



A3SEV-2C/4C-LN4

USER'S MANUAL

Revision 1.0c

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Manual Revision 1.0c

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Preface

About This Manual

This manual is written for system integrators, IT technicians and knowledgeable end users. It provides information for the installation and use of the A3SEV-2C/4C-LN4 motherboard.

About This Motherboard

The A3SEV-2C/4C-LN4 motherboard provides powerful graphics and increased media processing performance with multi-frame technology. Paired with the Intel® Atom® SoC (System-on-Chip) processor, the A3SEV-2C/4C-LN4 delivers more computing power for faster memory speeds and bandwidth while maintaining energy efficiency. Utilizing Intel TCC (Time Coordinated Computing) Technology, the motherboard resolves latency issues in applications and improves determinism across connected devices. The motherboard features advanced technologies such as Intel® Virtualization to improve security and reliability of systems, and Thermal Monitoring to reduce power consumption. It also comes with more I/O ports and high-speed connectivity.

Please note that this motherboard is intended to be installed and serviced by professional technicians only. For processor/memory updates, please refer to our website at <http://www.supermicro.com/products/>.

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury to yourself:



Warning! Indicates important information given to prevent equipment/property damage or personal injury.



Warning! Indicates high voltage may be encountered when performing a procedure.



Important: Important information given to ensure proper system installation or to relay safety precautions.



Note: Additional Information given to differentiate various models or provides information for correct system setup.

Contacting Supermicro

Headquarters

Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: Marketing@supermicro.com (General Information)
Sales-USA@supermicro.com (Sales Inquiries)
Government_Sales-USA@supermicro.com (Gov. Sales Inquiries)
Support@supermicro.com (Technical Support)
RMA@supermicro.com (RMA Support)
Webmaster@supermicro.com (Webmaster)

Website: www.supermicro.com

Europe

Address: Super Micro Computer B.V.
Het Sterrenbeeld 28, 5215 ML
's-Hertogenbosch, The Netherlands

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: Sales_Europe@supermicro.com (General Information)
Support_Europe@supermicro.com (Technical Support)
RMA_Europe@supermicro.com (RMA Support)

Website: www.supermicro.nl

Asia-Pacific

Address: Super Micro Computer, Inc.
3F, No. 150, Jian 1st Rd.
Zhonghe Dist., New Taipei City 235
Taiwan (R.O.C)

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3992

Email: Sales-Asia@supermicro.com.tw (Sales Inquiry)
Support@supermicro.com.tw (Technical Support)
RMA@supermicro.com.tw (RMA Support)

Website: www.supermicro.com.tw

Table of Contents

Chapter 1 Introduction

1.1 Checklist	7
1.2 Processor Overview	16
1.3 Special Features	16
1.4 ACPI Features	17
1.5 Power Supply	17
1.6 Super I/O	17
1.7 Advanced Power Management	18
Management Engine (ME)	18

Chapter 2 Installation

2.1 Static-Sensitive Devices	19
Precautions	19
Unpacking	19
2.2 Motherboard Installation	20
Tools Needed	20
Location of Mounting Holes	20
Installing the Motherboard	21
2.3 Memory Support and Installation	22
Memory Support	22
SO-DIMM Installation	23
SO-DIMM Removal	23
2.4 Rear I/O Ports	24
2.5 Front Control Panel	28
2.6 Connectors	32
Power Connections	32
Headers	34
2.7 Jumper Settings	45
How Jumpers Work	45
2.8 LED Indicators	50

Chapter 3 Troubleshooting

3.1 Troubleshooting Procedures	51
Before Power On	51

No Power	51
No Video	52
System Boot Failure	52
Memory Errors	52
Losing the System's Setup Configuration	53
When the System Becomes Unstable	53
3.2 Technical Support Procedures	55
3.3 Frequently Asked Questions	56
3.4 Battery Removal and Installation	57
Battery Removal.....	57
Proper Battery Disposal	57
Battery Installation.....	57
3.5 Returning Merchandise for Service.....	58
Chapter 4 BIOS	
4.1 Introduction.....	59
Starting the Setup Utility	59
4.2 Main.....	60
4.3 Advanced.....	61
4.4 Security.....	85
4.5 Boot.....	90
4.6 Save & Exit.....	92
Appendix A BIOS Codes	
Appendix B Software Installation	
B.1 Installing Software Programs	96
B.2 SuperDoctor® 5.....	97
Appendix C Standardized Warning Statements	
Battery Handling.....	98
Product Disposal	100
Appendix D UEFI BIOS Recovery	
D.1 Overview.....	101
D.2 Recovering the UEFI BIOS Image	101
D.3 Recovering the BIOS Block with a USB Device	101

Chapter 1

Introduction

Congratulations on purchasing your computer motherboard from an industry leader. Supermicro boards are designed to provide you with the highest standards in quality and performance.

In addition to the motherboard, several important parts that are included with the system are listed below. If anything listed is damaged or missing, please contact your retailer.

1.1 Checklist

Main Parts List (Retail Single Package)		
Description	Part Number	Quantity
Motherboard	A3SEV-2C/4C-LN4	1
SATA data cable (25cm)	CBL-0044L	2
Quick Reference Guide	MNL-2355-QRG	1

