NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Fanless Embedded Computer
NDiS B339
User Manual

CONTENTS

Chapter 3: System Setup

Chapter 4: BIOS Setup

PREFACE

Copyright

This publication, including all photographs, illustrations and software, is protected under international copyright laws, with all rights reserved. No part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without the prior written consent from NEXCOM International Co., Ltd.

Disclaimer

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

Acknowledgements

NDiS B339 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.

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.

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.

Global Service Contact Information

Headquarters
NEXCOM International Co., Ltd.

9F, No. 920, Zhongzheng Rd.,
Zhonghe District, New Taipei City, 23586,
Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
www.nexcom.com

Asia

Taiwan
NexAIoT Headquarters
Industry 4.0 and Cloud Services

13F, No.922, Zhongzheng Rd.,
Zhonghe District, New Taipei City,
23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7926
Email: jacobhuang@nexaiot.com
www.nexaiot.com

NexAIoT Co., Ltd.
Taichung Office

16F, No.250, Sec.2, Chongde Rd.,
Beitun District,
Taichung City, 406, Taiwan, R.O.C.
Tel: +886-4-2249-1179
Fax: +886-4-2249-1172
Email: jacobhuang@nexaiot.com
www.nexaiot.com

NexCOBOT Taiwan Co., Ltd.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7926
Email: jennyshern@nexcobot.com
www.nexcobot.com

GreenBase Technology Corp.

13F, No.922, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7900
Email: vivianlin@nexcom.com.tw
www.nexcom.com.tw

DivioTec Inc.

19F-1A, No.97, Sec.4, ChongXin Rd.,
Sanchong District,
New Taipei City, 24161, Taiwan, R.O.C.
Tel: +886-2-8976-3077
Email: sales@diviotec.com
www.diviotec.com

AIoT Cloud Corp.

13F, No.922, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: alantsai@aiotcloud.net
www.aiotcloud.dev

EMBUX TECHNOLOGY CO., LTD.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: info@embux.com
www.embux.com

TMR TECHNOLOGIES CO., LTD.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: services@tmrtek.com
www.tmrtek.com

China
NEXSEC Incorporated

201, Floor 2, Unit 2, Building 15, Yard 3,
Gaolizhang Road, Haidian District,
Beijing, 100094, China
Tel: +86-10-5704-2680
Fax: +86-10-5704-2681
Email: marketing@nexsec.cn
www.nexsec.cn

NEXCOM Shanghai

Room 406-407, Building C, No 154, Lane 953,
Jianchuan Road, Minhang District,
Shanghai, 201108, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Surveillance Technology Corp.

Floor 8, Building B3, Xiufeng Industrial Zone,
GanKeng Community, Buji Street,
LongGang District,
ShenZhen, 518112, China
Tel: +86-755-8364-7768
Fax: +86-755-8364-7738
Email: steveyang@nexcom.com.tw
www.nexcom.cn

NEXGOL Chongqing

1st Building No.999,
Star Boulevard, Yongchuan Dist,
Chongqing City, 402160, China
Tel: +86-23-4960-9080
Fax: +86-23-4966-5855
Email: sales@nexgol.com.cn
www.nexcom.cn

Beijing NexGemo Technology Co.,Ltd.

Room 205, No.1, Fazhan Road.,
Beijing International Information Industry Base,
Changping District,
Beijing, 102206, China
Tel: +86-10-8072-2025
Fax: +86-10-8072-2022
Email: sales@nexgemo.cn
www.nexgemo.cn

Japan
NEXCOM Japan

9F, Tamachi Hara Bldg.,
4-11-5, Shiba Minato-ku,
Tokyo, 108-0014, Japan
Tel: +81-3-5419-7830
Fax: +81-3-5419-7832
Email: sales@nexcom-jp.com
www.nexcom-jp.com

America
USA
NEXCOM USA

46665 Fremont Blvd.,
Fremont CA 94538, USA
Tel: +1-510-656-2248
Fax: +1-510-656-2158
Email: sales@nexcom.com
www.nexcomusa.com

Europe
United Kingdom
NEXCOM EUROPE

10 Vincent Avenue,
Crownhill Business Centre,
Milton Keynes, Buckinghamshire
MK8 0AB, United Kingdom
Tel: +44-1908-267121
Fax: +44-1908-262042
Email: sales.uk@nexcom.eu
www.nexcom.com

Package Contents

Before continuing, verify that the NDiS B339 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	10W00B33900X0	NDiS B339	1
2	10W00B33901X0	NDiS B339-X7211	1
3	10W00B33902X0	NDiS B339-X7433	1

Ordering Information

The following information below provides ordering information for NDiS B339.

NDiS B339 (P/N: 10W00B33900X0)

Slim & Fanless Visual Edge Computer power by Intel Atom® x7213RE processor

NDiS B339-X7211 (P/N: 10W00B33901X0)

Slim & Fanless Visual Edge Computer power by Intel Atom® x7211RE processor

NDiS B339-X7433 ((P/N: 10W00B33902X0)

Slim & Fanless Visual Edge Computer power by Intel Atom® x7433RE processor

xiii NDiS B339 User Manual

CHAPTER 1: PRODUCT INTRODUCTION

Overview

NDiS B339 visual edge computer, which is designed with an Intel Atom® x7000RE Series SoC processor. A fanless industrial computer, the NDiS B339 is designed for edge computing applications amount Smart Retail sector and is superior in data collection within diverse environments. Equipped with a robust I/O interface, the NDiS B339 features 2 x RS-232 port, 2 x high-speed 2.5G LAN port, 4 x USB port, and 2 x HDMI 2.0 port, providing seamless connectivity and versatility. Built to thrive in demanding conditions, the NDiS B339 supports a wide temperature range -20°C to 60°C, making it suitable for semi-outdoor installations, such as QSR drive through kiosks, intelligent vending machines, information stands, bus stops, or digital transit information signs. Its fanless design ensures silent and reliable operation, while the inclusion of 2 HDMI 2.0 ports enhances display capabilities for multimedia applications.

Key Features

- Intel Atom® x7000RE Processor Series
- Dual HDMI 2.0, up to 3840x2160@60Hz
- TPM 2.0 on board design for security
- Dual LAN ports and 4 x USB 3.2 port for easy connection
- Slim compact chassis and fanless design
- 1 x M.2 Key M 2242, supports PCIe x 1 & SATA for storage
- 1 x DDR4 260-pin SO-DIMM, up to 16 GB
- 1 x Half/Full size Mini PCIe slot, supports Wi-Fi/BT/4G LTE module
- Support +12 to 24V DC In

Physical Features

Front Panel

USB 3.2 Gen 1x1

Power Button

LAN1/2

HDMI 2.0

Rear Panel

Antenna Holes

+12 to 24V DC In

COM1/2

Line-out
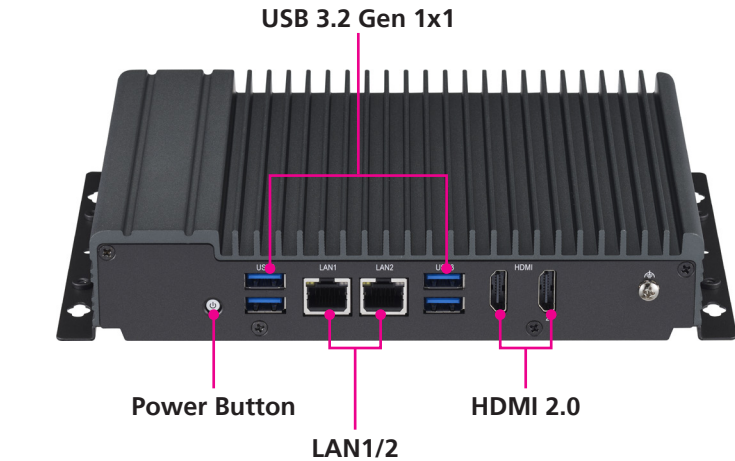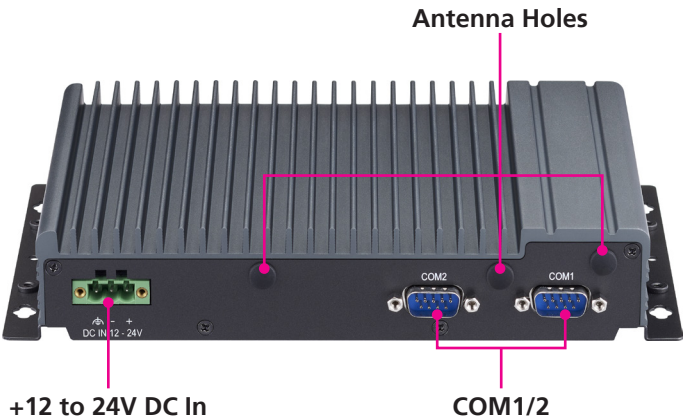
Hardware Specifications

System

- Onboard Intel Atom® processor x7211RE, Dual Core, frequency up to 3.2 GHz, 6M Cache (formerly Amston Lake)
  - Intel® UHD Graphics
- Onboard Intel Atom® processor x7213RE, Dual Core, frequency up to 3.4 GHz , 6M Cache (formerly Amston Lake)
  - Intel® UHD Graphics
- Onboard Intel Atom® processor x7433RE, Quad Core, frequency up to 3.4 GHz , 6M Cache (formerly Amston Lake)
  - Intel® UHD Graphics

Main Memory

- 1 x DDR4 SO-DIMM, non-ECC, up to 16GB

I/O Interface-Front

- 1 x Power button with LED
- 4 x USB 3.2 Gen 1x1, Type-A
- 2 x 2.5GbE RJ45 port, Intel® i226V
- 2 x HDMI 2.0, up to 3840x2160@60Hz

I/O Interface-Rear

- 1 x 3-pin phoenix contact +12 to 24V DC input
- 2 x COM port
  - COM1: supports RS-232/RS-422/RS-485
  - COM2: supports RS-232
- 3 x Antenna hole

