NEXCOM International Co., Ltd.

Network and Communication Solutions
Network Security Appliance
NSA 7146
User Manual

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PREFACE

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Acknowledgements

NSA 7146 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.

NEXCOM Return Merchandise Authorization (RMA)

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

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

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

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

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

Repair Service Charges for Out-of-Warranty Products

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

System Level

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

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

▪ Replace with 3rd party products if needed.

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

Board Level

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

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

Warnings

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

Cautions

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

Safety Information

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

- Read all instructions carefully.

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

- Follow all warnings and cautions in this manual.

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

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

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

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

Installation Recommendations

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

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

- A Philips screwdriver

- A flat-tipped screwdriver

- A grounding strap

- An anti-static pad

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

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

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

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

5. Keep this equipment away from humidity.

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

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

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

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

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

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

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

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

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

15. Do not place heavy objects on the equipment.

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

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Technical Support and Assistance

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

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

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

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

Conventions Used in this Manual

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

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NSA 7146 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	19S00714600X0	NSA 7146	1
2	6023309081X00	DB9-to-RJ45 Console Cable	1
3	50311F0100X00	Round Head Screw with Spring	1
4	50311F0110X00	Flat Head Screw	8
5	50311F0162X00	Round Head Screw with Washer	1
6	5044440031X00	Rubber Foot Set	4
7	5040150001X00	Hook Handle (For retrieving LAN module)	1
8	50311F0512X00	F Head Screw	8
9	5061700467X00	LGA3647 CPU Carrier	2

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Ordering Information

The following information below provides ordering information for NSA 7146.

Barebone

NSA 7146 (P/N: TBC)

2U Intel® Xeon® PCH C621, with LCM, 2 swappable 2.5" HDD trays,
3 swappable system fans, 8 LAN module (NI/NX series) bays, 700W PSU

LAN Modules

Model	P/N	Interface	Type	Port Number	Bypass/Segment	Expansion Slot	Location Slot
NX 140F	10S20140F01X0	XL710-BM1	PCIe x8	4 SFP+	None	None	All Slot
NX 142F	10S20142F01X0	XL710-BM1	PCIe x8	4 SFP+	2 bypass	None	All Slot
NX 142F-LR	10S20142F03X0	XL710-BM1	PCIe x8	4 SFP+	2 bypass	None	All Slot
NX 120F	10S20120F00X0	X710-BM2	PCIe x8	2 SFP+	None	None	All Slot
NI 140F	10SK000NI02X0	i350AM4x1	PCIe x8	4 SFP	None	None	All Slot
NI 180F	10S10180F01X0	i350AM4x2	PCIe x8	8 SFP	None	None	All Slot
NI 142C	10SK000NI03X0	i350AM4x1	PCIe x8	4 Copper	2 bypass	None	All Slot
NI 180C	10S10180C01X0	i350AM4x2	PCIe x8	8 Copper	None	None	All Slot
NI 184C	10S10184C01X0	i350AM4x2	PCIe x8	8 Copper	4 bypass	None	All Slot
NI 142F	10S10142F01X0	i350AM4x1	PCIe x8	4 SFP	2 bypass	None	All Slot
NI 121F	10S10121F01X0	i350AM2x1	PCIe x8	2 SFP	1 bypass	None	All Slot
NI 140C	10S10140C01X0	i350AM4x1	PCIe x8	4 Copper	None	None	All Slot
NV 120F	10S50120F01X0	XXV710-AM2	PCIe x8	2 SPF28	None	None	All Slot
NC220Q28M	10S30022002X0	MT27708A0-FDCF-CE	PCIe x16	2 QSFP28	None	None	1,2/ 3,4/ 5,6/ 7,8

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CHAPTER 1: PRODUCT INTRODUCTION

Overview

Key Features

- Dual Intel® Xeon® scalable processor family

- Support processor-FPGA solution

- Support up to 512GB of DDR4 2133/2400/2666 ECC & REG memory

- Up to 8 slots for PCIe LAN modules

- 2 x 2.5" SATA/SAS HDDs (swappable)

- CRPS (1 + 1) redundant power supply

- Support BMC with IPMI 2.0 and out-of-band management

- Optional TPM 1.2/2.0 module

- Support IPMI 2.0

- Support Intel® QAS® ready

Hardware Specifications

Main Board

- NSB 7145
- Dual Intel® Xeon® processor scalable family
- Support 10.4 GT/s UPI
- Intel® C627

Main Memory

- 16 x 284-pin DDR4 2133/2400/2666 DIMM sockets, up to 512GB ECC & REG SDRAM

LAN Features

- Swappable LAN modules
- Support Intel® i350/Intel® XL710 copper/fiber ports
- Support 10/100/1000/10G/100G link speed
- LAN Bypass:
  * Please see LAN module list information

I/O Interface-Front

- Support 2 x 20 characters LCD module, SIO interface
- Power status/HDD status/GPIO status/system failure status LEDs
- 2 x 2.5" HDD swappable bays
- 8 x LAN module bays
- 2 x USB 3.0 ports
- 1 x micro USB type console port
- 1 x RJ45 type console port
- 2 x Management LAN ports

I/O Interface-Rear

- 3 x Swappable system fans
- 1 x Power button switch
- 1 x VGA Port
- 2 x USB 2.0 ports

Storage

- 1 x On-board CFast socket

Power Input

- 700W 1+1 CRPS redundant power supply

Chassis Dimensions

- Chassis dimension: 438 mm x 570 mm x 88 mm
- Carton dimension: 774 mm x 636 mm x 293 mm

Weight

- Without packing: 19kg
- With packing: 25kg

Environment

- Operating temperature: 0°C~40°C
- Storage temperature: -20°C~75°C
- Relative humidity: 10%~90% non-condensing

Certifications

- CE approval
- FCC Class A
- UL

Knowing Your NSA 7146

Front Panel
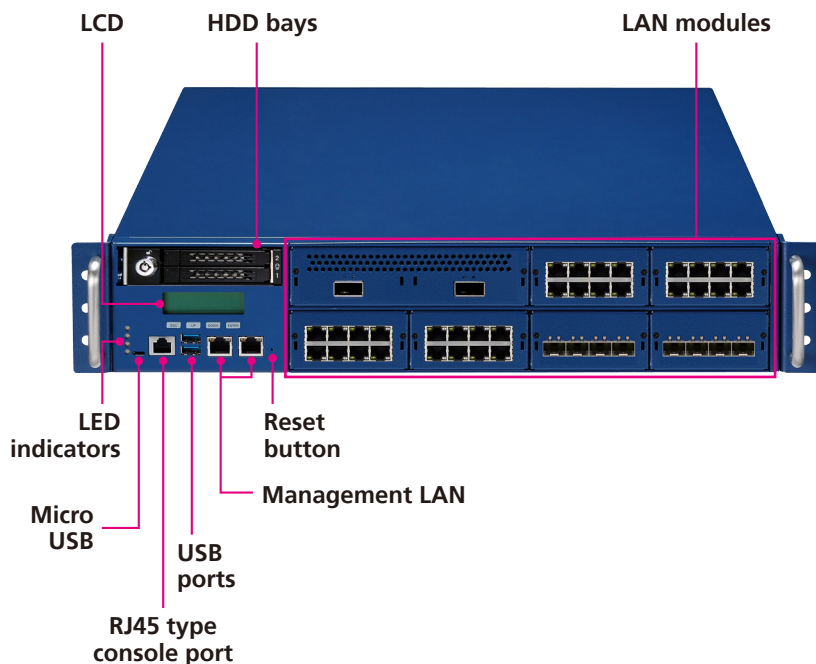
LCD
2x20 characters LCD module, SIO interface.

HDD Bays
Two 2.5" HDD swappable bays for installing HDDs.

LED Indicators
Indicates the power status, system failure status, hard drive and GPIO activity of the system.

RJ45/Micro USB Type Console Serial Port
Used to connect console devices with RJ45/Micro USB type connection.

USB Ports
Used to connect USB 3.0/2.0/1.1 devices.

Management LAN Ports
Two LAN ports used for managing the system.

Reset Button
Press to restart the system.

LAN Modules
Eight LAN module bays.

Rear Panel

Power switch   **VGA**   **USB ports**   **AC power sockets**
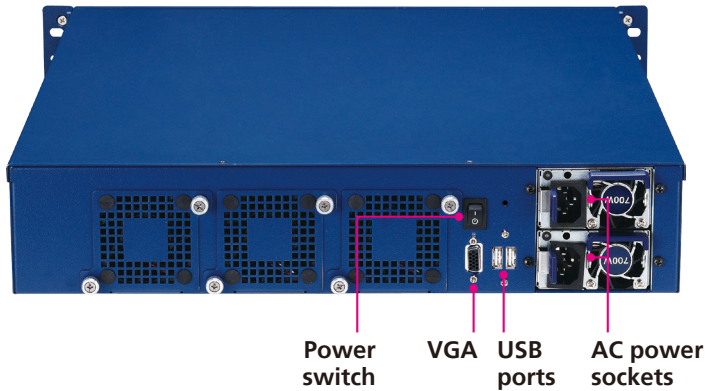
Power Switch
Press to power-on or power-off the system.

VGA
Used to connect an analog VGA monitor.

USB Ports
Used to connect USB 2.0/1.1 devices.

AC Power Sockets
Dual redundant power supply sockets, plug an AC power cord here before turning on the system.

CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NSA 7146 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)
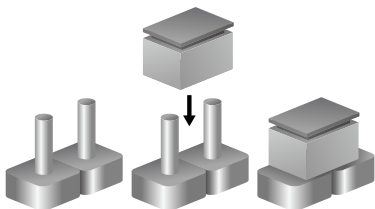
Three-Pin Jumpers: Pins 1 and 2 are Short
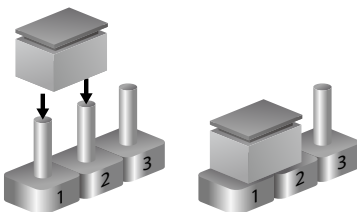
Locations of the Jumpers and Connectors

The figure below shows the location of the jumpers and connectors.
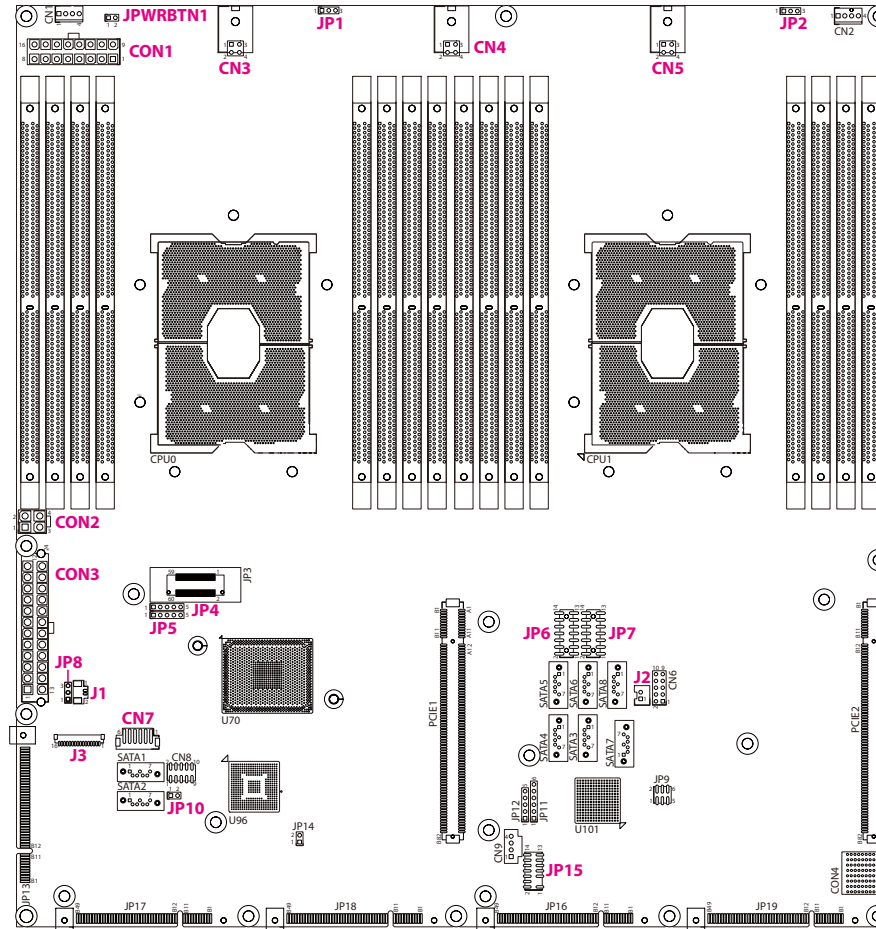
Jumper

RTC Clear

Connector type: 1x3 3-pin header
Connector location: JP8

1 ▢ ○ ○ 3

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

1-2 On: default

Pin	Definition
1	NC
2	RST_RTCRST_N
3	GND

Internal Connectors

Power Button Header

Connector type: 1x2 2-pin header
Connector location: JPWRBTN1

1 ▢ ◯ 2

Pin	Definition
1	FP_PWRBTN_R_N
2	GND

System Fan Connectors

Connector type: 2x2 4-pin header
Connector location: CN3, CN4 and CN5

1 ▢ ◯ 3
2 ◯ ◯ 4

Pin	Definition	Pin	Definition
1	GND	2	SYS_FAN3_TACH_P
3	SYS_FAN3_PWM	4	P12V

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BMC Debug Header

Connector type: 1x2 2-pin header
Connector location: JP10

1 ▢ ◯ 2

Pin	Definition
1	BMC_COM_SW_N
2	GND

USB 2.0 Connectors

Connector type: 1x6 6-pin header
Connector location: CN7

6   1
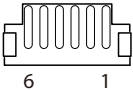
Pin	Definition	Pin	Definition
1	P5V_USB_P34	2	USB2N3_C
3	USB2P3_C	4	USB2N4_C
5	USB2P4_C	6	GND

Internal Power Connector

Connector type: 2x8 16-pin header
Connector location: CON1
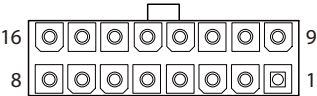
Pin	Definition	Pin	Definition
1	P12V	2	P12V
3	P12V	4	P12V
5	P12V	6	P12V
7	P12V	8	P12V
9	GND	10	GND
11	GND	12	GND
13	GND	14	GND
15	GND	16	GND

ATX 12V Internal Power Connector

Connector type: 2x2 4-pin header
Connector location: CON2
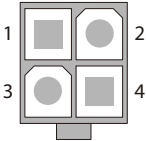
Pin	Definition	Pin	Definition
1	GND	2	GND
3	P12V_V1	4	P12V_V1

Internal Power Connector

Connector type: 2x12 24-pin header
Connector location: CON3

Battery Connector

Connector type: 1x2 2-pin header
Connector location: J1
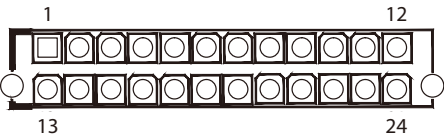
Pin	Definition	Pin	Definition
1	+3.3V	2	+3.3V
3	GND	4	+5V
5	GND	6	+5V
7	GND	8	PW-OK
9	+5VSB	10	+12V
11	+12V	12	+3.3V
13	+3.3V	14	-12V
15	GND	16	PS-ON
17	GND	18	GND
19	GND	20	RES/-5V
21	+5V	22	+5V
23	+5V	24	GND
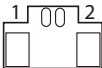
Pin	Definition
1	GND
2	RTC_BAT

