



**NEXCOM International Co., Ltd.**

# **Network and Communication Solutions**

## **Industrial-Grade Platform**

### **ISA 142**

#### User Manual

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# PREFACE

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## Acknowledgements

ISA 142 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 in 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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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](http://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.
3. CFast: Turn off the unit's power before inserting or removing a CFast storage card.

## Conventions Used in this Manual



### Warning:

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



### Caution:

Information to avoid damaging components or losing data.



### Note:

Provides additional information to complete a task easily.

## 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

12F, No.922, Zhongzheng Rd.,  
Zhonghe Dist., New Taipei City,  
23586, Taiwan, R.O.C.  
Tel: +886-2-8226-7796  
Fax: +886-2-8226-7926  
Email: sales@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.,  
Sanhong 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 Rd.,  
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.com

## 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

## Package Contents

Before continuing, verify that the ISA 142 package that you received is complete. Your package should have all the items listed in the following table.

Item	Item Number	Name	Description	Qty
1	19L10014200X0	ISA142 ASSY		1
2	6012200053X00	PE ZIPPER BAG #3 炎洲:印刷由任袋3號	100x70mm,W/China RoHS SYMBOL	1
3	6012200169X00	PE BAG FOR SG 105/115 SERIES VER:A FULPAK PE	300x320x0.08mm	1
4	6023309081X00	CABLE EDI:232091081804-RS	COM PORT. DB9 FEMALE TO RJ45 8P8C L:1800mm	1
5	4NCPF00204X00	TERMINAL BLOCKS 2P PHOENIX CONTACT:1777989	ASSY 5.08mm FEMALE GREEN	2
6	60100A0346X00	ACCESSARY BOX FOR ISA141 VER:A FULPAK	246X176X41mm E FLUTE 8KG (INSIDE DIMENSION)	1
7	6014401540X00	ESD LABEL JAYRAY	60x30mm YELLOW	1
8	Z300000040X00	OUTSIDE BOX LABEL FOR STANDARD VER.A	60x60mm ART PAPER CLW5	1
9	6014606898X00	LABEL BLANK WAI GHA	60x60mm ART PAPER CLW5	2
10	6014605767X00	ORIGINAL SEAL LABEL JAYRAY	50x25mm MATT SILVER#25 VOID	2
11	6013301927X00	(N)EPE FOR ISA142 VER:A TSAIJIN	290x190.5X90.5mm	2
12	60111A1031X00	OUTSIDE CARTON FOR ISA142 VER:A YI GIA	300x242x202mm B FLUTE 16KG	1

## Ordering Information

The following below provides ordering information for ISA 142.

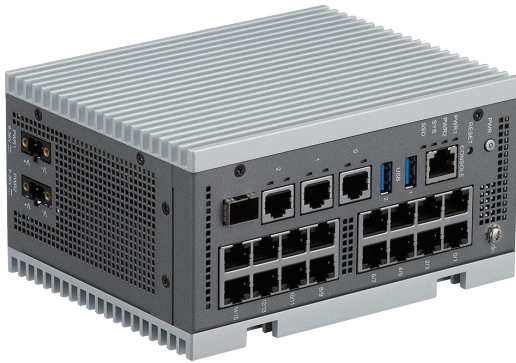
### **Barebone**

#### **ISA 142 (P/N: 10L10014200X0)**

Intel® Atom® x6413E Processor, BGA type, 4 cores, 1 x SODIMM 8GB memory module, 3 x 1GbE RJ45 ports with 1 combo port and 16 x switch ports with 2G upstream throughput

# CHAPTER 1: PRODUCT INTRODUCTION

## Overview



## Key Features

- Intel Atom® x6413E Processor SoC, BGA type
- 1 x 8GB DDR4 with SODIMM Slot
- 1 x 40GB pSLC M.2 2242 SSD module
- 1 x RJ45 console port
- 2 x USB 3.0
- 3 x 1GbE RJ45 with 1 combo port
- Up to 16 switch ports
- Dual DC (9~36VDC)
- Supports OOB

## Hardware Specifications

### Main Board

- Intel Atom® x6413E processor, 4 cores, 1.5M cache, 1.50 GHz
- TPM 2.0 onboard

### Main Memory

- 1 x DDR4 SODIMM ECC or non ECC 3200 MT/s 8GB module

### Storage

- 1 x 16GB eMMC
- 1 x 40GB pSLC M.2 2242 SSD module

### Interface External

- 1 x Power & 1 x reset buttons
- 1 x RJ45 console port
- 2 x USB 3.0 ports
- 3 x 1GbE RJ45 ports
  - with 1 combo port
- 16 x Switch ports with 2G upstream throughput

### Interface Internal

- 1 x DDR4 SODIMM slot
- 1 x M.2 2242 Key B slot

### Power Input

- Dual terminal block for DC in support 9-36V
  - 1 x Power input on main board
  - 1 x Power input on switch board

### Dimension and Weight

- System size: 165 x 86.5 x 132.74 mm
- Packaging size: 300 x 242 x 202 mm
- Weight without packaging: 2.415kg
- Weight with packaging: 3.085kg

### Environment

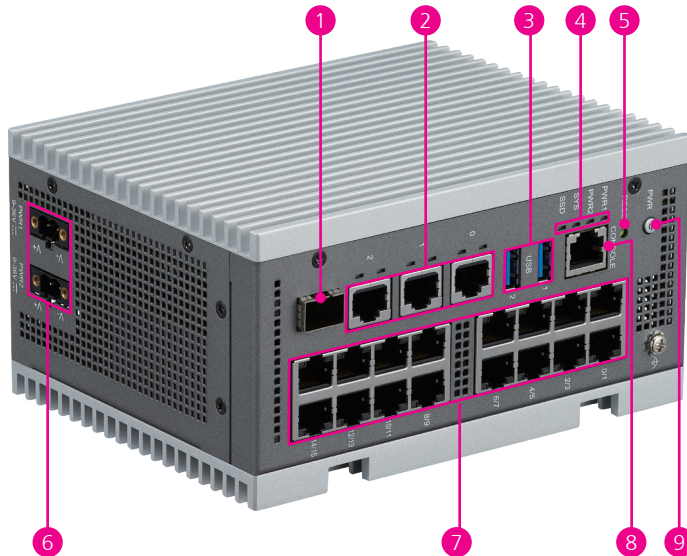
- Operating temperature: -20°C~60°C
- Storage temperature: -40°C~80°C
- Relative humidity: 0%~95% non-condensing

### Certifications

- CE/FCC Class A



## Knowing Your ISA 142

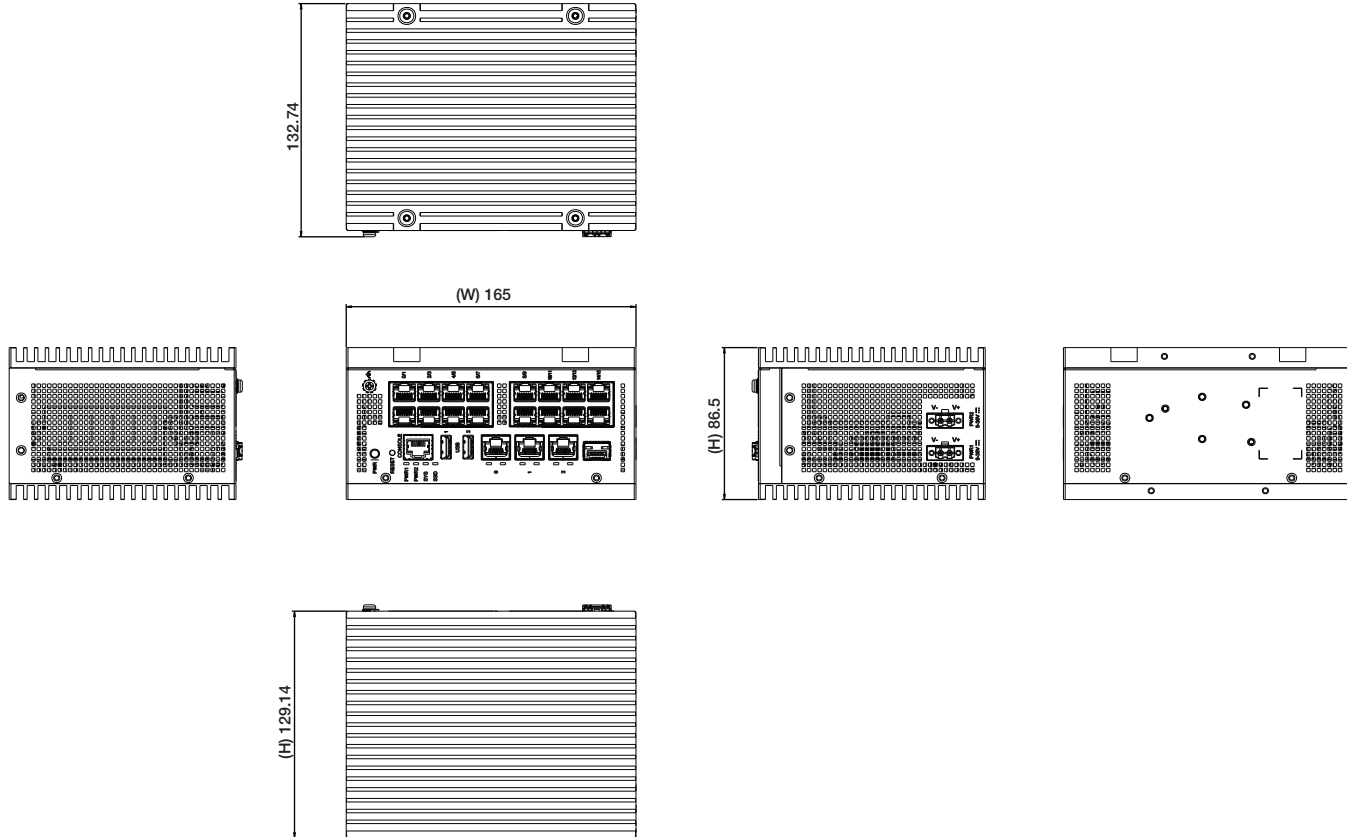


- 1 **SFP Port\***  
Used to connect network devices.
- 2 **LAN 0 to LAN 2 Ports\***  
Used to connect network devices.
- 3 **USB 3.0 Ports**  
Used to connect USB 3.0/2.0 devices.
- 4 **LED Indicators**  
Indicate the power 1/2, status of the system, and status of the SSD,
- 5 **Reset Button**  
Press to reset the system.
- 6 **9V to 36V DC Power Inputs**  
Used to plug DC power cords.
- 7 **RJ45 with 1GbE for Switch Ports**  
Used to connect network devices.
- 8 **RJ45 Console Port**  
Used to connect to devices with RJ45 type console connection.
- 9 **Power Button**  
Press to power-on or power-off the system.