Internal-Internal

- 2 x 6-pin header for 3 x USB 2.0 port
- 1 x 10-pin header for GPIO, 4 x GPI, 4 x GPO
- 1 x 4-pin pin header for 2W/4Ω speaker out
- 1 x 9-pin pin header for Mic in and Line out
- 1 x 2-pin header for Reset
- 1 x 7 pin SATA & 2 pin SATA power connector

Storage

- 1 x M.2 Key M 2242 NVMe SSD (PCIe 3.0 x1, SATA 3.0)

Expansion

- 1 x half/full size Mini PCIe slot, supports Wi-Fi/BT/4G LTE module

Power Requirement

- Power input: +12 to 24V DC In
- DC input type: 3-pin terminal block
- AC/DC power adapter: not include in accessory

Mechanical

- System Unit
  - Dimension: 224mm (W) x 150mm (D) x 39.8mm (H) (with mount bracket)
  - Net weight: 1.4 kg/Unit
- Package Carton
  - Dimension: 491mm x 357mm x 302 mm
  - Gross weight: 10 kg/(5 units/per outer carton)

Environment

- Operating temperature:
  - Ambient with air flow: -20°C~60°C
  - Storage temperature: -20°C~80°C
- Relative humidity: 0%~90% (non-condensing)
- Shock protection: 20g peak acceleration, 11 ms according to IEC 60068-2-27
- Vibration protection
  - Random: 2.2Grms@5~500Hz, 0.5hr/axis (non-operating),
  - IEC 60068-2-64
  - Sinusoidal: 2Grms@5~500Hz, 1hr/axis, IEC 60068-2-6

Operating System

- Windows 11
- Windows 10, 64bit
- Linux

Certification

- CE (EMC EN 55035 + EN 55032)
- FCC Class A (EMI Part 15B)
- LVD (EN 62368-1)

Mechanical Dimensions
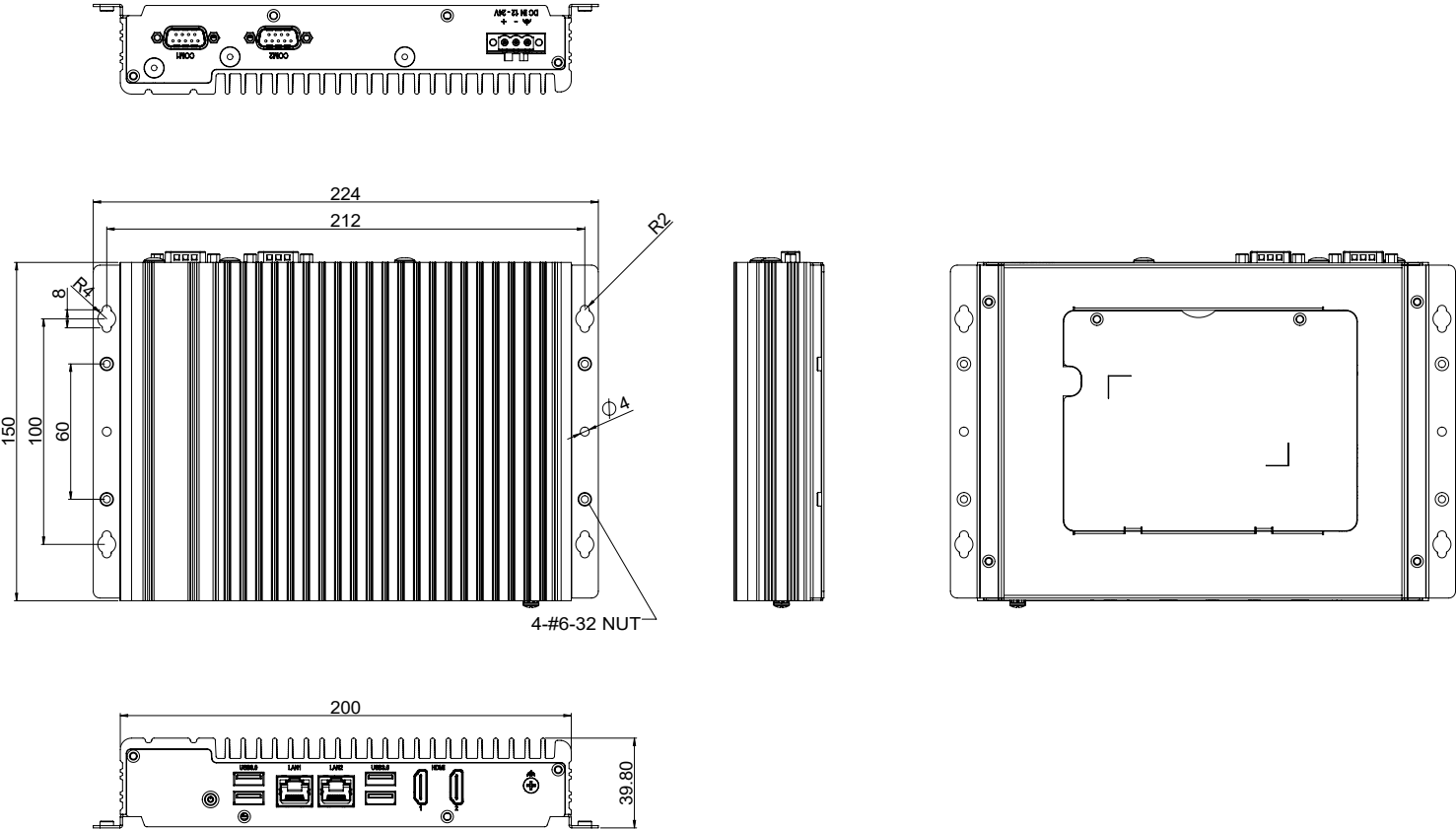
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NDiS B339 motherboard.

Before You Begin

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

- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  – A Philips screwdriver
  – A flat-tipped screwdriver
  – A set of jewelers screwdrivers
  – A grounding strap
  – An anti-static pad

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

- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

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

Follow the guidelines below to avoid damage to your computer or yourself:
- Always disconnect the unit from the power outlet whenever you are working inside the case.

- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.

- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.

- Use correct screws and do not over tighten screws.

Jumper Settings

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

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

Two-Pin Jumpers: Open (Left) and Short (Right)
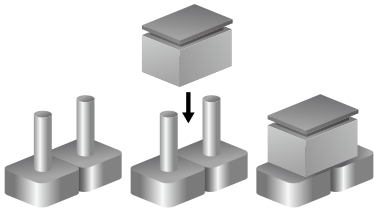
Three-Pin Jumpers: Pins 1 and 2 are Short
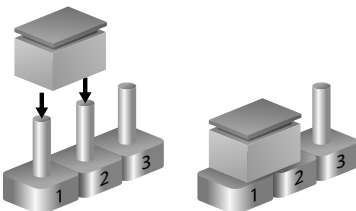
Locations of the Jumpers and Connectors for NDiS B339

The following figures show the motherboard used in the DNiS B339, and indicate the locations of the jumpers and connectors. Refer to this chapter for detailed pin settings and definitions of the connectors marked in pink on the figures.

Top View
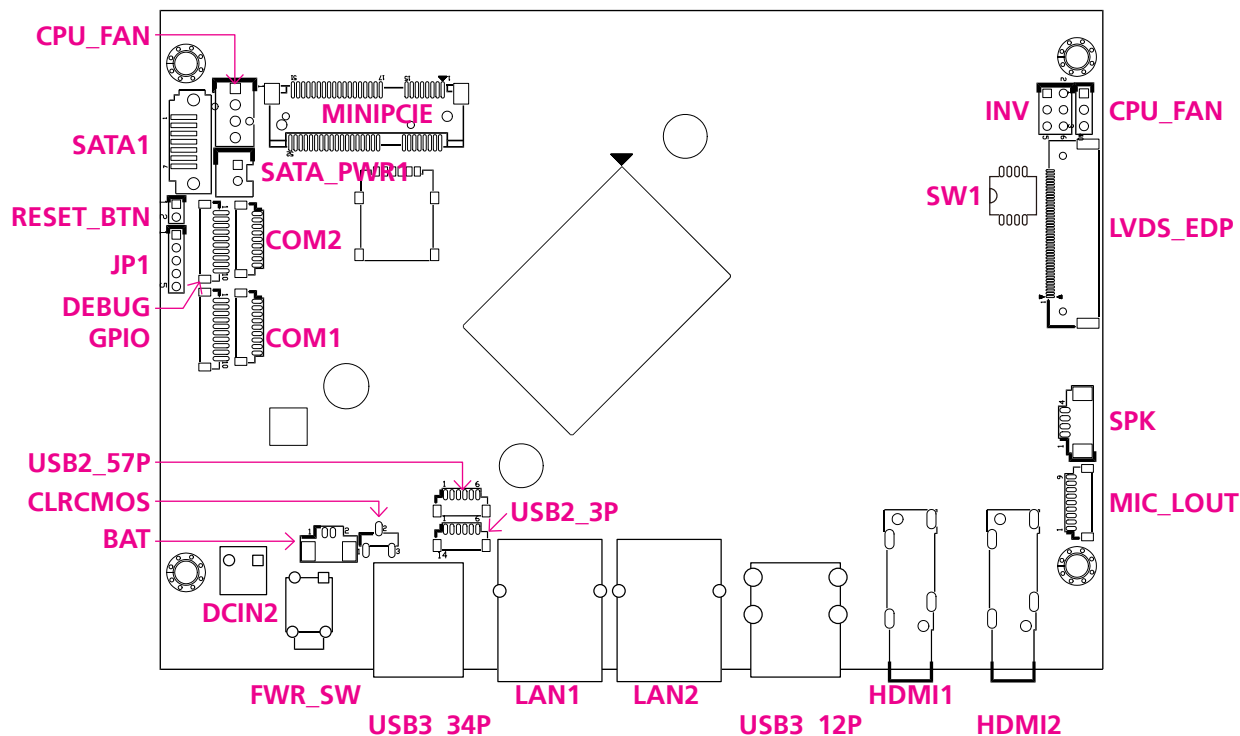
Bottom View
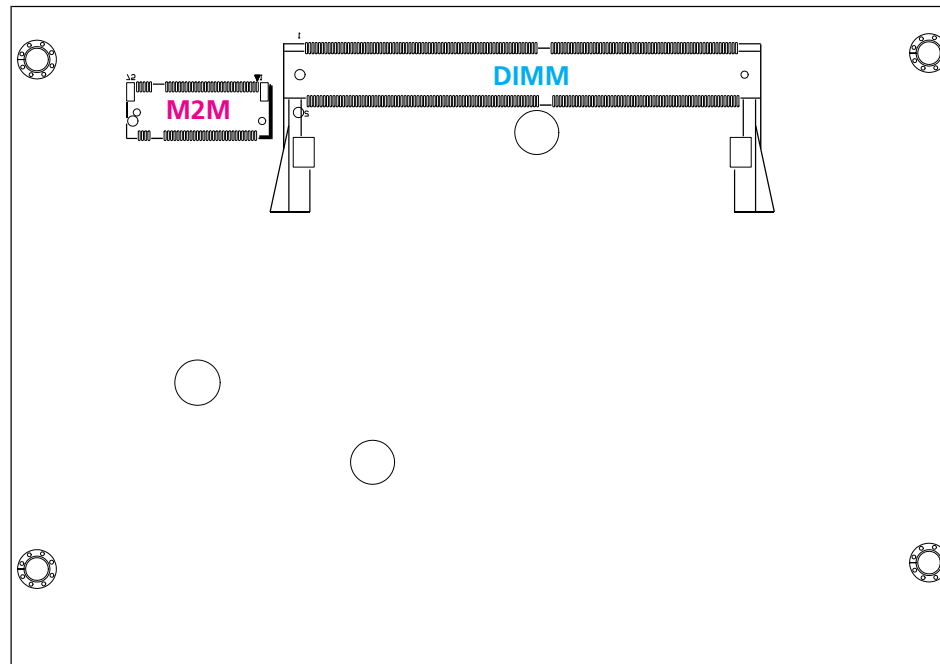
External I/O

