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Manual

NEXCOM

NDiS B360

Fanless Embedded Computer with 11th Gen. Intel® Core™ Tiger Lake UP3 Processor



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NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit

Digital Signage Platform

NDiS B360

User Manual

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PREFACE

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Disclaimer

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Acknowledgements

NDiS B360 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. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

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

Repair Service Charges for Out-of-Warranty Products

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

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System Level

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

Board Level

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

Warnings

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

Cautions

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

Safety Information

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

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

Installation Recommendations

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

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

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

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

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection to protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped and damaged.
 - f. The equipment has obvious signs of breakage.
15. Do not place heavy objects on the equipment.
16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
17. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

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 B360 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	19W00B36001X0 or	NDiS B360-i5 System or	1
	19W00B36000X0	NDiS B360-i3 System	
2	7400060049X00	Power Adapter FSP:FSP060-DHAN3 (9NA0608064)	1

Ordering Information

The following information below provides ordering information for NDiS B360.

NDiS B360-i3 (P/N: 10W00B36000X0)

11th Generation Intel® Core™ i3-1115G4E processor slim and fanless system

NDiS B360-i5 (P/N: 10W00B36001X0)

11th Generation Intel® Core™ i5-1145G7E processor slim and fanless system

CHAPTER 1: PRODUCT INTRODUCTION

Overview



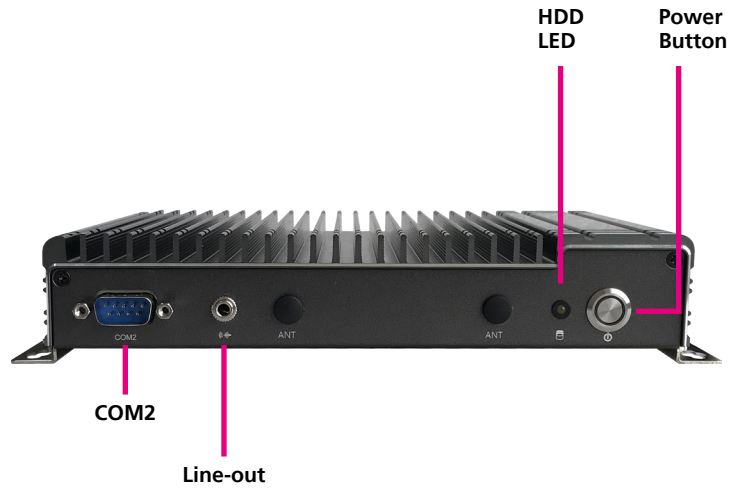
Powered by the latest 11th generation Intel® Core™ Tiger Lake processor, NDiS B360 series digital signage player can handle very rich multimedia contents. With Intel® processor low power consumption and new Intel® Iris® Xe graphics, the platform deliver powerful graphics offering stunning visuals for compelling 4K content creation and media playback. In addition, NDiS B360 series supports display output by HDMI and DP ports with flexible integration for various peripherals such as touchscreen displays, scanners, readers, and many more. NDiS B360 series is a slim/fanless player with extended temperature durability further extends to outdoor usage like QSR drive through kiosks, box office displays, information stands, bus stops, or digital transit information signs. It is also ideal as a digital signage player delivering enhanced performance and new immersive experiences for advertising, hospitality and brand promotion applications.

Key Features

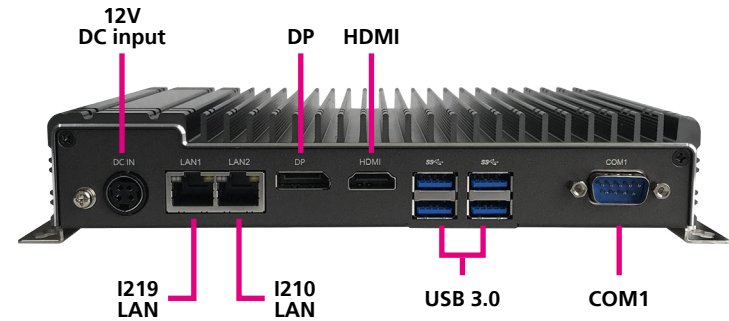
- 11th Generation Intel® Core™ (Tiger Lake-UP3) processor SoC
- Dual 4K @ 60Hz display output, DP++, HDMI 2.0
- Support 4K @ 60Hz eDP display output
- Dual LAN ports and 4x USB 3.0 ports for easy connectivity
- Compact and slim design (H: 36mm)
- Onboard M.2 2280 Key M with PCIe signal for storage modules
- Onboard M.2 2230 Key E for optional Wi-Fi modules
- Support extended temperature for outdoor application
- Fanless design

Physical Features

Front Panel



Rear Panel



Hardware Specifications

CPU Support

- Onboard 11th Generation Intel® Core™ i3-1115G4E processor, Dual Core, 2.2 GHz, 6M Cache (15W)
- Onboard 11th Generation Intel® Core™ i5-1145G7E processor, Quad Core, 1.5 GHz, 8M Cache (15W)
- Onboard 11th Generation Intel® Core™ i7-1185G7E processor Quad Core, 1.8 GHz, 12M Cache (15W) (by request)

Chipset

- SoC (codenamed Tiger Lake-UP3)

Main Memory

- 1 x 260-pin DDR4 SO-DIMM, supports non-ECC, un-buffered memory up to 32G

I/O Interface-Front

- 1 x Power button
- 1 x HDD LED
- 1 x Line-out
- 1 x DB9 for RS232 (COM2)
- 2 x Antenna hole

I/O Interface-Rear

- 1 x 12V DC Jack
- 2 x RJ45 Intel® Gigabit LAN port
 - 1 x Intel® I219-LM GbE PHY
 - 1 x Intel® I211-AT GbE LAN
- 1 x DP++
- 1 x HDMI 2.0
- 4 x USB 3.0
- 1 x DB9 for RS232/422/485 (COM1)

Graphics & Display

- Intel® UHD graphics on i3 processor
- Intel® Iris® Xe graphics on i5 and i7 processor
- 1x DP++, support 4096 x 2304 @ 60Hz
- 1x HDMI 2.0, support 4096 x 2160 @ 60Hz

I/O Interface-Internal

- 4 x USB 2.0, internal connector
- 1 x Mic-in, internal connector
- 1 x Speaker-out with 2W/4Ω amplifier, internal connector
- 6 x GPIO pin header for 3 x GPI and 3 x GPO
- 1 x 4-pin connector for PWM smart FAN
- 1 x 12V 2A power output coming from main power source to additional module use
- 1 x eDP: support 4096 x 2160 @ 60Hz
- TPM 2.0: optional feature by request

Storage

- 1 x M.2 2280 Key M (PCIe x4 only), support optional storage modules

Expansion

- 1 x M.2 2230 Key E (PCIe x1), support optional Wi-Fi modules

Power Supply

- 1x External 60W AC/DC adapter
Input: 100~240VAC
Output: DC+12VDC

Environment

- Operating temperature: -20°C to 60°C
- Storage temperature: -20°C to 80°C
- Humidity: 10 to 90% (non-condensing)