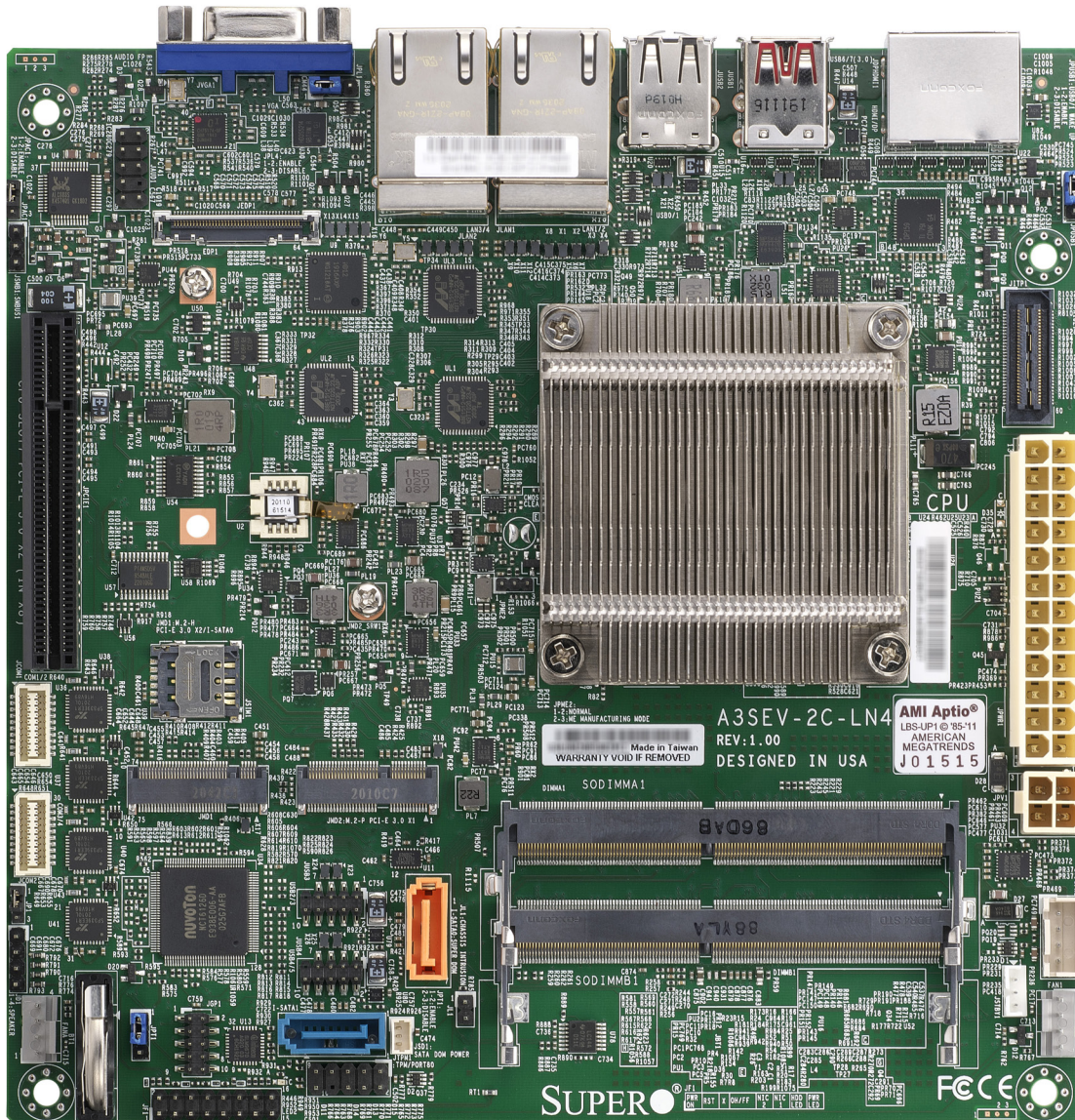
Important Links

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: <https://www.supermicro.com/wdl/driver/>
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm
- A secure data deletion tool designed to fully erase all data from storage devices can be found at our website: https://www.supermicro.com/wdl/utility/Lot9_Secure_Data_Deletion_Utility/
- If you have any questions, please contact our support team at: support@supermicro.com

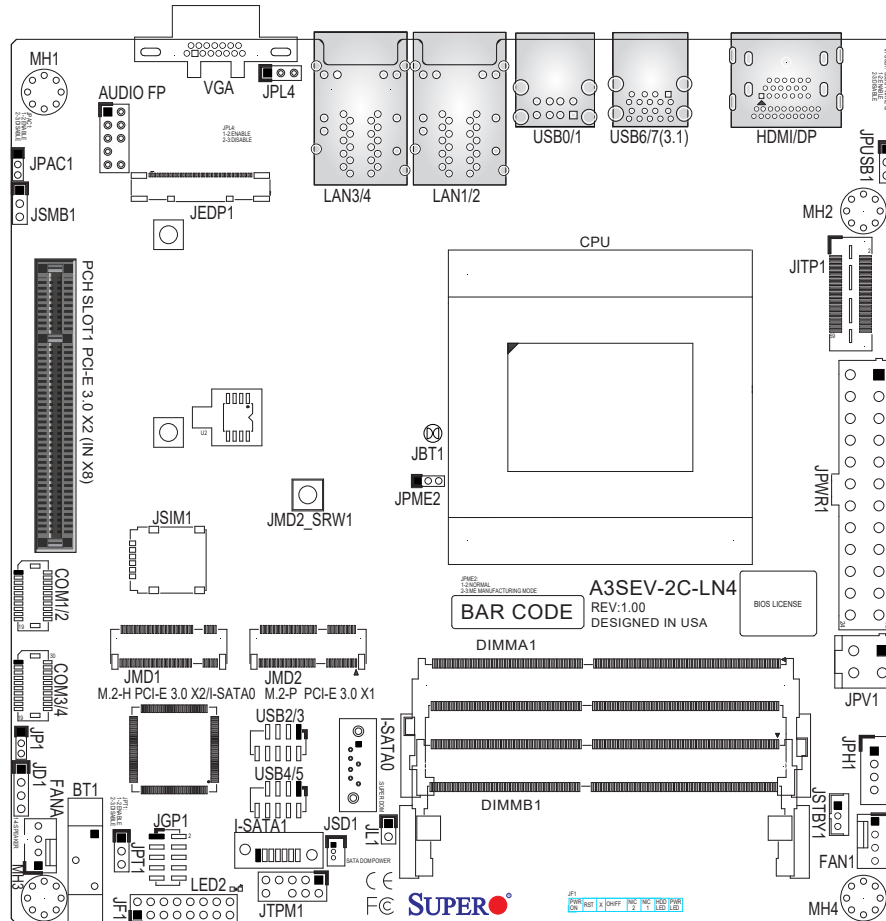
This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Figure 1-1. A3SEV-2C-LN4 Motherboard Image