Only one of the SFP and LAN2 ports can be enabled at a time. When one port is selected for activation, the other will be disabled.

# Mechanical Dimensions



## CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the ISA 142 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:

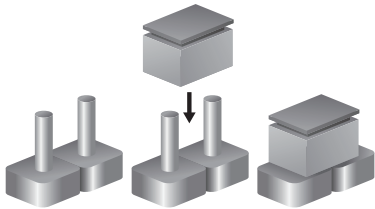
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal 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

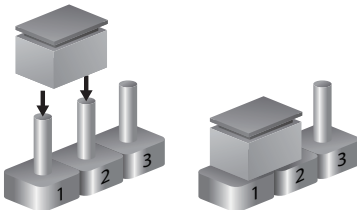
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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



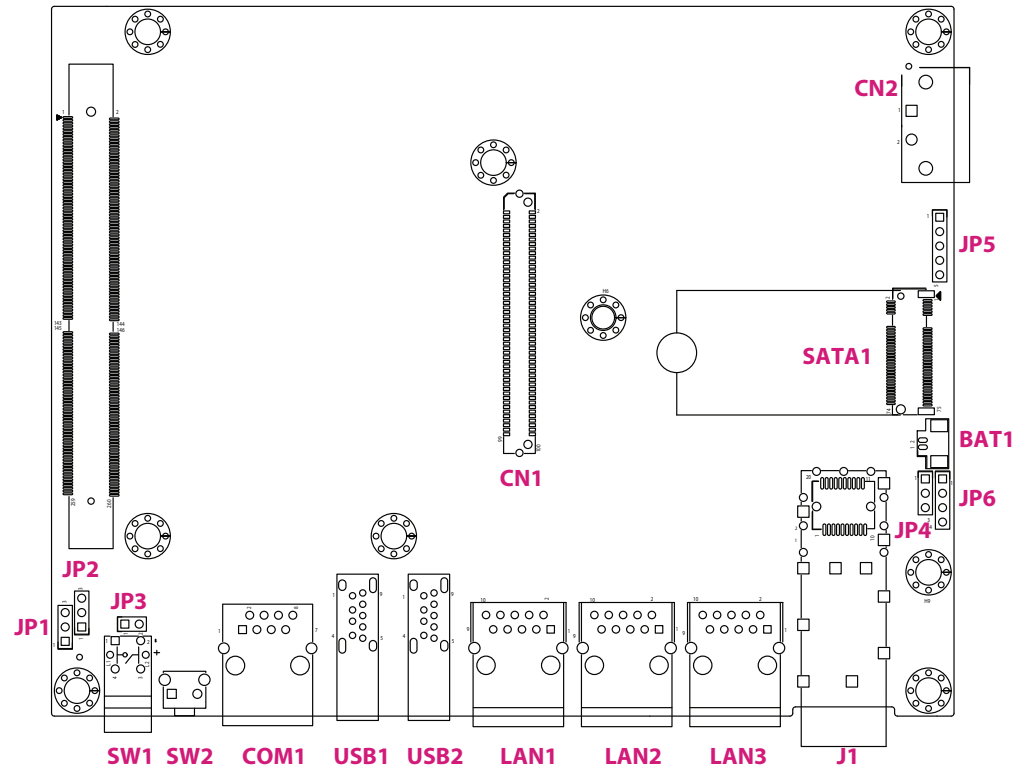
Three-Pin Jumpers: Pins 1 and 2 are Short



## Locations of the Mainboard Jumpers and Connectors

The following figure shows the mainboard used in the ISA 142, 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 this figure.

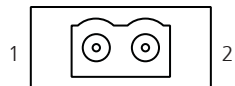
### ISA 142 Mainboard Top View



## External I/O Pin Definitions

### Power Connector

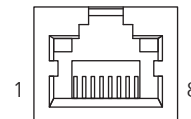
Connector location: CN2



Pin	Definition
1	POWER_IN1
2	PGND

### Console Port

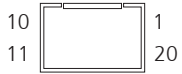
Connector location: COM1



Pin	Definition	Pin	Definition
1	COM_UART_RTS_N	2	COM_UART_DTR_N
3	COM_UART_TXD	4	GND
5	COM_UART_DCD_N	6	COM_UART_RXD
7	COM_UART_DSR_N	8	COM_UART_CTS_N

## SFP Connector

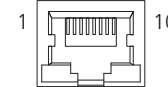
Connector location: J1



Pin	Definition	Pin	Definition
1	GND	2	SFP_TXFAULT
3	TX_DISABLE0_1	4	SFP_SDA
5	SFP_SCL	6	SFP_MOD-ABS
7	SFP_RS0	8	SFP_RX_LOS
9	SFP_RS1	10	GND
11	GND	12	SFP_RX_N
13	SFP_RX_P	14	GND
15	P3V3_SFP+_RX0	16	P3V3_SFP+_TX0
17	GND	18	SFP_TX_P
19	SFP_TX_N		GND

## LAN Ports

Connector location: LAN0, LAN1, LAN2



### LAN1

Pin	Definition	Pin	Definition
1	MDI_P_00A	2	MDI_N_00A
3	MDI_P_01A	4	MDI_N_01A
5	CT	6	CT
7	MDI_P_02A	8	MDI_N_02A
9	MDI_P_03A	10	MDI_N_03A

**LAN2**

Pin	Definition	Pin	Definition
1	MDI_P_00B	2	MDI_N_00B
3	MDI_P_01B	4	MDI_N_01B
5	CT	6	CT
7	MDI_P_02B	8	MDI_N_02B
9	MDI_P_03B	10	MDI_N_03B

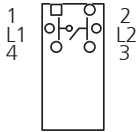
**LAN3**

Pin	Definition	Pin	Definition
1	MDI_P_00C	2	MDI_N_00C
3	MDI_P_01C	4	MDI_N_01C
5	CT	6	CT
7	MDI_P_02C	8	MDI_N_02C
9	MDI_P_03C	10	MDI_N_03C



## Power Button

Connector location: SW1



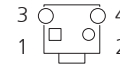
Pin	Definition	Pin	Definition
1	GND	2	FP_PWRBTN_N
3	FP_PWRBTN_N	4	GND
L1	LED (Blue)	L2	LED (RED)



L1: LED Blue indicates that the system is in S0 mode.  
L2: LED Red indicates that the system is in S5 mode.

## Reset Button

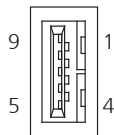
Connector location: SW2



Pin	Definition	Pin	Definition
1	GND	2	FP_RST_BTN_N_L
3	CHASSIS GND	4	CHASSIS GND

## USB 3.0 Ports

Connector location: USB1, USB2



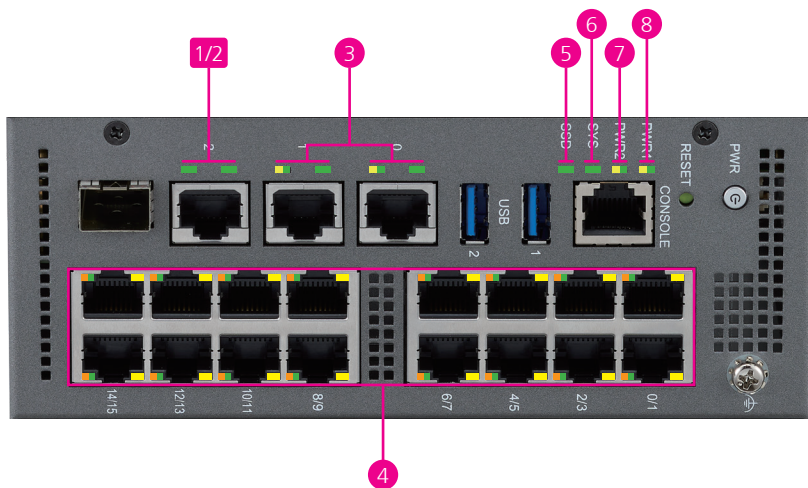
### USB1

Pin	Definition	Pin	Definition
1	P5V_USB3	2	USB2N0_C
3	USB2P0_C	4	GND
5	USB3RN0_C	6	USB3RP0_C
7	GND	8	USB3TN0_C
9	USB3TP0_C	10	

### USB2

Pin	Definition	Pin	Definition
1	P5V_USB3	2	USB2N1_C
3	USB2P1_C	4	GND
5	USB3RN1_C	6	USB3RP1_C
7	GND	8	USB3TN1_C
9	USB3TP1_C	10	

## LED Indicators



1. The SFP and LAN2 ports share the same LED indicators.
2. This connector is a dual-purpose port that can be used as either an OOB or a LAN port. To enable or disable the OOB, refer to the [BIOS](#). By default, the option is set to **Disabled**.

