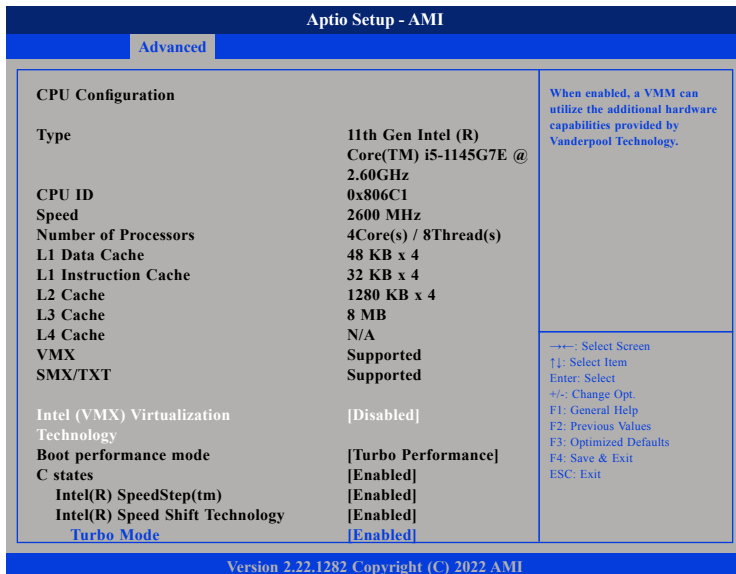
USB Power State in S5
Select USB power state in S5.

Pending operation
Schedules an operation for the security device.

CPU Configuration

This section is used to configure CPU parameters.

```
                         Aptio Setup - AMI
           Advanced

   CPU Configuration                                  When enabled, a VMM can
                                                      utilize the additional hardware
   Type                        11th Gen Intel (R)     capabilities provided by
                               Core(TM) i5-1145G7E @  Vanderpool Technology.
                               2.60GHz
   CPU ID                      0x806C1
   Speed                       2600 MHz
   Number of Processors        4Core(s) / 8Thread(s)
   L1 Data Cache               48 KB x 4
   L1 Instruction Cache        32 KB x 4
   L2 Cache                    1280 KB x 4
   L3 Cache                    8 MB
   L4 Cache                    N/A
   VMX                         Supported              →←: Select Screen
   SMX/TXT                     Supported              ↑↓: Select Item
                                                      Enter: Select
   Intel (VMX) Virtualization  [Disabled]             +/-: Change Opt.
   Technology                                         F1: General Help
   Boot performance mode       [Turbo Performance]    F2: Previous Values
   C states                    [Enabled]              F3: Optimized Defaults
      Intel(R) SpeedStep(tm)   [Enabled]              F4: Save & Exit
      Intel(R) Speed Shift Technology  [Enabled]      ESC: Exit
      Turbo Mode               [Enabled]

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```

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

Boot Performance Mode
Configures the performance state that the BIOS will set before OS handoff.

C States
Enables or disables CPU power management. Allows CPU to go to C states when it's not 100% utilized.

Intel® SpeedStepTM
Enables or disables Intel SpeedStep.

Intel® Speed Shift Technology
Enables or disables Intel Speed Shift Technology support. Enabling it will expose the CPPC v2 interface to allow hardware controlled P-states.

Turbo Mode
Enables or disables turbo mode.

SATA and RST Configuration

```
                        Aptio Setup - AMI
        Advanced

  SATA and RST Configuration                           Enable/Disable SATA Device.

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

  Serial ATA Port 0             Empty
  Serial ATA Port 1             Empty




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


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```

SATA Controller(s)
Enables or disables the SATA controller.

SATA Test Mode
Enables or disables SATA test mode.

Trusted Computing

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

```
                        Aptio Setup - AMI
            Advanced

  Configuration                                        Enable or Disables BIOS support
     Security Device Support      [Disabled]           for security device. O.S. will not
        No Security Device Found                        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.

ACPI Settings

This section is used to configure ACPI settings.

```
                        Aptio Setup - AMI
        Advanced

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




                                                   →←: 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 operating systems.