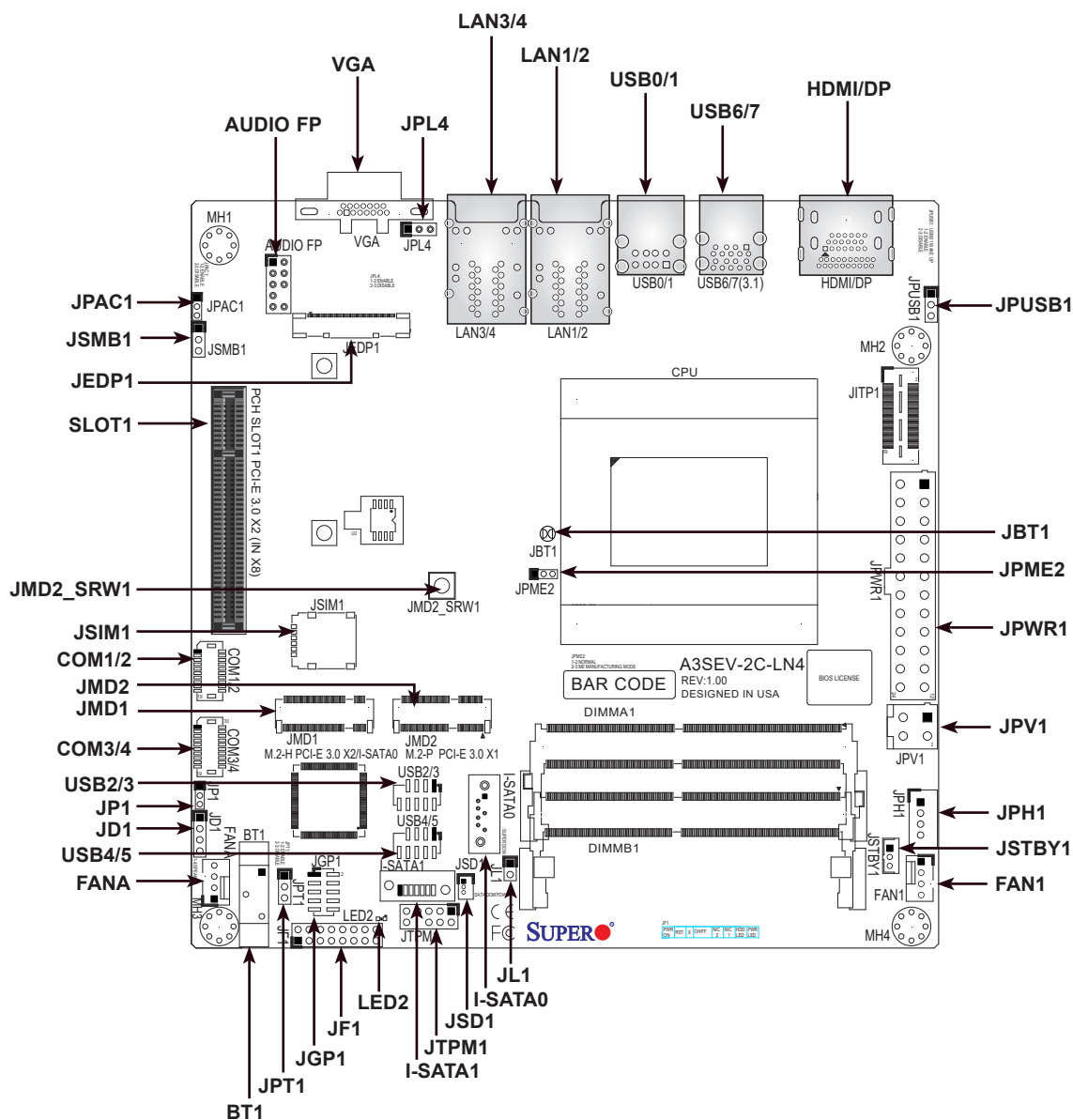


Note: All graphics shown in this manual were based upon the latest PCB revision available at the time of publication of the manual. The motherboard you received may or may not look exactly the same as the graphics shown in this manual.

Figure 1-2. Motherboard Layout
(not drawn to scale)



Note: Components not documented are for internal testing only.



- See Chapter 2 for detailed information on jumpers, I/O ports, and JF1 front panel connections.
- "■" indicates the location of Pin 1.
- Jumpers/LED indicators not indicated are used for testing only.
- Use only the correct type of onboard CMOS battery as specified by the manufacturer.

Quick Reference Table

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open: Normal
JP1	SIM Detection	Pins 1-2 (High Active)
JPAC1	Audio Enable/Disable	Pins 1-2 (Enabled)
JPL4	LAN4 Enable/Disable	Pins 1-2 (Enabled)
JPME2	ME Manufacturing Mode	Pins 1-2 (Normal)
JPT1	Onboard TPM Enable/Disable	Pins 1-2 (Enabled)
JPUSB1	USB0/1 Wake Up	Pins 1-2 (Enabled)

LED	Description	Status
LED2	Power LED	Solid Green: Power On

Connector	Description
AUDIO FP	Front Panel Audio Header
BT1	Onboard Battery
COM1/2, COM3/4	COM Headers
FAN1, FANA	System Fan Headers
HDMI/DP	High Definition Multimedia Interface/DisplayPort
I-SATA0, I-SATA1	SATA 3.0 Port (I-SATA0: SuperDOM)
JD1	Speaker/Buzzer (Pins 1-4: Speaker)
JEDP1	Extended DisplayPort
JF1	Front Control Panel Header
JGP1	General Purpose I/O Header
JL1	Chassis Intrusion Header
JMD1	M.2 B-Key 2280/3042 (PCIe 3.0 x2/SATA/USB3.1) Slot *SATA mux with I-SATA0
JMD2	M.2 E-Key 2230 (PCIe 3.0 x1/USB2.0) Slot
JMD2_SRW1	M.2 Mounting Screw
JPH1	4-pin Power Connector (for HDD)
JPV1	4-pin 12V DC Power Connector
JPWR1	24-pin ATX Power Connector
JSD1	SATA DOM Power Connector
JSIM1	Nano SIM Card Slot
JSMB1	System Management Bus Header
JSTBY1	Standby Power Header
JTPM1	Trusted Platform Module (TPM)/Port80 Header
LAN1/2, LAN3/4	Gigabit Ethernet RJ45 Ports
SLOT1	PCH SLOT1 PCIe 3.0 x2 (IN x8) Slot

Connector	Description
USB0/1	Back Panel USB 2.0 Ports
USB2/3, USB4/5	USB 2.0 Headers
USB6/7	Back Panel USB 3.1 Ports
VGA	VGA Port

Motherboard Features

Motherboard Features	
CPU	
- A3SEV-2C-LN4 supports an Intel Atom x6211E 2 Core Processor - A3SEV-4C-LN4 supports an Intel Atom x6425E 4 Core Processor	
Memory	
Supports up to 32GB of DDR4 Non-ECC SO-DIMM with speeds of up to 3200MT/s in two slots	
DIMM Size	
8GB, 16GB	
Expansion Slots	
- One PCIe 3.0 x2 (IN x8) Slot - One M.2 B-Key for PCIe 3.0 x2/SATA/USB 3.0 (2280/3042), SATA mux with I-SATA0 - One M.2 E-Key for PCIe 3.0 x1/USB 2.0 (2230) *Due to the motherboard dimensions, there is a size limitation for the PCIe card. If you use the COM port and PCIe slot simultaneously, the recommended PCIe card size is x8 or smaller.	
Network	
- One Gigabit Ethernet via Intel I210-IT Controller - Three Gigabit Ethernet via SoC [Marvell 88E1512 PHY]	
Graphics	
Intel UHD Graphics	
I/O Devices	
- COM Ports - SATA Ports - Audio Header - SMBus Header	- Four serial ports (COM1/2, COM3/4) - Two SATA 3.0 ports (I-SATA0, I-SATA1) - One HD Audio header with Mic-in/Headphone-out (Realtek ALC888S) (audio on A3SEV only supports 0-60°C) - One SMBus header
Peripheral Devices	
- Two USB 2.0 ports on the rear I/O panel (USB0/1) - Two USB 3.1 ports on the rear I/O panel (USB6/7) - Four USB 2.0 ports via headers (USB2/3, USB4/5)	
BIOS	
256Mb SPI AMI BIOS® - ACPI 3.0 or later, SMBIOS 2.7 or later, PCI F/W 3.0, BIOS rescue hot-key, RTC (Real Time Clock) wakeup	