No.	LED Indicator	Description	LED Behavior
1	SFP Port* <sup>1</sup>	Link (Left)	Steady Green
		Activity (Right)	Blinking Green, off when idle
2	LAN Port 2 (OOB Port)* <sup>2</sup>	Link (Left)	Steady Green while the LAN is linking
		Activity (Right)	Blinking Green, steady Green when idle
3	LAN Ports 0/1	Speed (Left)	Blinking Green for highest speed
			Blinking Yellow for secondary speed
			Off for lower speed
		Link/Active (Right)	Steady Green while the LAN is linking
		Blinking Green while the LAN is active with traffic	
4	Switch Ports 0 to 15	Speed	Blinking Green for highest speed
			Blinking Orange for secondary speed
			Off for lower speed
		Link/Active	Steady Green while the LAN is linking
		Blinking Green while the LAN is active with traffic	
5	SSD	Status	Stay Off (default)
			Blinking Green while access
6	SYS	S/W Programmable	Stay Off (default)
7	PWR2	S0	Steady Green
		S5	Steady Yellow
		No Power	Stay Off
8	PWR1	S0	Steady Green
		S5	Steady Yellow
		No Power	Stay Off

## Pin Definitions for Internal Jumpers

### Clear RTC Registers

Connector location: JP2



Pin	Definition
1	SRTC_RST_N
2	GND
3	NC

Pin	Definition
1-2 On	Clear RTC Registers
2-3 On	Save RTC Registers (Default)

### Clear CMOS

Connector location: JP4



Pin	Definition
1	RTC_RST_N
2	GND
3	NC

Pin	Definition
1-2 On	Clear CMOS
2-3 On	Save MOS (Default)

## Pin Definitions for Internal Connectors

### Battery Connector

Connector location: BAT1



Pin	Definition
1	BAT_C
2	GND

### Board to Board Connector

Connector location: CN1



Pin	Definition	Pin	Definition
1	VIN	2	VIN
3	VIN	4	VIN
5	VIN	6	VIN
7	PGND	8	PGND
9	PGND	10	PGND
11	PGND	12	PGND
13	P3V3	14	P3V3
15	P3V3	16	P3V3
17	P3V3	18	P3V3
19	GND	20	GND
21	P1V8	22	GND
23	P3V3_5G_EN	24	P3V3_AUX
25	P3V3_5G_PG	26	P3V3_AUX
27	MCU_5G_SERRIA_PLAS2#_0	28	P3V3_AUX
29	MCU_5G_SERRIA_PLAS2#_1	30	MCU_5G_DIS_1
31	MCU_5G_W_DISABLE#_0	32	MCU_5G_GPS_DISABLE#_0
33	MCU_5G_W_DISABLE#_1	34	MCU_5G_GPS_DISABLE#_1

Pin	Definition	Pin	Definition
35	MCU_5G_POWER_OFF#_0	36	BUF_PLT_RST_R_N
37	MCU_5G_POWER_OFF#_1	38	DC_IN2_STATUS
39	WIFI0_W_DISABLE1#	40	WIFI_PCIE_RST1#
41	WIFI1_W_DISABLE1#	42	WIFI_PCIE_RST0#
43	MCU_5G_DIS_0	44	MCU_5G_MODULE_RST1#
45	MODULE_WIFI_LED_0	46	MCU_5G_MODULE_RST0#
47	MODULE_WIFI_LED_1	48	WIFI_CLKREQ_N_1
49	MODULE_5G_LED_0	50	WIFI_CLKREQ_N_0
51	MODULE_5G_LED_1	52	5G_CLKREQ_N_1
53	GND	54	5G_CLKREQ_N_0
55	PCIE_CLK3_DN	56	SLOT_SMB_MCU_CLK
57	PCIE_CLK3_DP	58	SLOT_SMB_MCU_DATA
59	GND	60	GND
61	PCIE_CLK2_DP	62	USB2_P2_DP
63	PCIE_CLK2_DN	64	USB2_P2_DN
65	GND	66	USB2_P3_DP
67	PCIE_CLK1_DP	68	USB2_P3_DN

Pin	Definition	Pin	Definition
69	PCIE_CLK1_DN	70	USB2_P4_DP
71	GND	72	USB2_P4_DN
73	PCIE_CLK0_DP	74	USB2_P5_DP
75	PCIE_CLK0_DN	76	USB2_P5_DN
77	GND	78	GND
79	MINIW_TX_DP1	80	MINIW_RX_DP1
81	MINIW_TX_DN1	82	MINIW_RX_DN1
83	GND	84	GND
85	MINIW_TX_DP0	86	MINIW_RX_DP0
87	MINIW_TX_DN0	88	MINIW_RX_DN0
89	GND	90	GND
91	USB3_5G_TX_DP1	92	USB3_5G_RX_DP1
93	USB3_5G_TX_DN1	94	USB3_5G_RX_DN1
95	GND	96	GND
97	USB3_5G_TX_DP0	98	USB3_5G_RX_DP0
99	USB3_5G_TX_DN0	100	USB3_5G_RX_DN0

## SOC UART Header

Connector location: JP1



Pin	Definition
1	PSE_UART2_RXD_R
2	GND
3	PSE_UART2_TXD_R

## Power Button Header (For debug)

Connector location: JP3



### USB1

Pin	Definition
1	FP_PWRBTN_N_R
2	GND

## MCU UART Header

Connector location: JP6

1



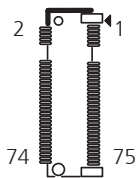
4

Pin	Definition
1	P3V3_MCU
2	MCU_UART2_TX
3	MCU_UART2_RX
4	GND



## M.2 Key B for SATA

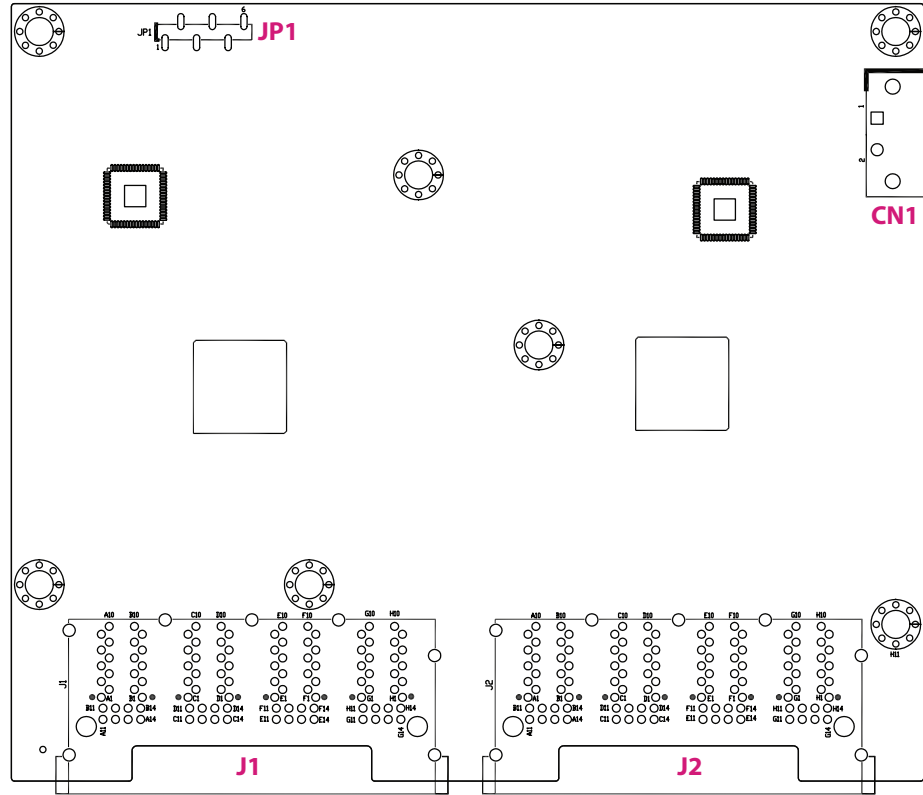
Connector location: SATA1



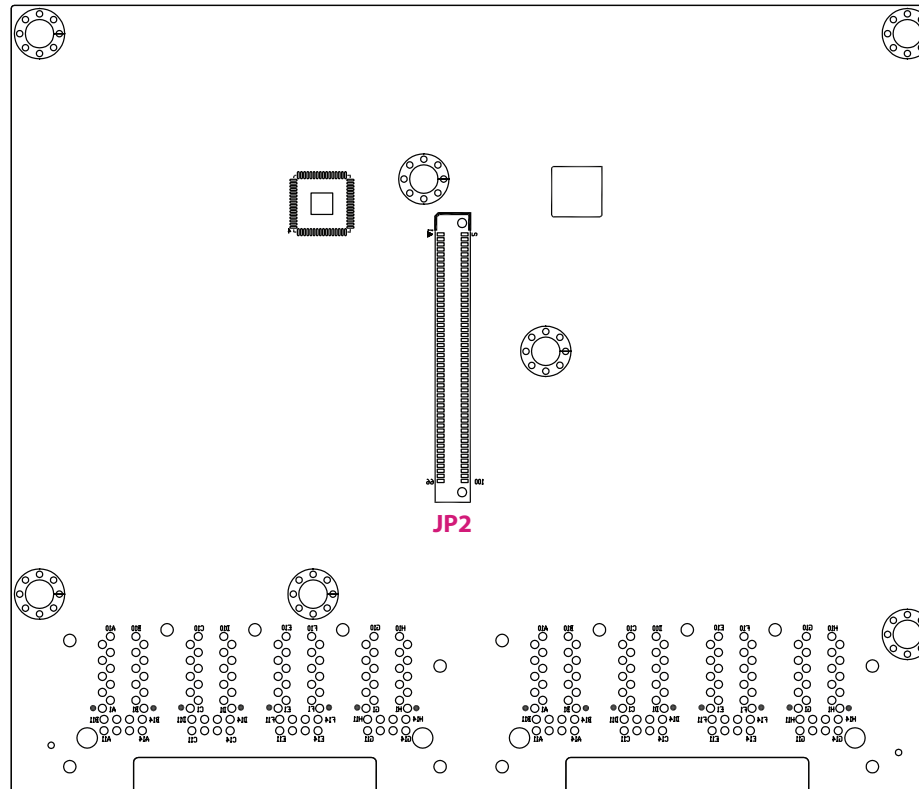
Pin	Definition	Pin	Definition
1	NC	2	P3V3
3	GND	4	P3V3
5	GND	6	NC
7	NC	8	NC
9	NC	10	M2_SATA_LED#
11	NC	20	NC
21	NC	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	NC
39	GND	40	NC
41	M2_RX_DP	42	NC