HDMI

Connector location: HDMI1, HDMI2

```
19 ┌─────────────┐ 1
18 └─────────────┘ 2
```
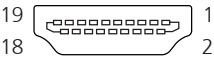
Pin	Definition	Type	Description
1	HDMI1_TX2P	2	GND
3	HDMI1_TX2N	4	HDMI1_TX1P
5	GND	6	HDMI1_TX1N
7	HDMI1_TX0P	8	GND
9	HDMI1_TX0N	10	HDMI1_CLK_P
11	GND	12	HDMI1_CLK_N
13	NC	14	NC
15	HDMI1_SCL	16	HDMI1_SDA
17	GND	18	HDMI1_P5V
19	HDMI1_HPD	MH1	CGND
MH2	CGND	MH3	CGND
MH4	CGND		

LAN Port

Connector type: RJ45 port with LED
Connector location: LAN1, LAN2

```
C8   C1
```
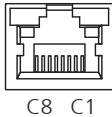
Pin	Definition	Type	Description
C1	TX1+	C2	TX1-
C3	TX2+	C4	TX3+
C5	TX3-	C6	TX2-
C7	TX4+	C8	TX4-

System Power Button

Connector type: 1 x 4 4-pin header
Connector location: PWR_SW
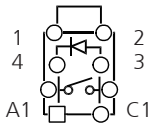
Pin	Definition	Type	Description
1	SWITCH_NODE1	2	SWITCH_NODE2
3	SWITCH_NODE2	4	SWITCH_NODE1
C1	LED-	A1	LED+
MH1	N.C.	MH2	N.C

USB 3.2

Connector type: USB 3.2 Gen 1x1, Type-A
Connector location: USB3_12P, USB3_34P
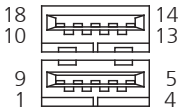
Pin	Definition	Type	Description
1	+5V	2	USB2_3N
3	USB2_3P	4	GND
5	USB3_RX3N	6	USB3_RX3P
7	GND	8	USB3_TX3N
9	USB3_TX3P	10	+5V
11	USB2_4N	12	USB2_4P
13	GND	14	USB3_RX4N
15	USB3_RX4P	16	GND
17	USB3_TX4N	18	USB3_TX4P
MH1	CGND	MH2	CGND
MH3	CGND	MH4	CGND

Internal Jumpers & DIP Switches

Clear CMOS

Connector type: 1 x 3-pin header, 2.0mm pitch
Connector location: CLRCMOS

1 ▢ ○ ○ 3

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

LVDS Panel Voltage Select

Connector type: 1 x 3-pin header, 2.54mm pitch
Connector location: LCD_PWR

1 ▢ ○ ○ 3
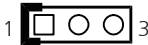
Pin	Settings
1-2 On	3.3V (Default)
2-3 On	5V

COM2 RI Select

Connector type: 1 x 5-pin header, 2.0mm pitch
Connector location: JP1
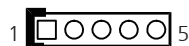
Pin	Settings
1	RI (Default)
2	COM2_RI (Default)
3	+5V
4	COM2_RI
5	+12V

eDP Panel Resolution Select

Connector type: 4-pin DIP switch
Connector location: SW1

Pin4	Pin3	Pin2	Pin1	For LVDS Panel	For eDP Panel
ON	ON	ON	ON	800x600 18bit Single	Not Supported
ON	ON	ON	OFF	1024x768 18bit Single	Not Supported
ON	ON	OFF	ON	1024x768 24bit Single	Not Supported
ON	ON	OFF	OFF	1280x768 18bit Single	Not Supported
ON	OFF	ON	ON	1280x800 18bit Single	Not Supported
ON	OFF	ON	OFF	1280x800 24bit Single	Not Supported
ON	OFF	OFF	ON	1280x1024 24bit Dual	Not Supported
ON	OFF	OFF	OFF	1366x768 18bit Single	Not Supported
OFF	ON	ON	ON	1366x768 24bit Single	Not Supported
OFF	ON	ON	OFF	1440x900 24bit Dual	Not Supported
OFF	ON	OFF	ON	1400x1050 24bit Dual	Not Supported
OFF	ON	OFF	OFF	1600x900 24bit Dual	Not Supported
OFF	OFF	ON	ON	1680x1050 24bit Dual	Not Supported
OFF	OFF	ON	OFF	1600x1200 24bit Dual	Not Supported
OFF	OFF	OFF	ON	1920x1080 24bit Dual	Not Supported
OFF*	OFF*	OFF*	OFF*	1920x1200 24bit Dual (default)	Up to 1920x1080 (default)

Default: All OFF

Internal I/O

Battery Connector

Connector type: 1x 2-pin header, 1.25mm pitch
Connector location: BAT
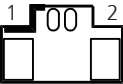
Pin	Definition
1	GND
2	BAT

COM 1 Port Header

Connector type: WtoB, 1 x 9-pin header, 1.0mm pitch,
supports RS-232/422/485
Connector location: COM1
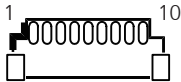
RS-232		RS-422		RS-485	
Pin	Definition	Pin	Definition	Pin	Definition
1	RI	1		1	
2	CTS	2		2	
3	RTS	3		3	
4	DSR	4		4	
5	GND	5		5	
6	DTR	6	RX-	6	
7	TXD	7	RX+	7	
8	RXD	8	TX+	8	TR+
9	DCD	9	TX-	9	TR-

COM 2 Port Header

Connector type: WtoB, 1 x 9-pin header, 1.0mm pitch,
              supports RS-232 only
Connector location: COM2
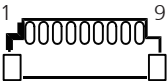
Pin	Definition
1	RI
2	CTS
3	RTS
4	DSR
5	GND
6	DTR
7	TXD
8	RXD
9	DCD

FAN Connector

Connector type: WtoB Conn. 1 x 4-pin header, 2.54mm pitch
Connector location: CPU_FAN
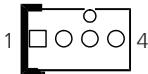
Pin	Definition
1	GND
2	+12V
3	FAN Speed Detect
4	FAN Speed Control

DC Power Input

Connector type: 1 x 2-pin header
Connector location: DCIN2
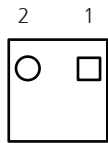
Pin	Definition
1	GND
2	+12V

Debug Port Connector

Connector type: 1 x 10-pin header, 1.0mm pitch
Connector location: DEBUG
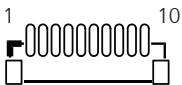
Pin	Definition	Pin	Definition
1	GND	2	PLTRST#
3	ESPI_CLK	4	ESPI_CS#
5	ESPI_IO3	6	ESPI_IO2
7	ESPI_IO1	8	ESPI_IO0
9	ESPI_RST#	10	3.3V

GPIO Connector

Connector type: 1 x 10-pin header, 1.0mm pitch
Connector location: GPIO

LVDS Inverter Connector

Connector type: 2 x 3, 6-pin header JST, 2.54mm pitch
Connector location: INV
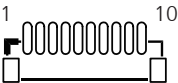
Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPO0	4	GPO1
5	GPO2	6	GPO3
7	GPI0	8	GPI1
9	GPI2	10	GPI3
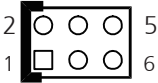
Pin	Definition	Pin	Definition
1	GND	2	GND
3	+V_INV	4	+V_INV
5	INV_BKLTEN	6	INV_BKLTCTRL

LVDS/eDP Panel Connector

Connector type: 1 x 40-pin header, 0.5mm pitch
Connector location: LVDS_EDP

40   1
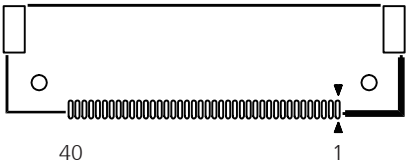
LVDS Definition			
Pin	Definition	Pin	Definition
1	LVDS_DAT3P	2	LVDS_DAT3N
3	LVDS_DAT2P	4	LVDS_DAT2N
5	LVDS_DAT1P	6	LVDS_DAT1N
7	LVDS_DAT0P	8	LVDS_DAT0N
9	LVDS_DAT7P	10	LVDS_DAT7N
11	LVDS_DAT6P	12	LVDS_DAT6N
13	LVDS_DAT5P	14	LVDS_DAT5N
15	LVDS_DAT4P	16	LVDS_DAT4N
17	GND	18	+V_PANEL
19	+V_PANEL	20	+V_PANEL

LVDS Definition			
Pin	Definition	Pin	Definition
21	GND	22	+V_PANEL
23	GND	24	GND
25	GND	26	LVDS_CLK1P
27	LVDS_CLK1N	28	GND
29	GND	30	GND
31	Hot-Plug Detect	32	INV_BKLTEN
33	INV_BKLTCTRL	34	LVDS_CLK2P
35	LVDS_CLK2N	36	+V_INV
37	+V_INV	38	+V_INV
39	+V_INV	40	N.C.