Certification

- CE/FCC Class A

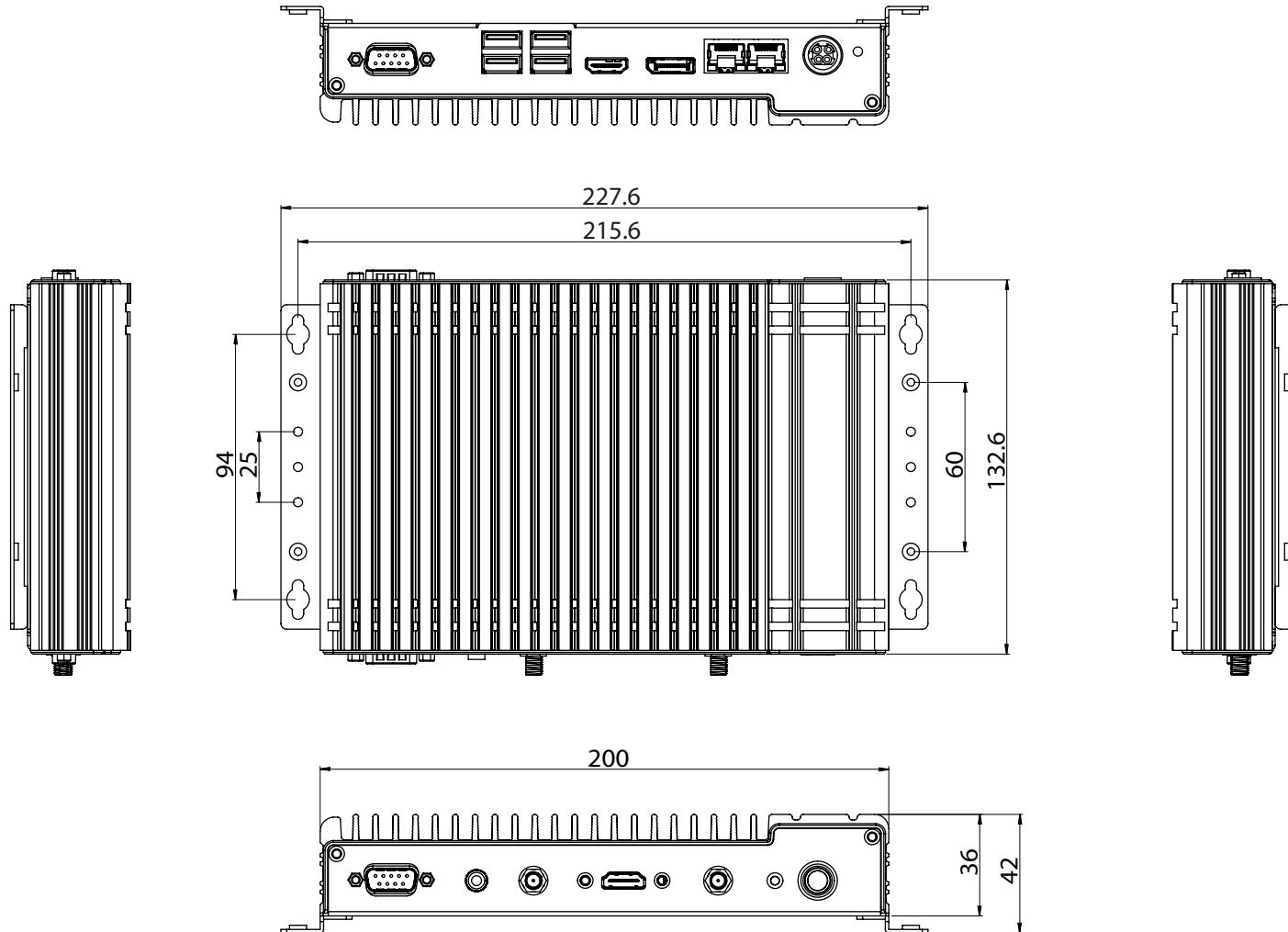
Dimensions

- 200mm (W) x 132.6mm (D) x 36mm (H) (without wall mount bracket)

Operating System

- Windows 10/Linux

Mechanical Dimensions



CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NDiS B360 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

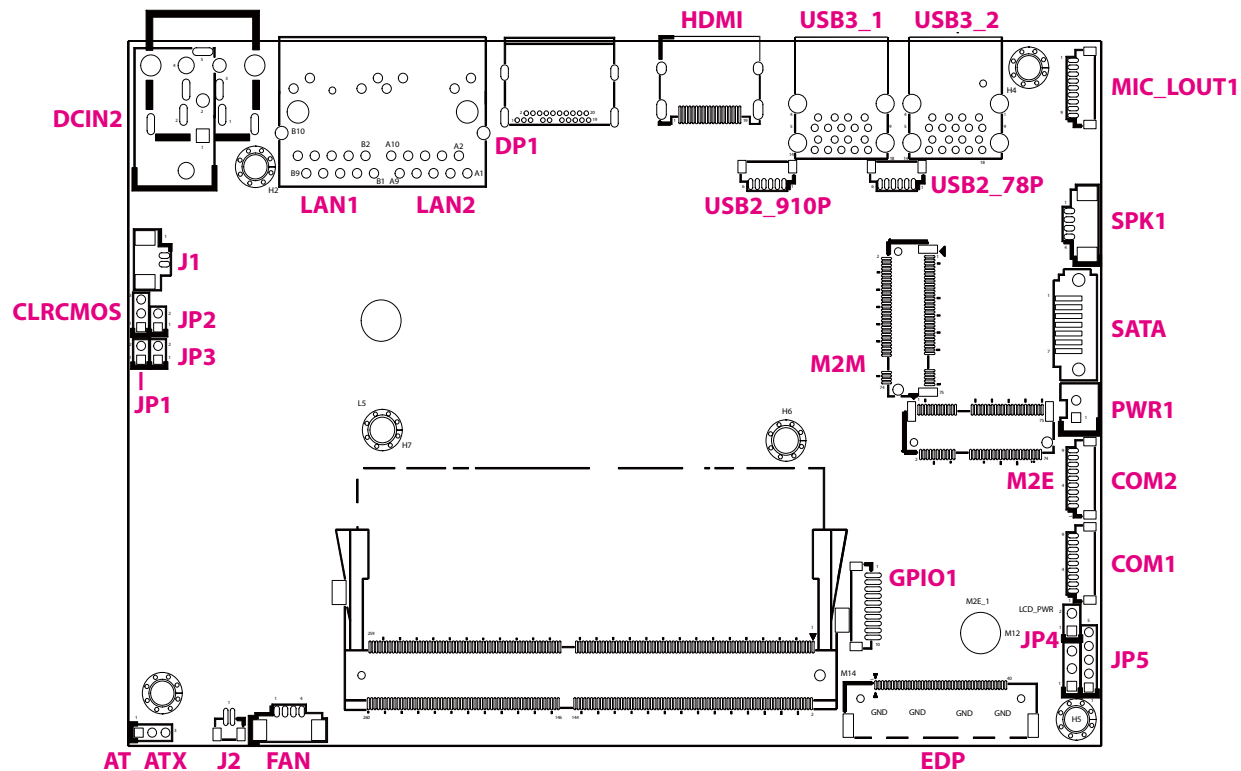
Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

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.

Locations of the Jumpers and Connectors for NDiS B360

The figure below is the top view of the mainboard used in the NDiS B360. It shows the locations of the jumpers and connectors.