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

NCT6126D Super IO Configuration

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

```
                        Aptio Setup - AMI
          Advanced

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




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


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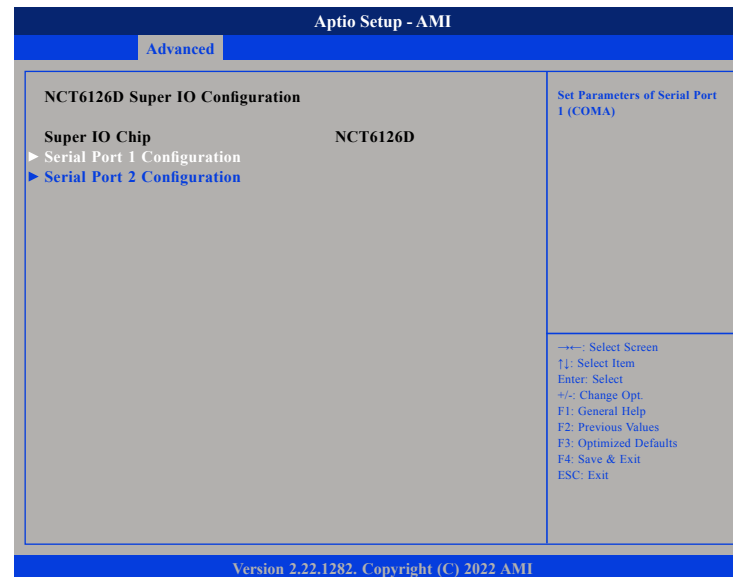
Super IO Chip
Displays the Super I/O chip used on the board.

Hardware Monitor

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

```
                       Aptio Setup - AMI
     Advanced

 Pc Health Status                            Smart Fan function setting

 CPU Core Temperature        : +99°C
 System Temperature          : +42°C

 CPU Fan Speed               : N/A

 VCORE                       : +1.280 V
 VCC3                        : +3.392 V
 VCC5                        : +5.000 V
 VCC12                       :  +12.192 V

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


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```

CPU Core Temperature
Detects and displays the current CPU core temperature.

System Temperature
Detects and displays the current system temperature.

CPU FAN Speed
Detects and displays the current CPU fan speed.

VCORE to VCC12
Detects and displays the voltage from Vcore to VCC12.

Smart Fan Function
Smart Fan function settings.

USB Configuration

This section is used to configure USB parameters.

```
                          Aptio Setup - AMI
        Advanced

   USB Configuration                                   Enables Legacy USB support.
                                                       AUTO option disables legacy
   USB Module Version          26                      support if no USB devices are
                                                       connected. DISABLE option will
                                                       keep USB devices available
   Legacy USB Support          [Enabled]               only for EFI applications.
   XHCI Hand-off               [Enabled]
   USB Mass Storage Driver Support  [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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```

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 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 device driver support.

Network Stack

This section is used to configure the network stack.

```
                          Aptio Setup - AMI
        Advanced

   Network Stack               [Enabled]               Enable/Disable UEFI Network
      IPv4 PXE Support         [Enabled]               Stack
      IPv6 PXE Support         [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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```
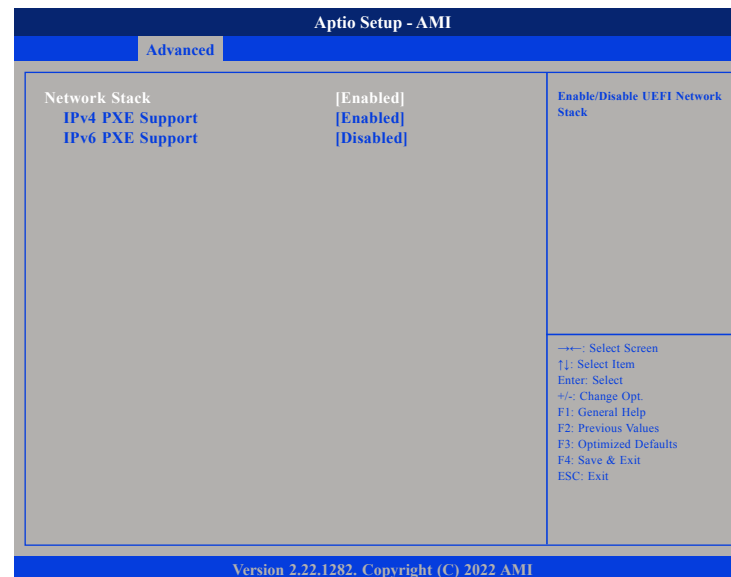
Network Stack

Enables or disables UEFI network stack.