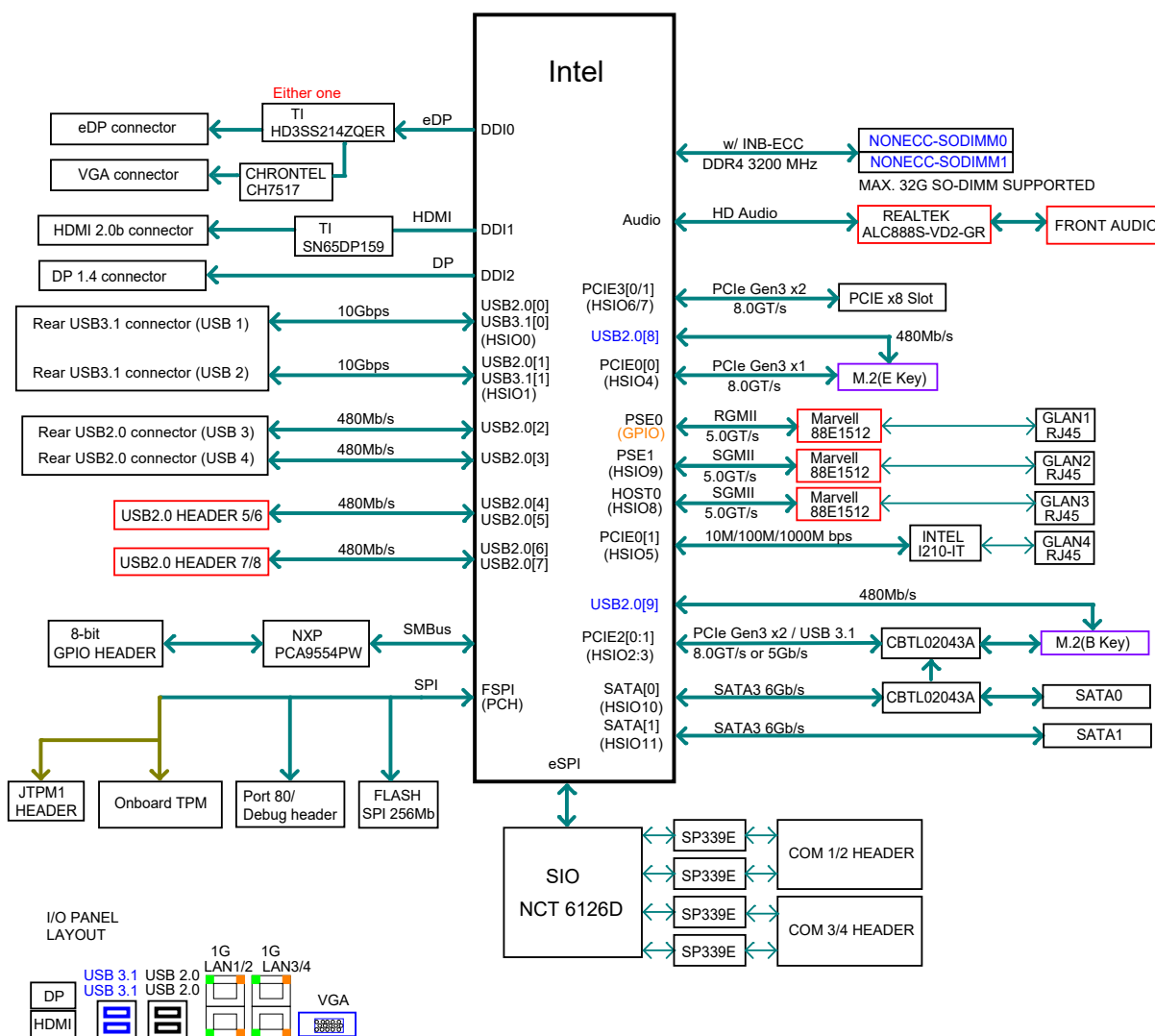
Note: The table above is continued on the next page.

Motherboard Features	
Power Management	
• ACPI power management • S3, S4, S5 • Power button override mechanism • Power-on mode for AC power recovery • Wake-On-LAN • TXE Management Engine • RTC Battery (typical voltage: 3.0V, normal discharge capacity: 220mAh)	
System Health Monitoring	
• Onboard voltage monitoring for +3.3V, +5V, +12V, 3.3V standby, 3.3VCC, P12V, P5V, VCPU (PVCCIN), PVDDQ, Vcore, Vmem, VBAT, VSB • CPU switching phase voltage regulator • CPU thermal trip support	
Fan Control	
• 4-pin fan headers • Dual Zone Fan Control	
System Management	
• Trusted Platform Module (TPM) 2.0 support • SuperDoctor® 5, Watch Dog, RoHS	
LED Indicators	
• Power/Suspend-state indicator LED • Fan Fail LED	
Mechanical Specification	
• Mini ITX, Dimensions: 6.7" (L) x 6.7" (W) (170.18mm x 170.18mm)	
Environment	
• Operating Temperature Range: -30°C~70°C	



Note 1: The CPU maximum thermal design power (TDP) is subject to chassis and heatsink cooling restrictions. For proper thermal management, please check the chassis and heatsink specifications for proper CPU TDP sizing.

Figure 1-3.
System Block Diagram



Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the previous pages for the actual specifications of your motherboard.

1.2 Processor Overview

Built upon the functionality and capability of the Intel Atom SoC series processor, the motherboard offers maximum I/O expandability, energy efficiency, and data reliability in a 14-nm process architecture, and is optimized for embedded storage solutions, networking applications, or cloud-computing platforms. The drastically increases system performance for a multitude of server applications.

The A3SEV-2C/4C-LN4 supports the following features:

- Intel Virtualization Technology for Directed I/O (Intel VT-d)
- Enhanced Intel SpeedStep® Technology
- Adaptive Thermal Management/Monitoring
- Gen3 SATA ports with transfer rates of up to 6Gb/s
- System Management Bus (SMBus) Specification, Version 2.0
- M.2 slot with B-key 2280/3042 and E-key 2230 modules
- TPM2.0 (Trusted Platform Module) onboard

1.3 Special Features

This section describes the health monitoring features of the motherboard. The motherboard has an onboard System Hardware Monitor chip that supports system health monitoring.

Recovery from AC Power Loss

The Basic I/O System (BIOS) provides a setting that determines how the system will respond when AC power is lost and then restored to the system. You can choose for the system to remain powered off (in which case you must press the power switch to turn it back on), or for it to automatically return to the power-on state. See the Advanced BIOS Setup section for this setting. The default setting is Last State.

1.4 ACPI Features

The Advanced Configuration and Power Interface (ACPI) specification defines a flexible and abstract hardware interface that provides a standard way to integrate power management features throughout a computer system including its hardware, operating system and application software. This enables the system to automatically turn on and off peripherals such as network cards, hard disk drives and printers.

In addition to enabling operating system-directed power management, ACPI also provides a generic system event mechanism for Plug and Play and an operating system-independent interface for configuration control. ACPI leverages the Plug and Play BIOS data structures while providing a processor architecture-independent implementation that is compatible with Windows® 10 IOT.

1.5 Power Supply

As with all computer products, a stable power source is necessary for proper and reliable operation. It is even more important for processors that have high CPU clock rates. In areas where noisy power transmission is present, you may choose to install a line filter to shield the computer from noise. It is recommended that you also install a power surge protector to help avoid problems caused by power surges.