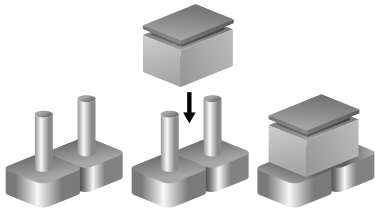


Jumper Settings

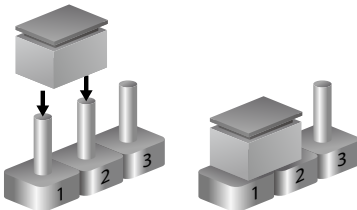
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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



Jumpers

LCD Panel Voltage Select

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

Connector location: LCD_PWR



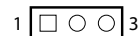
Pin	Settings
1-2 On	3.3V
2-3 On	5V

1-2 On: default

Clear CMOS

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

Connector location: CLR CMOS



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

1-2 On: default

ATX/AT Mode Select

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



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

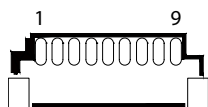
2-3 On: default

Connector Pin Definitions

External I/O Interfaces

MIC and Line Out Connector

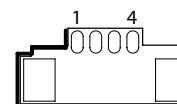
Connector location: MIC_LOUT1



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		

Speaker Connector

Connector location: SPK1

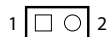


Pin	Definition	Pin	Definition
1	OUT_L+	2	OUT_L-
3	OUT_R+	4	OUT_R-

System Power Button

Connector type: 1x2 2-pin header

Connector location: J2

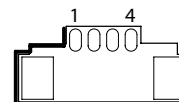


Pin	Settings
1	GND
2	PWRBTN#

Fan Connector

Connector type: 1x4 4-pin header, 1.25mm pitch

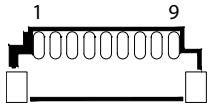
Connector location: FAN1



Pin	Definition	Pin	Definition
1	GND	2	+12V
3	FAN SPEED DETECT	4	FAN SPEED CONTROL

COM Port Connector

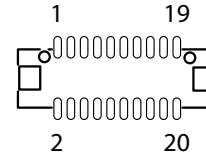
Connector type: 1x9 9-pin header, 1.0mm pitch
Connector location: COM1 & COM2



Pin	RS232 Function	RS485 Function (Only COM1 support)	RS422 Function (Only COM1 support)
1	RI		
2	CTS		
3	RTS		
4	DSR		
5	GND		
6	DTR		422_RX-
7	TXD		422_RX+
8	RXD	485_D+	422_TX+
9	DCD	485_D-	422_TX-

DP Connector

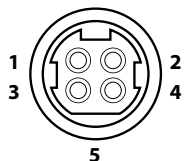
Connector type: DisplayPort connector
Connector location: DP1



Pin	Definition	Pin	Definition
1	DP0	2	GND
3	DN0	4	DP1
5	GND	6	DN1
7	DP2	8	GND
9	DN2	10	DP3
11	GND	12	DN3
13	CONFIG1	14	CONFIG2
15	AUXP	16	GND
17	AUXN	18	HPD
19	GND	20	+3V

DC Power Input Jack (+12V only)

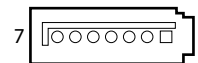
Connector location: DCIN2



Pin	Definition	Pin	Definition
1	+12VSUS	2	+12VSUS
3	GND	4	GND
5	CGND		

SATA Connector

Connector location: SATA

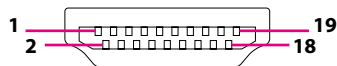


Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP
3	SATA_TXN	4	GND
5	SATA_RXN	6	SATA_RXP
7	GND		

HDMI

Connector type: HDMI port

Connector location: HDMI

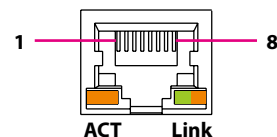


Pin	Definition	Pin	Definition
1	TX2P	2	GND
3	TX2N	4	TX1P
5	GND	6	TX1N
7	TX0P	8	GND
9	TX0N	10	CLKP
11	GND	12	CLKN
13	NC	14	NC
15	SCL	16	SDA
17	GND	18	+5V
19	HPD		

LAN Connector

Connector type: RJ45 port with LEDs

Connector location: LAN1

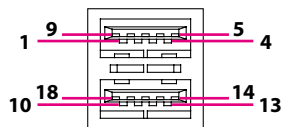


Pin	Definition	Pin	Definition
1	MDI_0P	2	MDI_0N
3	MDI_1P	4	MDI_1N
5	MDI_2P	6	MDI_2N
7	MDI_3P	8	MDI_3N
9	CT	10	GND
11	LINK1000#	12	LINK100#
13	ACTLED#	14	+3VSB

USB 3.0 Connector

Connector type: Dual USB 3.0 ports

Connector location: USB3_1 & USB3_2



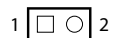
Pin	Definition	Pin	Definition
1	+5V	2	USB2_1N
3	USB2_1P	4	GND
5	USB3_RX1N	6	USB3_RX1P
7	GND	8	USB3_TX1N
9	USB3_TX1P	10	+5V
11	USB2_2N	12	USB2_2P
13	GND	14	USB3_RX2N
15	USB3_RX2P	16	GND
17	USB3_TX2N	18	USB3_TX2P

Internal Connectors

System Reset Button

Connector type: 1x2 2-pin header, 2.0mm pitch

Connector location: JP3



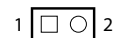
Pin	Settings
1	GND
2	RESET#

2-3 On: default

HDD LED Connector

Connector type: 1x2 2-pin header, 2.0mm pitch

Connector location: JP2

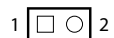


Pin	Settings
1	HDD_LED+
2	HDD_LED-

Power LED Connector

Connector type: 1x2 2-pin header, 2.0mm pitch

Connector location: JP1

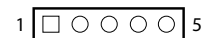


Pin	Settings
1	PWR_LED-
2	PWR_LED+

RI Connector

Connector type: 1x5 5-pin header, 2.0mm pitch

Connector location: JP5

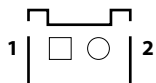


Pin	Definition	Pin	Definition
1	RI1	2	COM1_RI
3	+5V	4	COM1_RI
5	+12V		

Battery Connector

Connector type: 1x2 2-pin header, 1.25mm pitch

Connector location: J1

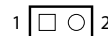


Pin	Settings
1	GND
2	BAT

12V Header

Connector type: 1x2 2-pin header, 2.0mm pitch

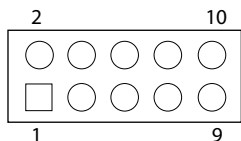
Connector location: JP4



Pin	Settings
1	12V
2	GND

GPIO Connector

Connector location: GPIO1

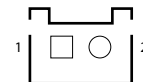


Pin	Definition	Pin	Definition
1	+5V	2	GND
3	I2C_CLK	4	I2C_DATA
5	GPIO_PIN5	6	GPIO_PIN6
7	GPIO_PIN7	8	GPIO_PIN8
9	GPIO_PIN9	10	GPIO_PIN10

SATA Power Connector

Connector type: 1x2 2-pin header, 2.5mm pitch

Connector location: PWR1



Pin	Definition
1	+5V
2	GND

80 Debug Port Connector

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

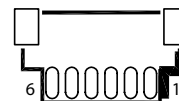


Pin	Definition	Pin	Definition
1	GND	2	PLTRST#
3	EPSI_CLK	4	ESPI_CS#
5	ESPI_IO3	6	ESPI_IO2
7	ESPI_IO2	8	ESPI_IO0
9	ESPI_RST#	10	3.3V

USB 2.0

Connector type: Internal dual USB 2.0 ports

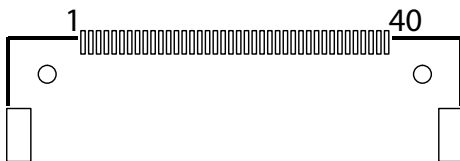
Connector location: USB2_78P1 & USB2_910P1



Pin	Definition	Pin	Definition
1	GND	2	USB2N
3	USB2P	4	USB1N
5	USB1P	6	+5V

eDP Connector

Connector location: EDP1

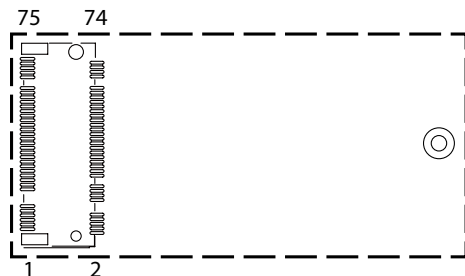


Pin	Definition	Pin	Definition
1	EDP_D3-	2	EDP_D3+
3	GND	4	EDP_D2-
5	EDP_D2+	6	GND
7	EDP_D1-	8	EDP_D1+
9	GND	10	EDP_D0-
11	EDP_D0+	12	GND
13	NC	14	NC
15	NC	16	NC
17	GND	18	+V_PANEL (3.3V or 5V)
19	+V_PANEL (3.3V or 5V)	20	+V_PANEL (3.3V or 5V)
21	GND	22	NC
23	GND	24	GND
25	GND	26	EDP_AUXP
27	EDP_AUXN	28	GND
29	GND	30	GND
31	HPD	32	EDP_BKLT_EN