Connector

Connector type: 1x2 2-pin header
Connector location: J2

Pin	Definition
1	P5V
2	GND

VGA Connector

Connector type: 1x16 16-pin header
Connector location: J3
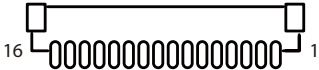
Pin	Definition	Pin	Definition
1	VGA_VCC	2	GND
3	N/C	4	DDC_CLKO_B
5	DDC_DATAO_B	6	N/C
7	AVSYNCO_B	8	GND
9	AHSYNCO_B	10	VGA_VCC
11	GND	12	DACBOA_B
13	GND	14	DACGOA_B
15	GND	16	DACROA_B

Digital Power Debug Pin Header

Connector type: 1x3 3-pin header
Connector location: JP1 and JP2

1 ☐ ○ ○ 3

Pin	Definition
1	SMB_PMBUS2_STBY_LVC3_SCL
2	SMB_PMBUS2_STBY_LVC3_SDA
3	GND

CPU TAP1 Pin Header

Connector type: 1x5 5-pin header
Connector location: JP4

1 ☐ ○ ○ ○ ○ 5

Pin	Definition
1	JTAG_XDP_CPU_QS_GTL_TRST_N
2	JTAG_CPU1_MUX_GTL_TDO_R
3	JTAG_MUX_CPU0_GTL_TDI
4	JTAG_XDP_CPU_QS_GTL_TMS
5	JTAG_XDP_CPU_GTL_TCK

PCH TAP2 Header

Connector type: 1x5 5-pin header
Connector location: JP5

1 ▢ ◯ ◯ ◯ ◯ 5

Pin	Definition
1	N/C
2	JTAG_QS_XDP_GTL_TDO
3	JTAG_XDP_QS_GTL_TDI
4	JTAG_XDP_CPU_GTL_TMS
5	JTAG_XDP_PCH_TCK1

FPGA CPU1 GPIO Connectors

Connector type: 2x7 14-pin header
Connector location: JP6 and JP7

2 ◯ ◯ ◯ ◯ ◯ ◯ ◯ 14
1 ▢ ◯ ◯ ◯ ◯ ◯ ◯ 13
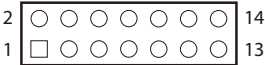
Pin	Definition	Pin	Definition
1	N/C	2	P3V3
3	PWRGD_PVCCH_CPU1_DLY	4	SMB_CPU1_RC_I2C1_RESET_N
5	FM_CPU1_RC_GPIO_B_4	6	GND
7	FM_CPU1_RC_GPIO_B_3	8	GND
9	FM_CPU1_RC_GPIO_B_2	10	GND
11	FM_CPU1_RC_GPIO_B_1	12	GND
13	FM_CPU1_RC_GPIO_B_0	14	GND

TPM Header

Connector type: 2x7 14-pin header
Connector location: JP15

```
2 [ O O O O O O O ] 14
1 [ □   O O O O O ] 13
```
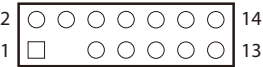
Pin	Definition	Pin	Definition
1	GND	2	CLK_24M_66M_LPC0_ESPI_TPM
3	NC	4	LPC_LFRAME_N_ESPI_CS0_N_TPM
5	LPC_LAD2_ESPI_IO2_TPM	6	RST_R1_N_TPM
7	LPC_LAD1_ESPI_IO1_TPM	8	LPC_LAD3_ESPI_IO3_TPM
9	GND	10	LPC_LAD0_ESPI_IO0_TPM
11	IRQ_LPC_SERIRQ_ESPI_CS1_N_TPM	12	P3V3
13	GND	14	GND

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Block Diagram
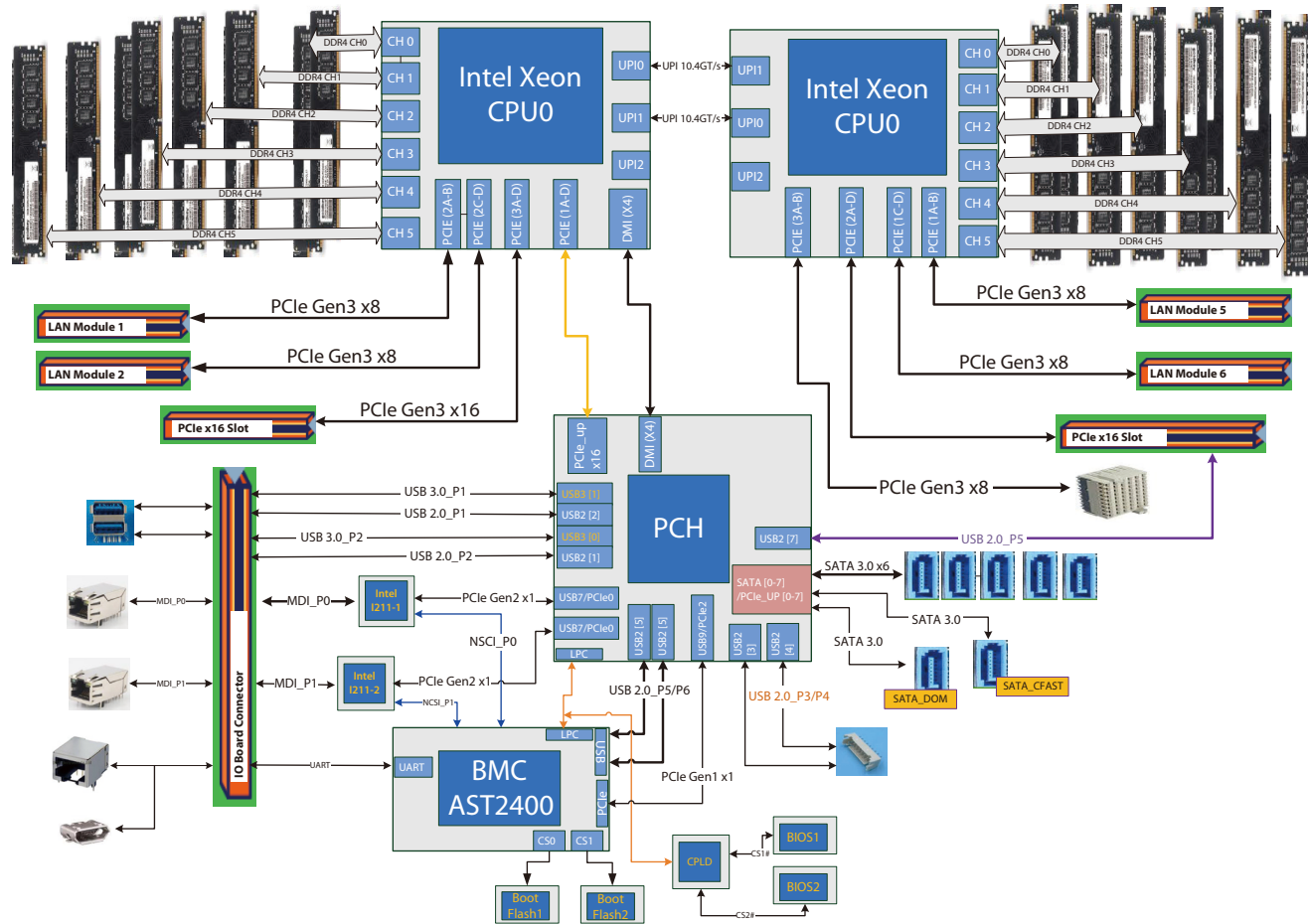
CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

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

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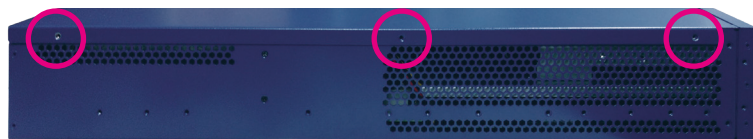
Screws on the sides
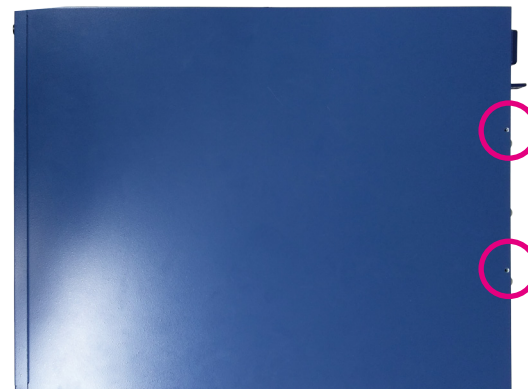
Screws on the top

2. With the screws removed, gently slide the cover outwards and then lift up the cover to remove it.

Lift here
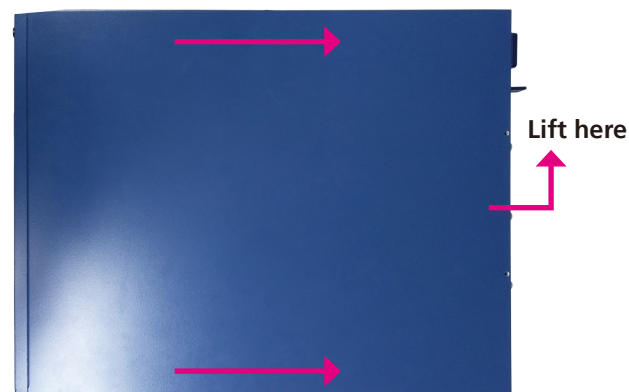
Installing a LAN Module

Please correctly follow the below instructions and noted items to avoid making unnecessary damages. Make sure the power supply is switched off and disconnected from the power sources before replacing or adding LAN modules to prevent electric shock or system damage.

1. Remove the screw on the LAN module then put them in a safe place for later use.
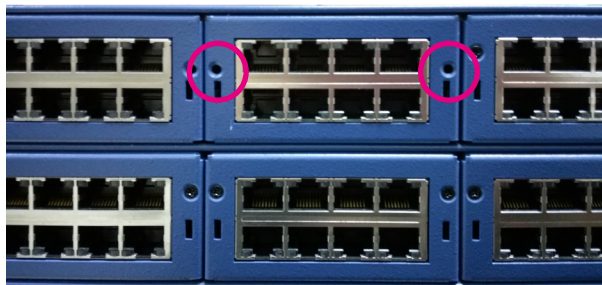
2. Use the handle provided, and insert the handle into the two holes on the LAN module.

Handle

Insert here
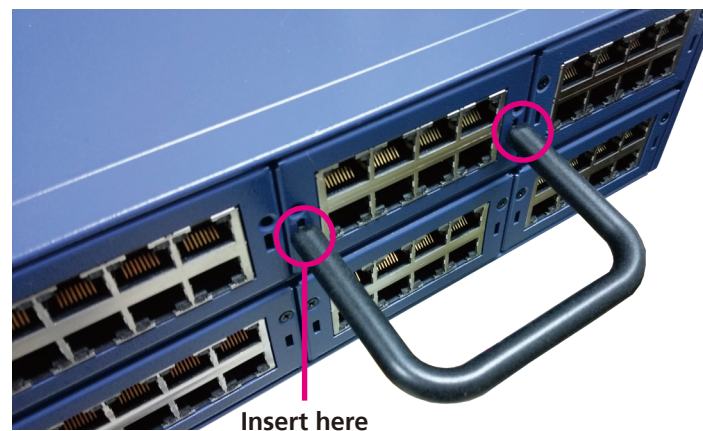
3. Once the handle is firmly secured in position, pull the handle outwards to remove the LAN module.

4. Insert the new LAN module into the slot and secure the module with screws.
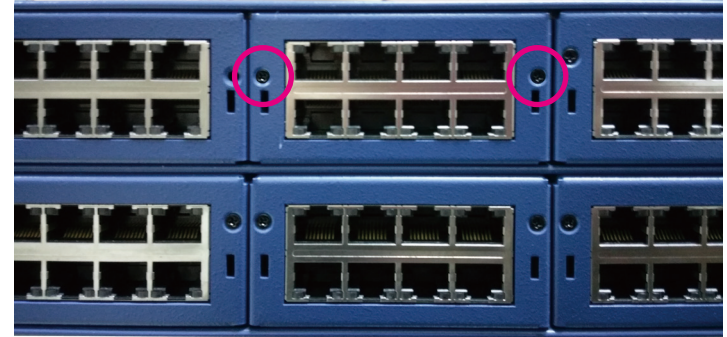
Important:

Before using Optical fiber for transferring data, make sure you have connected an approved Optical Transceiver Module. User needs to install appropriate and UL approved Laser Class I Transceivers, rated 3.3Vdc, max. 1W.

Installation Sequence of CPU and Memory

CPU Installation

When installing a CPU into the system, please install it into socket CPU 0 first as depicted below.
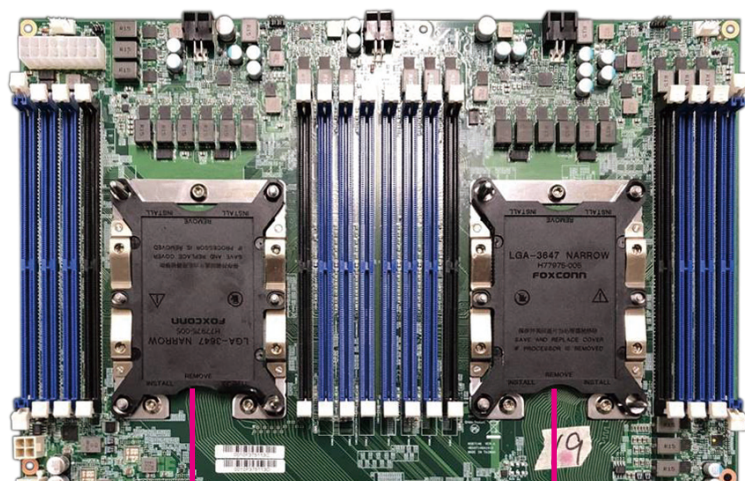
Socket CPU 0　　　　**Socket CPU 1**

Memory Installation

When installing memory modules into the system, please install the first and second memory module into the memory slots in the numerical sequence as depicted below.

❷　❶
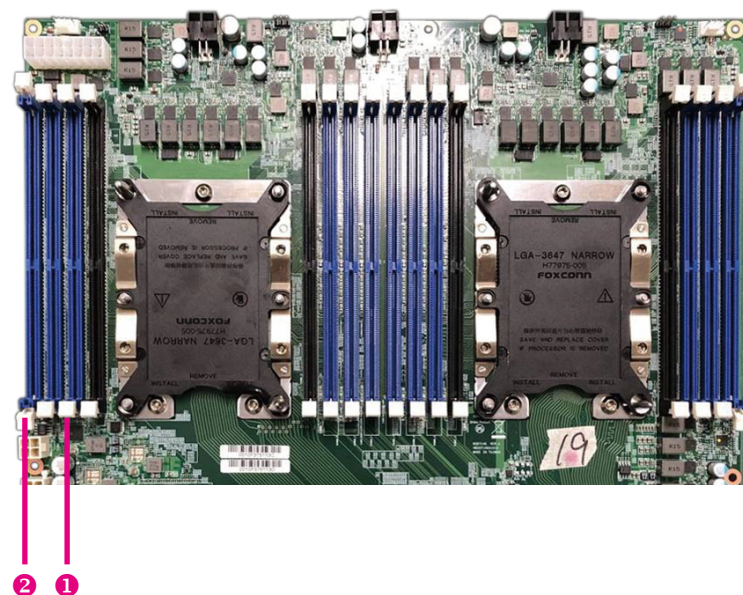
Note: The system may not boot if the first memory module is not installed in slot 1 labeled above.