Continued on next page

eDP Definition			
Pin	Definition	Pin	Definition
1	N.C.	2	N.C.
3	EDP_TX0P	4	EDP_TX0N
5	EDP_TX1P	6	EDP_TX1N
7	EDP_HPD	8	N.C.
9	N.C.	10	N.C.
11	N.C.	12	N.C.
13	N.C.	14	N.C.
15	N.C.	16	N.C.
17	GND	18	+V_PANEL
19	+V_PANEL	20	+V_PANEL

eDP Definition			
Pin	Definition	Pin	Definition
21	GND	22	+V_PANEL
23	GND	24	GND
25	GND	26	EDP_AUXP
27	EDP_AUXN	28	GND
29	GND	30	GND
31	Hot-Plug Detect	32	INV_BKLTEN
33	INV_BKLTCTRL	34	N.C.
35	N.C.	36	+V_INV
37	+V_INV	38	+V_INV
39	+V_INV	40	GND

M.2 Key M Connector

Connector type: M.2 Key M, 2242, supports PCIe x1 or SATA
Connector location: M2M

75   1

Pin	Definition	Pin	Definition
1	GND	2	VCC3
3	GND	4	VCC3
5	PCIE3_RXN	6	NC
7	PCIE3_RXP	8	NC
9	GND	10	M2M_LED#
11	PCIE3_TXN	12	VCC3
13	PCIE3_TXP	14	VCC3
15	GND	16	VCC3
17	PCIE2_RXN	18	VCC3
19	PCIE2_RXP	20	NC
21	GND	22	NC
23	PCIE2_TXN	24	NC
25	PCIE2_TXP	26	NC
27	GND	28	NC
29	PCIE1_RXN	30	NC
31	PCIE1_RXP	32	NC

Pin	Definition	Pin	Definition
39	GND	40	NC
41	SATA_RXP(PCIE0_RXP)	42	NC
43	SATA_RXN(PCIE0_RXN)	44	NC
45	GND	46	NC
47	SATA_TXN(PCIE0_TXN)	48	NC
49	SATA_TXP(PCIE0_TXP)	50	RESET#
51	GND	52	CLKREQ#
53	CLK_PCIEN	54	WAKE#
55	CLK_PCIEP	56	NC
57	GND	58	NC
67	NC	68	NC
69	M2M_PEDET	70	VCC3
71	GND	72	VCC3
73	GND	74	VCC3
75	GND		

MIC in & Line out Connector

Connector type: 1 x 9-pin header, 1.0mm pitch
Connector location: MIC_LOUT
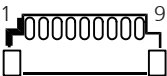
Pin	Definition	Pin	Definition
1	LINE_OUT-R	2	LINE_JD
3	AUDGND	4	LINE_OUT-L
5	AUDGND	6	MIC_OUT-R
7	MIC_JD	8	MIC_OUT-L
9	AUDGND		

Mini PCIe Connector

Connector location: MINIPCIE
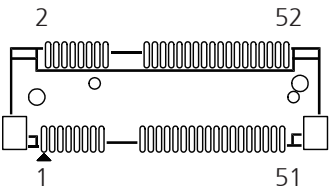
Pin	Definition	Pin	Definition
1	WAKE#	2	3.3V
3	NC	4	GND
5	NC	6	1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	CLKN0	12	UIM_CLK
13	CLKP0	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	W_DIS#
21	GND	22	RESET#
23	PCIE5_RXN / SATA_RXP	24	3.3V
25	PCIE5_RXP / SATA_RXN	26	GND

Pin	Definition	Pin	Definition
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	PCIE5_TXN / SATA_TXN	32	SMB_DATA
33	PCIE5_TXP / SATA_TXP	34	GND
35	GND	36	USB2_6DN
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	mSATA Presece Detection	52	3.3V

22 NDiS B339 User Manual

System Reset Connector

Connector type: 1 x 2-pin header, 2.0mm pitch
Connector location: RESET_BTN

Pin	Definition
1	GND
2	RESET#

SATA Connector

Connector type: 1 x 7P, 1.27mm
Connector location: SATA1

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

SATA Power Connector

Connector type: WtoB Con. 1 x 2-pin header, 2.5mm
Connector location: SATA_PWR1
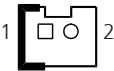
Pin	Definition
1	+5V
2	GND

Speaker Connector

Connector type: 1 x 4-pin header, 1.25mm pitch
Connector location: SPK
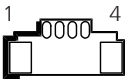
Pin	Definition	Pin	Definition
1	L_OUT+	2	L_OUT-
3	R_OUT+	4	R_OUT-

USB 2.0 Connector

Connector type: 1 x 6-pin header, 1.0mm for 2x USB 2.0 port
Connector location: USB2_57

USB 2.0 Connector

Connector type: 1 x 6-pin header, 1.0mm for 1x USB 2.0 port
Connector location: USB2_3P
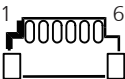
Pin	Definition	Pin	Definition
1	GND	2	USB5N
3	USB5P	4	USB7N
5	USB7P	6	+5V
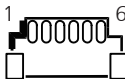
Pin	Definition	Pin	Definition
1	GND	2	NC
3	NC	4	USB3N
5	USB3P	6	+5V

Block Diagram
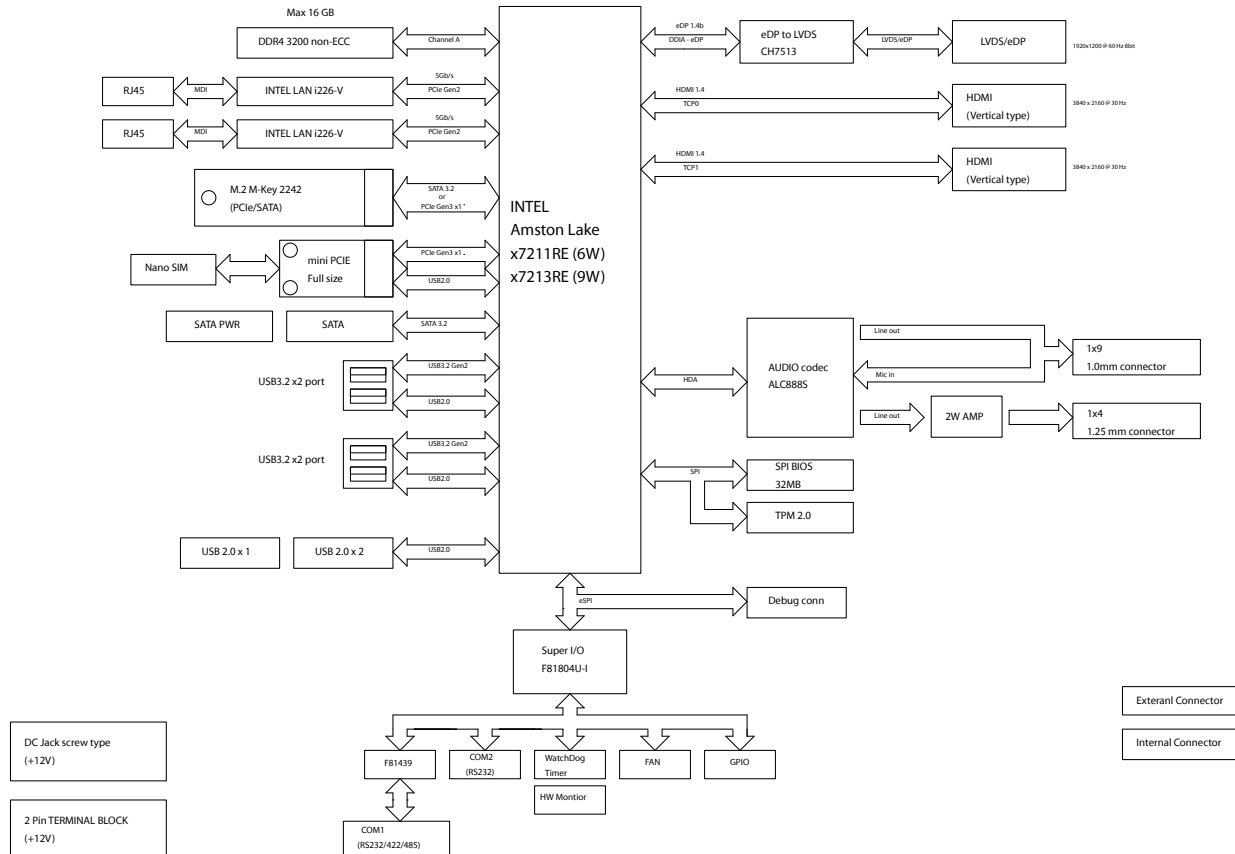
CHAPTER 3: SYSTEM SETUP

Removing the Bottom 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. Loosen these two screws and place them in a safe place for later use, then remove the bottom cover.