1.6 Super I/O

The Super I/O (NCT6126D chip) provides four high-speed, 16550 compatible serial communication ports (UARTs), one of which supports serial infrared communication. Each UART includes a 128 byte send/receive FIFO, a programmable baud rate generator, complete modem control capability and a processor interrupt system. UARTs provide legacy speed with baud rate of up to 115.2 Kbps as well as an advanced speed with baud rates of 250 K, 500 K, or 1 Mb/s, which support higher speed modems.

The Super I/O provides functions that comply with ACPI (Advanced Configuration and Power Interface), which includes support of legacy and ACPI power management through a SMI or SCI function pin. It also features auto power management to reduce power consumption.

The IRQs, DMAs and I/O space resources of the Super I/O can be flexibly adjusted to meet ISA PnP requirements, which support ACPI and APM (Advanced Power Management).

1.7 Advanced Power Management

The following new advanced power management features are supported by the motherboard.

Management Engine (ME)

Intel Atom SoC only supports the TXE function, also called Converged Security Engine (CSE), which is the lite ME function.

Chapter 2

Installation

2.1 Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your motherboard, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

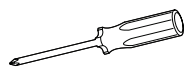
- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the motherboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure that your chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Use only the correct type of CMOS onboard battery as specified by the manufacturer. Do not install the CMOS battery upside down, which may result in a possible explosion.

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the motherboard, make sure that the person handling it is static protected.

2.2 Motherboard Installation

All motherboards have standard mounting holes to fit different types of chassis. Make sure that the locations of all the mounting holes for both the motherboard and the chassis match. Although a chassis may have both plastic and metal mounting fasteners, metal ones are highly recommended because they ground the motherboard to the chassis. Make sure that the metal standoffs click in or are screwed in tightly.



Phillips Screwdriver (1)

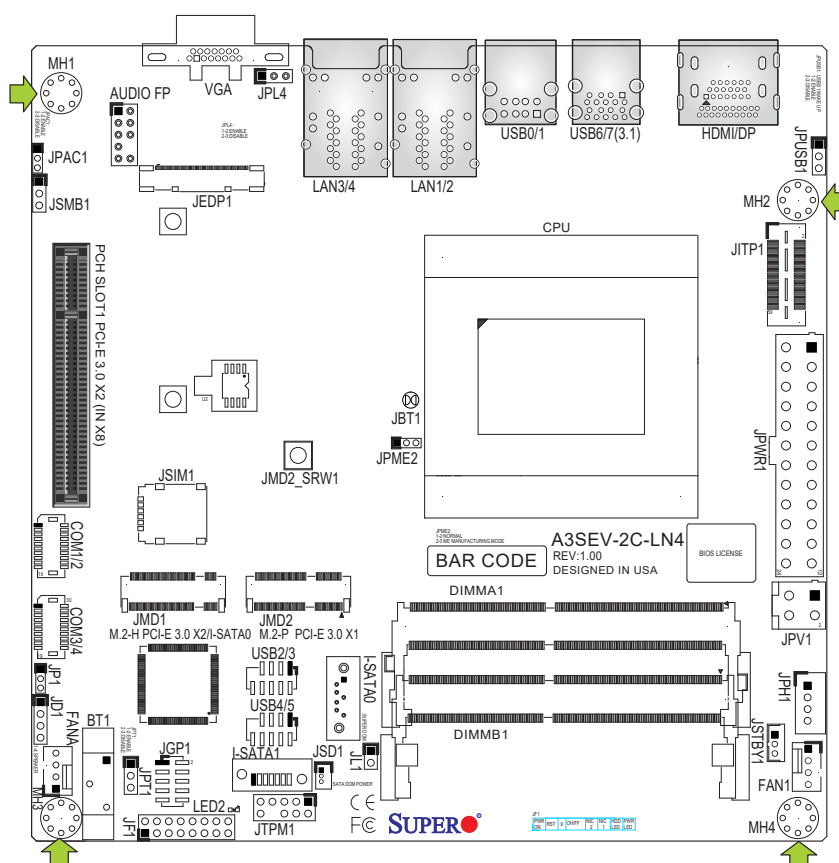


Phillips Screws (4)



Standoffs (4)
Only if Needed

Tools Needed



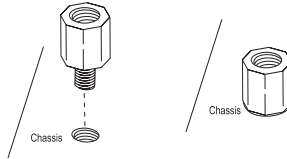
Location of Mounting Holes



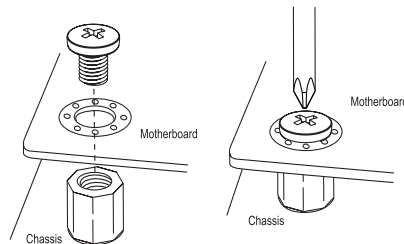
- Note:** 1) To avoid damaging the motherboard and its components, please do not use a force greater than 8 lb/inch on each mounting screw during motherboard installation.
- 2) Some components are very close to the mounting holes. Please take precautionary measures to avoid damaging these components when installing the motherboard to the chassis.

Installing the Motherboard

1. Locate the mounting holes on the motherboard. See the previous page for the location.



2. Locate the matching mounting holes on the chassis. Align the mounting holes on the motherboard against the mounting holes on the chassis.



3. Install standoffs in the chassis as needed.
4. Install the motherboard into the chassis carefully to avoid damaging other motherboard components.
5. Using the Phillips screwdriver, insert a Phillips head #6 screw into a mounting hole on the motherboard and its matching mounting hole on the chassis.
6. Repeat Step 5 to insert #6 screws into all mounting holes.
7. Make sure that the motherboard is securely placed in the chassis.



Note: Images displayed are for illustration only. Your chassis or components might look different from those shown in this manual.

2.3 Memory Support and Installation



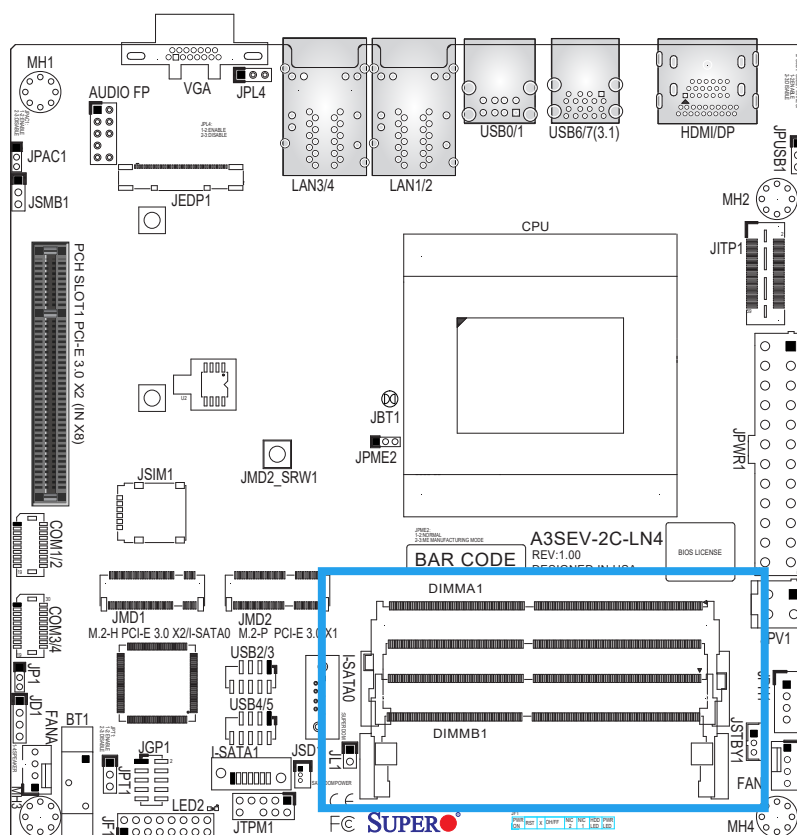
Note: Check the Supermicro website for recommended memory modules.