Assembling the 2.5" Removable Drive Bay

The 2.5" removable drive bay kit contains the parts pictured below:
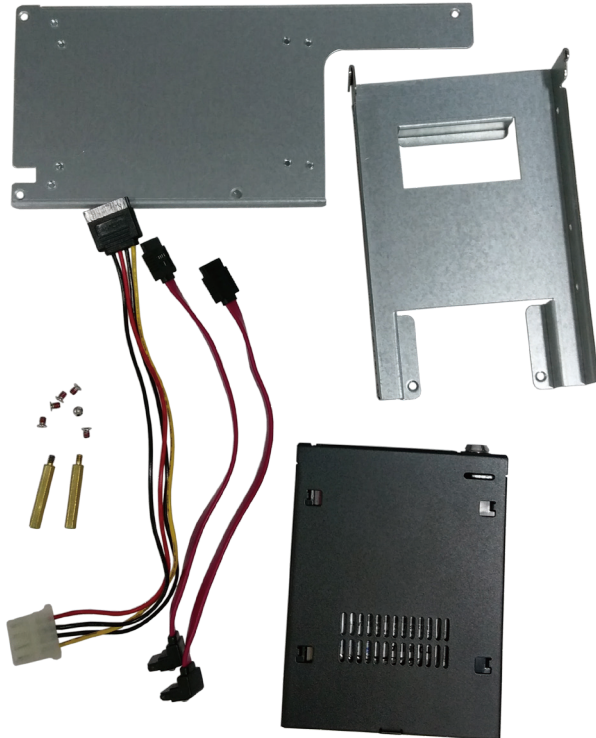
1. Locate the installation location for the drive bay kit.
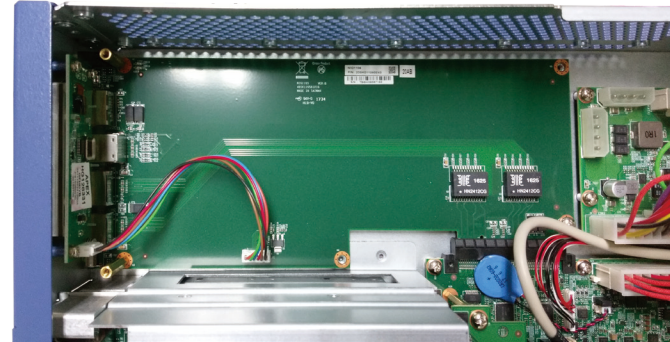
2. Install the two copper standoffs to the location circled below.
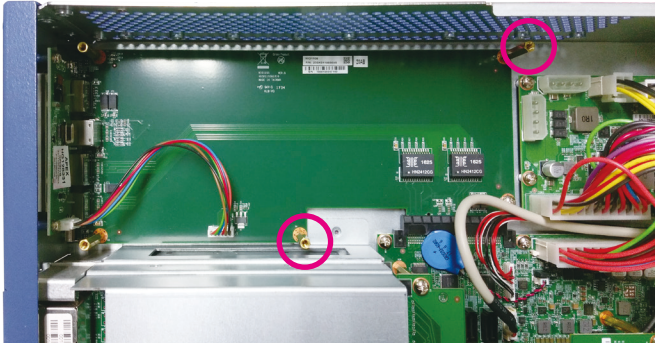
3. Align the mounting holes on the base plate to the copper standoffs.
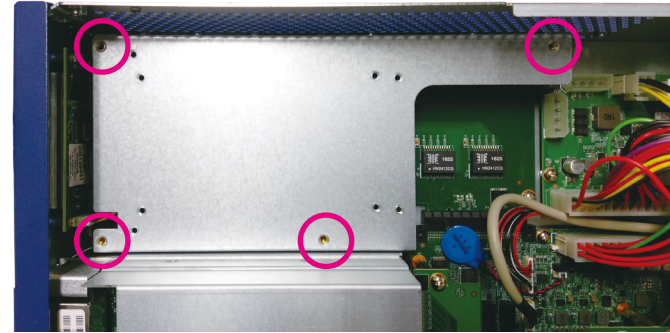
4. Secure the base plate to the standoffs with screws.
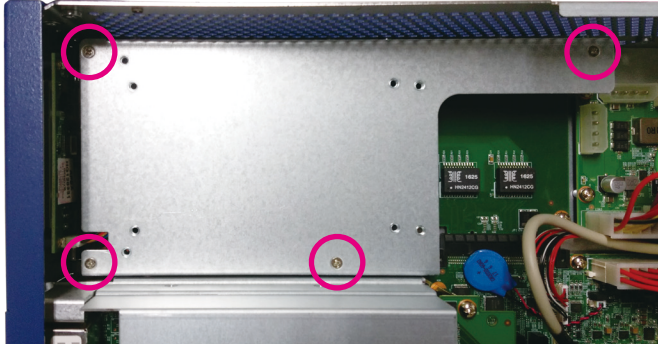
5. Align the mounting holes on the drive bay enclosure to the mounting holes on the drive bay bracket.

Drive Bay Bracket   **Drive Bay Enclosure**
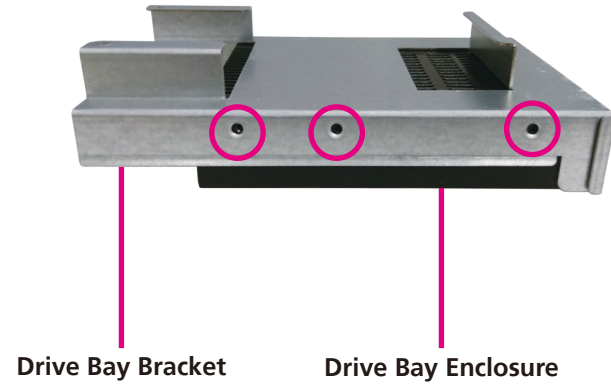
6. Secure the drive bay enclosure to the bracket with screws.

7. Repeat step 6 for securing the screws on the other side of the bracket.

8. Fix the drive bay bracket to the base plate with screws.
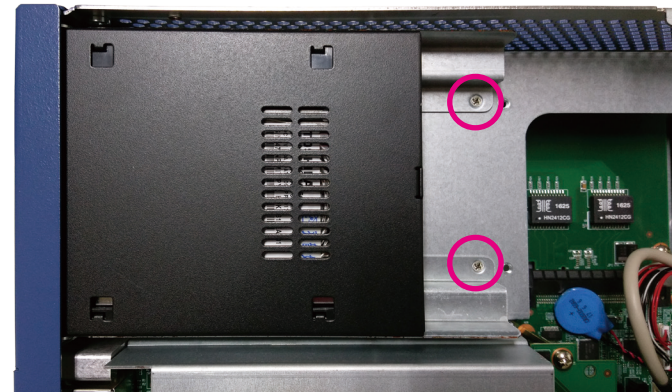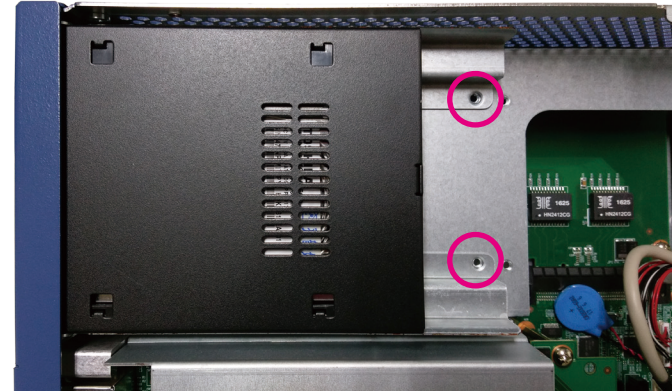
9. Connect the SATA data and power cables to the respective connectors on the board and the other ends of the cables to the connectors on the drive bay enclosure.

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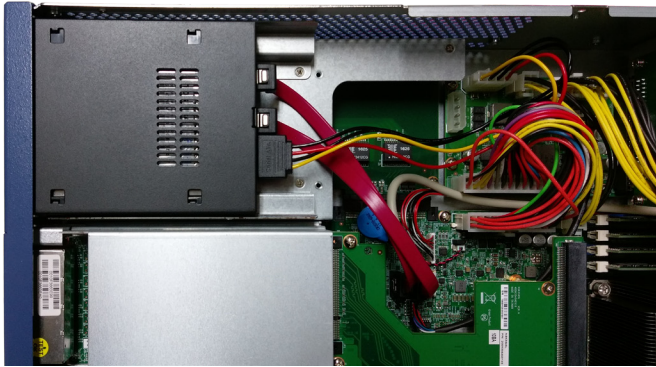
Assembling the 3.5" Removable Drive Bay

The 3.5" removable drive bay kit contains the parts pictured below:
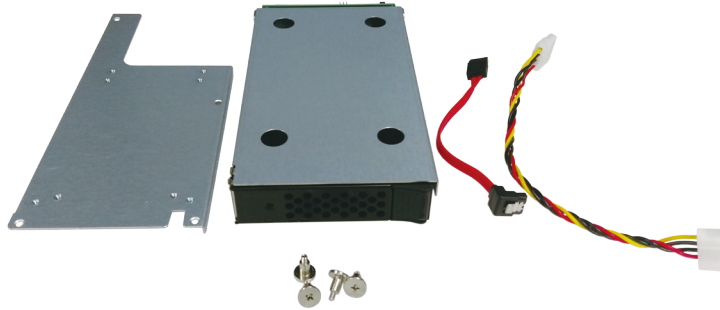
1. Locate the installation location for the drive bay kit.
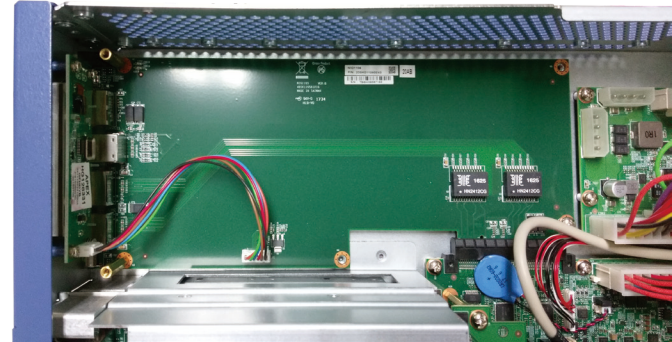
2. Install the two copper standoffs to the location circled below.
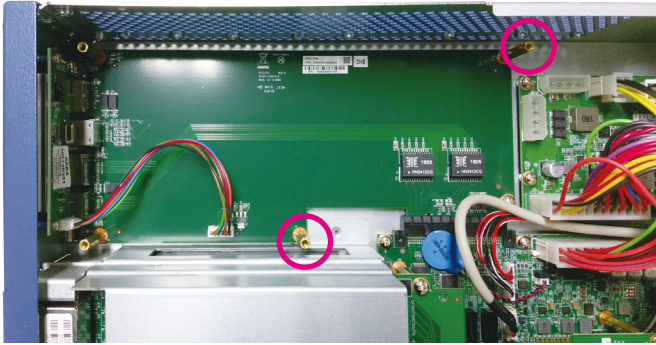
3. Align the mounting holes on the base plate to the copper standoffs.
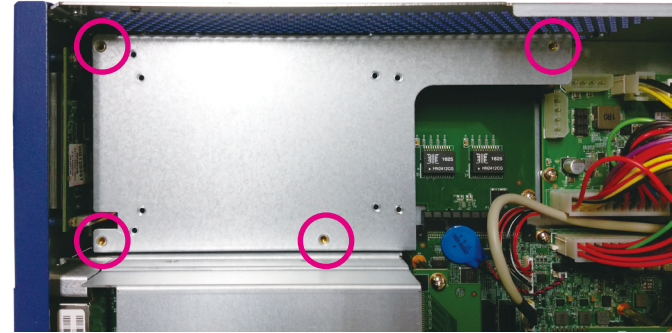
4. Secure the base plate to the standoffs with screws.
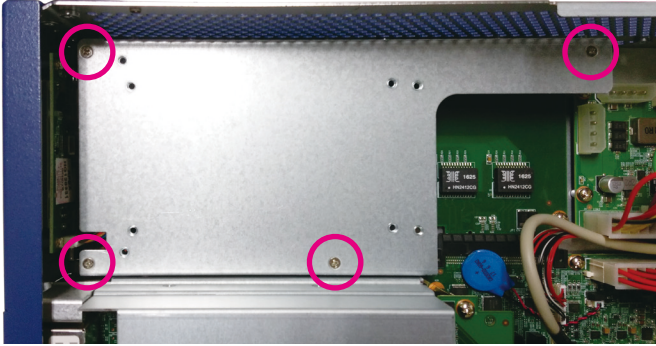
5. Push the eject button on the HDD drive tray to release the latch.

Eject button

6. Grab on the latch and pull the drive tray out gently.
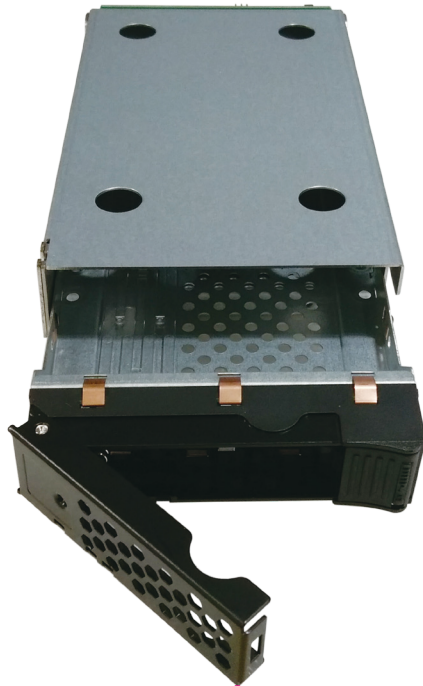
Latch

7. Place the SATA drive onto the tray and align the mounting holes on the drive with the mounting holes on the tray, then secure the drive in place with screws.

8. Repeat step 7 for securing the screws on the other side of the HDD tray.

9. Slide the tray back into the drive bay enclosure, and push firmly until you hear a distinctive click sound.

10. Fix the drive bay enclosure to the base plate with screws.
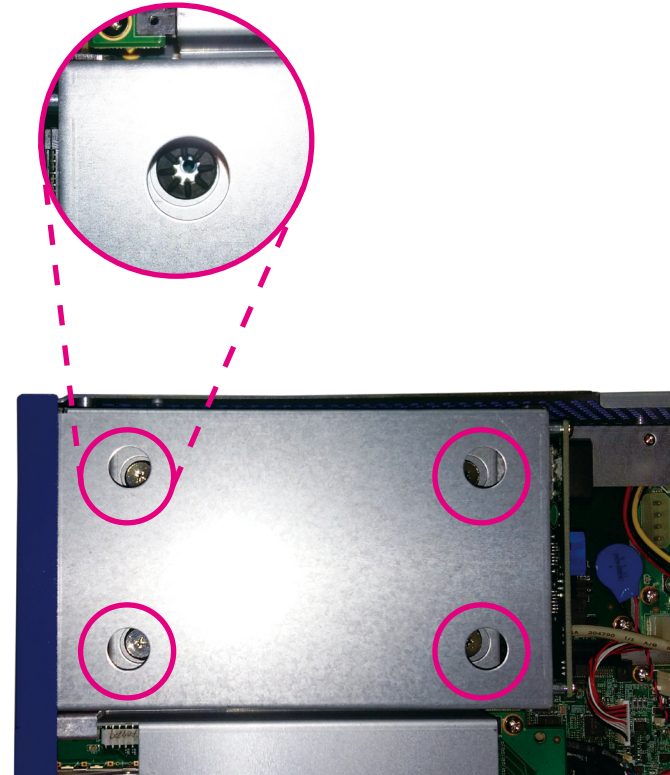
11. Connect the SATA data and power cables to the respective connectors on the board and the other ends of the cables to the connectors on the drive bay enclosure.
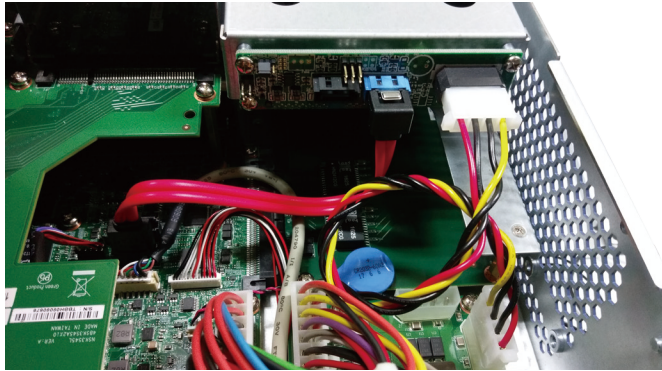
CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NSA 7146. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM website at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:
- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

- This program should be executed under the following conditions:
- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.

- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing Del allows you to enter Setup.

Legends

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

Scroll Bar

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

Submenu

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

BIOS Setup Utility

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

Main

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

```
                Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Main    Advanced    Platform Configuration    Socket Configuration    Server Mgmt

  BIOS Information                                              Set the Date. Use Tab to switch
  BIOS Vendor                  American Megatrends             between Date elements.
  Core Version                 5.14                            Default Ranges:
  Compliancy                   UEFI 2.7; PI 1.6                Year: 1998-9999
  Project Version              Z101AT 1.03 x64                 Months: 1-12
  Build Date and Time          05/08/2019 17:39:49             Days: dependent on month
  Current BIOS                 BIOS1                           Range of Years may vary.
  Access Level                 Administrator

  Memory Information
  Total Memory                 4096 MB

  System Date                  [Mon 06/10/2019]                →←: Select Screen
  System Time                  [17:02:25]                      ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit

                Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

System Date
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1998 to 9999.

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

Advanced

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

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

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Main Advanced Platform Configuration Socket Configuration Server Mgmt	
▶ Trusted Computing	Trusted Computing Settings
▶ AST2400 Super IO Configuration	
▶ Hardware Monitor	
▶ Serial Port Console Redirection	
▶ PCI Subsystem Settings	
▶ USB Configuration	
▶ CSM Configuration	
▶ Network Stack Configuration	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Trusted Computing

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

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Advanced	
Configuration	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Security Device Support [Enable]	
NO Security Device	
	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Security Device Support

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

AST2400 Super IO Configuration

This section is used to configure the serial port.

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

    AST2400 Super IO Configuration                           Set Parameters of Serial Port
                                                             1 (COMA)
    Super IO Chip                    AST2400
  ▶ Serial Port 1 Configuration
  ▶ Serial Port 2 Configuration




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


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```

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

Serial Port 1 Configuration
Configuration settings for serial port 1.

Serial Port 2 Configuration
Configuration settings for serial port 2.

Serial Port 1 Configuration

This section is used to configure serial port 1.

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

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

    Change Settings                  [Auto]




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


              Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Serial Port
Enables or disables the serial port.

Change Settings
Selects an optimal setting for the Super IO device.

Serial Port 2 Configuration

This section is used to configure serial port 2.

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

  Serial Port 2 Configuration                              Enable or Disable Serial Port
                                                           (COM)
  Serial Port                       [Enabled]
  Device Settings                   IO=2F8h; IRQ=3;

  Change Settings                   [Auto]



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


      Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Serial Port
Enables or disables the serial port.

Change Settings
Selects 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.

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

  Pc Health Status

  P12V_SCALED                 +11.60 V
  P3V3_AUX_SCALED             +3.36 V
  P5V_AUX_SCALED              +4.76 V
  P1V05_PCH_AUX               +1.06 V
  PVNN_PCH_AUX                +0.91 V
  VCC_CPU0_SCALED             +1.80 V
  VCC_CPU1_SCALED             +1.79 V
  PVDDQ_ABC                   +1.24 V
  PVDDQ_DEF                   +1.25 V
  PVDDQ_GHJ                   +1.24 V
  PVDDQ_KLM                   +1.24 V
  P3V_VBAT                    +3.05 V
  SYS_FAN1_TP                 0 RPM        →←: Select Screen
  SYS_FAN2_TP                 0 RPM        ↑↓: Select Item
  SYS_FAN3_TP                 0 RPM        Enter: Select
  SMB_TMP0                    39 C         +/-: Change Opt.
                                           F1: General Help
                                           F2: Previous Values
                                           F3: Optimized Defaults
                                           F4: Save & Exit
                                           ESC: Exit

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```

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

  PVDDQ_ABC                   +1.24 V
  PVDDQ_DEF                   +1.25 V
  PVDDQ_GHJ                   +1.24 V
  PVDDQ_KLM                   +1.24 V
  P3V_VBAT                    +3.04 V
  SYS_FAN1_TP                 0 RPM
  SYS_FAN2_TP                 0 RPM
  SYS_FAN3_TP                 0 RPM
  SMB_TMP0                    39 C
  SMB_TMP1                    50 C
  PECI_IBMC                   0 C
  PECI_IBMC2                  0 C
  PSU0_VOL                    +0.00 V
  PSU1_VOL                    +0.00 V      →←: Select Screen
  PSU0_TEMP                   0 C          ↑↓: Select Item
  PSU1_TEMP                   0 C          Enter: Select
  PSU0_FAN                    0 RPM        +/-: Change Opt.
  PSU1_FAN                    0 RPM        F1: General Help
                                           F2: Previous Values
                                           F3: Optimized Defaults
                                           F4: Save & Exit
                                           ESC: Exit

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```

P12V_SCALED to SMB_TMP0
Detects and displays the output voltages, temperatures and fan speeds.
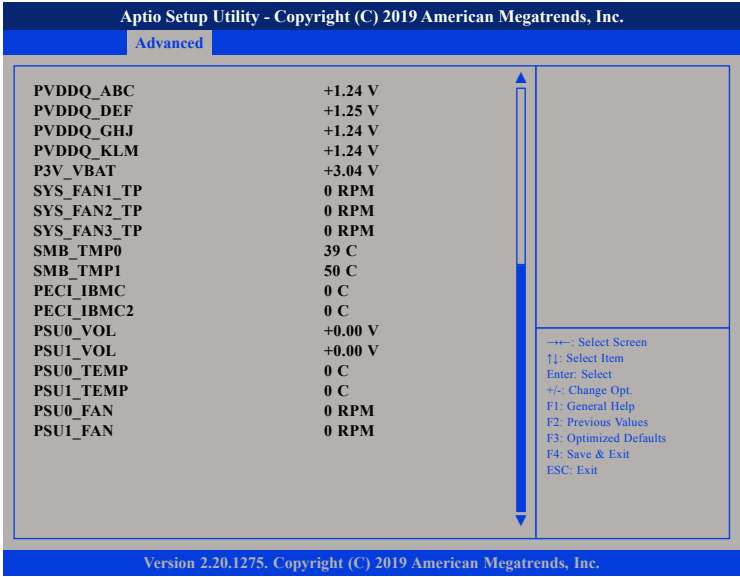
PVDDQ_ABC to PSU1_FAN
Detects and displays the output voltages, temperatures and fan speeds.

Serial Port Console Redirection

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

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

                                                                  Console Redirection Enable or
                                                                  Disable.
   COM0
   Console Redirection                    [Enabled]
 ▶ Console Redirection Settings




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


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```

Console Redirection

Enables or disables console redirection for COM0.

Console Redirection Settings (COM0)

Specifies how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

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

                                                                  Emulation: ANSI: Extended
                                                                  ASCII char set. VT100: ASCII
   COM0                                                           char set. VT100+: Extends
   Console Redirection Settings                                   VT100 to support color, function
                                                                  keys, etc.
   Terminal Type                          [ANSI]                  VT-UTF8: Uses UTF8 encoding
   Bits per second                        [115200]               to map Unicode chars onto 1
   Data Bits                              [8]                     or more
   Parity                                 [None]
   Stop Bits                              [1]
   Flow Control                           [None]
   VT-UTF8 Combo Key Sup                  [Enabled]
   Recorder Mode                          [Disabled]
   Resolution 100x31                      [Disabled]
   Putty KeyPad                           [VT100]
                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit


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```

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
Selects 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
Enables or disables 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
Enables or disables extended terminal resolution.

Putty KeyPad
Selects the Putty keyboard emulation type.

PCI Subsystem Settings

This section is used to configure the PCI.

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.		
Advanced		
PCI Bus Driver Version	A5.01.18	Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).
PCI Devices Common Settings:		
Above 4G Decoding	[Enabled]	
SR-IOV Support	[Enabled]	
BME DMA Mitigation	[Disabled]	
		→←: Select Screen
		↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
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Above 4G Decoding
Enables or disables decoding of 64-bit devices in 4G address space. (Only if the system supports 64-bit PCI decoding.)

SR-IOV Support
Enables or disables SR-IOV support.

BME DMA Mitigation
Enables or disables the function to re-enable bus master attribute during PCI enumeration for PCI bridges after SMM is locked.

USB Configuration

This section is used to configure the USB.

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

  USB Configuration                                    Enables Legacy USB support.
                                                       AUTO option disables legacy
  USB Module Version           21                      support if no USB devices are
                                                       connected. DISABLE option will
  USB Controllers:                                     keep USB devices available
     1 XHCI                                            only for EFI applications.
  USB Devices:
     10 Drives, 2 Keyboards, 2 Mice, 2 Hubs

  Legacy USB Support           [Enabled]
  XHCI Hand-off                [Enabled]
  USB Mass Storage Driver Support  [Enabled]
  Port 60/64 Emulation         [Enabled]               →←: Select Screen
                                                        ↑↓: Select Item
  USB hardware delays and time-outs:                    Enter: Select
  USB transfer time-out        [20 sec]                 +/-: Change Opt.
  Device reset time-out        [20 sec]                 F1: General Help
  Device power-up delay        [Auto]                   F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

     Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

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

  USB hardware delays and time-outs:                   Mass storage device emulation
  USB transfer time-out        [20 sec]                type. 'AUTO' enumerates devices
  Device reset time-out        [20 sec]                according to their media format.
  Device power-up delay        [Auto]                  Optical drives are emulated as
                                                       'CDROM', drives with no media
  Mass Storage Devices:                                will be emulated
  KingstonDataTraveler 3       [Auto]
  AMI Virtual CDROM0 1.0       [Auto]
  AMI Virtual HDisk0   1.0     [Auto]
  AMI Virtual CDROM1 1.0       [Auto]
  AMI Virtual CDROM2 1.0       [Auto]
  AMI Virtual CDROM3 1.0       [Auto]
  AMI Virtual HDisk1   1.0     [Auto]
  AMI Virtual HDisk2   1.0     [Auto]                   →←: Select Screen
  AMI Virtual HDisk3   1.0     [Auto]                   ↑↓: Select Item
  AMI Virtual HDisk4   1.0     [Auto]                   Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```

Legacy USB Support

Enable   Enables Legacy USB.
Auto   Disables support for Legacy when no USB devices are connected.
Disable   Keeps USB devices available only for EFI applications.

XHCI Hand-off

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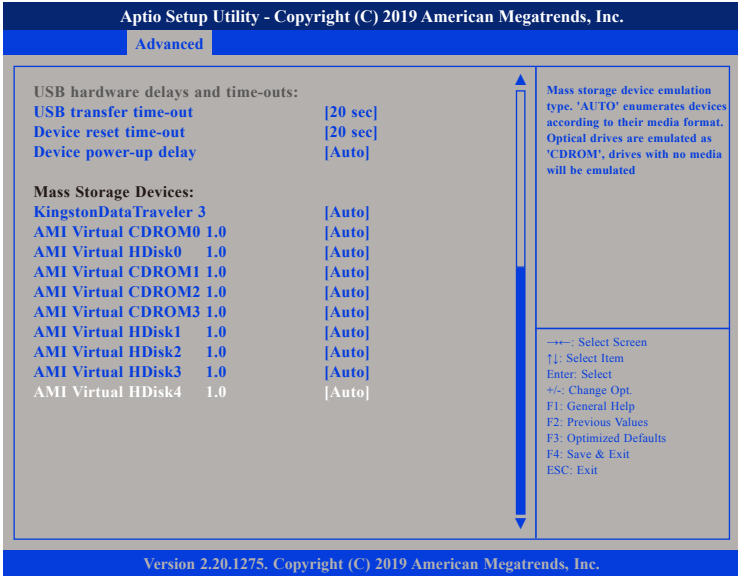
USB Mass Storage Driver Support

Enables or disables USB mass storage device driver support.

Port 60/64 Emulation

Enables I/O port 60h/64h emulation support. This should be enabled for complete USB keyboard legacy support for non-USB aware OS.

USB transfer time-out

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

Device reset time-out

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

Device power-up delay

Maximum time the value will take before it properly reports itself to the Host Controller. "Auto" uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

Mass Storage Devices:

Selects the mass storage device emulation type.

CSM Configuration

This section is used to configure the compatibility support module features.

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

  Compatibility Support Module Configuration          Enable/Disable CSM Support.

  CSM Support                      [Enabled]

  CSM16 Module Version             07.83

  GateA20 Active                   [Upon Request]
  Option ROM Messages              [Force BIOS]
  INT19 Trap Response              [Immediate]
  HDD Connection Order             [Adjust]

  Option ROM execution

  Network                          [Do not launch]      →←: Select Screen
  Storage                          [Legacy]              ↑↓: Select Item
  Video                            [Legacy]              Enter: Select
  Other PCI devices                [Do not launch]       +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit

      Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

CSM Support

This field is used to enable or disable CSM support, if Auto option is selected, based on OS, CSM will be enabled or disabled automatically.

GateA20 Active

Upon Request   GA20 can be disabled using BIOS services.

Always   Do not allow disabling of GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages
This field is used to set display mode for Option ROM. The options are Force BIOS and Keep Current.

INT19 Trap Response
Allows Option ROMs to trap Interrupt 19 when enabled.

Immediate   Execute the trap right away.
Postponed   Execute the trap during legacy boot.

HDD Connection Order
Configures the HDD handles to be adjusted.

Network
Controls the execution of UEFI and Legacy PXE OpROM.

Storage
Controls the execution of UEFI and Legacy Storage OpROM.

Video
Controls the execution of UEFI and Legacy Video OpROM.

Other PCI Devices
Configures the OpROM execution policy for devices other than Network, Storage or Video.

Network Stack Configuration

This section is used to configure the network stack.

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.		
Advanced		
Network Stack	[Disabled]	Enable/Disable UEFI Network Stack
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.		

Network Stack
Enables or disables UEFI network stack.

Platform Configuration

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
   Main        Advanced    Platform Configuration    Socket Configuration    Server Mgmt

 ► PCH Configuration                               Displays and provides option to
 ► Network Configuration                           change the PCH Settings
 ► Server ME Debug Configuration




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


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```

PCH Configuration
Enters the PCH Configuration submenu.

Network Configuration
Enters the Network Configuration submenu.

Server ME Debug Configuration
Enters the Server ME Debug Configuration submenu.

PCH Configuration

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

 PCH Configuration                                 Enable/Disable Intel(R) IO
 ----------------------------------------------...  Controller Hub devices

 ► PCH Devices
 ► PCI Express Configuration
 ► PCH SATA Configuration
 ► USB Configuration



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


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```

PCH Devices
Enters the PCH Devices submenu.

PCI Express Configuration
Enters the PCI Express Configuration submenu.

PCH SATA Configuration
Enters the PCH SATA Configuration submenu.

USB Configuration
Enters the USB Configuration submenu.

PCH Devices

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Platform Configuration	
External SSC Enable - **Pcie Pll SSC** [Disable] [Disable]	Enable Spread Spectrum - only affects external clock generator →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

External SSC Enable
Enables or disables spread spectrum clock. Only affects external clock generator.

Pcie Pll SSC
Enables or disables PCIe Phase Locked Loop for spread spectrum clock.

PCI Express Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Platform Configuration	
Max Read Request Size [MRRS 1024B]	PCIE Max Read Request Size Selection. →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Max Read Request Size
Configures the PCIe max read request size.

PCH SATA Configuration

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

PCH SATA Configuration                                        Enable or Disable SATA
                                                             Controller
---------------------------------------------------------------
SATA Controller                [Enable]
Configure SATA as              [AHCI]

SATA Port 0                    [Not Installed]
Software Preserve              Unknown
  Port 0                       [Enable]
  Hot Plug                     [Enable]
SATA Port 1                    [Not Installed]
Software Preserve              Unknown
  Port 1                       [Enable]              →←: Select Screen
  Hot Plug                     [Enable]              ↑↓: Select Item
SATA Port 2                    [Not Installed]       Enter: Select
Software Preserve              Unknown               +/-: Change Opt.
  Port 2                       [Enable]              F1: General Help
  Hot Plug                     [Enable]              F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

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

SATA Port 3                    [Not Installed]                Designates this port as Hot
Software Preserve              Unknown                        Pluggable.
  Port 3                       [Enable]
  Hot Plug                     [Enable]
SATA Port 4                    [Not Installed]
Software Preserve              Unknown
  Port 4                       [Enable]
  Hot Plug                     [Enable]
SATA Port 5                    [Not Installed]
Software Preserve              Unknown
  Port 5                       [Enable]
  Hot Plug                     [Enable]              →←: Select Screen
SATA Port 6                    [Not Installed]       ↑↓: Select Item
Software Preserve              Unknown               Enter: Select
  Port 6                       [Enable]              +/-: Change Opt.
  Hot Plug                     [Enable]              F1: General Help
SATA Port 7                    [Not Installed]       F2: Previous Values
Software Preserve              Unknown               F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```

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

Configure SATA as
Configures the SATA mode.

AHCI   This option configures the Serial ATA drives to use AHCI
        (Advanced Host Controller Interface). AHCI allows the storage
        driver to enable the advanced Serial ATA features which will
        increase storage performance.
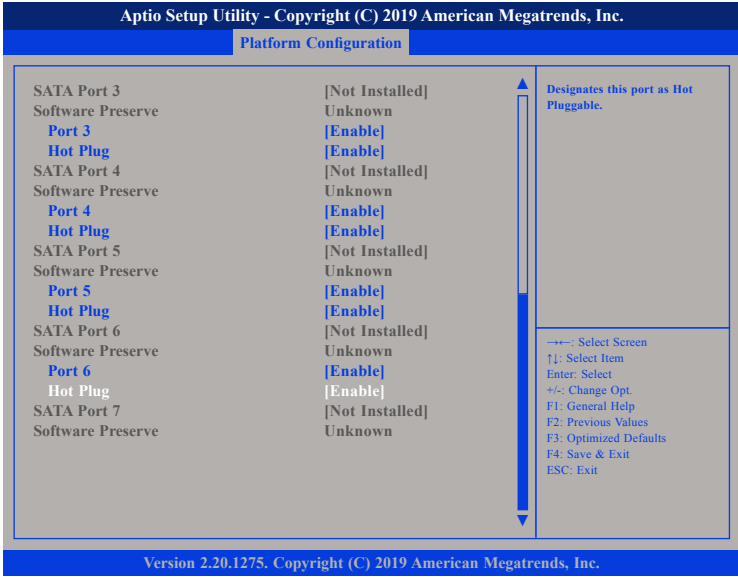
Port 0 to Port 6
Enables or disables SATA port 0 to port 6.

Hot Plug
Enables or disables hot plugging feature on SATA port 0 to port 6.

USB Configuration (PCH)

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

 XHCI Manual Mode              [Disable]        Use by validation, not for
 USB Per-Connector Disa        [Disable]        end-user.















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




        Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

XHCI Manual Mode
Enables or disables XHCI manual mode.

USB Per-Connector Disable
Provides the option to enable or disable each USB connector.

Network Configuration

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

 Network Configuration                          Switch ByPass Auto Detect to
 ------------------------------------------     Enable/Disable
 ByPass Auto Detect            [Enable]

 If all the PCIE slots don't insert the Lan Module or all the Lan
 Modules don't support ByPass function, the options of the ByPass
 will not be shown!!











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


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```

ByPass Auto Detect
Enables or disables automatic LAN Bypass function.

Server ME Debug Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Platform Configuration	
► Server ME General Configuration	**Switch ME basic features configuration**
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Server ME General Configuration

Enters the Server ME General Configuration submenu.

Server ME General Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Platform Configuration	
► Override ICC Clock Settings	**Override the default ICC Set Clock Settings.**
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	
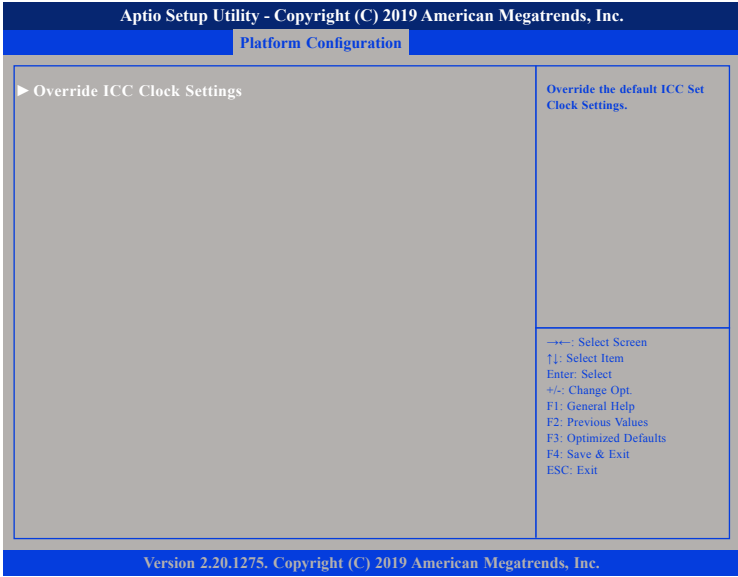
Override ICC Clock Settings

Enters the Override ICC Clock Settings submenu.

Override ICC Clock Settings

Platform Configuration

Override ICC Clock Set	[Enabled]	This option allows customization
ICC Clock Spread Spect	**[Disabled]**	of clock settings.

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

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
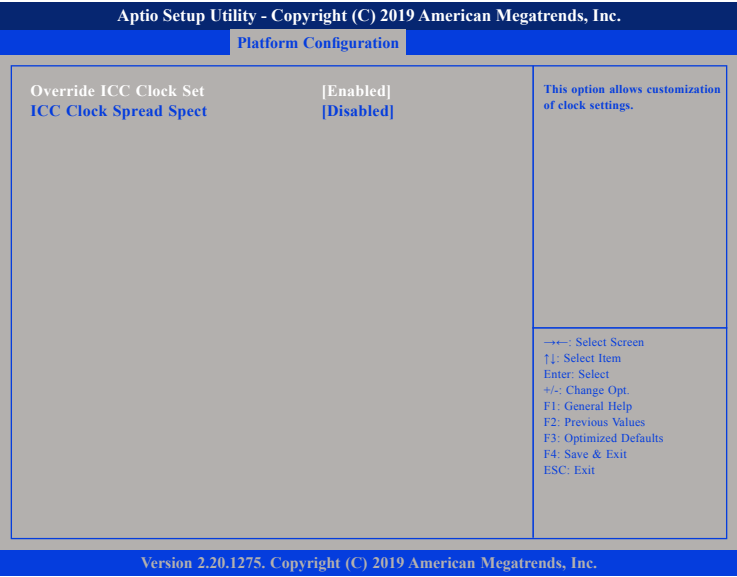
Override ICC Clock Settings
Provides the option to allow customization of clock settings.

ICC Clock Spread Spectrum
Enables or disables ICC Clock Spread Spectrum.

Socket Configuration

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

Main	Advanced	Platform Configuration	Socket Configuration	Server Mgmt

► **Processor Configuration**
► **Common RefCode Configuration**
► **UPI Configuration**
► **Memory Configuration**
► **IIO Configuration**
► **Advanced Power Management Configuration**

Displays and provides option to change the Processor Settings

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

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Processor Configuration
Enters the Processor Configuration submenu.

Common RefCode Configuration
Enters the Common RefCode Configuration submenu.

UPI Configuration and Memory Configuration
Enters the UPI Configuration and Memory Configuration submenu.

IIO Configuration and Advanced Power Management Configuration
Enters the IIO Configuration and Advanced Power Management Configuration submenu.

Processor Configuration

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

  Processor Configuration                              Change Per-Socket Settings
  ------------------------------------------------
► Per-Socket Configuration
  Processor BSP Revision    50656 - CLX B0
  Processor Socket          Socket 0          Socket 1
  Processor ID              00050656*    |    00050656
  Processor Frequency       2.400GHz     |    2.400GHz
  Processor Max Ratio       18H          |    18H
  Processor Min Ratio       0AH          |    0AH
  Microcode Revision        0400001C     |    0400001C
  L1 Cache RAM              64KB          |    64KB
  L2 Cache RAM             1024KB         |   1024KB
  L3 Cache RAM            36608KB         |  36608KB      →←: Select Screen
  Processor 0 Version                                    ↑↓: Select Item
  Intel (R) Xeon (R) Platinum 8260C CPU @ 2.40GHz        Enter: Select
  Processor 1 Version                                    +/-: Change Opt.
  Intel (R) Xeon (R) Platinum 8260C CPU @ 2.40GHz        F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit

            Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```
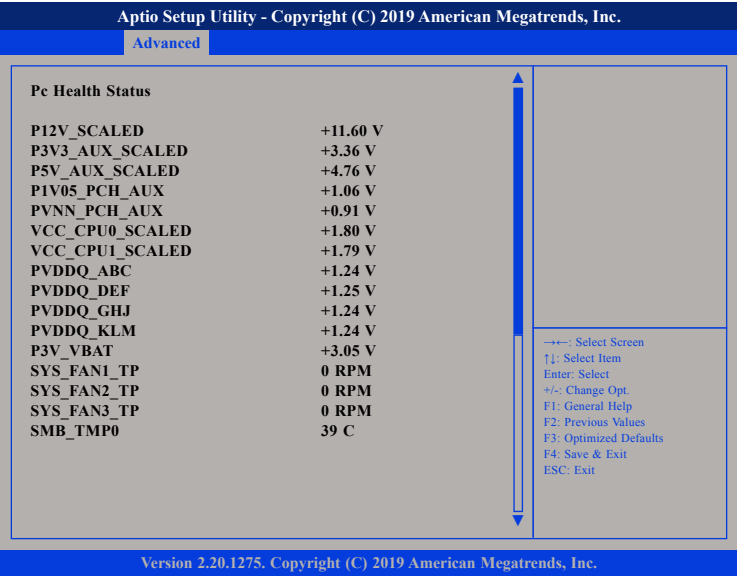
```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
                              Socket Configuration