2. Once the cover is removed, the memory and SSD slots will appear, highlighted with pink marks, as shown below. Refer to the next section for detailed installation.
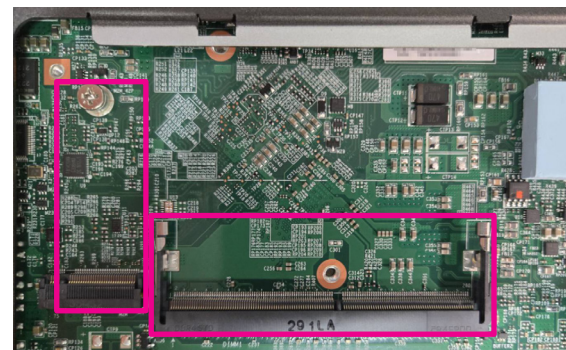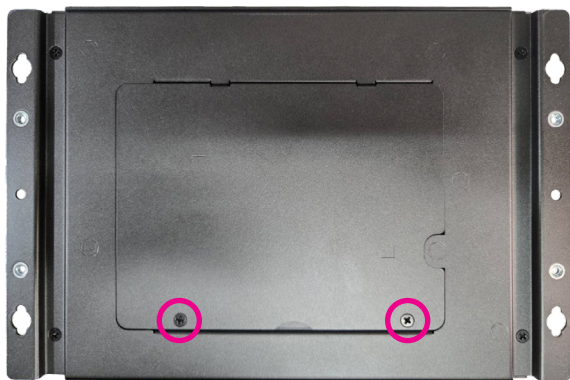
SSD slot   Memory slot

Installing an M.2 Storage Module

1. Locate the M.2 Key M 2242 slot and remove the screw shown in the image below on the motherboard.

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.
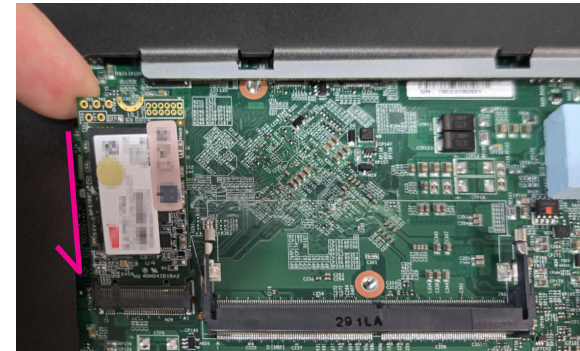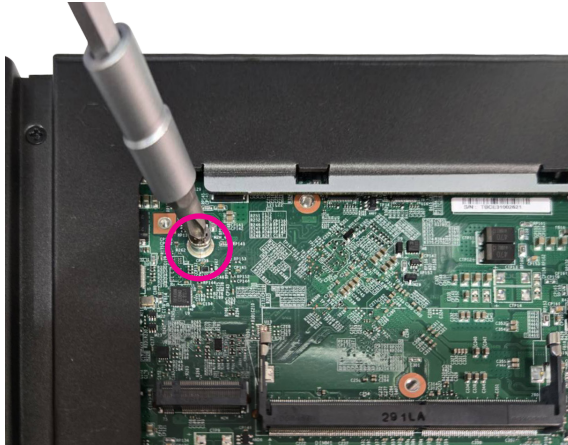
3. Push the module down and secure it with the screw that was removed in step 1.
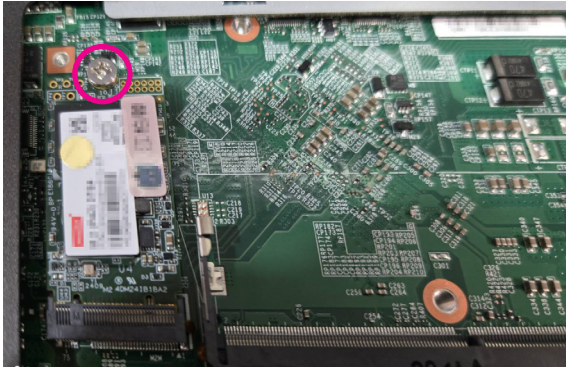
Installing a SO-DIMM Memory Module

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

2. Insert the memory 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.
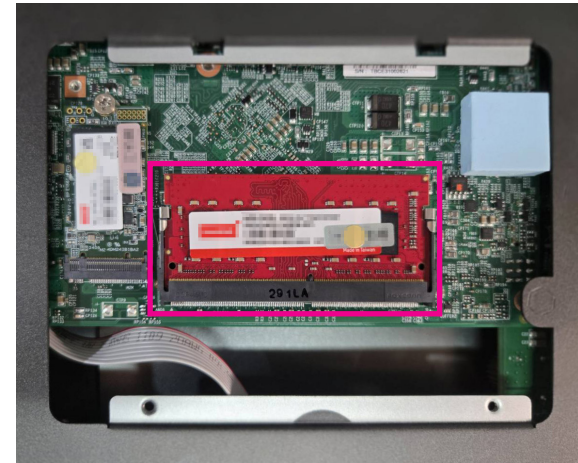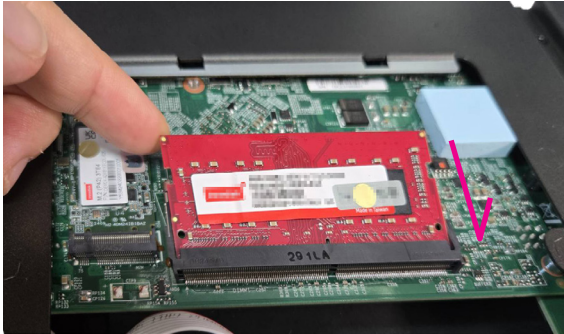
Installing a Full/Half Size Mini PCIe Wi-Fi/BT/4G LTE Module

1. Remove the 4 screws on the bottom, as shown below.

2. Remove the screws from the front and rear panels as shown below.

Front panel

Rear panel
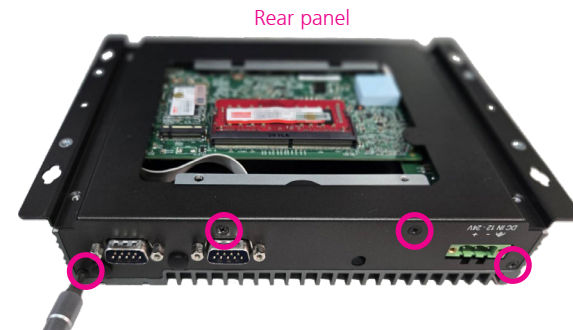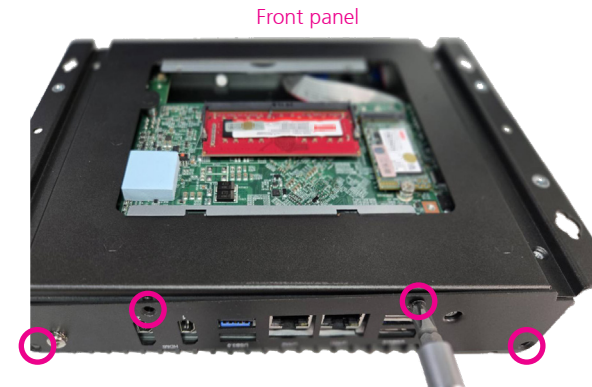
3. Detach the front panel carefully.

4. Separate the bottom part and the upper part of the chassis.

Bottom part

Upper part
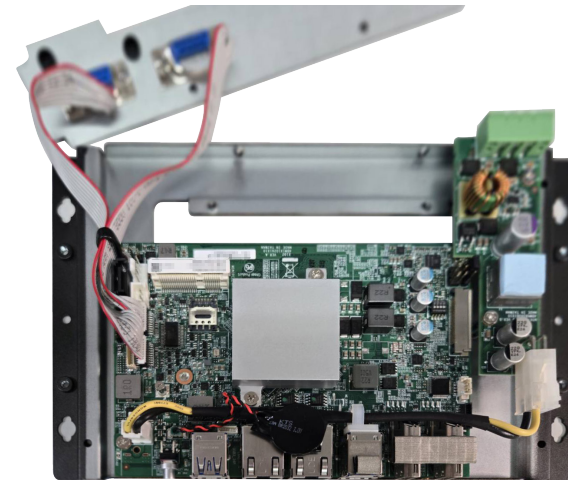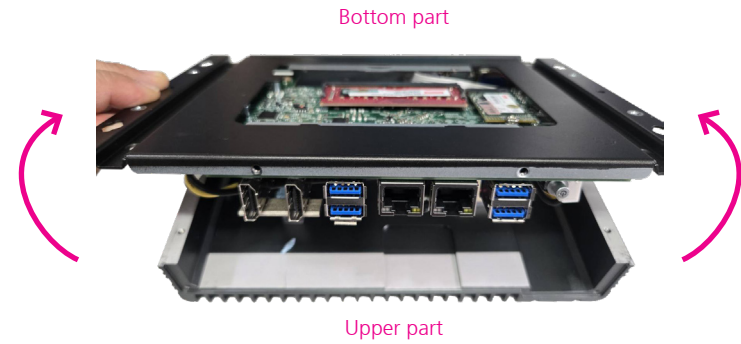
5. Remove the screw on the motherboard, as shown below.
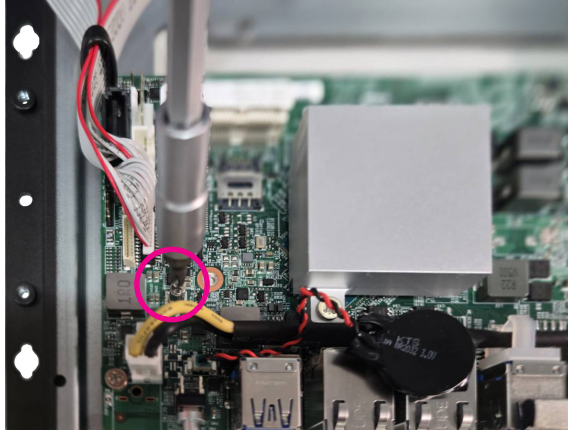
6. Insert the communication module and secure it with the screw removed in the previous step.
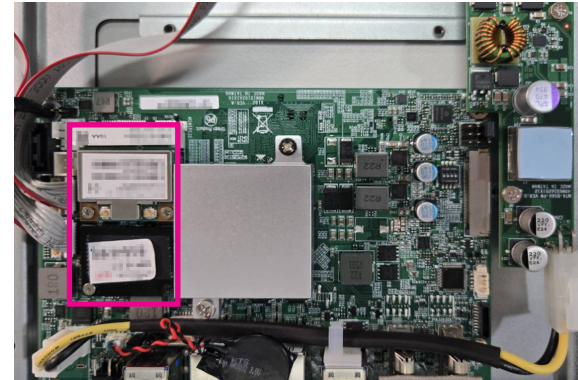
If the mini PCIe module is a half card (short card), follow the instruction below to install the module bracket. Align the Mini PCIe module to the module bracket and secure both together with screws.