Important: Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

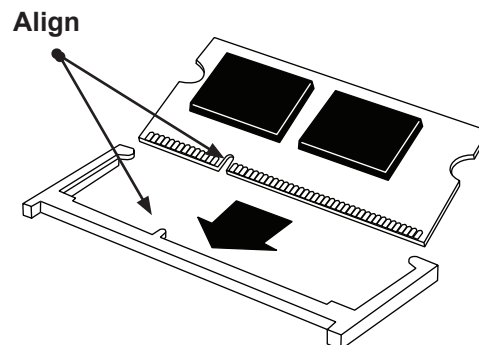
Memory Support

The A3SEV-2C/4C-LN4 motherboard supports up to 32GB of DDR4 Non-ECC SO-DIMM with speeds of up to 3200MT/s in two slots.

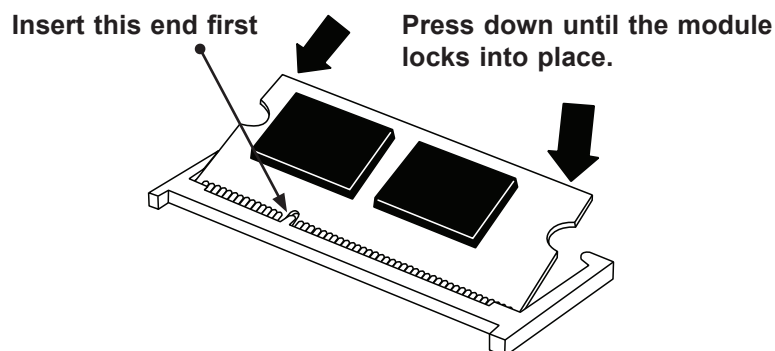


SO-DIMM Installation

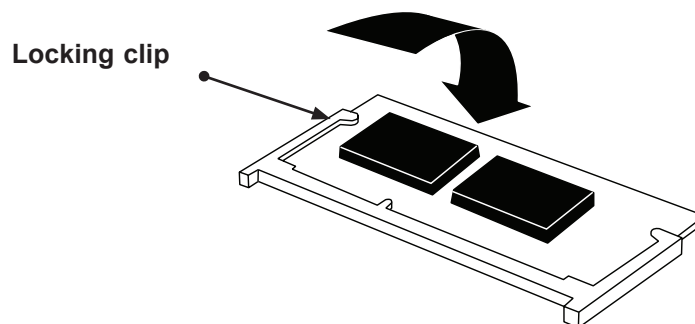
1. Position the SO-DIMM module's bottom key so it aligns with the receptive point on the slot.



2. Insert the SO-DIMM module vertically at about a 45 degree angle. Press down until the module locks into place.



3. The side clips will automatically secure the SO-DIMM module, locking it into place.



SO-DIMM Removal

1. Push the side clips at the end of the slot to release the SO-DIMM module. Pull the SO-DIMM module up to remove it from the slot.

2.4 Rear I/O Ports

See Figure 2-1 below for the locations and descriptions of the various I/O ports on the rear of the motherboard.

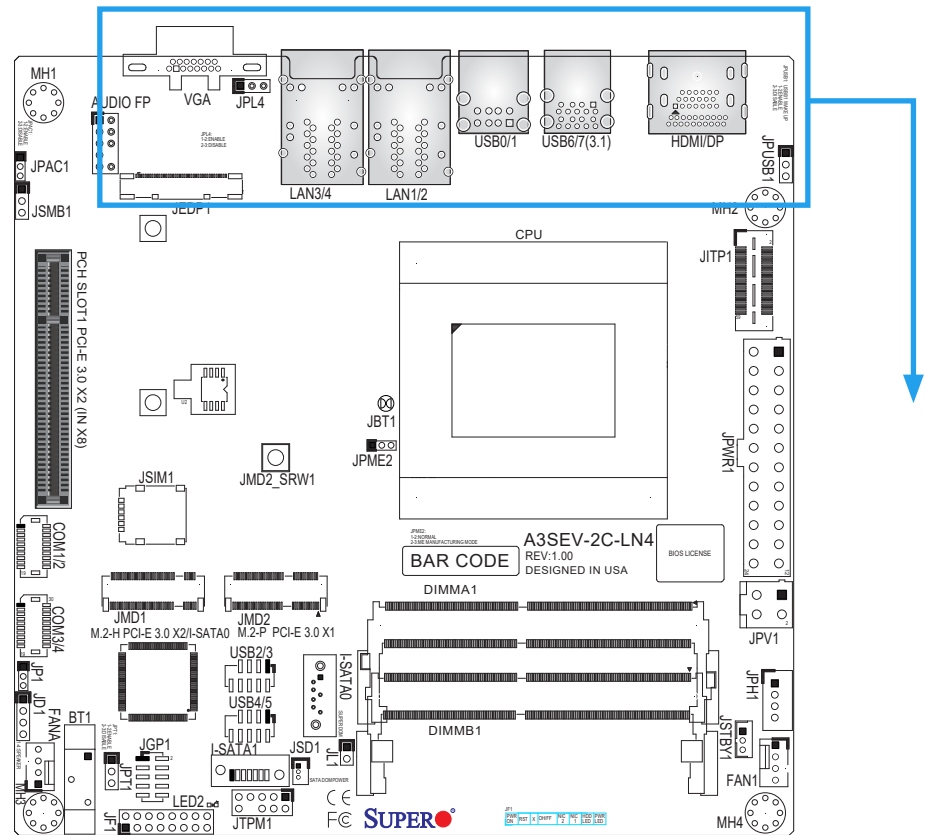
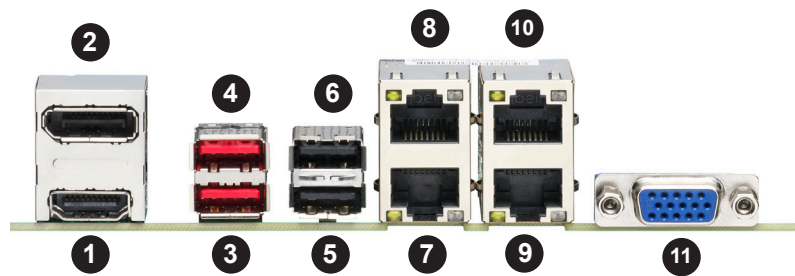