Pin	Definition	Pin	Definition
33	EDP_BKLT_CTRL	34	NC
35	NC	36	+12V
37	+12V	38	+12V
39	+12V	40	NC

M.2 2280 M-key

Connector location: M2M1

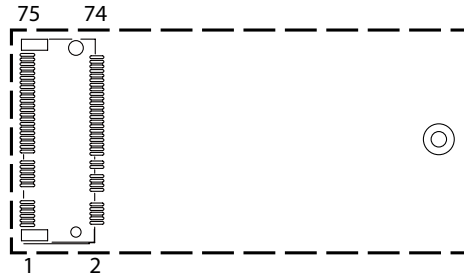


Pin	Definition	Pin	Definition
1	GND	2	+3VSB
3	GND	4	+3VSB
5	PCIE4_RXN	6	NC
7	PCIE4_RXP	8	NC
9	GND	10	M2M_LED#
11	PCIE4_RXN	12	+3VSB
13	PCIE4_RXP	14	+3VSB
15	GND	16	+3VSB
17	PCIE3_RXN	18	+3VSB
19	PCIE3_RXP	20	NC
21	GND	22	NC
23	PCIE3_RXN	24	NC
25	PCIE3_RXP	26	NC
27	GND	28	NC
29	PCIE2_RXN	30	NC
31	PCIE2_RXP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

Pin	Definition	Pin	Definition
33	GND	34	NC
35	PCIE2_RXN	36	NC
37	PCIE2_RXP	38	DEVSLP
39	GND	40	NC
41	PCIE1_RXP	42	NC
43	PCIE1_RXN	44	NC
45	GND	46	NC
47	PCIE1_TXN	48	NC
49	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 2230 E-key

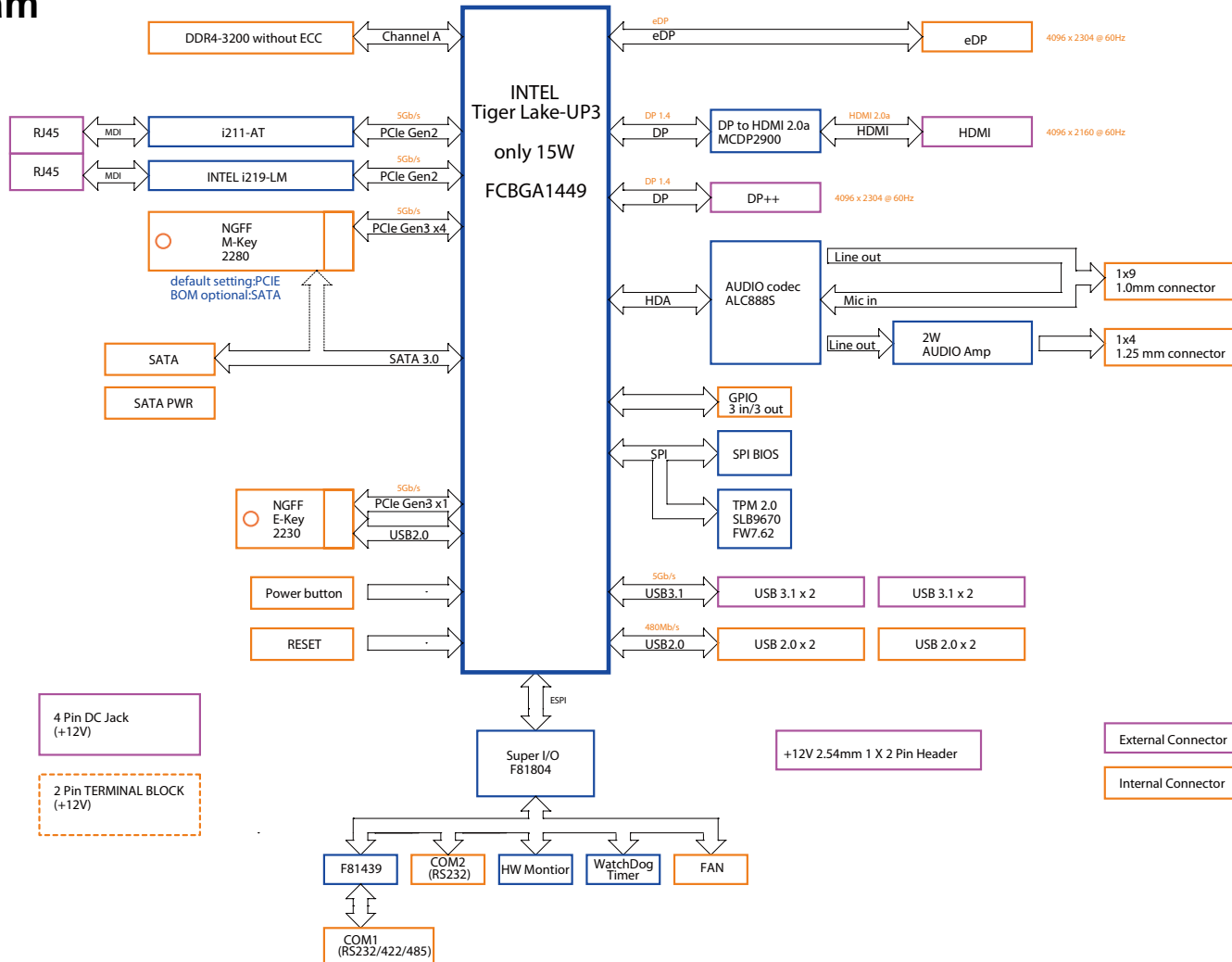
Connector location: M2E1



Pin	Definition	Pin	Definition
1	GND	2	3VSB
3	USBP	4	3VSB
5	USBN	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	NC
19	NC	20	NC
21	NC	22	NC
23	NC		
		32	NC
33	GND	34	NC
35	PCIE_TXP	36	NC

Pin	Definition	Pin	Definition
37	PCIE_TXN	38	NC
39	GND	40	NC
41	PCIE_RXP	42	NC
43	PCIE_RXN	44	NC
45	GND	46	NC
47	CLK_PCIEP	48	NC
49	CLK_PCIEN	50	SUSCLK
51	GND	52	PLTRST#
53	CLKREQ#	54	BT_DISABLE#
55	WAKE#	56	WIFI_DISABLE#
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	GND	64	NC
65	NC	66	NC
67	NC	68	NC
69	GND	70	NC
71	NC	72	3VSB
73	NC	74	3VSB
75	GND	76	