Pin	Definition	Pin	Definition
43	M2_RX_DN	44	NC
45	GND	46	NC
47	M2_TX_DN	48	NC
49	M2_TX_DP	50	NC
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	NC
67	NC	68	NC
69	NC	70	P3V3
71	GND	72	P3V3
73	GND	74	P3V3
75	NC		

## ISA 142 Switch Board Top View

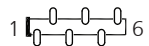


## ISA 142 Switch Board Bottom View



## CPLD Program Header

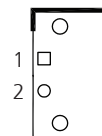
Connector location: JP1



Pin	Definition
1	P3V3 CPLD
2	GND
3	JTAG PLD TCK
4	JTAG PLD TDO
5	JTAG PLD TDI
6	JTAG PLD TMS

## Power Connector

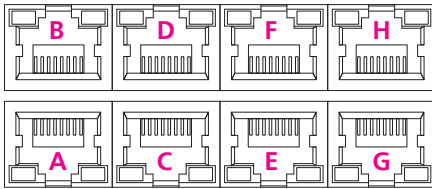
Connector location: CN1



Pin	Definition
1	POWER IN2
2	PGND

## Switch Ports 0 to 7

Connector location: J1



Pin	Signal	Pin	Signal
A1	P1_MDIN_0	A2	P1_MDIP_0
A3	P1_MDIN_1	A4	P1_MDIP_1
A5	P1_MDIN_2	A6	P1_MDIP_2
A7	P1_MDIN_3	A8	P1_MDIP_3
A9	NC	A10	GND
A11	EE_CLK_C0_LED_0	A12	R0_LED_0
A13	P1_LINK1G#	A14	P1_LINK100#
B1	P2_MDIN_0	B2	P2_MDIP_0
B3	P2_MDIN_1	B4	P2_MDIP_1
B5	P2_MDIN_2	B6	P2_MDIP_2
B7	P2_MDIN_3	B8	P2_MDIP_3
B9	NC	B10	GND
B11	C2_LED_0	B12	R0_LED_0
B13	P2_LINK1G#	B14	P2_LINK100#

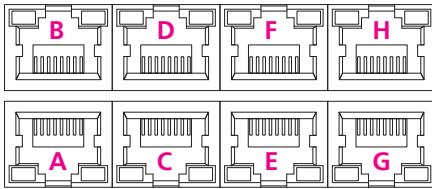
Pin	Signal	Pin	Signal
C1	P3_MDIN_0	C2	P3_MDIP_0
C3	P3_MDIN_1	C4	P3_MDIP_1
C5	P3_MDIN_2	C6	P3_MDIP_2
C7	P3_MDIN_3	C8	P3_MDIP_3
C9	NC	C10	GND
C11	EE_CLK_C0_LED_0	C12	R1_LED_0
C13	P3_LINK1G#	C14	P3_LINK100#
D1	P4_MDIN_0	D2	P4_MDIP_0
D3	P4_MDIN_1	D4	P4_MDIP_1
D5	P4_MDIN_2	D6	P4_MDIP_2
D7	P4_MDIN_3	D8	P4_MDIP_3
D9	NC	D10	GND
D11	C2_LED_0	D12	R1_LED_0
D13	P4_LINK1G#	D14	P4_LINK100#

Pin	Signal	Pin	Signal
E1	P5_MDIN_0	E2	P5_MDIP_0
E3	P5_MDIN_1	E4	P5_MDIP_1
E5	P5_MDIN_2	E6	P5_MDIP_2
E7	P5_MDIN_3	E8	P5_MDIP_3
E9	NC	E10	GND
E11	EE_CLK_C0_LED_0	E12	R2_LED_0
E13	P5_LINK1G#	E14	P5_LINK100#
F1	P6_MDIN_0	F2	P6_MDIP_0
F3	P6_MDIN_1	F4	P6_MDIP_1
F5	P6_MDIN_2	F6	P6_MDIP_2
F7	P6_MDIN_3	F8	P6_MDIP_3
F9	NC	F10	GND
F11	C2_LED_0	F12	R2_LED_0
F13	P6_LINK1G#	F14	P6_LINK100#

Pin	Signal	Pin	Signal
G1	P7_MDIN_0	G2	P7_MDIP_0
G3	P7_MDIN_1	G4	P7_MDIP_1
G5	P7_MDIN_2	G6	P7_MDIP_2
G7	P7_MDIN_3	G8	P7_MDIP_3
G9	NC	G10	GND
G11	EE_CLK_C0_LED_0	G12	R3_LED_0
G13	P7_LINK1G#	G14	P7_LINK100#
H1	P8_MDIN_0	H2	P8_MDIP_0
H3	P8_MDIN_1	H4	P8_MDIP_1
H5	P8_MDIN_2	H6	P8_MDIP_2
H7	P8_MDIN_3	H8	P8_MDIP_3
H9	NC	H10	GND
H11	C2_LED_0	H12	R3_LED_0
H13	P8_LINK1G#	H14	P8_LINK100#

## Switch Ports 8 to 15

Connector location: J2



Pin	Signal	Pin	Signal
A1	P9_MDIN_0	A2	P9_MDIP_0
A3	P9_MDIN_1	A4	P9_MDIP_1
A5	P9_MDIN_2	A6	P9_MDIP_2
A7	P9_MDIN_3	A8	P9_MDIP_3
A9	NC	A10	GND
A11	EE_CLK_CO_LED_1	A12	RO_LED_1
A13	P9_LINK1G#	A14	P9_LINK100#
B1	P10_MDIN_0	B2	P10_MDIP_0
B3	P10_MDIN_1	B4	P10_MDIP_1
B5	P10_MDIN_2	B6	P10_MDIP_2
B7	P10_MDIN_3	B8	P10_MDIP_3
B9	NC	B10	GND
B11	C2_LED_1	B12	RO_LED_1
B13	P10_LINK1G#	B14	P10_LINK100#

Pin	Signal	Pin	Signal
C1	P11_MDIN_0	C2	P11_MDIP_0
C3	P11_MDIN_1	C4	P11_MDIP_1
C5	P11_MDIN_2	C6	P11_MDIP_2
C7	P11_MDIN_3	C8	P11_MDIP_3
C9	NC	C10	GND
C11	EE_CLK_CO_LED_1	C12	R1_LED_1
C13	P11_LINK1G#	C14	P11_LINK100#
D1	P12_MDIN_0	D2	P12_MDIP_0
D3	P12_MDIN_1	D4	P12_MDIP_1
D5	P12_MDIN_2	D6	P12_MDIP_2
D7	P12_MDIN_3	D8	P12_MDIP_3
D9	NC	D10	GND
D11	C2_LED_1	D12	R1_LED_1
D13	P12_LINK1G#	D14	P12_LINK100#

Pin	Signal	Pin	Signal
E1	P13_MDIN_0	E2	P13_MDIP_0
E3	P13_MDIN_1	E4	P13_MDIP_1
E5	P13_MDIN_2	E6	P13_MDIP_2
E7	P13_MDIN_3	E8	P13_MDIP_3
E9	NC	E10	GND
E11	EE_CLK_CO_LED_1	E12	R2_LED_1
E13	P13_LINK1G#	E14	P13_LINK100#
F1	P14_MDIN_0	F2	P14_MDIP_0
F3	P14_MDIN_1	F4	P14_MDIP_1
F5	P14_MDIN_2	F6	P14_MDIP_2
F7	P14_MDIN_3	F8	P14_MDIP_3
F9	NC	F10	GND
F11	C2_LED_1	F12	R2_LED_1
F13	P14_LINK1G#	F14	P14_LINK100#

Pin	Signal	Pin	Signal
G1	P15_MDIN_0	G2	P15_MDIP_0
G3	P15_MDIN_1	G4	P15_MDIP_1
G5	P15_MDIN_2	G6	P15_MDIP_2
G7	P15_MDIN_3	G8	P15_MDIP_3
G9	NC	G10	GND
G11	EE_CLK_CO_LED_1	G12	R3_LED_1
G13	P15_LINK1G#	G14	P15_LINK100#
H1	P16_MDIN_0	H2	P16_MDIP_0
H3	P16_MDIN_1	H4	P16_MDIP_1
H5	P16_MDIN_2	H6	P16_MDIP_2
H7	P16_MDIN_3	H8	P16_MDIP_3
H9	NC	H10	GND
H11	C2_LED_1	H12	R3_LED_1
H13	P16_LINK1G#	H14	P16_LINK100#