Figure 2-1. I/O Port Locations and Definitions



Rear I/O Ports					
#	Description	#	Description	#	Description
1	HDMI	5	USB0 (2.0)	9	LAN3
2	DP	6	USB1 (2.0)	10	LAN4
3	USB6 (3.1)	7	LAN1	11	VGA
4	USB7 (3.1)	8	LAN2		

VGA Port

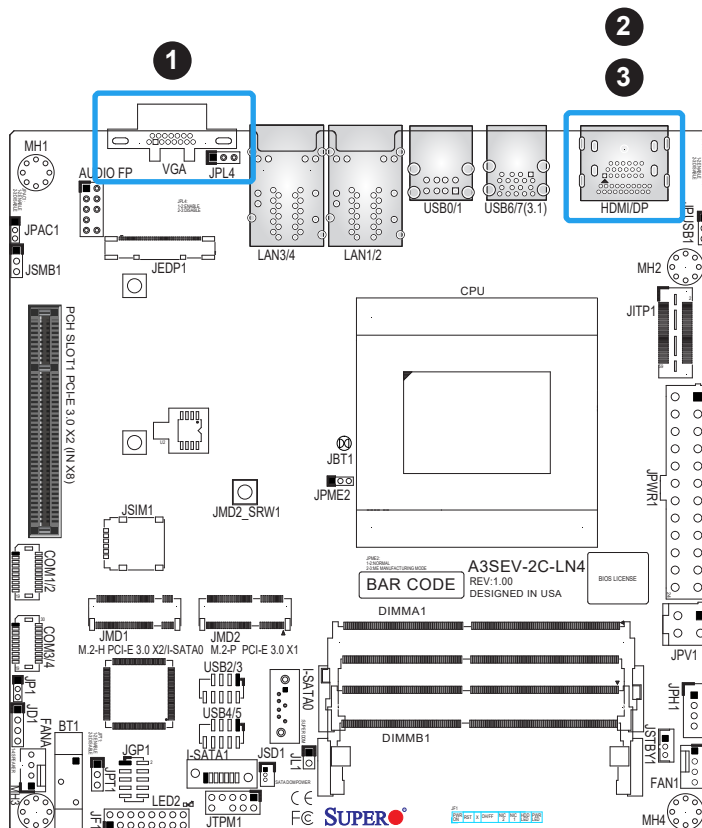
A video (VGA) port is located on the I/O back panel. Refer to the board layout below for the location.

HDMI

One HDMI (High Definition Multimedia Interface) port is on the I/O back panel. This connector is used to display both high definition video and digital sound through an HDMI-capable display, using a single HDMI cable (not included).

DP (DisplayPort)

There is one DisplayPort on the I/O back panel. DisplayPort, developed by the VESA consortium, delivers digital display and fast refresh rate. It can connect to virtually any display using a DisplayPort adaptor for devices such as VGA, DVI, or HDMI.



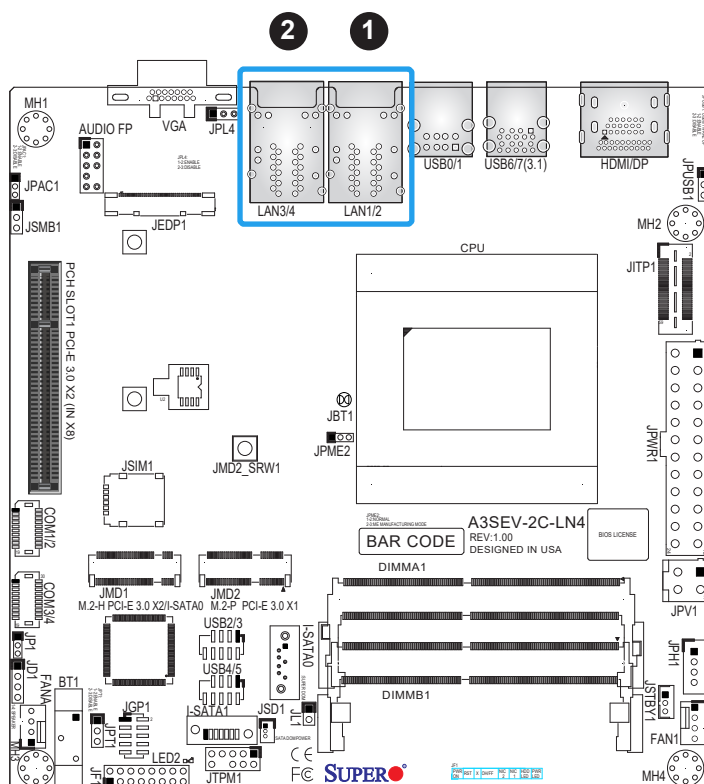
1. VGA Port
2. HDMI Port
3. DP

LAN Ports

There are four 1GbE LAN ports (LAN1 - LAN4) on the I/O back panel. These ports accept RJ45 type cables. Please refer to the LED Indicator section for LAN LED information. See the table below for pin definitions.

LAN1/3 Port Pin Definition			
Pin#	Definition	Pin#	Definition
A1	TD1+	A11	YEL-
A2	TD1-	A12	YEL+
A3	TD2+	A13	GRN-/ORG+
A4	TD2-	A14	GRN+/ORG-
A5	CT_VCC	A15	
A6	CT_VCC	A16	
A7	TD3+	A17	
A8	TD3-	A18	
A9	TD4+	A19	
A10	TD4-	A20	

LAN2/4 Port Pin Definition			
Pin#	Definition	Pin#	Definition
B1	TD1+	B11	YEL-
B2	TD1-	B12	YEL+
B3	TD2+	B13	GRN-/ORG+
B4	TD2-	B14	GRN+/ORG-
B5	CT_VCC	B15	
B6	CT_VCC	B16	
B7	TD3+	B17	
B8	TD3-	B18	
B9	TD4+	B19	
B10	TD4-	B20	