Mini PCIe Module

Module Bracket

Mounting Hole

Gold-Plated Connector
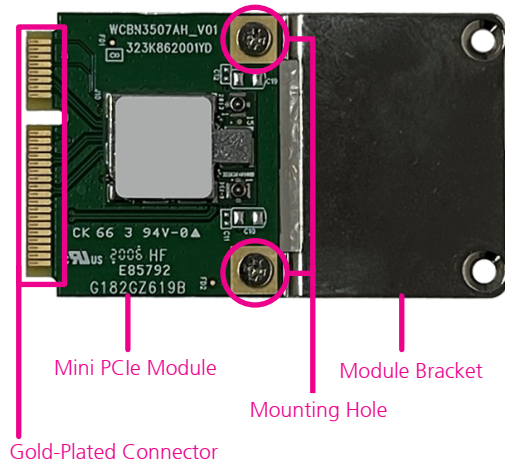
Reassemble the Chassis

1. Once you have inserted the necessary modules, follow the steps to reassemble the chassis.

2. Attach the upper part and bottom part of the chassis, then secure them from the bottom side with the screws that were removed in the previous step, as shown below and to the right.

Bottom part

Upper part
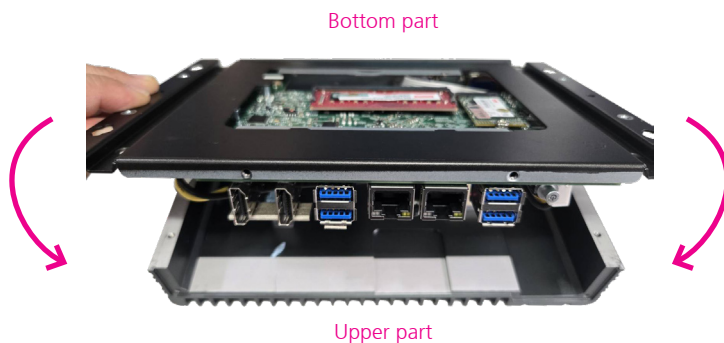
3. Assemble the rear panel and secure it with the screws that were removed in the previous step, as shown below.

4. Assemble the front panel and secure it with the screws that were removed in the previous step, as shown below.

5. Before assembling the bottom cover, note that you should paste the thermal pads based on the memory, storage, and Wi-Fi/BT module locations as shown below. You may find these thermal pads in the accessory box.
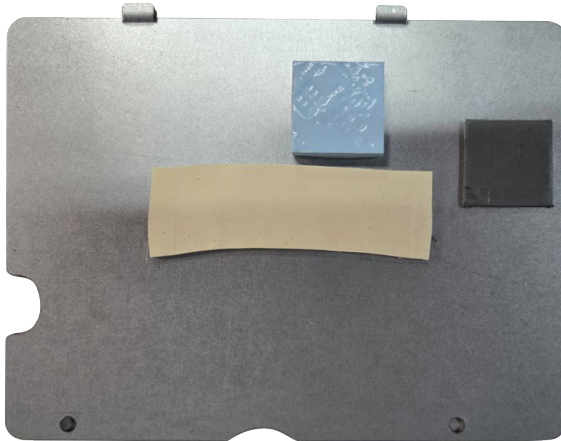
6. Place the bottom cover back to its original location on the bottom side of the chassis, and then secure it with screws.
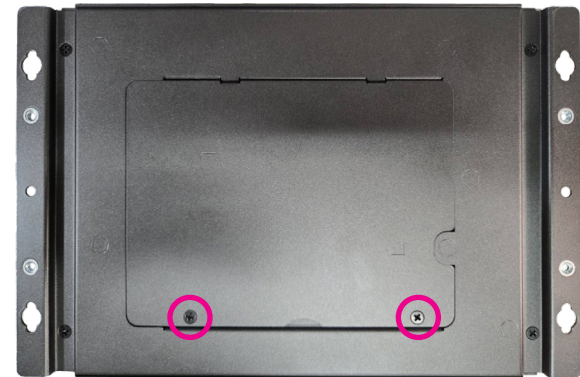
CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for the NDiS B339. 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
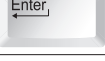
When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- 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 <Del> allows you to enter Setup.

Press the [Del] key to enter Setup:

Legends

Key	Function
← →	Moves the highlight left or right to select a menu.
↑ ↓	Moves the highlight up or down between sub-menus or fields.
Esc	Exits the BIOS Setup Utility.
+	Scrolls forward through the values or options of the highlighted field.
−	Scrolls backward through the values or options of the highlighted field.
Tab	Selects a field.
F1	Displays General Help.
F2	Load previous values.
F3	Load optimized default values.
F4	Saves and exits the Setup program.
Enter	Press <Enter> to enter the highlighted sub-menu

Scroll Bar

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

Submenu

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

BIOS Setup Utility

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

Main

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

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

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

```
                              Aptio Setup - AMI
   | Main | Advanced  Security  Boot  Save & Exit
  /------------------------------------------------+----------------------\
  |  BIOS Information                           ^|                         |
  |  BIOS Vendor            American Megatrends *|                         |
  |  Product Name           NDiS-B339           *|                         |
  |  BIOS Version           B339-005 x64        *|                         |
  |  Build Date and Time    08/09/2024 14:03:49 *|                         |
  |                                             *|                         |
  |  I226-V #1 MAC Address   00-10-F3-A6-EA-2F   *|                         |
  |  I226-V #2 MAC Address   00-10-F3-A6-EA-30   *|                         |
  |                                             *|-------------------------|
  |  Intel(R) Atom(TM) x7211RE                   *|                         |
  |  Speed                  1000 MHz            *|><: Select Screen        |
  |  Stepping               A0                  *|^v: Select Item          |
  |  Microcode Revision     15                  *|Enter: Select            |
  |                                             *|+/-: Change Opt.         |
  |  IGFX GOP Version       21.0.1063           +|F1: General Help         |
  |  ME FW Version          16.50.10.1351       +|F2: Previous Values      |
  |  Total Memory           4096 MB             +|F3: Optimized Defaults   |
  |  Memory Frequency       3200 MHz            v|F4: Save & Exit          |
  |                                              |ESC: Exit                |
  ------------------------------------------------+----------------------/
                 Version 2.22.1289 Copyright (C) 2024 AMI
```

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
/----------------------------------------------------------------------\
| USB Power State in S5     [ON]          |Select USB power state |
| eDP/LVDS Power State      [OFF]         |in S5.                 |
| State After Power Loss    [S0 State]    |                       |
|                                          |                       |
| Wake on LAN/COM           [Enabled]     |                       |
|                                          |                       |
|> CPU Configuration                       |                       |
|> SATA Configuration                      |                       |
|> Trusted Computing                       |                       |
|> ACPI Settings                           |------------------------|
|> F81804 Super IO Configuration          |><: Select Screen      |
|> Hardware Monitor                        |^v: Select Item        |
|> Serial Port Console Redirection        |Enter: Select          |
|> Network Stack Configuration            |+/-: Change Opt.       |
|> NVMe Configuration                      |F1: General Help       |
|                                          |F2: Previous Values    |
|                                          |F3: Optimized Defaults |
|                                          |F4: Save & Exit        |
|                                          |ESC: Exit              |
\----------------------------------------------------------------------/
          Version 2.22.1289 Copyright (C) 2024 AMI
```

State After G3
Select USB power state in S5.

eDP/LVDS Support
Enable or disable eDP/LVDS support.

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

Wake on LAN Enable
Enable or disable the integrate LAN & COM port RI to wake the system.

CPU Configuration

```
                          Aptio Setup - AMI
   ┌─────────┐
   │ Advanced│
   ├─────────┴───────────────────────────────────────────────────┐
   │ CPU Configuration                       ^|Displays the E-core │
   │                                         *|Information         │
   │> Efficient-core Information             *|                    │
   │> Performance-core Information           *|                    │
   │                                         *|                    │
   │  ID                    0xB06E0          *|                    │
   │  Brand String          Intel(R) Atom(TM)*|                    │
   │                        x7211RE          *|                    │
   │  VMX                   Supported        *|                    │
   │                                         *|────────────────────│
   │  Intel (VMX)           [Enabled]        *|><: Select Screen   │
   │  Virtualization                         *|^v: Select Item     │
   │  Technology                             *|Enter: Select       │
   │  PECI                  [Enabled]        *|+/-: Change Opt.    │
   │  AVX                   [Enabled]        +|F1: General Help    │
   │  Active Efficient-cores [All]           +|F2: Previous Values │
   │  BIST                  [Disabled]       +|F3: Optimized Defaults│
   │  AP threads Idle Manner [MWAIT Loop]    v|F4: Save & Exit     │
   │                                          |ESC: Exit           │
   └───────────────────────────────────────────────────────────────┘
              Version 2.22.1289 Copyright (C) 2024 AMI
```

Efficient-core Information
Enter the sub-menu of Efficient-core Information and display the relevant information.

Performance-core Information
Enter the sub-menu of Performance-core Information and display the relevant information.

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

PECI
Enable or disable PECI (Platform Environment Control Interface)

AVX
Enable or disable the AVX 2 instructions. This is applicable for Performance-core only.

Avtive Efficient-Cores
This allows you to select the number of E-cores to enable in each processor package. Note: Number of P-cores and E-cores are looked at together.When both are {0,0}, P-core will enable all cores.

BIST
Enable or disable BIST (built-in Self Test) on reset.

AP Threads Idle Manner
AP Threads Idle Manner for waiting signal to run.

AES
Enable or disable AES (Advanced Encryption Standard).

MachnineCheck
Enable or disable Machnine Check.

MonitorMwait
Enable or disable MonitorMwait; If disable MonitorMwait, the AP Threads Idle Manne should not set in MWAIT Loop.

CPU SMM Enhancement
Enter the sub-menu of CPU SMM Enhancement.

Turbo Mode
Enable or disable the processor turbo mode.

CPU SMM Enhancement