## Board to Board Connector

Connector location: JP2



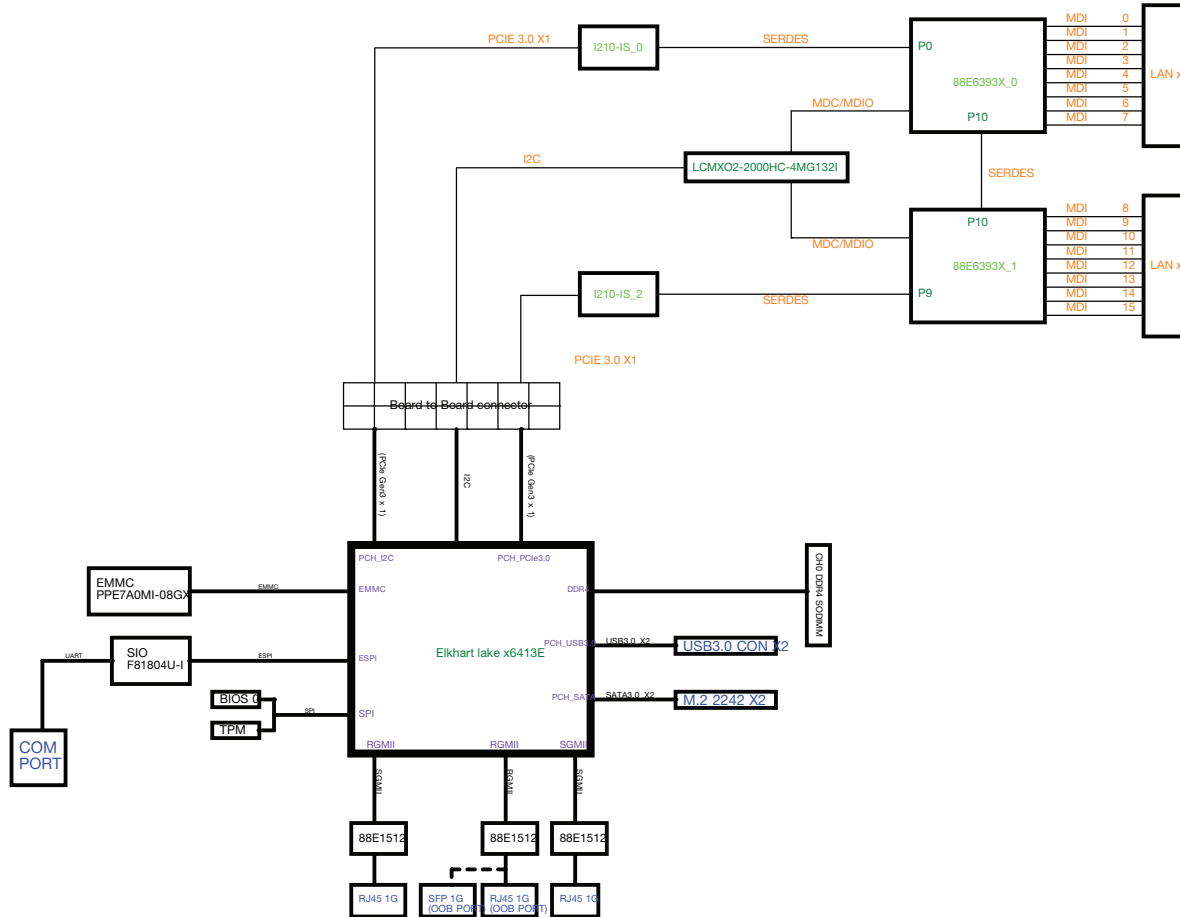
Pin	Definition	Pin	Definition
1	VIN	2	VIN
3	VIN	4	VIN
5	VIN	6	VIN
7	PGND	8	PGND
9	PGND	10	PGND
11	PGND	12	PGND
13	P3V3	14	P3V3
15	P3V3	16	P3V3
17	P3V3	18	P3V3
19	GND	20	GND
21	NC	22	GND
23	NC	24	P3V3_AUX
25	NC	26	P3V3_AUX

Pin	Definition	Pin	Definition
27	NC	28	P3V3_AUX
29	NC	30	NC
31	NC	32	NC
33	NC	34	NC
35	NC	36	BUF_PLT_RST_R_N
37	NC	38	DC_IN2_STATUS
39	NC	40	NC
41	NC	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	NC
51	NC	52	NC

Pin	Definition	Pin	Definition
53	GND	54	NC
55	NC	56	SLOT_I2C_MCU_CLK
57	NC	58	SLOT_I2C_MCU_DATA
59	GND	60	GND
61	PCIE_CLK2_DP	62	NC
63	PCIE_CLK2_DN	64	NC
65	GND	66	NC
67	PCIE_CLK1_DP	68	NC
69	PCIE_CLK1_DN	70	NC
71	GND	72	NC
73	PCIE_CLK0_DP	74	NC
75	PCIE_CLK0_DN	76	NC

Pin	Definition	Pin	Definition
77	GND	78	GND
79	NC	80	NC
81	NC	82	NC
83	GND	84	GND
85	PCIE_TX_DP2	86	PCIE_RX_DP2
87	PCIE_TX_DN2	88	PCIE_RX_DN2
89	GND	90	GND
91	PCIE_TX_DP1	92	PCIE_RX_DP1
93	PCIE_TX_DN1	94	PCIE_RX_DN1
95	GND	96	GND
97	PCIE_TX_DP0	98	PCIE_RX_DP0
99	PCIE_TX_DN0	100	PCIE_RX_DN0

# Block Diagram



## CHAPTER 3: SYSTEM SETUP

### Removing the Top 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.

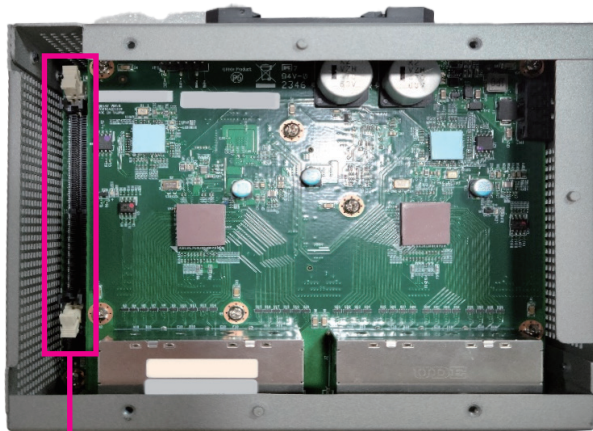
1. The screws on the top cover are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.



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

## Installing an SO-DIMM DRAM Module

1. With the chassis cover removed, install a memory module in the SO-DIMM socket. Push the module down until the clips on both sides of the socket lock into position. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.
2. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive “click” sound, indicating the module is correctly locked into position.



SO-DIMM Socket



# CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for ISA 142. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM website at [www.nexcom.com.tw](http://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  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  .

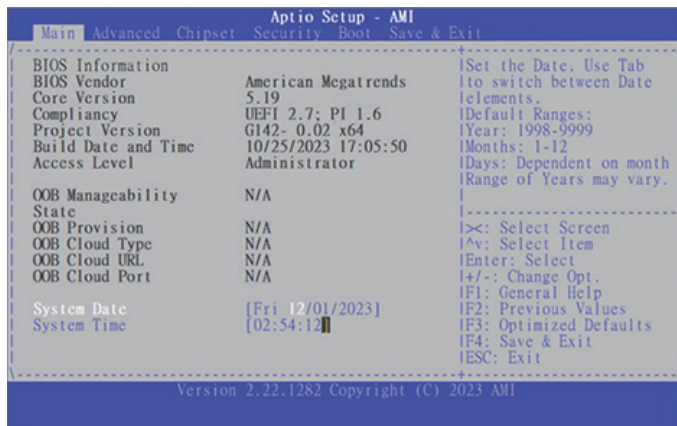


## BIOS Setup Utility

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.



### 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

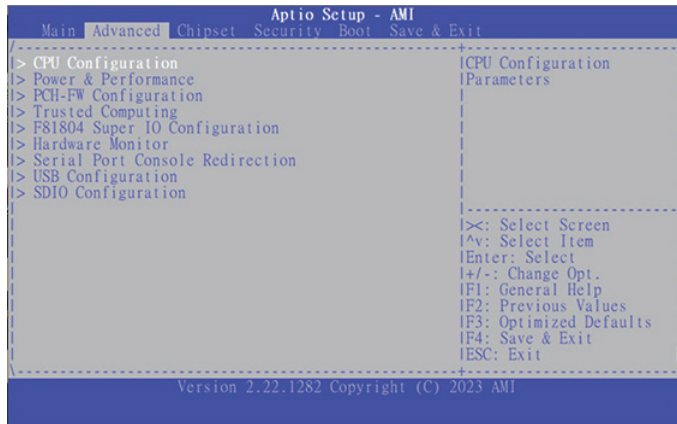
The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

## 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.

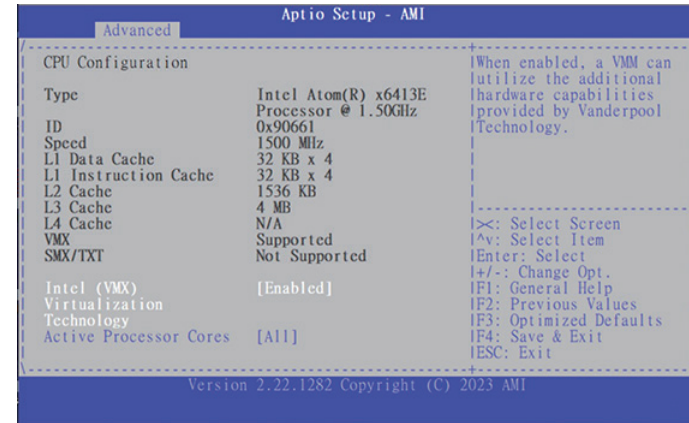


Setting incorrect field values may cause the system to malfunction.



## CPU Configuration

This section is used to configure the CPU.