Block Diagram



CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover



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

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

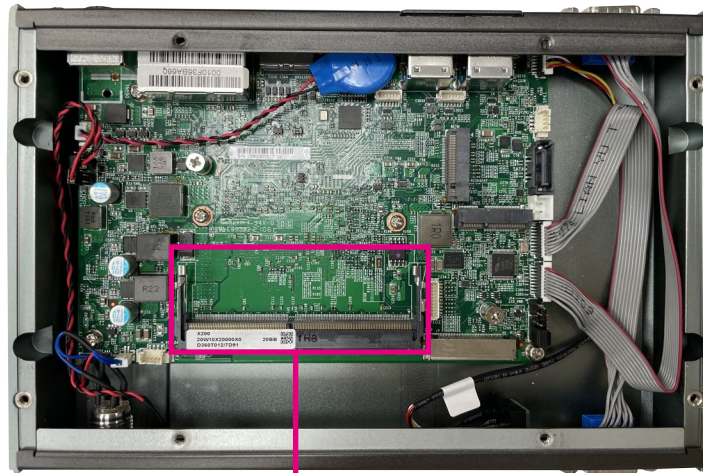


2. With the screws removed, lift up the cover and remove it from the chassis.



Installing SO-DIMM Memory Modules

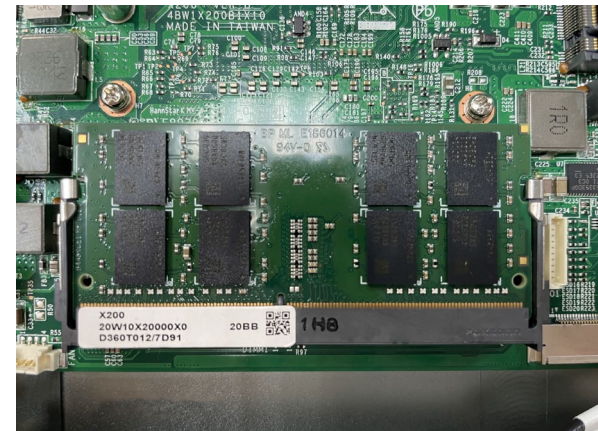
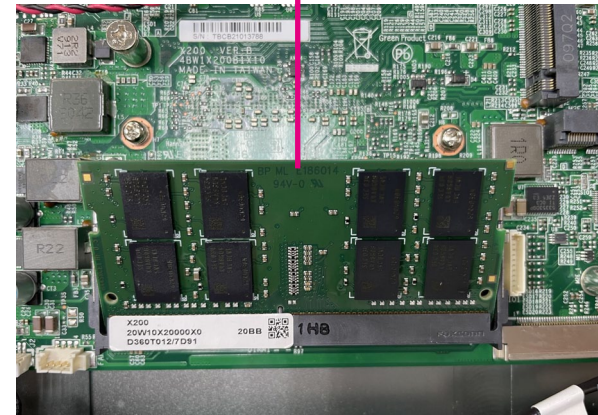
1. Locate the SO-DIMM socket on the board.



SO-DIMM socket

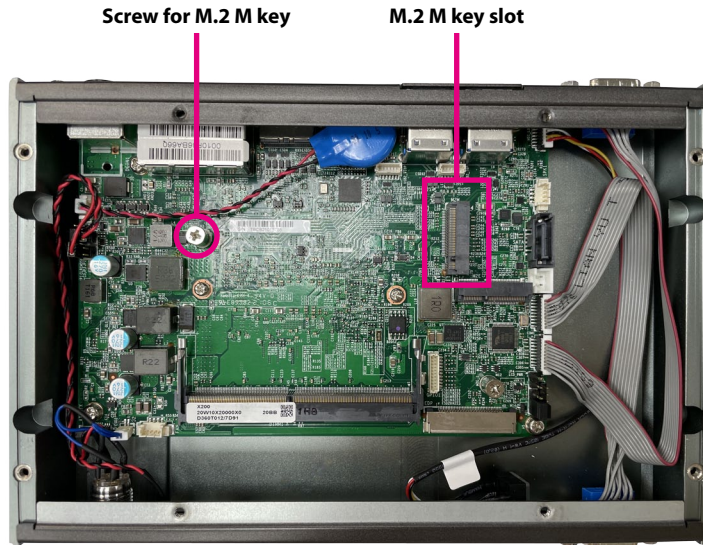
2. Insert the module into the socket at an approximately 30 degrees angle. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

Memory Module



Installing a M.2 Storage Module (M key 2280)

1. Locate the M.2 M key slot and remove the screws on the board.



2. 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.

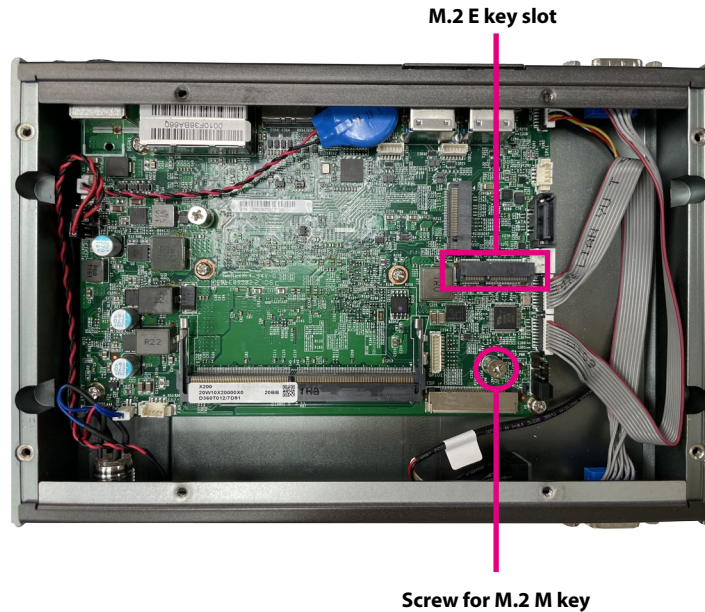


3. Push the module down and secure it with the screw that was removed from step 1.

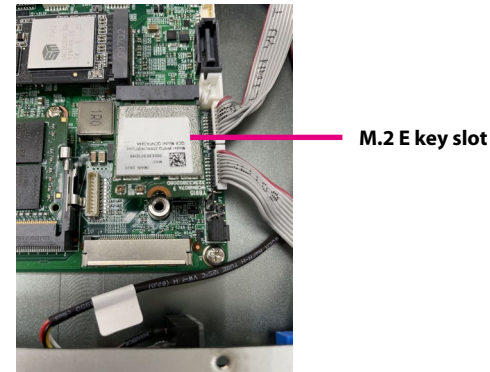


Installing a M.2 WiFi Module (E key 2230)

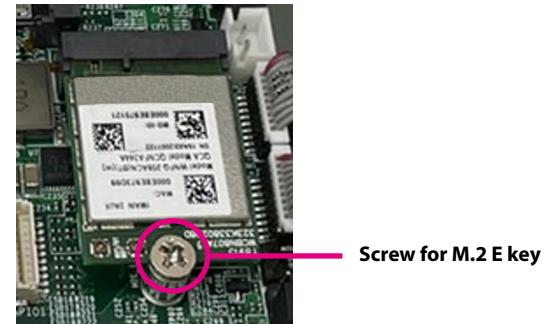
1. Locate the M.2 E key slot and remove the screws on the board.



2. 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.

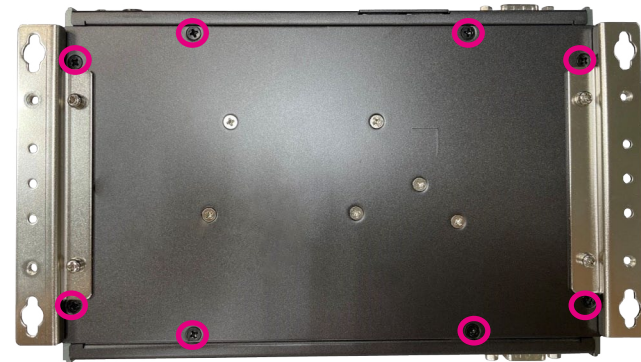
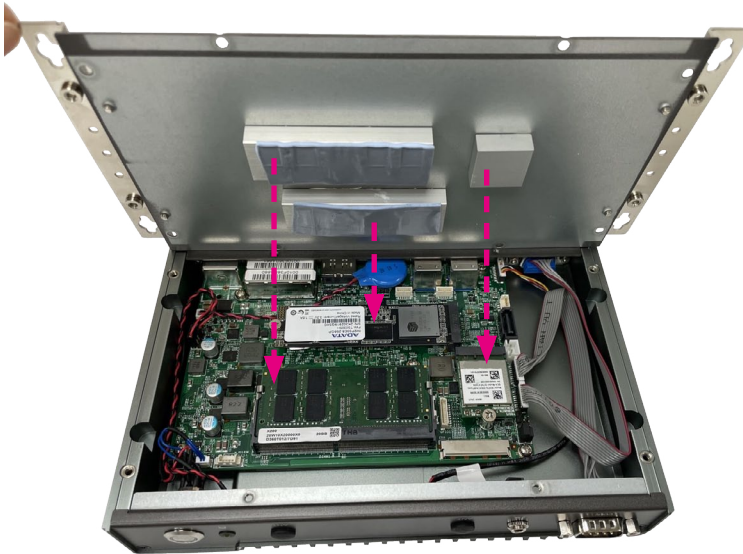


3. Push the module down and secure it with the screw that was removed from step 1.



Assembling the Bottom Cover

1. Make sure the bottom cover is facing the right direction.
2. Secure the bottom cover with SSD to the chassis with the eight screws.