  Processor ID              00050656*    |    00050656      Enable/disable extended APIC
  Processor Frequency       2.400GHz     |    2.400GHz      support
  Processor Max Ratio       18H          |    18H
  Processor Min Ratio       0AH          |    0AH
  Microcode Revision        0400001C     |    0400001C
  L1 Cache RAM              64KB          |    64KB
  L2 Cache RAM             1024KB         |   1024KB
  L3 Cache RAM            36608KB         |  36608KB
  Processor 0 Version
  Intel (R) Xeon (R) Platinum 8260C CPU @ 2.40GHz
  Processor 1 Version
  Intel (R) Xeon (R) Platinum 8260C CPU @ 2.40GHz
                                                           →←: Select Screen
  Hyper-Threading [ALL]      [Disable]                     ↑↓: Select Item
  Hardware Prefetcher        [Disable]                     Enter: Select
  L2 RFO Prefetch Disable    [Disable]                     +/-: Change Opt.
  Adjacent Cache Prefetcher  [Enable]                      F1: General Help
  Extended APIC              [Disable]                     F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

            Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Hyper-Threading [ALL]
Enables or disables hyper-threading technology.

Hardware Prefetcher
Enables or disables the MLC streamer prefetcher.

L2 RFO Prefetch Disable
Enables or disables L2 RFO prefetch.

Adjacent Cache Prefetcher
Enables or disables prefetching of adjacent cache lines.

Extended APIC
Enables or disables extended APIC support.

Per-Socket Configuration

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

 ► CPU Socket 0 Configuration
 ► CPU Socket 1 Configuration




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


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```

CPU Socket 0 Configuration
Processor settings for the CPU on socket 0.

CPU Socket 1 Configuration
Processor settings for the CPU on socket 1.

CPU Socket 0 Configuration

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

 CPU Socket 0 Configuration                           0: Enable all cores.
 ---------------------------------------------------...  FFFFFFF: Disable all cores
                                                       NOTE: At least one core per
 Fused Core Bitmap:      0x01FFFFF7                    CPU must be enabled.
 Available Bitmap:       0x01FFFFF7                    Disabling all cores is an invalid
                                                       configuration.
 Core Disable Bitmap(He    0

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

            Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Cores Disable Bitmap
Provides the option to enable or disable all cores. 0 means enable all cores. FFFFFFF means disable all cores.

IOT Cfg
Enables or disables IOT Cfg.

CPU Socket 1 Configuration

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

  CPU Socket 1 Configuration                                    0: Enable all cores.
  -----------------------------------------------------...      FFFFFFF: Disable all cores
                                                                NOTE: At least one core per
  Fused Core Bitmap:        0x01FFFFFB                          CPU must be enabled.
  Available Bitmap:         0x01FFFFFB                          Disabling all cores is an invalid
                                                                configuration.
  Core Disable Bitmap(He    0

  IOT Cfg                   [Disable]



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


         Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Common RefCode Configuration

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

  Common RefCode Configuration                                  Isoc: Disable,Enable
  -----------------------------------------------------...
  Isoc Mode                 [Disable]
  Numa                      [Enable]



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


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```

Cores Disable Bitmap

Provides the option to enable or disable all cores. 0 means enable all cores. FFFFFFF means disable all cores.

IOT Cfg

Enables or disables IOT Cfg.

Isoc Mode

Enables or disables Isochronous support.

Numa

Enables or disables Non-Uniform Memory Access support.

UPI Configuration

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

   UPI Configuration                                          Displays and provides option to
   -----------------------------------------------...         change the UPI General Settings
   ► UPI General Configuration
   ► UPI Per Socket Configuration




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


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```

UPI General Configuration
Enters the UPI General Configuration submenu.

UPI Per Socket Configuration
Enters the UPI Per Socket Configuration submenu.