### Intel® Virtualization Technology

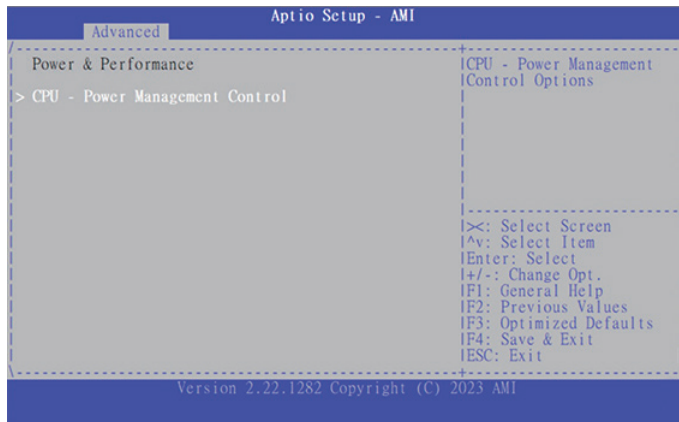
When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

### Active Processor Cores

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

## Power & Performance

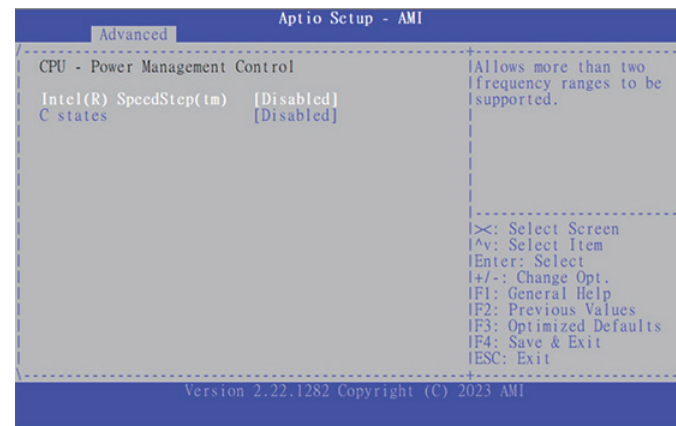
This section is used to configure the CPU power management features.



### CPU - Power Management Control

Enter the CPU - Power Management Control sub-menu.

### CPU - Power Management Control



#### Intel® SpeedStep™

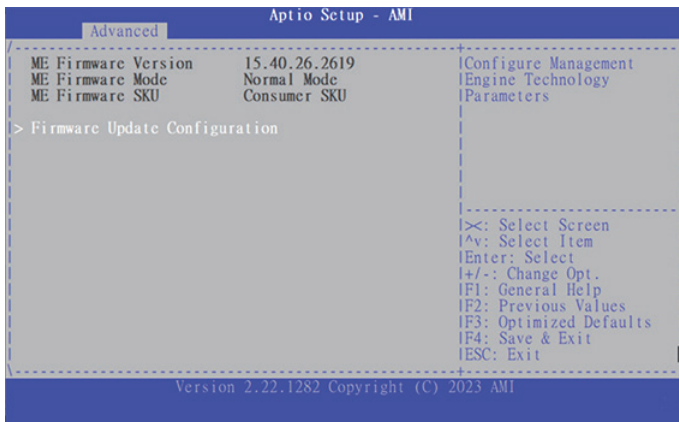
Enable or disable Intel SpeedStep technology.

#### C states

Enable or disable CPU C states support for power saving.

### PCH-FW Configuration

This section is used to configure the firmware update options.

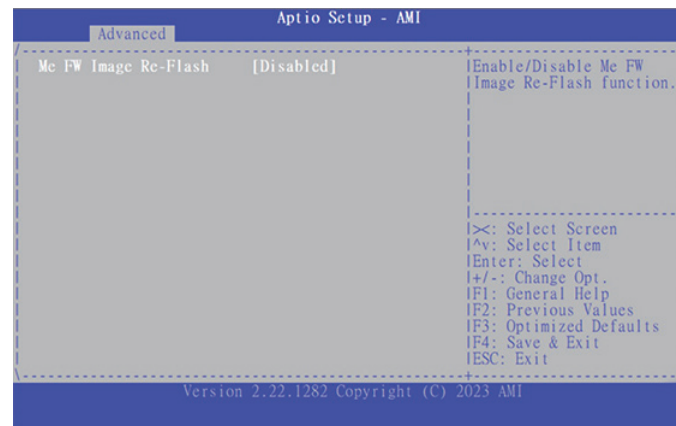


### Firmware Update Configuration

Enter the Firmware Update Configuration submenu.

### Firmware Update Configuration

This section is used to configure the firmware update options.

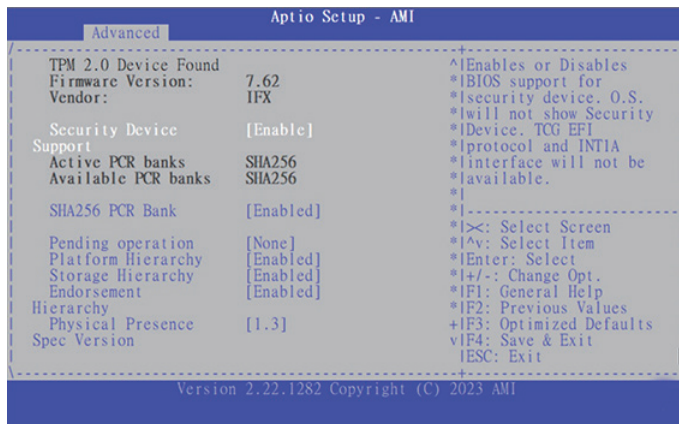


### Me FW Image Re-Flash

Enable or disable the ME firmware image re-flash function.

## Trusted Computing

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



### 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.

### Physical Presence Spec Version

Configure the physical presence spec version.

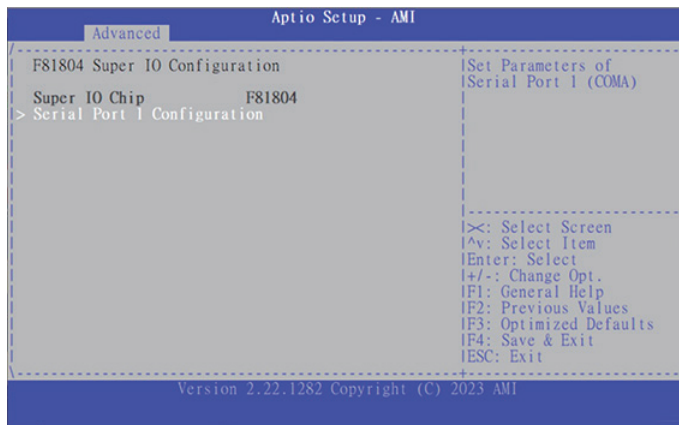
### TPM2.0 InterfaceType

Configures the TPM2.0 spec version.

- TCG\_1\_2: The compatible mode Windows 8/Windows 10.  
 TCG\_2: Support new TCG2 protocol and event format for Windows 10 or later.

## F81804 Super IO Configuration

This section is used to configure the serial ports.



### Super IO Chip

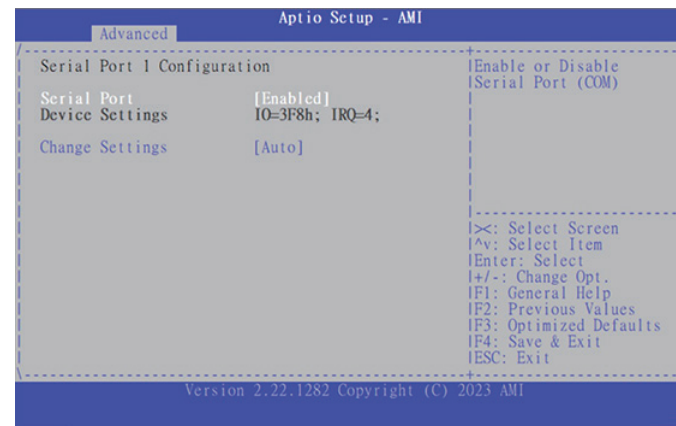
Display the Super I/O chip used on the board.

### Serial Port 1 Configuration

Enter the submenu to set the parameters for serial port 1.

## Serial Port 1 Configuration

This section is used to configure serial port 1.



### Serial Port

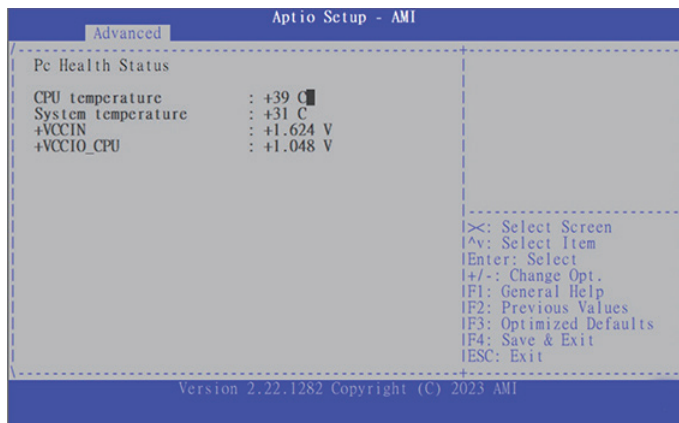
Enable or disable serial port.

### Change Settings

Select an optimal setting for the Super IO device.

## Hardware Monitor

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



### CPU temperature

Detect and display the current CPU temperature.

### System temperature

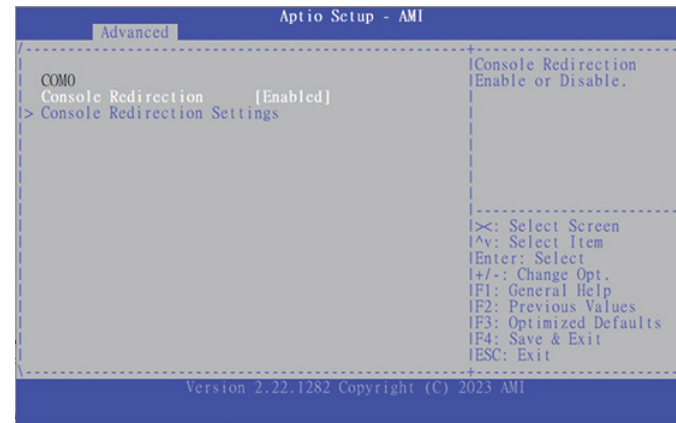
Detect and display the current system temperature.

### +VCCIN to +VCCIO\_CPU

Detect and display the +VCCIN and +VCCIO\_CPU voltage.

## Serial Port Console Redirection

This section is used to configure the serial port that will be used for console redirection.