Wall mounting instruction

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 in the sides of the mounting brackets with the predrilled holes in the mounting surface.
5. Insert four retention screws, two in each bracket to secure the system to the wall.



Specification of the wall mount screw:

Round Head Screw w/ Spring+Flat Washer Long Fei:P3x6L P3x6 iso/SW6x0.5 NI

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for the NDiS B360. 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 Web site 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 allows you to enter Setup.

Press the  key to enter Setup:


Legends

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


Scroll Bar

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

Submenu

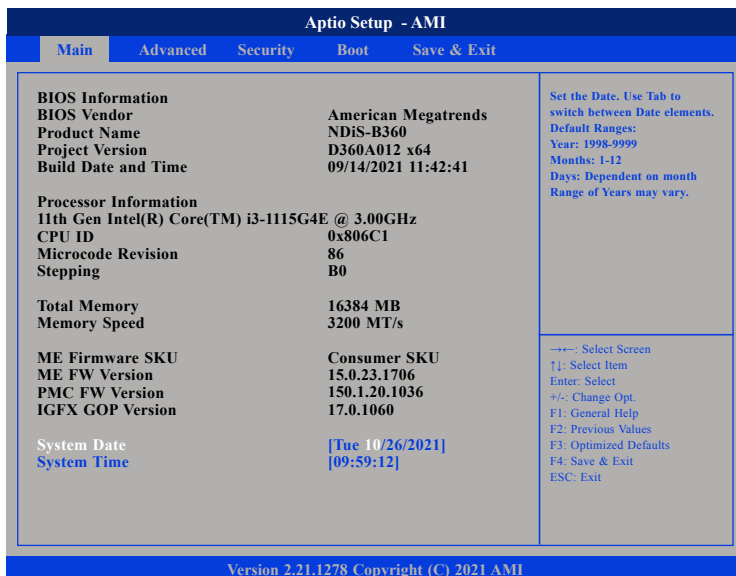
When “▶” appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press  .

BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from several setup functions and one exit. Use arrow keys to select among the items and press  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		American Megatrends	Set the Date. Use Tab to switch between Date elements.	
BIOS Vendor		NDiS-B360	Default Ranges:	
Product Name		D360A012 x64	Year: 1998-9999	
Project Version		09/14/2021 11:42:41	Months: 1-12	
Build Date and Time			Days: Dependent on month	
			Range of Years may vary.	
Processor Information				
11th Gen Intel(R) Core(TM) i3-1115G4E @ 3.00GHz			←→: Select Screen	
CPU ID		0x806C1	↑↓: Select Item	
Microcode Revision		86	Enter: Select	
Stepping		B0	+/-: Change Opt.	
			F1: General Help	
			F2: Previous Values	
			F3: Optimized Defaults	
			F4: Save & Exit	
			ESC: Exit	
Total Memory		16384 MB		
Memory Speed		3200 MT/s		
ME Firmware SKU		Consumer SKU		
ME FW Version		15.0.23.1706		
PMC FW Version		150.1.20.1036		
IGFX GOP Version		17.0.1060		
System Date		[Tue 10/26/2021]		
System Time		[09:59:12]		

Version 2.21.1278 Copyright (C) 2021 AMI

System Date

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

System Time

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

Advanced

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

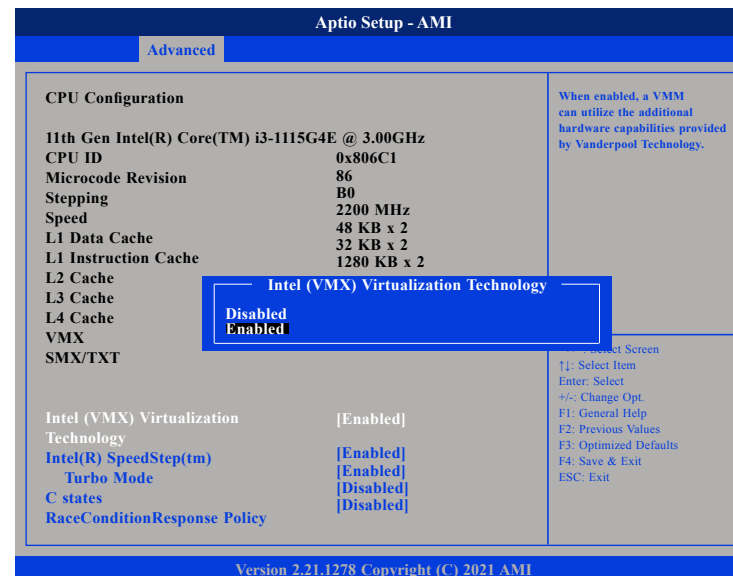


Setting incorrect field values may cause the system to malfunction.



CPU Configuration

This section is used to configure the CPU.



Intel® Virtualization Technology

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

Intel® SpeedStep™

Enables or disables Intel SpeedStep.

Turbo Mode

Enables or disables processor turbo mode (requires EMTTM enabled too). Auto means enabled.

C states

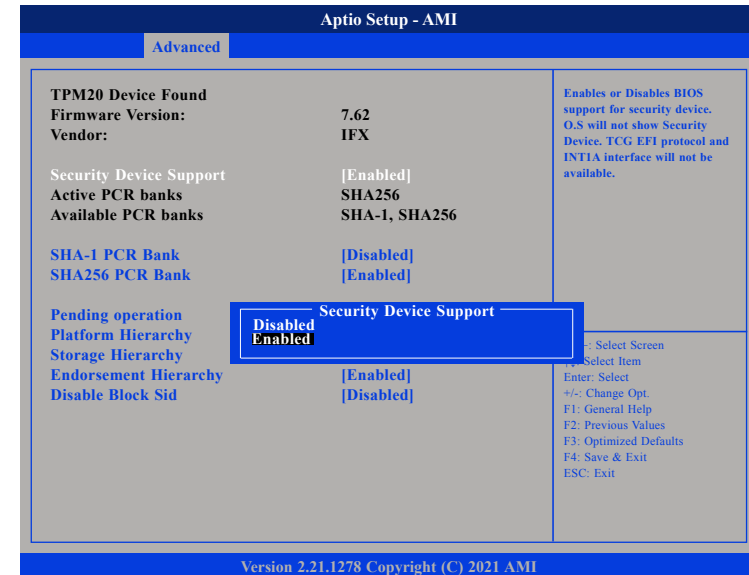
Enables or disables CPU power management. Allows CPU to go to C states when it's not 100% utilized.

RaceConditionResponse Policy

Enables or disables race condition response discovered.

Trusted Computing

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



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.

SHA-1 PCR Bank

Enables or disables SHA-1 PCR Bank.

SHA256 PCR Bank

Enables or disables SHA256 PCR Bank.