UPI General Configuration

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

   UPI General Configuration                                  UPI Status Help
   -----------------------------------------------...
   ► UPI Status
   Link Speed Mode              [Fast]
   Link Frequency Select        [Auto]




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


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```
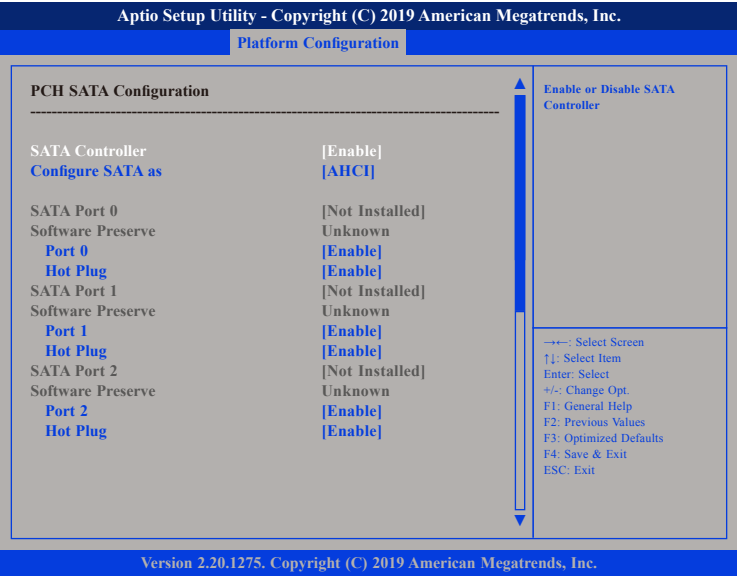
Link Speed Mode
Configures the link speed mode.

Link Frequency Select
Configures the UPI frequency.

UPI Status

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

```
UPI Status
-----------------------------------------------------------...
Number of CPU                    2
Number of IIO                    2
Current UPI Link Speed           Fast
Current UPI Link Frequ           10.4 GT/s
UPI Global MMIO Low Ba           90000000 / FBFFFFFF
UPI Global MMIO High B           0000000000000000 / 0. . .
UPI Pci-e Configuratio           80000000 / 10000000




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

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Displays information on the current UPI configuration.

UPI Per Socket Configuration

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

```
UPI Per Socket Configuration             CPU 0 Configuration Silk Screen
-----------------------------------------...  Equivalent->CPU 1
► CPU 0
► CPU 1




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

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CPU 0
Enters the CPU 0 submenu.

CPU 1
Enters the CPU 1 submenu.

UPI Per Socket Configuration CPU 0

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

    CPU 0                                                        CPU 0 UPI Port 0 Configuration
    -------------------------------------------------------...
  ► CPU 0 UPI Port 0
  ► CPU 0 UPI Port 1
  ► CPU 0 UPI Port 2




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



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```

CPU 0 UPI Port 0
Enters the CPU 0 UPI Port 0 configuration submenu.

CPU 0 UPI Port 1
Enters the CPU 0 UPI Port 1 configuration submenu.

CPU 0 UPI Port 2
Enters the CPU 0 UPI Port 2 configuration submenu.

UPI Per Socket Configuration CPU 1

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

    CPU 1                                                        CPU 1 UPI Port 0 Configuration
    -------------------------------------------------------...
  ► CPU 1 UPI Port 0
  ► CPU 1 UPI Port 1
  ► CPU 1 UPI Port 2




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



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```
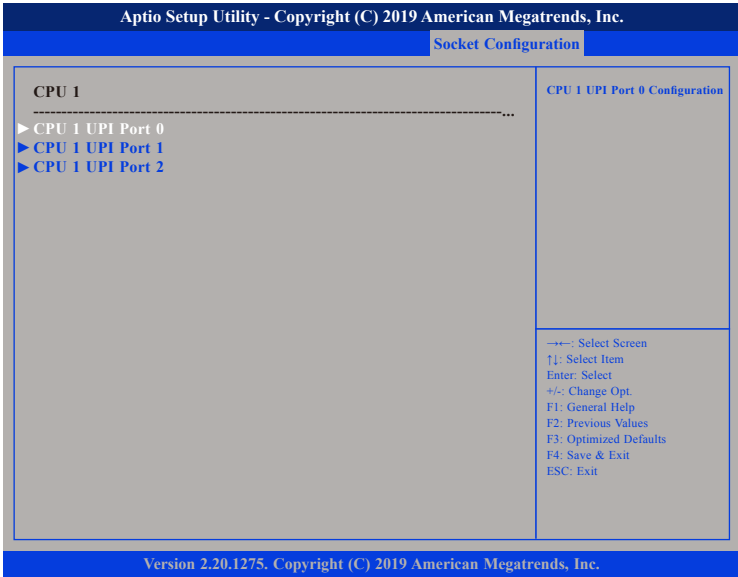
CPU 1 UPI Port 0
Enters the CPU 1 UPI Port 0 configuration submenu.

CPU 1 UPI Port 1
Enters the CPU 1 UPI Port 1 configuration submenu.

CPU 1 UPI Port 2
Enters the CPU 1 UPI Port 2 configuration submenu.

CPU 0 UPI Port 0

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

  CPU 0 UPI Port 0                                       UPI Link Disable
  --------------------------------------------------...
  Link Disable                    [No]
  UPI VNA Credit Overrid          7f
  Current UPI Link Speed          [Auto]




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



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```

Link Disable

Enables or disables the UPI link.

Current UPI Link Speed

Configures the current UPI link speed.

CPU 0 UPI Port 1

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

  CPU 0 UPI Port 1                                       UPI Link Disable
  --------------------------------------------------...
  Link Disable                    [No]
  UPI VNA Credit Overrid          7f
  Current UPI Link Speed          [Auto]




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



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```

Link Disable

Enables or disables the UPI link.

Current UPI Link Speed

Configures the current UPI link speed.

CPU 0 UPI Port 2

Socket Configuration

CPU 0 UPI Port 2
---...

Link Disable	[No]
UPI VNA Credit Overrid	7f
Current UPI Link Speed	[Auto]

UPI Link Disable

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

Link Disable
Enables or disables the UPI link.

Current UPI Link Speed
Configures the current UPI link speed.

CPU 1 UPI Port 0

Socket Configuration

CPU 1 UPI Port 0
---...

Link Disable	[No]
UPI VNA Credit Overrid	7f
Current UPI Link Speed	[Auto]

UPI Link Disable

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

Link Disable
Enables or disables the UPI link.

Current UPI Link Speed
Configures the current UPI link speed.

CPU 1 UPI Port 1

CPU 1 UPI Port 1 | UPI Link Disable
---...
Link Disable | [No]
UPI VNA Credit Overrid | 7f
Current UPI Link Speed | [Auto]

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

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Link Disable
Enables or disables the UPI link.

Current UPI Link Speed
Configures the current UPI link speed.

CPU 1 UPI Port 2

CPU 1 UPI Port 2 | UPI Link Disable
---...
Link Disable | [No]
UPI VNA Credit Overrid | 7f
Current UPI Link Speed | [Auto]

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

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Link Disable
Enables or disables the UPI link.

Current UPI Link Speed
Configures the current UPI link speed.

Memory Configuration

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

```
                                                                      Maximum Memory Frequency
                                                                      Selections in Mhz. Do not select
------------------------------------------------------------...       Reserved
Integrated Memory Controller (iMC)
------------------------------------------------------------...
Memory Frequency                        [Auto]
► Memory Topology
```

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

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Memory Frequency

Configures the maximum frequency of the memory. Do not select Reserved.

Memory Topology

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

```
--------------------------------------------------------------...
Socket0.ChA.Dimm0:  Micron SRx8 4GB RDIMM
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
Empty
```

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

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Detects and displays the information on the memory installed.

IIO Configuration

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

   IIO Configuration
   ------------------------------------------------------------------------------...

   ▶ Socket0 Configuration
   ▶ Socket1 Configuration
   ▶ IOAT Configuration
   ▶ IIO General Configuration
   ▶ Intel. VT for Directed I/O (VT-d)

      IIO-PCIE Express Global Options
      ========================================
   PCIe Max Read Request                    [1024B]
                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```
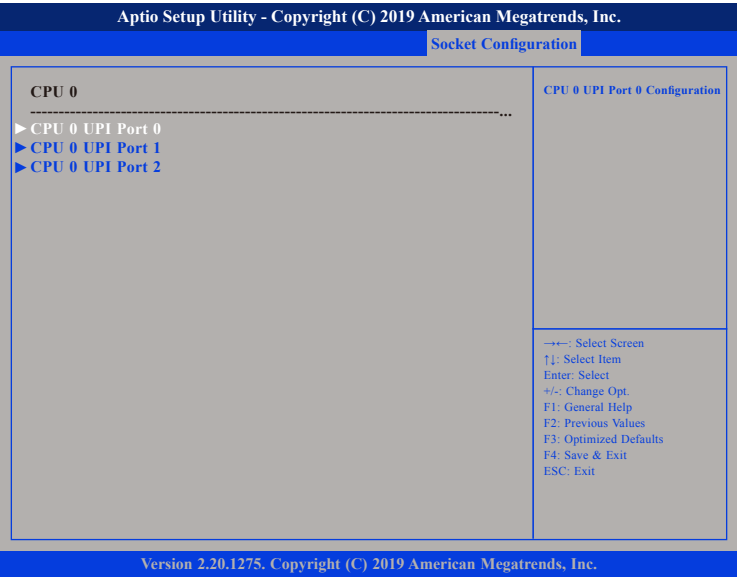
Socket0 Configuration and Socket1 Configuration
Enters the Socket0 and Socket1 Configuration submenu.

IOAT Configuration
Enters the IOAT Configuration submenu.

IIO General Configuration
Enters the IIO General Configuration submenu.

Intel. VT for Directed I/O (VT-d)
Enters the Intel® VT for Directed I/O (VT-d) submenu.

Socket0 Configuration

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

   IOU0 (IIO PCIe Br1)              [Auto]            Selects PCIe port Bifurcation for
   IOU1 (IIO PCIe Br2)              [Auto]            selected slot(s)
   IOU2 (IIO PCIe Br3)              [Auto]
   ▶ Socket 0 PcieBr0D00F0 - Port 0/DMI
   ▶ Socket 0 PcieBr1D00F0 - Port 1A
   ▶ Socket 0 PcieBr2D00F0 - Port 2A
   ▶ Socket 0 PcieBr2D02F0 - Port 2C
   ▶ Socket 0 PcieBr3D00F0 - Port 3A
   ▶ Socket 0 PcieBr3D02F0 - Port 3C

   IIO0 Redriver Control            [Auto Detect]
                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```

IOU0 (IIO PCIe Br1)
Port Bifurcation settings for IOU 0.

IOU1 (IIO PCIe Br2)
Port Bifurcation settings for IOU 1.

IOU2 (IIO PCIe Br3)
Port Bifurcation settings for IOU 2.

IIO0 Redriver Control
Configures the redriver options for IIO0.

Socket 0 PcieBr0D00F0 - Port 0/DMI

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

   Socket 0 PcieBr0D00F0 - Port 0/DMI                              Choose Link Speed for this
   ------------------------------------------------------------...  PCIe port

   Link Speed                      [Auto]
   Override Max Link Widt          [Auto]
   PCI-E Port DeEmphasis           [-6.0 dB]
   PCI-E Port Link Status          Linked as x4
   PCI-E Port Link Max             Max Width x4
   PCI-E Port Link Speed           Gen 3 (8.0 GT/s)
   PCI-E Port Max Payload          [256B]

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

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```

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 0 PcieBr1D00F0 - Port 1A

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

   Socket 0 PcieBr1D00F0 - Port 1A                               In auto mode the BIOS will
   ------------------------------------------------------------...  remove the EXP port if there is
                                                                 no device or errors on that device
   PCI-E Port                      [Enable]                       and the device is not HP capable.
   Link Speed                      [Auto]                         Disable is used to disable the
   Override Max Link Widt          [Auto]                         port and hide its CFG space.
   PCI-E Port DeEmphasis           [-6.0 dB]
   PCI-E Port Link Status          Linked as x16
   PCI-E Port Link Max             Max Width x16
   PCI-E Port Link Speed           Gen 3 (8.0 GT/s)
   PCI-E Port Max Payload          [256B]

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

          Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 0 PcieBr2D00F0 - Port 2A

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

  Socket 0 PcieBr2D00F0 - Port 2A                                      In auto mode the BIOS will
  --------------------------------------------------------------...    remove the EXP port if there is
                                                                       no device or errors on that device
  PCI-E Port                        [Enable]                           and the device is not HP capable.
  Link Speed                        [Auto]                             Disable is used to disable the
  Override Max Link Widt            [Auto]                             port and hide its CFG space.
  PCI-E Port DeEmphasis             [-6.0 dB]
  PCI-E Port Link Status            Link Did Not Train
  PCI-E Port Link Max               Max Width x8
  PCI-E Port Link Speed             Link Did Not Train
  PCI-E Port Max Payload            [256B]

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

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```
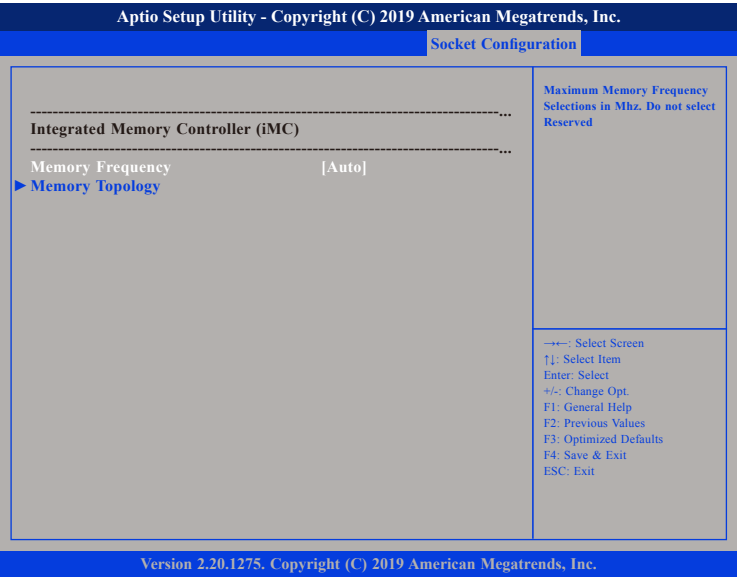
PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 0 PcieBr2D02F0 - Port 2C

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

  Socket 0 PcieBr2D02F0 - Port 2C                                      In auto mode the BIOS will
  --------------------------------------------------------------...    remove the EXP port if there is
                                                                       no device or errors on that device
  PCI-E Port                        [Enable]                           and the device is not HP capable.
  Link Speed                        [Auto]                             Disable is used to disable the
  Override Max Link Widt            [Auto]                             port and hide its CFG space.
  PCI-E Port DeEmphasis             [-6.0 dB]
  PCI-E Port Link Status            Link Did Not Train
  PCI-E Port Link Max               Max Width x8
  PCI-E Port Link Speed             Link Did Not Train
  PCI-E Port Max Payload            [256B]

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

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```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 0 PcieBr3D00F0 - Port 3A

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

  Socket 0 PcieBr3D00F0 - Port 3A                              In auto mode the BIOS will
  --------------------------------------------------------...  remove the EXP port if there is
                                                               no device or errors on that device
  PCI-E Port                          [Enable]                 and the device is not HP capable.
  Link Speed                          [Auto]                   Disable is used to disable the
  Override Max Link Widt              [Auto]                    port and hide its CFG space.
  PCI-E Port DeEmphasis               [-6.0 dB]
  PCI-E Port Link Status              Link Did Not Train
  PCI-E Port Link Max                 Max Width x8
  PCI-E Port Link Speed               Link Did Not Train
  PCI-E Port Max Payload              [256B]

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

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```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 0 PcieBr3D02F0 - Port 3C

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

  Socket 0 PcieBr3D02F0 - Port 3C                              In auto mode the BIOS will
  --------------------------------------------------------...  remove the EXP port if there is
                                                               no device or errors on that device
  PCI-E Port                          [Enable]                 and the device is not HP capable.
  Link Speed                          [Auto]                   Disable is used to disable the
  Override Max Link Widt              [Auto]                    port and hide its CFG space.
  PCI-E Port DeEmphasis               [-6.0 dB]
  PCI-E Port Link Status              Link Did Not Train
  PCI-E Port Link Max                 Max Width x8
  PCI-E Port Link Speed               Link Did Not Train
  PCI-E Port Max Payload              [256B]

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

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```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket1 Configuration

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

   IOU0 (IIO PCIe Br1)              [Auto]                  Selects PCIe port Bifurcation for
   IOU1 (IIO PCIe Br2)             [Auto]                   selected slot(s)
 ► Socket 1 PcieBr1D00F0 - Port 1A
 ► Socket 1 PcieBr1D02F0 - Port 1C
 ► Socket 1 PcieBr2D00F0 - Port 2A
 ► Socket 1 PcieBr2D02F0 - Port 2C

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

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```

IOU0 (IIO PCIe Br1)
Port Bifurcation settings for IOU 0.