```
                        Aptio Setup - AMI
    [Advanced]
/------------------------------------------\----------------------\
|  CPU SMM Enhancement                      |Enable/Disable usage of|
|                                           |SMM_DELAYED MSR for MP |
|  SMM Use Delay         [Enabled]          |sync in SMI            |
|  Indication                               |                       |
|  SMM Use Block         [Enabled]          |                       |
|  Indication                               |                       |
|  SMM Use SMM en-US     [Enabled]          |                       |
|  Indication                               |                       |
|                                           |                       |
|                                           |-----------------------|
|                                           |><: Select Screen      |
|                                           |^v: Select Item        |
|                                           |Enter: Select          |
|                                           |+/-: Change Opt.       |
|                                           |F1: General Help       |
|                                           |F2: Previous Values    |
|                                           |F3: Optimized Defaults |
|                                           |F4: Save & Exit        |
|                                           |ESC: Exit              |
\------------------------------------------/-----------------------/
            Version 2.22.1289 Copyright (C) 2024 AMI
```

SMM User Delay Indication
Enable or disable usage of SMM delayed MSR for MP sync in SMI.

SMM Use Block Indication
Enable or disable the usage of SMM block indication feature.

SMM Use SMM en-US Indication
Enable or disable the usage of SMM indication in US English.

SATA Configuration

```
                        Aptio Setup - AMI
    [Advanced]
/------------------------------------------\----------------------\
|  SATA 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      |
|                                           |^v: Select Item        |
|                                           |Enter: Select          |
|                                           |+/-: Change Opt.       |
|                                           |F1: General Help       |
|                                           |F2: Previous Values    |
|                                           |F3: Optimized Defaults |
|                                           |F4: Save & Exit        |
|                                           |ESC: Exit              |
\------------------------------------------/-----------------------/
            Version 2.22.1289 Copyright (C) 2024 AMI
```
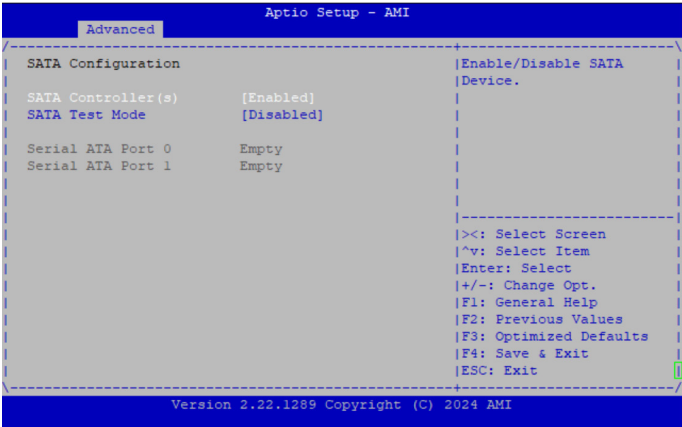
SATA Controller(s)
Enable or disable SATA device.

SATA Test Mode
Enable or disable test mode.

Trusted Computing

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

```
                        Aptio Setup - AMI
  |Advanced|
/---------------------------------------+------------------------\
|  TPM 2.0 Device Found                 |Enables or Disables     |
|  Firmware Version:       7.85         |BIOS support for        |
|  Vendor:                 IFX          |security device. O.S.   |
|                                       |will not show Security   |
|  Security Device        [Enable]      |Device. TCG EFI         |
|Support                                |protocol and INT1A      |
|  Active PCR banks       SHA256        |interface will not be   |
|  Available PCR banks    SHA256        |available.              |
|                                       |                        |
|  SHA256 PCR Bank        [Enabled]     |------------------------|
|                                       |><: Select Screen       |
|  Pending operation      [None]        |^v: Select Item         |
|  Platform Hierarchy     [Enabled]     |Enter: Select           |
|  Storage Hierarchy      [Enabled]     |+/-: Change Opt.        |
|  Endorsement            [Enabled]     |F1: General Help        |
|Hierarchy                              |F2: Previous Values     |
|                                       |F3: Optimized Defaults  |
|                                       |F4: Save & Exit         |
|                                       |ESC: Exit               |
\---------------------------------------+------------------------/
              Version 2.22.1289 Copyright (C) 2024 AMI
```

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

SHA256 PCR Bank
Enable or disable SHA256 PCR Bank.

Pending operation
Schedule an operation for the security device.

Platform Hierarchy
Enable or disable platform hierarchy.

Storage Hierarchy
Enable or disable storage hierarchy.

Endorsement Hierarchy
Enable or disable endorsement hierarchy.

ACPI Settings

```
                            Aptio Setup - AMI
         Advanced
/--------------------------------------+-------------------------------\
| ACPI Settings                        |Enables or Disables            |
|                                      |System ability to              |
|                                      |Hibernate (OS/S4 Sleep         |
| Enable Hibernation      [Enabled]    |State). This option may        |
| ACPI Sleep State        [S3 (Suspend to RAM)] |not be effective with |
|                                      |some operating systems.        |
|                                      |                               |
|                                      |                               |
|                                      |                               |
|                                      |-------------------------------|
|                                      |><: Select Screen              |
|                                      |^v: Select Item                |
|                                      |Enter: Select                  |
|                                      |+/-: Change Opt.               |
|                                      |F1: General Help               |
|                                      |F2: Previous Values            |
|                                      |F3: Optimized Defaults         |
|                                      |F4: Save & Exit                |
|                                      |ESC: Exit                      |
\--------------------------------------+-------------------------------/
              Version 2.22.1289 Copyright (C) 2024 AMI
```

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. The options are Suspend Disabled and S3 (Suspend to RAM).

F81804 Super IO Configuration

```
                        Aptio Setup - AMI
    Advanced
/--------------------------------------------------------------------\
|  F81804 Super IO Configuration        |Set Parameters of           |
|                                       |Serial Port 1 (COMA)        |
|  Super IO Chip         F81804         |                            |
|> Serial Port 1 Configuration          |                            |
|> Serial Port 2 Configuration          |                            |
|                                       |                            |
|                                       |                            |
|                                       |                            |
|                                       |                            |
|                                       |----------------------------|
|                                       |><: Select Screen           |
|                                       |^v: Select Item             |
|                                       |Enter: Select               |
|                                       |+/-: Change Opt.            |
|                                       |F1: General Help            |
|                                       |F2: Previous Values         |
|                                       |F3: Optimized Defaults      |
|                                       |F4: Save & Exit             |
|                                       |ESC: Exit                   |
\--------------------------------------------------------------------/
         Version 2.22.1289 Copyright (C) 2024 AMI
```
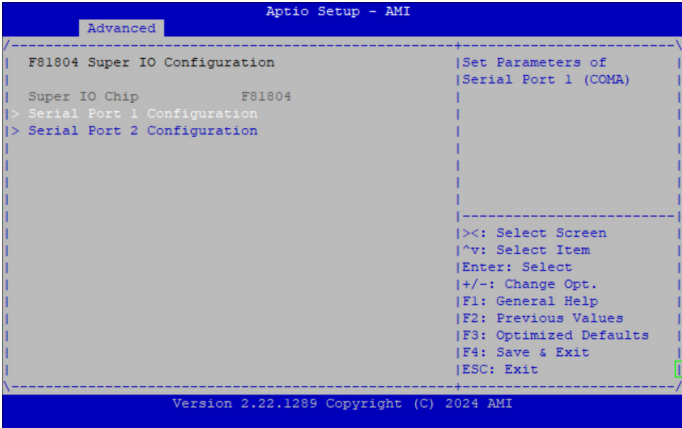
Super IO Chip
Display the Super I/O chip used on the board.

Serial Port 1/2 Configuration
Enter the submenu of Serial port 1/2 configuration.

Serial Port 1/2 Configuration

```
                        Aptio Setup - AMI
    Advanced
/--------------------------------------------------------------------\
|  Serial Port 1 Configuration          |Enable or Disable           |
|                                        |Serial Port (COM)          |
|  Serial Port          [Enabled]        |                            |
|  Device Settings      IO=3F8h; IRQ=4;  |                            |
|                                        |                            |
|  Onboard Serial Port 1   [RS232]       |                            |
|  Mode                                  |                            |
|                                        |                            |
|                                        |                            |
|                                        |----------------------------|
|                                        |><: Select Screen           |
|                                        |^v: Select Item             |
|                                        |Enter: Select               |
|                                        |+/-: Change Opt.            |
|                                        |F1: General Help            |
|                                        |F2: Previous Values         |
|                                        |F3: Optimized Defaults      |
|                                        |F4: Save & Exit             |
|                                        |ESC: Exit                   |
\--------------------------------------------------------------------/
         Version 2.22.1289 Copyright (C) 2024 AMI
```
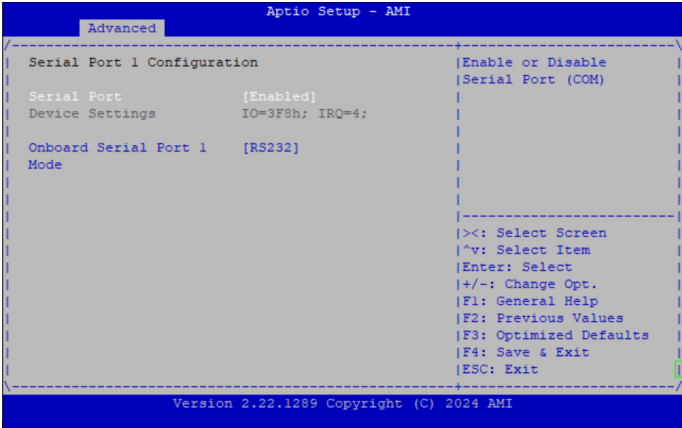
Serial Port (Port 1/2)
Enable or disable the serial port.

Device Settings (Port 1/2)
Display the IO address and IRQ of the serial COM port.

Onboard Serial Port 1/2 Mode
Select to change the serial port mode to RS232, RS422, or RS485.

Hardware Monitor