Pending operation

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

Platform Hierarchy

Enables or disables platform hierarchy.

Storage Hierarchy

Enables or disables storage hierarchy.

Endorsement Hierarchy

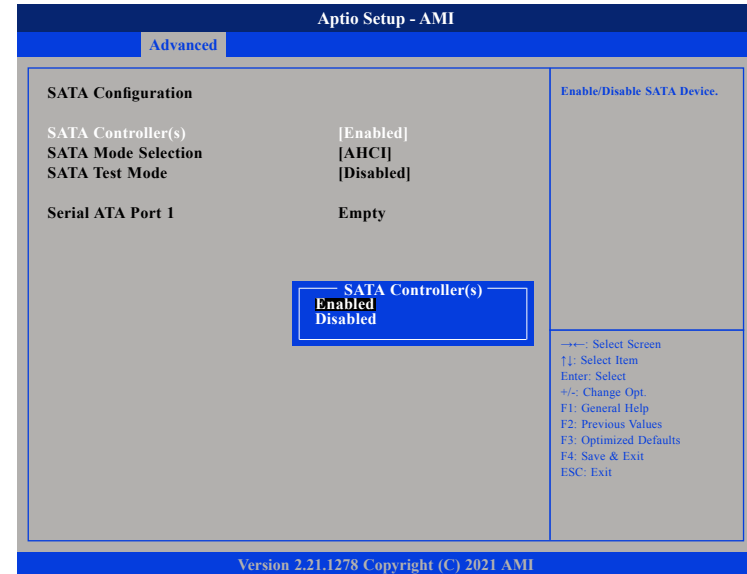
Enables or disables endorsement hierarchy.

Disable Block Sid

Override to allow SID authentication in TCG storage device.

SATA Configuration

This section is used to configure the SATA drives.



SATA Controller(s)

Enables or disables SATA device.

SATA Mode Selection

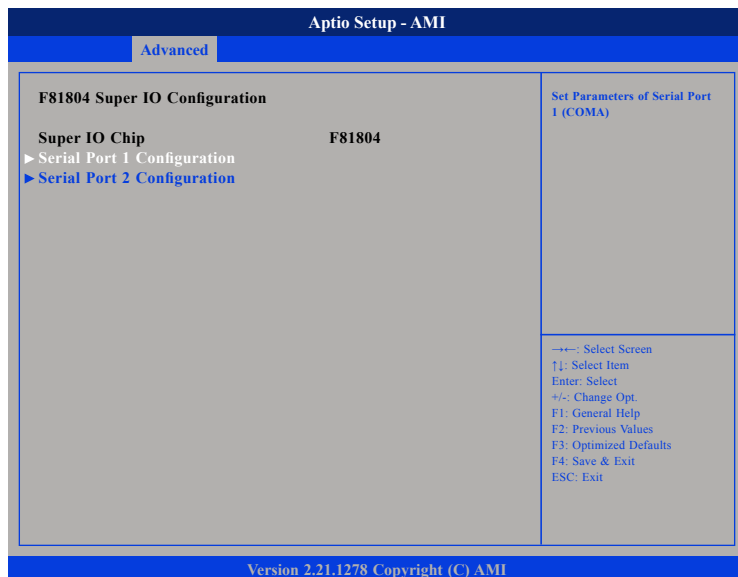
Determines how SATA controller(s) operate.

SATA Test Mode

Enables or disables SATA test mode.

F81804 Super IO Configuration

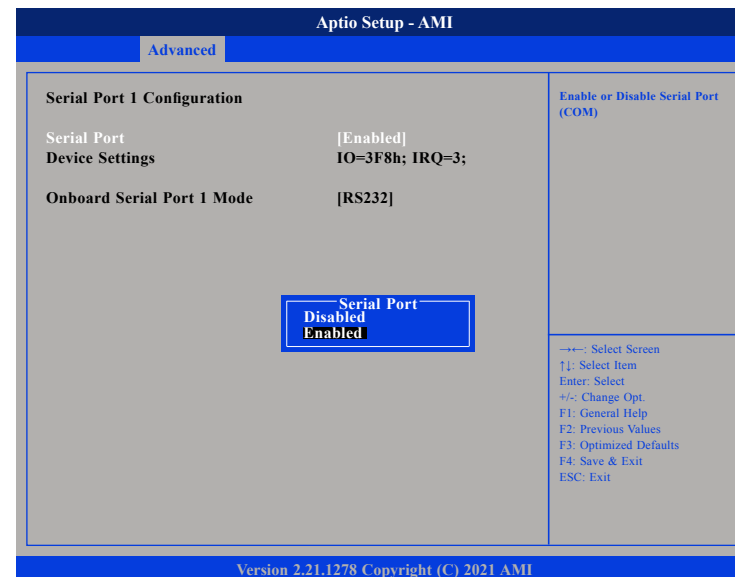
This section is used to configure serial ports 1 to 2.



Super IO Chip

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

Serial Port 1 Configuration



Serial Port

Enables or disables the serial port.

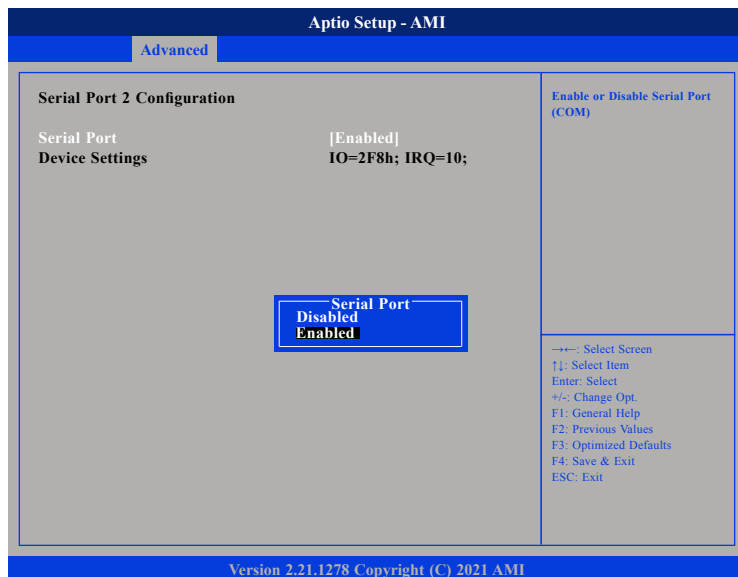
Device Settings

Displays the IO address and IRQ of serial port 1.

Onboard Serial Port 1 Mode

This field is used to configure the mode of serial port 1 as RS232, RS422, or RS485.

Serial Port 2 Configuration



Serial Port

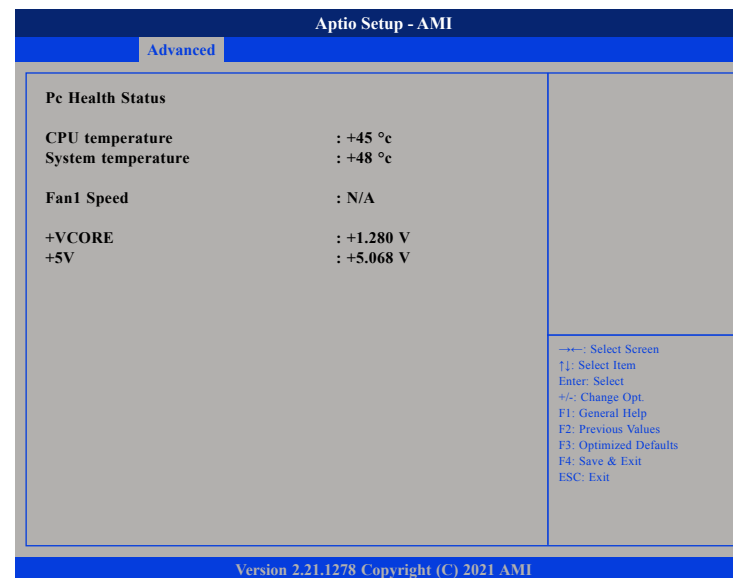
Enables or disables the serial port.