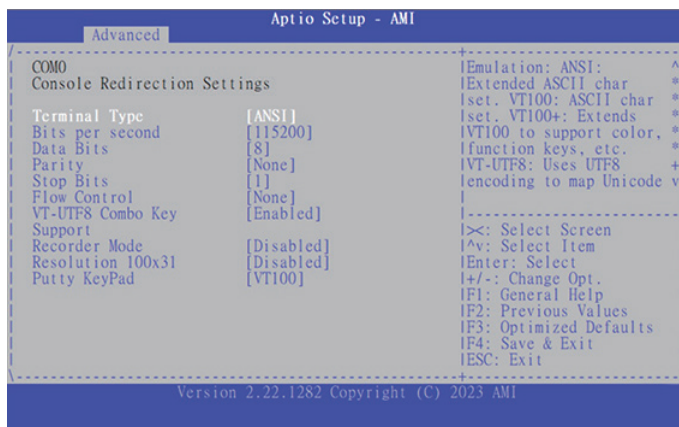
### Console Redirection

Enable or disable the console redirection.

### Console Redirection Settings

Enter the Console Redirection submenu.

## COM0 Console Redirection Settings



### Terminal Type

- ANSI Extended ASCII character set.
- VT100 ASCII character set.
- VT100+ Extends VT100 to support color, function keys, etc.
- VT-UTF8 Uses UTF8 encoding to map Unicode characters onto 1 or more bytes.

### Bits Per Second

Select the serial port transmission speed. The speed must match the other side. Long or noisy lines may require a lower speed.

### Data Bits

The options are 7 and 8.

### Parity

A parity bit can be sent with the data bits to detect some transmission errors.

- Even Parity bit is 0 if the number of 1's in the data bits is even.
- Odd Parity bit is 0 if number of 1's in the data bits is odd.

### Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

### Flow Control

Flow control can prevent data loss from buffer overflow. When sending data and the receiving buffers are full, a "stop" signal can be sent to stop the data flow.

### VT-UTF8 Combo Key Support

Enable or disable VT-UTF8 combo key support.

### Recorder Mode

When this field is enabled, only text will be sent. This is to capture the terminal data.

### Resolution 100x31

Enable or disable extended terminal resolution.

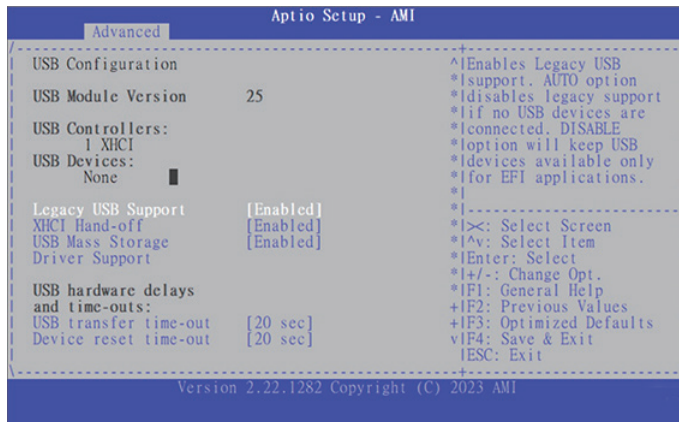
### Putty Keypad

Select the Putty keyboard emulation type.



## USB Configuration

This section is used to configure the USB.



### Legacy USB Support

Enable Enable Legacy USB.

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

Disable Keep USB devices available only for EFI applications.

### XHCI Hand-off

This is a workaround for OSs that does not support XHCI hand-off. The XHCI ownership change should be claimed by the XHCI driver.

### USB Mass Storage Driver Support

Enable or disable USB mass storage device driver support.

### USB Transfer Time-out

The time-out value for control, bulk, and Interrupt transfers.

### Device Reset Time-out

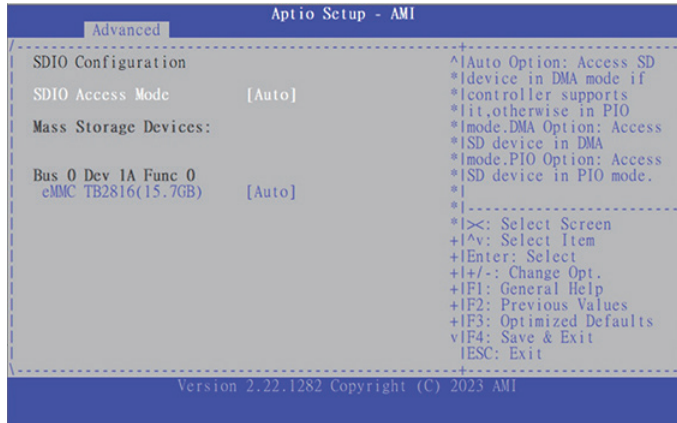
Select the USB mass storage device's start unit command timeout.

### Device Power-Up Delay

Select device power-up delay time.

## SDIO Configuration

This section is used to configure the SDIO access mode.



### SDIO Access Mode

**Auto Option** Access SD device in DMA mode if controller support it, otherwise in PIO mode.

**DAM Option** Access SD device in DMA mode.

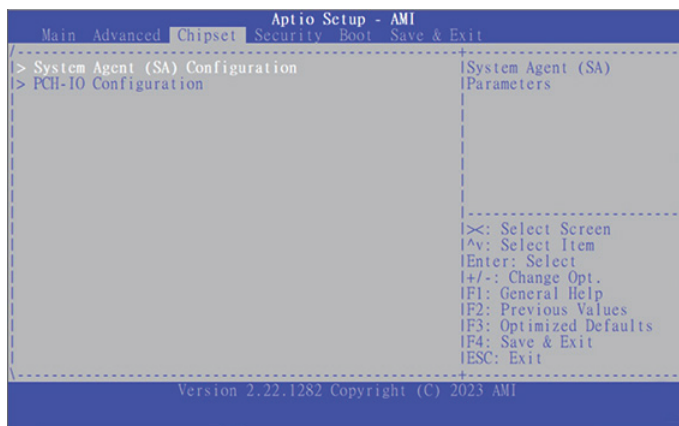
**PIO Option** Access SD device in PIO mode.

### eMMC MMC8GB (15.7GB)

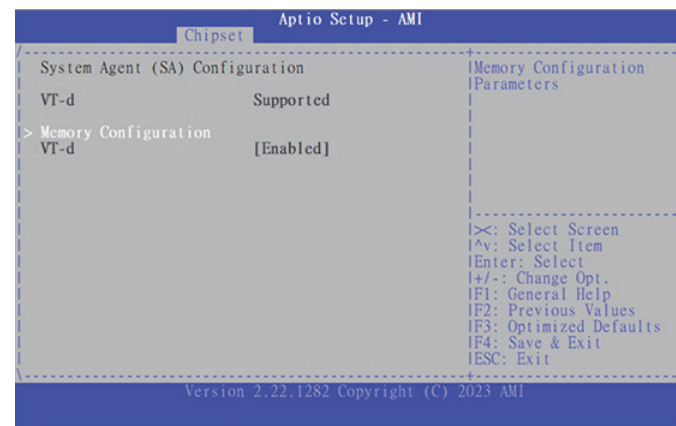
Mass storage device emulation type. **Auto** enumerates devices less than 530MB as floppies. Forced FDD option can be used to force HDD formatted drive to boot as FDD.

## Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.



## System Agent (SA) Configuration



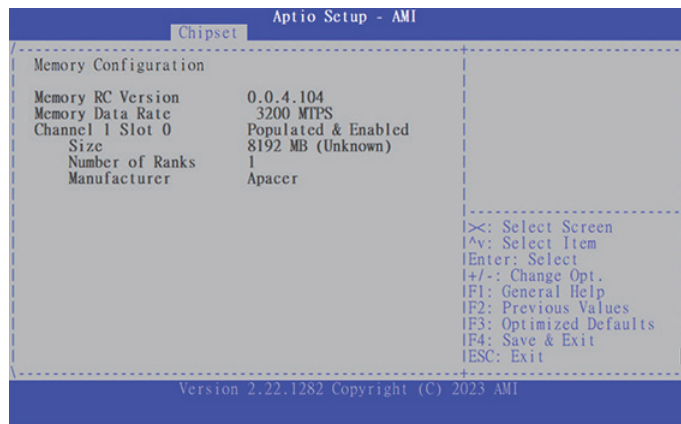
### VT-d

Enable or disable the VT-d.

### Memory Configuration

Enter the Memory Configuration submenu to set the parameters.

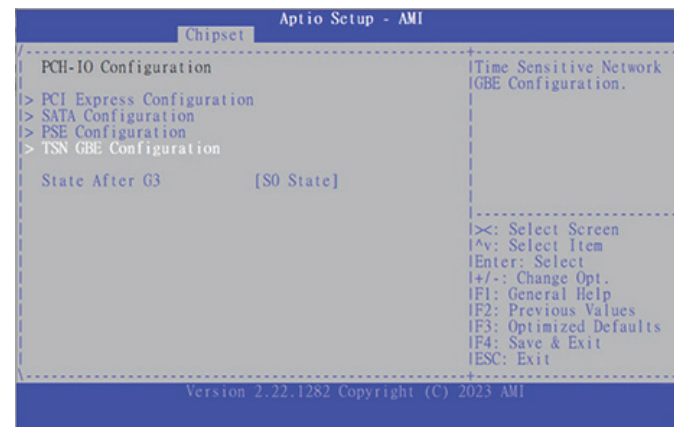
## Memory Configuration



### Memory Configuration

Display the information on the memory installed.

## PCH-IO Configuration



### PCI Express Configuration

Enter the PCI Express Configuration submenu.

### SATA Configuration

Enter the SATA Configuration submenu.