IPv4 PXE Support

Enables or disables IPv4 PXE support. If disabled, the IPv4 boot option will not be created.

IPv6 PXE Support

Enables or disables IPv6 PXE support. If disabled, the IPv6 boot option will not be created.

NVMe Configuration

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

```
                         Aptio Setup - AMI
            Advanced

   NVMe Configuration

   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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```

Security

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

   Password Description                          Set Administrator Password

   The password length must be
   in the following range:
   Minimum length              3
   Maximum length              20

   Administrator Password
   User Password
                                          →←: 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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```

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

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

Boot

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

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

  Boot Option Priorities
  Boot Option #1                [UEFI: PXE IPv4
                                Intel(R) Ethernet
                                Controller (3) I225-V]

  Boot Option #2                [UEFI: PXE IPv4
                                Intel(R) Ethernet
                                Connection (13)
                                I219-LM]

  Boot Option #3                [UEFI: Built-in EFI
                                Shell]
                                                             →←: 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.

Save & Exit

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

  Save Options                                                Exit system setup after saving
  Save Changes and Exit                                       the changes.
  Discard Changes and Exit

  Default Options
  Restore Defaults

  Boot Override
  UEFI: Built-in EFI Shell
  UEFI: PXE IPv4 Intel(R) Ethernet Controller (3) I225-V
  UEFI: PXE IPv4 Intel(R) Ethernet Connection (13) I219-LM

                                                             →←: 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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```
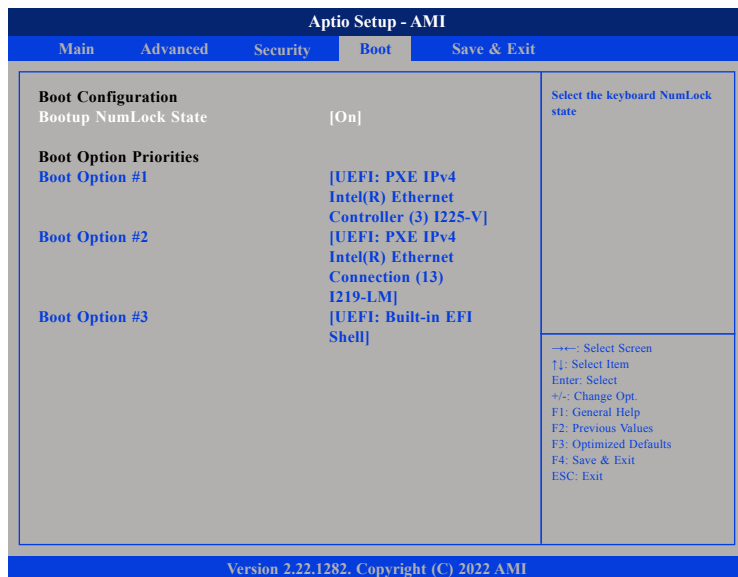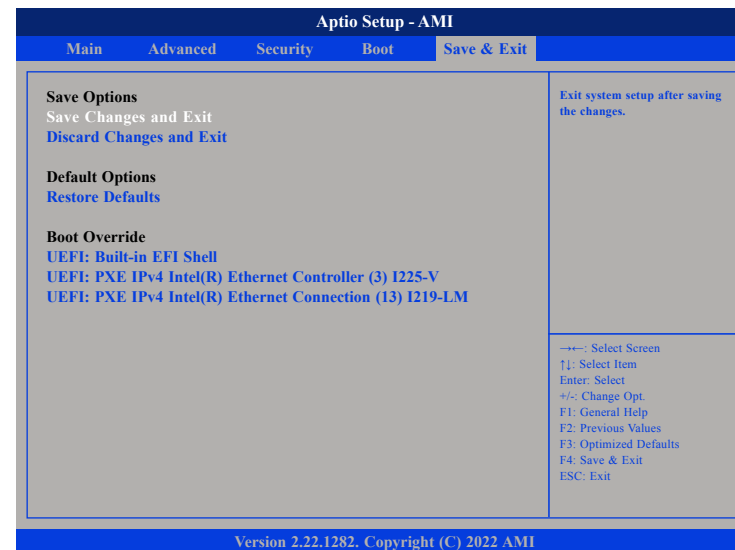
Save Changes and Exit

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.

Restore Defaults

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

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