IOU1 (IIO PCIe Br2)
Port Bifurcation settings for IOU 1.

Socket 1 PcieBr1D00F0 - Port 1A

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

   Socket 1 PcieBr1D00F0 - Port 1A                          In auto mode the BIOS will
   ---------------------------------------------------...   remove the EXP port if there is
                                                            no device or errors on that device
   PCI-E Port                      [Enable]                 and the device is not HP capable.
   Link Speed                      [Auto]                   Disable is used to disable the
   Override Max Link Widt          [Auto]                   port and hide its CFG space.
   PCI-E Port DeEmphasis           [-6.0 dB]
   PCI-E Port Link Status          Link Did Not Train
   PCI-E Port Link Max             Max Width x8
   PCI-E Port Link Speed           Link Did Not Train
   PCI-E Port Max Payload          [256B]

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

              Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 1 PcieBr1D02F0 - Port 1C

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

  Socket 1 PcieBr1D02F0 - Port 1C                                    In auto mode the BIOS will
  ------------------------------------------------------------...    remove the EXP port if there is
                                                                     no device or errors on that device
  PCI-E Port                       [Enable]                          and the device is not HP capable.
  Link Speed                       [Auto]                            Disable is used to disable the
  Override Max Link Widt           [Auto]                            port and hide its CFG space.
  PCI-E Port DeEmphasis            [-6.0 dB]
  PCI-E Port Link Status           Link Did Not Train
  PCI-E Port Link Max              Max Width x8
  PCI-E Port Link Speed            Link Did Not Train
  PCI-E Port Max Payload           [256B]

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

         Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.
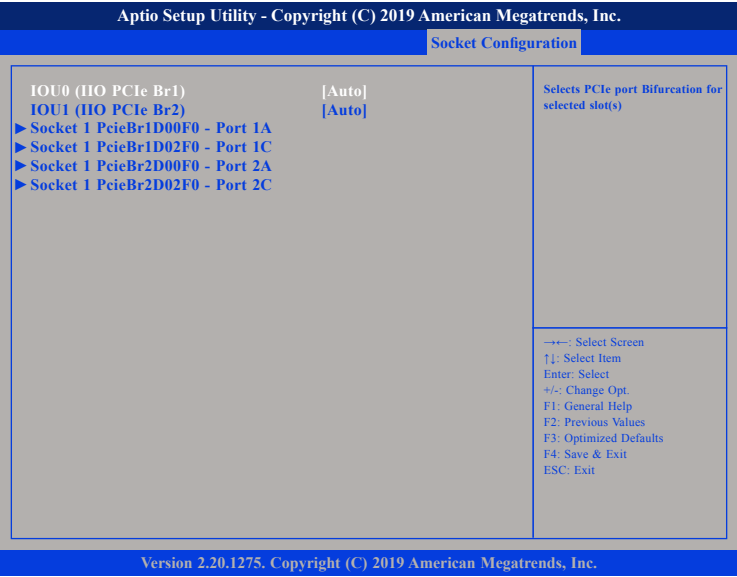
PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
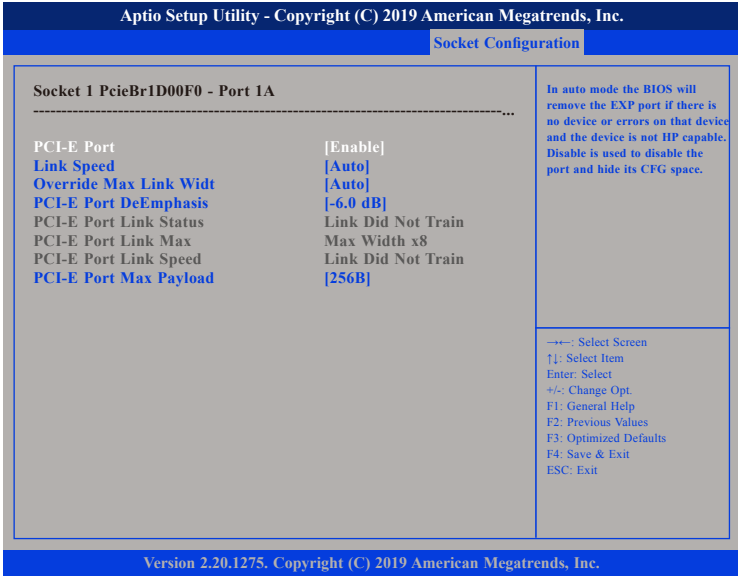Configures the PCIe port maximum payload size.

Socket 1 PcieBr2D00F0 - Port 2A

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

  Socket 1 PcieBr2D00F0 - Port 2A                                    In auto mode the BIOS will
  ------------------------------------------------------------...    remove the EXP port if there is
                                                                     no device or errors on that device
  PCI-E Port                       [Enable]                          and the device is not HP capable.
  Link Speed                       [Auto]                            Disable is used to disable the
  Override Max Link Widt           [Auto]                            port and hide its CFG space.
  PCI-E Port DeEmphasis            [-6.0 dB]
  PCI-E Port Link Status           Link Did Not Train
  PCI-E Port Link Max              Max Width x8
  PCI-E Port Link Speed            Link Did Not Train
  PCI-E Port Max Payload           [256B]

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

         Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
Configures the PCIe port maximum payload size.

Socket 1 PcieBr2D02F0 - Port 2C

PCI-E Port
Enables or disables the PCIe port. In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Disable is used to disable the port and hide its CFG space.

Link Speed
Configures the link speed for the PCIe port.

Override Max Link Width
Configures the link speed to override the max link width set by bifurcation.

PCI-E Port DeEmphasis
Configures the de-emphasis control for the PCIe port.

PCI-E Port Max Payload
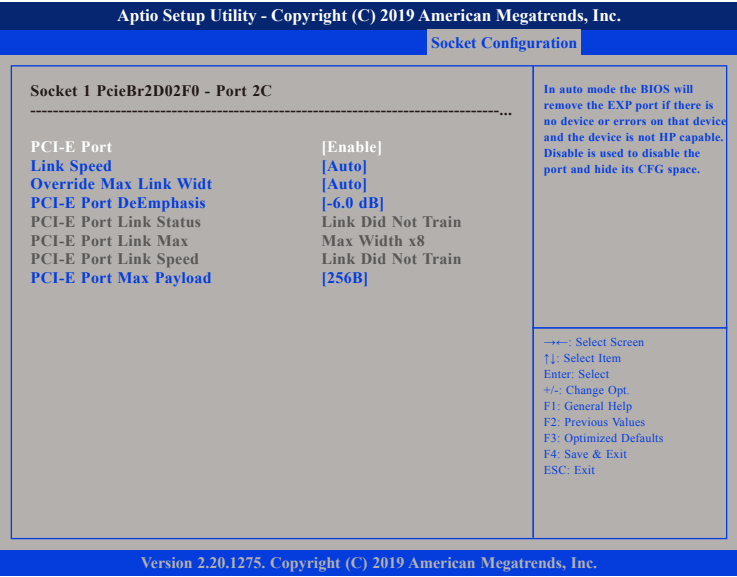Configures the PCIe port maximum payload size.

IOAT Configuration
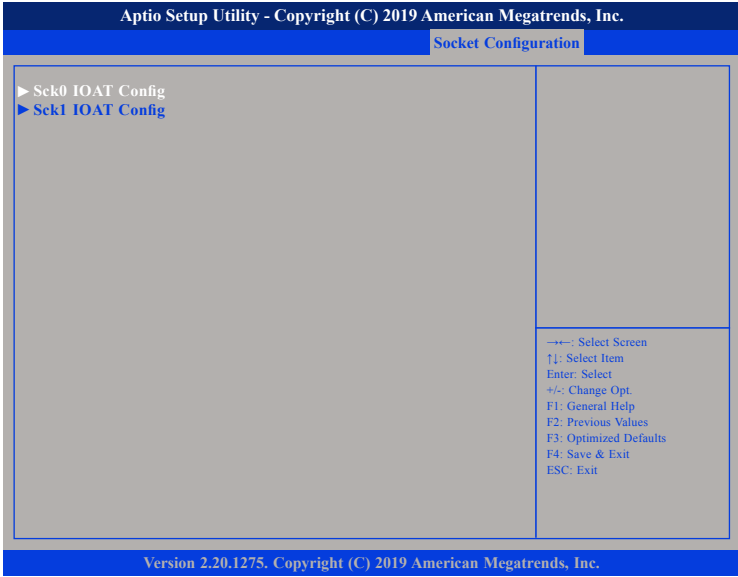
Sck0 IOAT Config and Sck1 IOAT Config
Enters the Socket0 and Socket1 IOAT Configuration submenu.

Sck0 IOAT Config

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

```
IOAT Function 0 Items                              Select Dma Enable/Disable for
==========================                          each CB device
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 1 Items
==========================
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 2 Items
==========================
DMA                          [Enable]
No Snoop                     [Disable]                →←: Select Screen
                                                      ↑↓: Select Item
IOAT Function 3 Items                                 Enter: Select
==========================                            +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit
```

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.

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

```
IOAT Function 4 Items                              No Snoop Enable/Disable for
==========================                          each CB device
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 5 Items
==========================
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 6 Items
==========================
DMA                          [Enable]
No Snoop                     [Disable]                →←: Select Screen
                                                      ↑↓: Select Item
IOAT Function 7 Items                                 Enter: Select
==========================                            +/-: Change Opt.
                                                      F1: General Help
DMA                          [Enable]                 F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit
```

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.

DMA
Enables or disables DMA.

No Snoop
Enables or disables No Snoop function for each CB device.

Sck0 IOAT Config Cont.

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

===================================================    No Snoop Enable/Disable for
DMA                          [Enable]                  each CB device
No Snoop                     [Disable]

IOAT Function 5 Items
===================================================
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 6 Items
===================================================
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 7 Items                                  →←: Select Screen
===================================================    ↑↓: Select Item
DMA                          [Enable]                  Enter: Select
No Snoop                     [Disable]                 +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit

     Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

DMA
Enables or disables DMA.

No Snoop
Enables or disables No Snoop function for each CB device.

Sck1 IOAT Config

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

IOAT Function 0 Items                                  Select Dma Enable/Disable for
===================================================    each CB device
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 1 Items
===================================================
DMA                          [Enable]
No Snoop                     [Disable]

IOAT Function 2 Items
===================================================
DMA                          [Enable]
No Snoop                     [Disable]                 →←: Select Screen
                                                       ↑↓: Select Item
IOAT Function 3 Items                                  Enter: Select
===================================================    +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit

     Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```
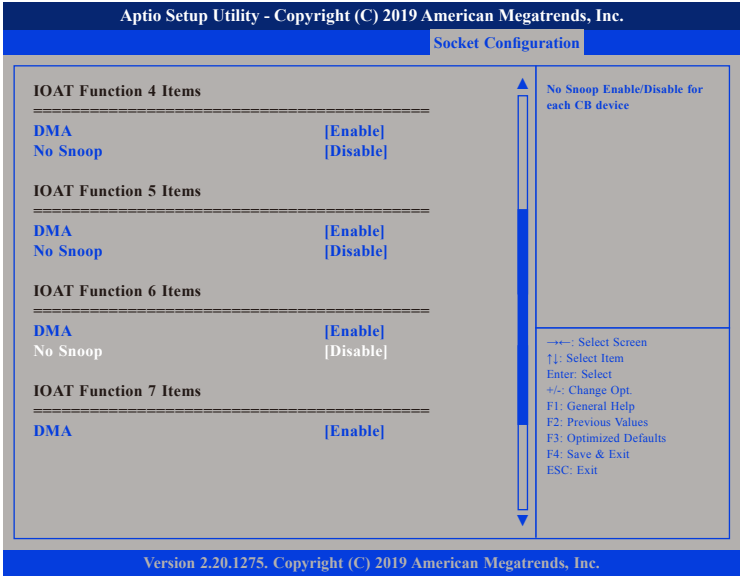
DMA
Enables or disables DMA.

No Snoop
Enables or disables No Snoop function for each CB device.

Sck1 IOAT Config Cont.

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Socket Configuration	
IOAT Function 4 Items	No Snoop Enable/Disable for each CB device
=====================================	
DMA [Enable]	
No Snoop [Disable]	
IOAT Function 5 Items	
=====================================	
DMA [Enable]	
No Snoop [Disable]	
IOAT Function 6 Items	
=====================================	
DMA [Enable]	→←: Select Screen
No Snoop [Disable]	↑↓: Select Item
	Enter: Select
IOAT Function 7 Items	+/-: Change Opt.
=====================================	F1: General Help
DMA [Enable]	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

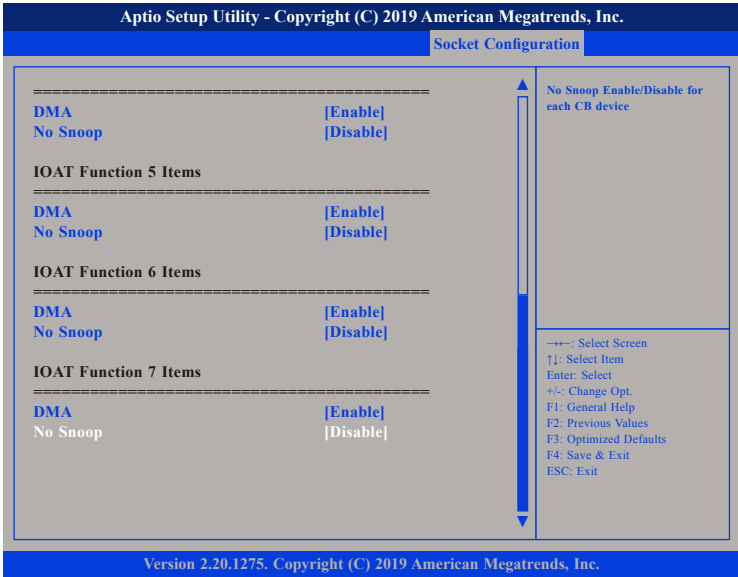| Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Socket Configuration	
=====================================	No Snoop Enable/Disable for each CB device
DMA [Enable]	
No Snoop [Disable]	
IOAT Function 5 Items	
=====================================	
DMA [Enable]	
No Snoop [Disable]	
IOAT Function 6 Items	
=====================================	
DMA [Enable]	→←: Select Screen
No Snoop [Disable]	↑↓: Select Item
	Enter: Select
IOAT Function 7 Items	+/-: Change Opt.
=====================================	F1: General Help
DMA [Enable]	F2: Previous Values
No Snoop [Disable]	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

DMA
Enables or disables DMA.