```
                        Aptio Setup - AMI
        Advanced
/-----------------------------------------------------------------\
|  Pc Health Status                           |                   |
|                                             |                   |
|  CPU Temperature           : +35 .          |                   |
|  System Temperature        : +29 .          |                   |
|                                             |                   |
|  CPU FAN Speed             : 5791 RPM       |                   |
|                                             |                   |
|  +VCORE                    : +1.000 V       |                   |
|  VCC5                      : +5.129 V       |                   |
|                                             |-------------------|
|                                             |><: Select Screen  |
|                                             |^v: Select Item    |
|                                             |Enter: Select      |
|                                             |+/-: Change Opt.   |
|                                             |F1: General Help   |
|                                             |F2: Previous Values|
|                                             |F3: Optimized Defaults|
|                                             |F4: Save & Exit    |
|                                             |ESC: Exit          |
|-------------------------------------------------------+---------/
            Version 2.22.1289 Copyright (C) 2024 AMI
```
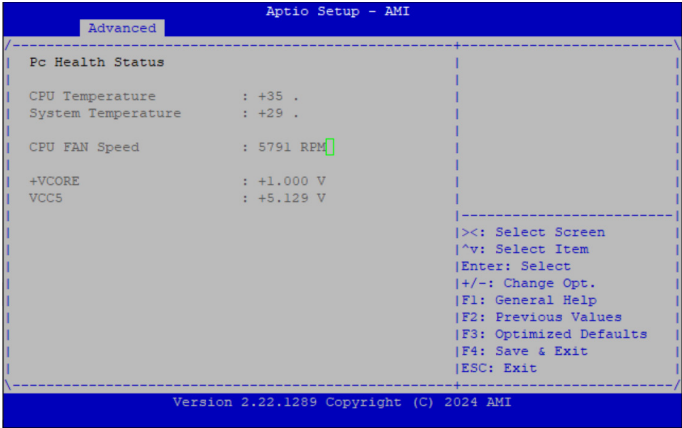
CPU Temperature
Detect and display the current CPU temperature.

System Temperature
Detect and display the internal system temperature.

CPU Fan Speed
Detect and display the current CPU fan speed.

VCore
Detect and display the Vcore CPU voltage.

VCC5
Detect and display 5V voltage.

Network Stack Configuration

```
                          Aptio Setup - AMI
      Advanced
/-----------------------------------------+------------------------\
| Network Stack          [Enabled]        |Enable/Disable UEFI     |
| IPv4 PXE Support       [Disabled]       |Network Stack           |
| IPv4 HTTP Support      [Disabled]       |                        |
| IPv6 PXE Support       [Disabled]       |                        |
| IPv6 HTTP Support      [Disabled]       |            []          |
| PXE boot wait time     0                |                        |
| Media detect count     1                |                        |
|                                         |                        |
|                                         |------------------------|
|                                         |><: Select Screen       |
|                                         |^v: Select Item         |
|                                         |Enter: Select           |
|                                         |+/-: Change Opt.        |
|                                         |F1: General Help        |
|                                         |F2: Previous Values     |
|                                         |F3: Optimized Defaults  |
|                                         |F4: Save & Exit         |
|                                         |ESC: Exit               |
\-----------------------------------------+------------------------/
          Version 2.22.1289 Copyright (C) 2024 AMI
```

Network Stack
Enable or disable UEFI network stack.

Ipv4 PXE Support
Enable or disable IPv4 PXE support. If disabled, the IPv4 PXE boot option will not be created.

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

Ipv6 PXE Support
Enable or disable IPv6 PXE support. If disabled, the IPv6 PXE boot option will not be created.

Pv6 HTTP Support
Enable or disable IPv6 HTTP support. If disabled, the IPv6 HTTP boot option will not be available.

PXE boot wait time
Configure the wait time to press the ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.

Media detect count
Configure the number of times the media will be checked. Use either +/- or numeric keys to set the value.

NVMe Configuration

```
                        Aptio Setup - AMI
        Advanced
/--------------------------------------------------------\
|  NVMe Configuration             |                      |
|                                 |                      |
|  No NVME Device Found           |                      |
|                                 |                      |
|                                 |                      |
|                                 |                      |
|                                 |                      |
|                                 |                      |
|                                 |                      |
|                                 |----------------------|
|                                 |><: Select Screen     |
|                                 |^v: Select Item       |
|                                 |Enter: Select         |
|                                 |+/-: Change Opt.      |
|                                 |F1: General Help      |
|                                 |F2: Previous Values   |
|                                 |F3: Optimized Defaults|
|                                 |F4: Save & Exit       |
|                                 |ESC: Exit             |
\--------------------------------------------------------/
           Version 2.22.1289 Copyright (C) 2024 AMI
```
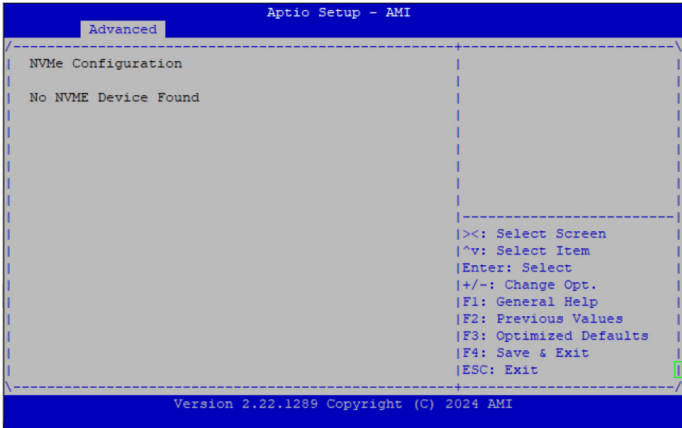
NVMe Configuration
Display the NVMe information if installed.

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                 |                        |
|                                         |                        |
|                                         |------------------------|
|                                         |><: Select Screen       |
|                                         |^v: Select Item         |
|> Secure Boot                            |Enter: Select           |
|                                         |+/-: Change Opt.        |
|                                         |F1: General Help        |
|                                         |F2: Previous Values     |
|                                         |F3: Optimized Defaults  |
|                                         |F4: Save & Exit         |
|                                         |ESC: Exit               |
\----------------------------------------+------------------------/
           Version 2.22.1289 Copyright (C) 2024 AMI
```

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

Secure Boot
Enter the sub-menu of Secure Boot.

Secure Boot

```
                    Aptio Setup - AMI
            Security
/----------------------------------------+------------------------\
|  System Mode        Setup               |Secure Boot feature is  |
|                                         |Active if Secure Boot   |
|  Secure Boot        [Enabled]           |is Enabled,             |
|                     Not Active          |Platform Key(PK) is     |
|                                         |enrolled and the System |
|  Secure Boot Mode   [Standard]          |is in User mode.        |
|> Restore Factory Keys                   |The mode change         |
|> Reset To Setup Mode                    |requires platform reset |
|                                         |                        |
|> Key Management                         |------------------------|
|                                         |><: Select Screen       |
|                                         |^v: Select Item         |
|                                         |Enter: Select           |
|                                         |+/-: Change Opt.        |
|                                         |F1: General Help        |
|                                         |F2: Previous Values     |
|                                         |F3: Optimized Defaults  |
|                                         |F4: Save & Exit         |
|                                         |ESC: Exit               |
\----------------------------------------+------------------------/
           Version 2.22.1289 Copyright (C) 2024 AMI
```

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

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

```
                        Aptio Setup - AMI
      Main  Advanced  Security  Boot  Save & Exit
/------------------------------------------+--------------------------\
|  Boot Configuration                      |Select the keyboard       |
|  Bootup NumLock State      [On]          |NumLock state             |
|  Quiet Boot                [Disabled]    |                          |
|                                          |                          |
|  Boot Option Priorities                  |                          |
|  Boot Option #1            [UEFI: Built-in EFI |                    |
|                            Shell]        |                          |
|                                          |                          |
|  Driver Option Priorities                |                          |
|                                          |--------------------------|
|                                          |><: Select Screen         |
|                                          |^v: Select Item           |
|                                          |Enter: Select             |
|                                          |+/-: Change Opt.          |
|                                          |F1: General Help          |
|                                          |F2: Previous Values       |
|                                          |F3: Optimized Defaults    |
|                                          |F4: Save & Exit           |
|                                          |ESC: Exit                 |
\------------------------------------------+--------------------------/
               Version 2.22.1289 Copyright (C) 2024 AMI
```

Bootup NumLock State
Select the keyboard NumLock state.

Quiet Boot
Enable or disable Quiet Boot option.

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

Driver Option Priorities
Used to manage the priority of EFI drivers, it supports adding, deleting, and specifying driver options, and allows configuring new driver file paths and names by setting paths (e.g., fsx:\path\filename.efi).

Save & Exit

```
                        Aptio Setup - AMI
    Main  Advanced  Security  Boot  Save & Exit
/----------------------------------------\-------------------------\
| Save Options                           |Exit system setup after  |
| Save Changes and Exit                  |saving the changes.       |
| Discard Changes and Exit               |                          |
|                                        |                          |
| Default Options                        |                          |
| Restore Defaults                       |                          |
|                                        |                          |
| Boot Override                          |                          |
| UEFI: Built-in EFI Shell               |                          |
|                                        |-------------------------|
|                                        |><: Select Screen         |
|                                        |^v: Select Item           |
|                                        |Enter: Select             |
|                                        |+/-: Change Opt.          |
|                                        |F1: General Help          |
|                                        |F2: Previous Values       |
|                                        |F3: Optimized Defaults    |
|                                        |F4: Save & Exit           |
|                                        |ESC: Exit                 |
\----------------------------------------/-------------------------/
             Version 2.22.1289 Copyright (C) 2024 AMI
```

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

Discard Changes and Exit
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.

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