### PSE Configuration

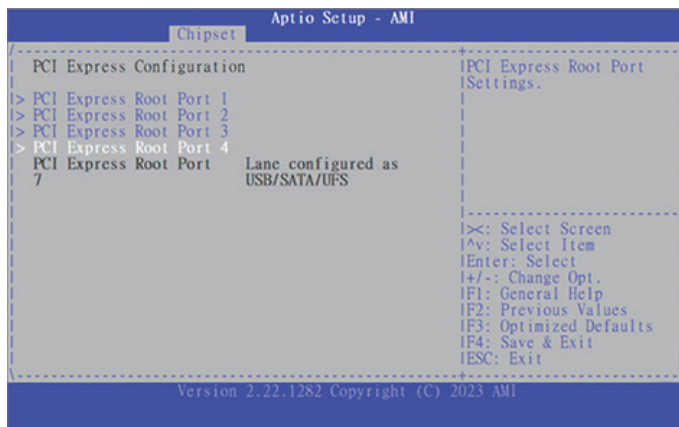
Enter the PSE Configuration submenu.

### State After G3

Configure the power state when power is re-applied after a power failure (G3 state).

## PCI Express Configuration

This section is used to configure PCI Express configuration.

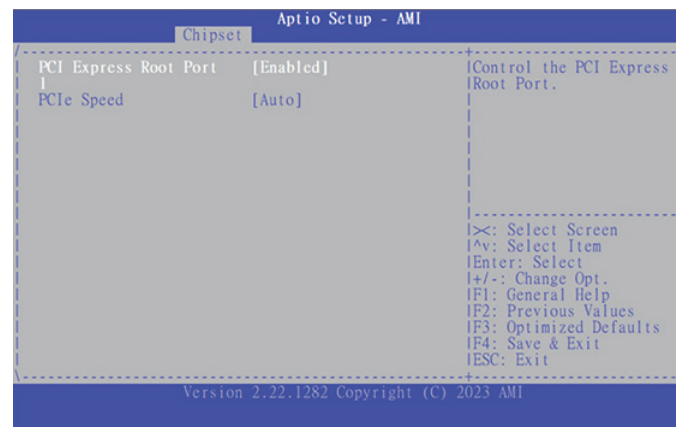


### PCI Express Root Port 1, 2, 3, 4, 7

Enter the PCI Express Root Port 1, 2, 3, 4, and 7 submenu.

## PCI Express Root Port 1/2/3/4/7

This section is used to configure PCI Express configuration.



### PCI Express Root Port

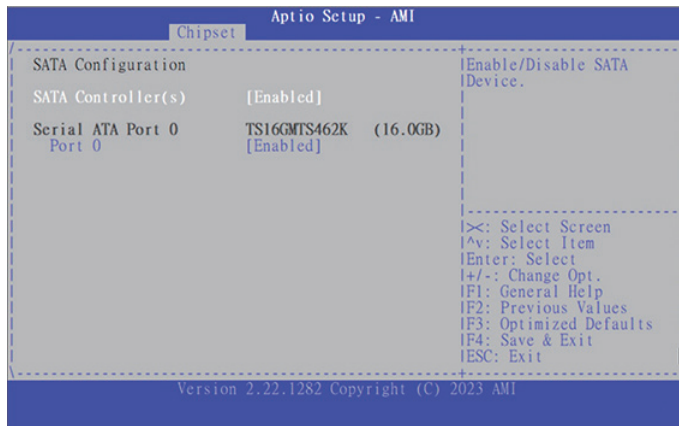
Enable or disable the PCI Express port.

### PCIe Speed

Configure the speed of the PCI Express Root Port.

### SATA Configuration

This section is used to configure PCI Express configuration.



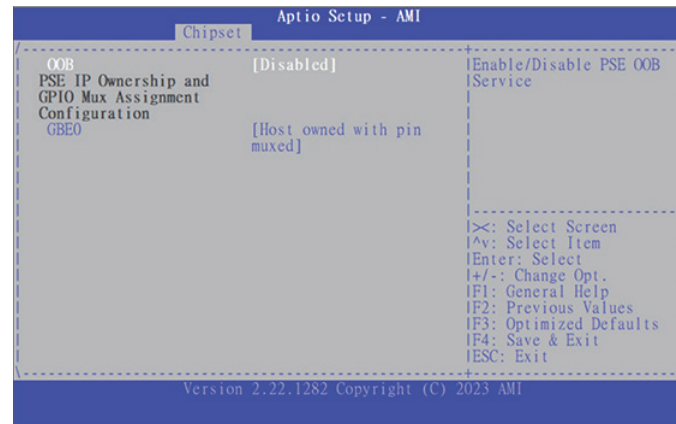
#### SATA Controller(s)

Enable or disable the SATA controller.

#### Port 0

Enable or disable the port 0.

### PSE Configuration



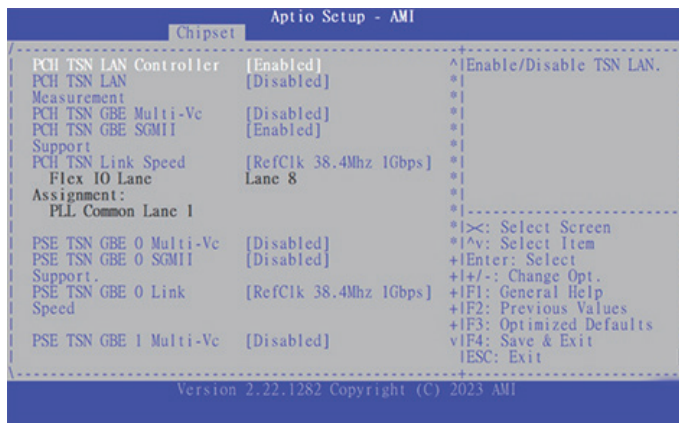
#### OOB

Enable or disable PSE OOB Service.

#### GBE0

Select ownership for GBE.

## TSN GBE Configuration



### PCH TSN LAN Controller

Enable or disable TSN LAN controller.

### PCH TSN LAN

Enable or disable PCH TSN LAN.

### PCH TSN GBE Multi-Vc

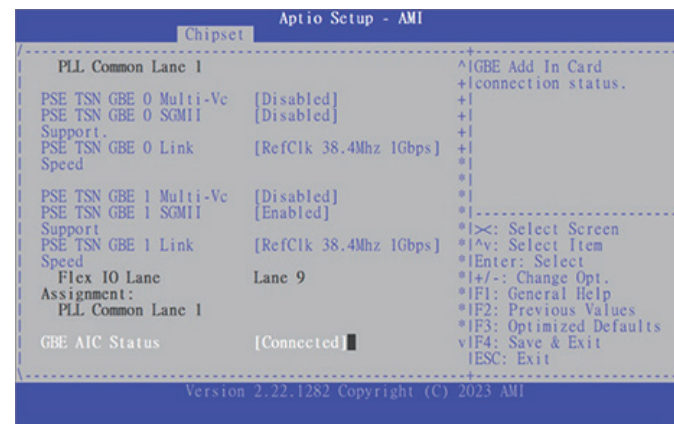
Enable or disable to lock bytes 38h to 3Fh in the lower/upper 128-byte bank of RTC RAM.

### PCH TSN GBE SGMII

Enable or disable the PCH BIOS lock enable feature.

## PCH TSN Link Speed

Select PCH TSN link speed.



### PSE TSN GBE 0/1 Multi-Vc

Enable or disable PSE TSN GBE 0/1 Multi-Vc.

### PSE TSN GBE 0/1 SGMII Support

Enable or disable PSE TSN GBE 0/1 SGMII Support.

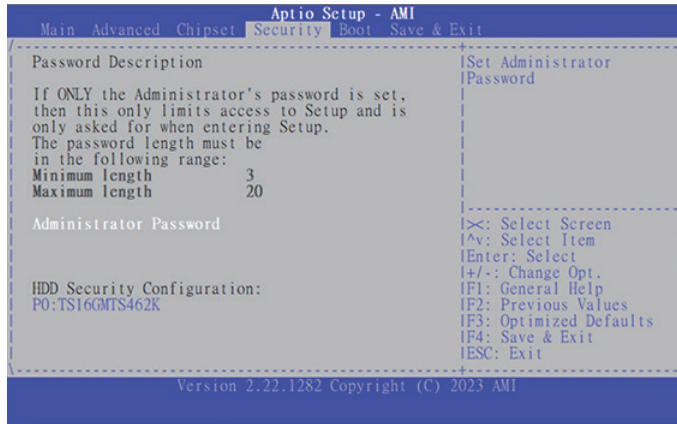
### PSE TSN GBE 1/0 Link

Select a link speed for PSE TSN GBE 1/0.

### GBE AIC Status

Display the connection status of GBE Add In Card.

## Security

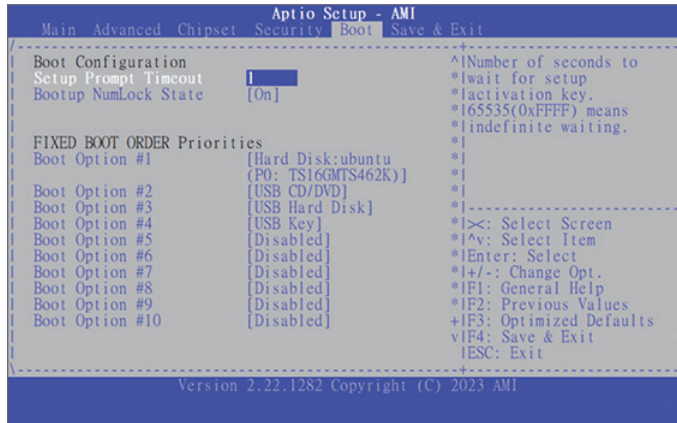


### Administrator Password

Select this to reconfigure the administrator's password.



## Boot



### UEFI Hard Drive BBS Priorities

Configure the boot device priority sequence from available UEFI hard drive devices.

### Setup Prompt Timeout

Select the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

### 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.

### Fixed Boot Order 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.

### 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>.

### Launch EFI Shell From Filesystem Device

Launch the EFI shell.