No Snoop
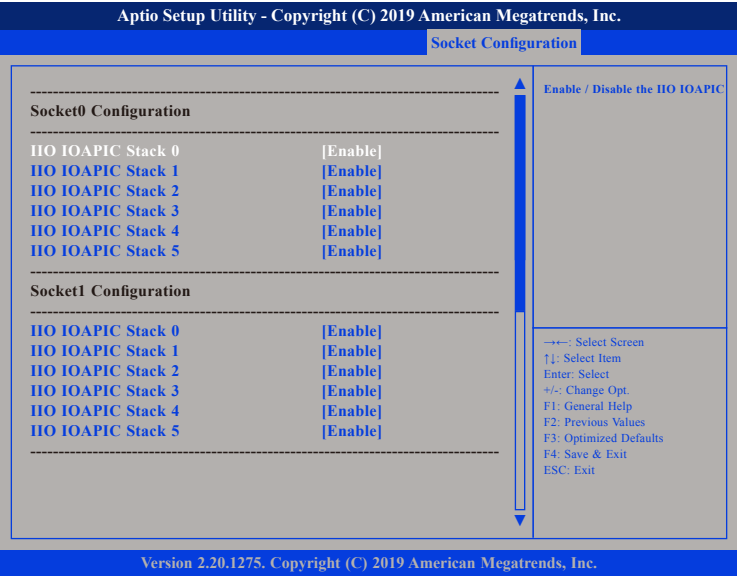Enables or disables No Snoop function for each CB device.

IIO General Configuration

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

```
------------------------------------------------------------    ▲    Enable / Disable the IIO IOAPIC

Socket0 Configuration
------------------------------------------------------------
IIO IOAPIC Stack 0              [Enable]
IIO IOAPIC Stack 1              [Enable]
IIO IOAPIC Stack 2              [Enable]
IIO IOAPIC Stack 3              [Enable]
IIO IOAPIC Stack 4              [Enable]
IIO IOAPIC Stack 5              [Enable]
------------------------------------------------------------
Socket1 Configuration
------------------------------------------------------------
IIO IOAPIC Stack 0              [Enable]
IIO IOAPIC Stack 1              [Enable]            →←: Select Screen
IIO IOAPIC Stack 2              [Enable]            ↑↓: Select Item
IIO IOAPIC Stack 3              [Enable]            Enter: Select
IIO IOAPIC Stack 4              [Enable]            +/-: Change Opt.
IIO IOAPIC Stack 5              [Enable]            F1: General Help
------------------------------------------------------------       F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit
                                                ▼
```

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.

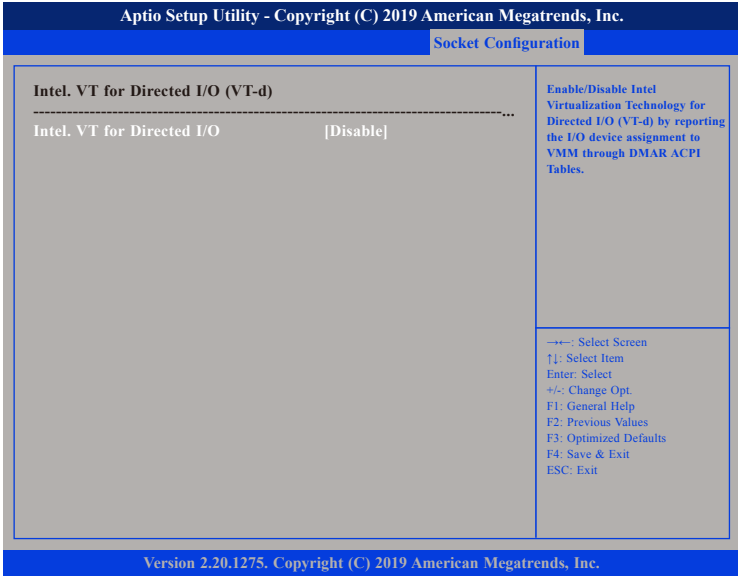### IIO IOAPIC Stack 0 to IIO IOAPIC Stack 5
Enables or disables I/O Advanced Power Interface Configuration (IIOAPIC) for Stack 0 to Stack 5 of Socket 0 and Socket 1.
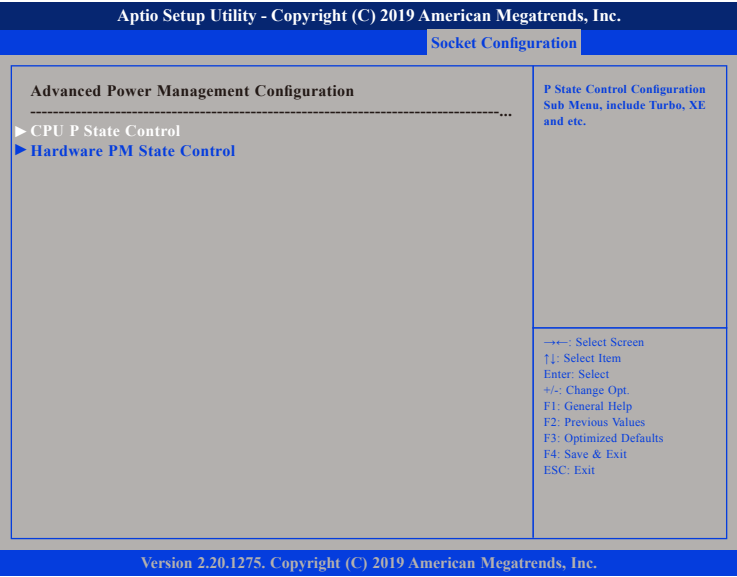
Intel. VT for Directed I/O (VT-d)

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

```
Intel. VT for Directed I/O (VT-d)                        Enable/Disable Intel
                                                         Virtualization Technology for
--------------------------------------------------...    Directed I/O (VT-d) by reporting
Intel. VT for Directed I/O       [Disable]               the I/O device assignment to
                                                         VMM through DMAR ACPI
                                                         Tables.




                                                         →←: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit
```
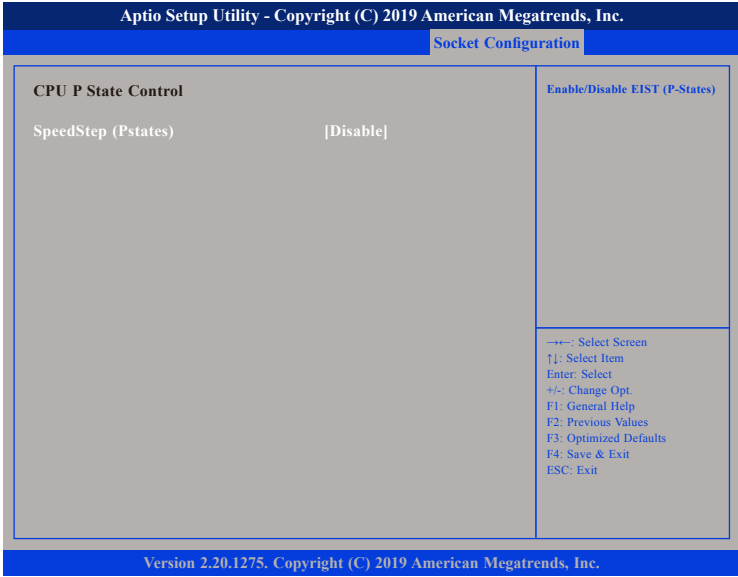
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.

Intel. VT for Directed I/O
Enables or disables Intel® Virtualization Technology for Directed I/O (VT-d) by reporting the I/O device assignment to VMM through DMAR ACPI tables.

Advanced Power Management Configuration

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

 Advanced Power Management Configuration                      P State Control Configuration
 -----------------------------------------------------------  Sub Menu, include Turbo, XE
 ▶ CPU P State Control                                        and etc.
 ▶ Hardware PM State Control




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


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```

CPU P State Control
Enters the CPU P State Control submenu.

Hardware PM State Control
Enters the Hardware PM State Control submenu.

CPU P State Control

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

 CPU P State Control                                          Enable/Disable EIST (P-States)

 SpeedStep (Pstates)              [Disable]




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


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```

SpeedStep (Pstates)
Enables or disables Intel® SpeedStep technology.

Hardware PM State Control

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Socket Configuration	
Hardware PM State Control	Disable: Hardware chooses a P-state based on OS Request (Legacy P-States)
Hardware P-States [Disable]	Native Mode: Hardware chooses a P-state based on OS guidance Out of Band
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Hardware P-States

Disable	Hardware chooses a P-state based on OS Request. (Legacy P-States).
Native Mode	Hardware chooses a P-state based on OS guidance.
Out of Band Mode	Hardware autonomously chooses a P-state (no OS guidance).

Server Mgmt

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Main Advanced Platform Configuration Socket Configuration **Server Mgmt**	
BMC Self Test Status PASSED BMC Device ID 32 BMC Device Revision 1 BMC Firmware Revision 1.01 IPMI Version 2.0 BMC Interface(s) KCS, USB	Enable/Disable interfaces to communicate with BMC
BMC Support [Enabled] ► System Event Log ► BMC network configuration ► View System Event Log ► BMC User Settings BMC Warm Reset	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

BMC Support
Enables or disables interfaces to communicate with BMC.

BMC Warm Reset
To perform a BMC warm reset, select this field then press <Enter>.

System Event Log

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

  Enabling/Disabling Options                               Change this to enable or disable
  SEL Components                    [Enabled]              event logging for error/progress
                                                           codes during boot.
  Erasing Settings
  Erase SEL                         [No]
  When SEL is Full                  [Do Nothing]

  Custom EFI Logging Options
  Log EFI Status Codes              [Error code]

  NOTE: All values changed here do not take
        effect until computer is restarted.

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

                Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

SEL Components
Enables or disables event logging for error/progress codes during boot.

Erase SEL
Configures the options for erasing SEL.

When SEL is Full
Configures the action to perform when SEL is full.

Log EFI Status Codes
Configures the options for logging EFI status codes.

BMC Network Configuration

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

  --BMC network configuration--                            Select to configure LAN
  **********************                                   channel parameters statically
  Configure IPV4 support                                   or dynamically(by BIOS or
  **********************                                   BMC). Unspecified option will
                                                           not modify any BMC network
                                                           parameters during BIOS phase
  Lan channel 1
  Configuration Address             [Unspecified]
  Current Configuration             DynamicAddressBmcDhcp
  Station IP address                0.0.0.0
  Subnet mask                       0.0.0.0
  Station MAC address               00-50-20-75-23-01
  Router IP address                 0.0.0.0
  Router MAC address                00-00-00-00-00-00

  Lan channel 2                                            →←: Select Screen
  Configuration Address             [Unspecified]          ↑↓: Select Item
  Current Configuration             DynamicAddressBmcDhcp  Enter: Select
  Station IP address                0.0.0.0                +/-: Change Opt.
                                                           F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

                Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Configuration Address
Select to configure LAN channel parameters statically or dynamically (by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.

BMC Network Configuration Cont.

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

Lan channel 2
Configuration Address   [Unspecified]
Current Configuration   DynamicAddressBmcDhcp
Station IP address   0.0.0.0
Subnet mask   0.0.0.0
Station MAC address   00-50-20-75-23-02
Router IP address   0.0.0.0
Router MAC address   00-00-00-00-00-00

****
Configure IPv6 support
****

Lan channel 1

IPv6 Support   [Enabled]

Configuration Address   [Unspecified]

Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase

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

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

Configuration Address   [Unspecified]
Current Configuration   DynamicAddressBmcDhcp

Station IPv6 address
::

Prefix Length
0

IPv6 Router1 IP Address
::

IPv6 address status   Active
IPv6 DHCP Algorithm   DHCPv6

Lan channel 2

IPv6 Support   [Enabled]

Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase

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

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.

IPv6 Support (LAN Channel 1)
Enables or disables IPv6 support for LAN channel 1.

BMC Network Configuration Cont.

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

Lan channel 2

IPv6 Support	[Enabled]
Configuration Address	[Unspecified]
Current Configuration	DynamicAddressBmcDhcp

Station IPv6 address
::

Prefix Length
0

IPv6 Router1 IP Address
::

IPv6 address status	Active
IPv6 DHCP Algorithm	DHCPv6

Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase

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

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IPv6 Support (LAN Channel 2)
Enables or disables IPv6 support for LAN channel 2.

View System Event Log

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

No. of log entries in SEL : 3640

DATE	TIME	SENSOR TYPE
01/01/00	08:00:14	Fan
01/01/00	08:00:14	Fan
01/01/00	08:00:15	Fan
01/01/00	08:00:15	Fan
01/01/00	08:00:15	Fan
01/01/00	08:00:15	Fan
04/24/19	11:52:50	System Boot/Restart In...
04/24/19	11:52:50	Fan
04/24/19	11:52:50	Fan
04/24/19	11:52:50	Fan
04/24/19	11:52:50	Fan
04/24/19	11:52:50	Fan
04/24/19	11:52:51	Fan

HEX:
01 00 02 0E B4 6D
38 20 00 04 04 0E
01 50 00 22
Generator ID: BMC - LUN #0 (Channel #0)
Sensor Number: 0x0E
Power System Board

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

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Displays system event log information including date, time and sensor type.

BMC User Settings

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
	Server Mgmt
BMC User Settings	Press <Enter> to Add a User.
▶ **Add User**	
▶ **Delete User**	
▶ **Change User Settings**	
	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

Add User
Option to add a user.

Delete User
Option to delete a user.

Change User Settings
Option to change user settings.

Add User

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
	Server Mgmt
BMC Add User Details	Enter BMC User Name
User Name	
User Password	
User Access	[Disable]
Channel No	0
User Privilege Limit	[Reserved]
	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.	

User Name and User Password
Configures the login username and password of the BMC user account.

Channel No and User Privilege Limit
Configures the BMC channel number and account access rights.

Delete User

Server Mgmt

BMC Delete User Details

Enter BMC User Name

User Name
User Password

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

User Name and User Password
Specify the login username and password of the BMC user account to delete.

Change User Settings

Server Mgmt

BMC Change User Settings

Enter BMC User Name

User Name
User Password
Change User Password
User Access   [Disable]
Channel No   0
User Privilege Limit   [Reserved]

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

User Name and User Password
Enter the login username and password of the BMC user account that needs to be changed.

Change User Password
Reconfigures a new password for the account.

User Access
Enables or disables this account.

Channel No and User Privilege Limit
Reconfigures the BMC channel number and account access rights.

Security

Security	Boot	Save & Exit	

Password Description

If ONLY the Administrator's password is set,
then this only limits access to Setup and is
only asked for when entering Setup.
The password length must be
in the following range:

Minimum length	3
Maximum length	20

Administrator Password

Set Administrator Password

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

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

Boot

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Security	Boot	Save & Exit	

Boot Configuration

Setup Prompt Timeout	1
Bootup NumLock State	[On]
Quiet Boot	[Disabled]
AMI Virtual Devices	[Disable]
Boot mode select	[LEGACY]

FIXED BOOT ORDER Priorities

Boot Option #1	[Hard Disk]
Boot Option #2	[CD/DVD]
Boot Option #3	[USB Hard Disk]
Boot Option #4	[USB CD/DVD]
Boot Option #5	[USB Key:KingstonD. . .]
Boot Option #6	[USB Floppy]
Boot Option #7	[USB Lan]
Boot Option #8	[Network]

Number of seconds to wait for
setup activation key.
65535(0xFFFF) means indefinite
waiting.

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

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Setup Prompt Timeout
Configures the number of seconds to wait for setup activation key. 65535 (0xFFFF) means 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.

Quiet Boot

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

AMI Virtual Devices

Enables or disables AMI virtual devices.

Boot mode select

Configures the boot mode option.

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

```
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  Security        Boot      Save & Exit

  Save Options                                    Reset the system after saving
  Save Changes and Reset                          the changes.
  Discard Changes and Reset

  Default Options
  Restore Defaults

  Boot Override
  KingstonDataTraveler 3.0
  Launch EFI Shell from filesystem device

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

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```

Save Changes and 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.

Launch EFI Shell from Filesystem Device
To launch EFI shell from a filesystem device, select this field and press <Enter>.