Device Settings

Displays the IO address and IRQ of serial port 2.

Hardware Monitor

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



CPU Temp

Detects and displays the current CPU temperature.

System Temperature

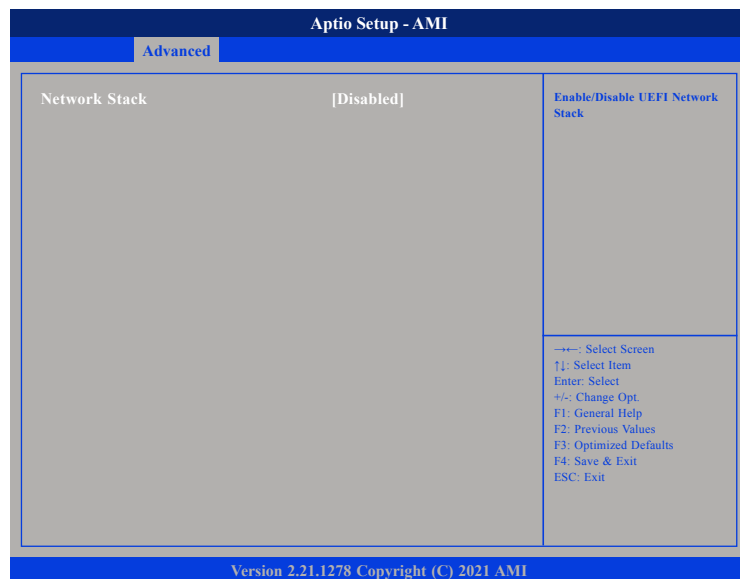
Detects and displays the internal temperature of the system.

VCORE to +5V

Detects and displays the output voltages.

Network Stack Configuration

This section is used to configure the network stack settings.

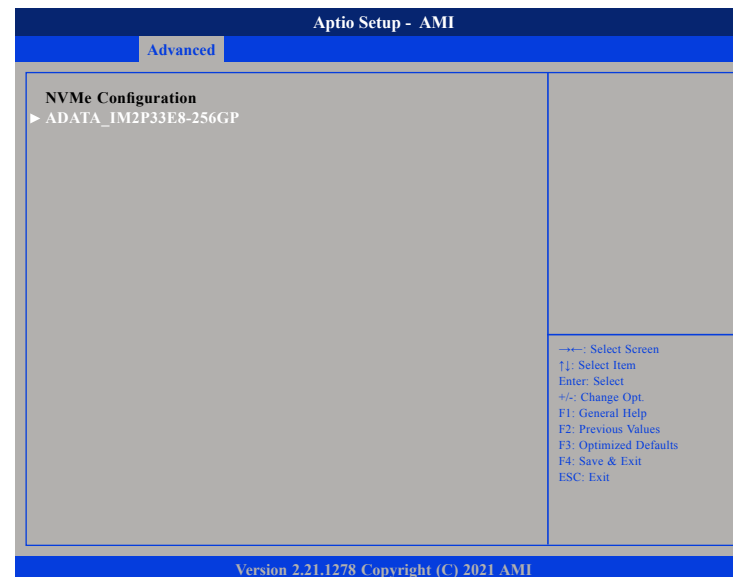


Network Stack

Enables or disables UEFI network stack.

NVMe Configuration

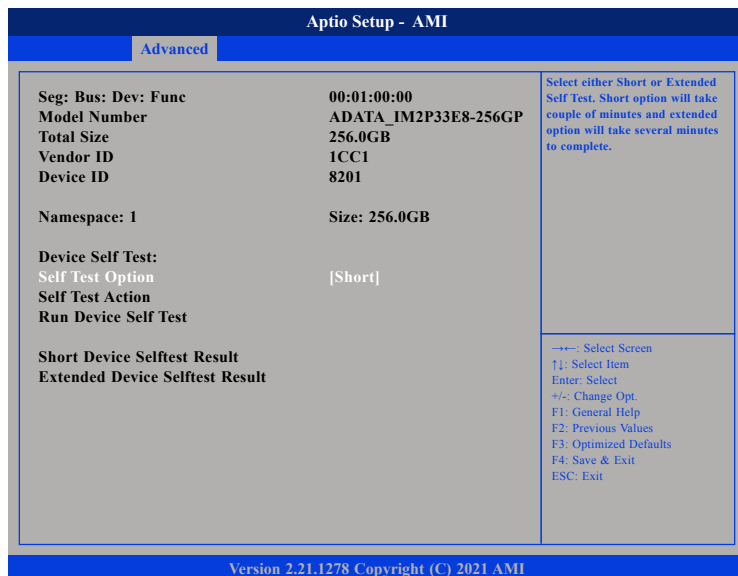
This section is used to display information on the NVMe devices installed.



NVMe Device (ADATA_IM2P33E8-256GP)

Enters the submenu of the NVMe device.

NVMe Device (ADATA_IM2P33E8-256GP)



Run Device Self Test

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

Self Test Option

Configures the method used for self test.

Short Short option will take couple of minutes to complete.
Extended Extended option will take several minutes to complete.

Self Test Action

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

Security

Aptio Setup - AMI				
Main	Advanced	Security	Boot	Save & Exit
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. The password length must be in the following range: Minimum length 3 Maximum length 20 Administrator Password ▶ Secure Boot		Set Administrator Password →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
Version 2.21.1278 Copyright (C) 2021 AMI				

Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Secure Boot

Aptio Setup - AMI				
Main	Advanced	Security	Boot	Save & Exit
System Mode Secure Boot Secure Boot Mode ▶ Restore Factory Keys ▶ Reset To Setup Mode ▶ Key Management		Setup [Enabled] Not Active [Standard]	Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Version 2.21.1278 Copyright (C) 2021 AMI				

Secure Boot

Select this to enable or disable Secure Boot. Secure Boot only works when the system runs in user mode.

Secure Boot Mode

Select this to configure the Secure Boot mode.

Standard

Fixed secure boot policy.

Custom

Secure boot policy variables can be configured by a physically present user without full authentication.

Boot



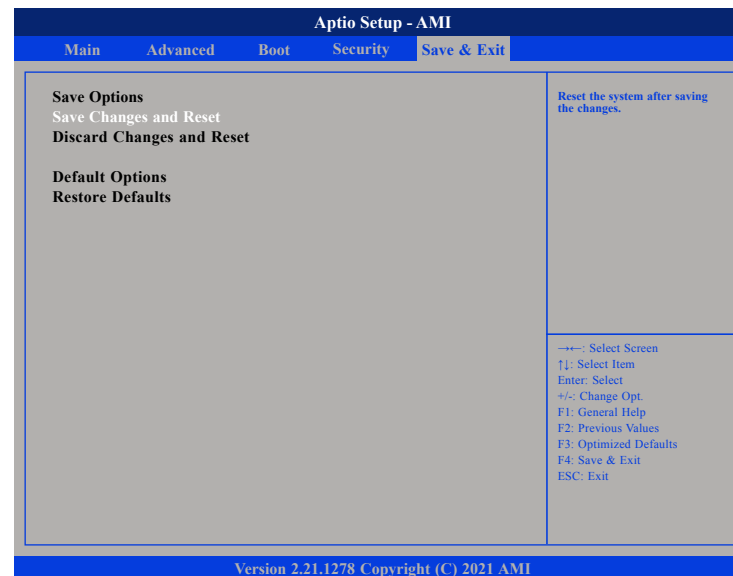
Bootup NumLock State

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.

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.

Save & Exit



Save Changes and Reset

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

Discard Changes and Reset

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

Restore Defaults

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

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