1. LAN1/2
2. LAN3/4

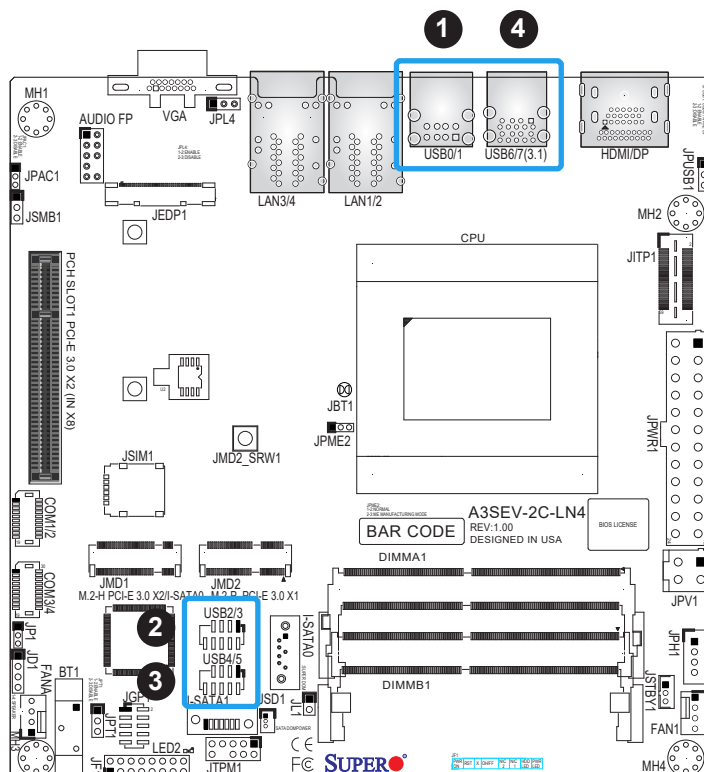
Universal Serial Bus (USB) Ports

There are two USB 2.0 ports (USB0/1) and two USB 3.1 ports (USB6/7) on the I/O back panel. The motherboard also has two USB 2.0 headers (USB2/3 and USB4/5) that provide four USB connections. The onboard headers can be used to provide front side USB access with a cable.

Back Panel USB 3.1 (USB6/7) Pin Definitions			
Pin#	Definition	Pin#	Definition
A1	VBUS	B1	VBUS
A2	D1-N	B2	D2-N
A3	D1-P	B3	D2-P
A4	GND	B4	GND
A5	StdA_SSRX1-N	B5	StdA_SSRX2-N
A6	StdA_SSRX1-P	B6	StdA_SSRX2-P
A7	GND_DRAIN	B7	GND_DRAIN
A8	StdA_SSTX1-N	B8	StdA_SSTX2-N
A9	StdA_SSTX1-P	B9	StdA_SSTX2-P

Back Panel USB 2.0 (USB0/1) Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	P5VSB	7	USB_CON_P2_DP
2	USB_CON_P3_DN	8	GND
3	USB_CON_P3_DP	9	GND
4	GND	10	GND
5	P5VSB	11	GND
6	USB_CON_P2_DN	12	GND

Front Panel USB 2.0 (USB2/3, USB4/5) Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	P5V_DUAL_F	2	P5V_DUAL_F
3	USBCON_N2	4	USBCON_N3
5	USBCON_P2	6	USBCON_P3
7	Ground	8	Ground
9	Key	10	NC



1. USB0/1
2. USB2/3
3. USB4/5
4. USB6/7

2.5 Front Control Panel

JF1 contains header pins for various buttons and indicators that are normally located on a control panel at the front of the chassis. These connectors are designed specifically for use with Supermicro chassis. See the figure below for the descriptions of the front control panel buttons and LED indicators.

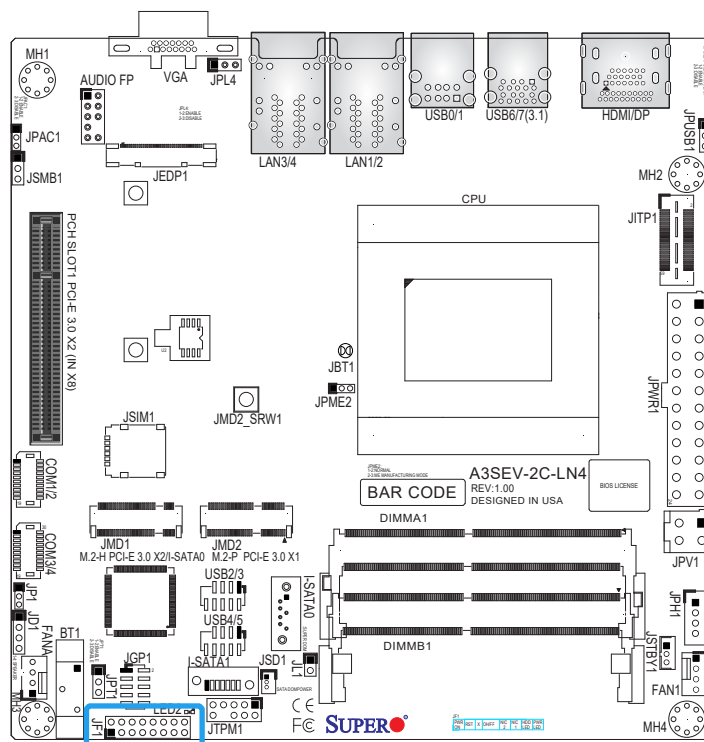


Figure 2-2. JF1 Header Pins

	1	2	
Power Button			Ground
Reset Button			Ground
X			X
3.3V			OH/Fan Fail LED
3.3V Stby			NIC2 Active LED
3.3V Stby			NIC1 Active LED
3.3V			HDD LED
3.3V Stby			PWR LED
	15	16	

Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS - see Chapter 4). To turn off the power in the suspend mode, press the button for at least 4 seconds. See the table below for pin definitions.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Power Button
2	GND

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case to reset the system. See the table below for pin definitions.

Reset Button Pin Definitions (JF1)	
Pin#	Definition
3	Reset
4	Ground

	1	2		1. Power Button
1 Power Button	○	○	Ground	
2 Reset Button	○	○	Ground	2. Reset Button
X	○	○	X	
3.3V	○	○	OH/Fan Fail LED	
3.3V Stby	○	○	NIC2 Active LED	
3.3V Stby	○	○	NIC1 Active LED	
3.3V	○	○	HDD LED	
3.3V Stby	○	○	PWR LED	
	15	16		

Overheat (OH)/Fan Fail

Connect an LED cable to pins 7 and 8 of the Front Control Panel to use the Overheat/Fan Fail LED connections. The LED on pin 8 provides warnings of overheating or fan failure. Refer to the tables below for pin definitions.

OH/Fan Fail Indicator Status	
State	Definition
Off	Normal
On	Overheat
Flashing	Fan Fail

OH/Fan Fail LED Pin Definitions (JF1)	
Pin#	Definition
7	3.3V
8	OH/Fan Fail LED

NIC1/NIC2 (LAN1/LAN2)

The NIC (Network Interface Controller) LED connection for LAN port 1 is located on pins 11 and 12 of JF1, and LAN port 2 is on pins 9 and 10. Attach the NIC LED cables here to display network activity. Refer to the table below for pin definitions.

NIC1/NIC2 LED Pin Definitions (JF1)	
Pin#	Definition
9	3.3V Stby
10	NIC 2 Link LED
11	3.3V Stby
12	NIC 1 Link LED

	1	2	
Power Button	○	○	Ground
Reset Button	○	○	Ground
X	○	○	X
3.3V	○	○	OH/Fan Fail LED ①
3.3V Stby	○	○	NIC2 Active LED ③
3.3V Stby	○	○	NIC1 Active LED ②
3.3V	○	○	HDD LED
3.3V Stby	○	○	PWR LED
	15	16	

1. Overheat/Fan Fail
2. NIC1/NIC2 LED

HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a cable to pin 14 to show hard drive activity status. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pins	Definition
13	3.3V
14	HDD Active

Power LED

The Power LED connection is located on pins 15 and 16 of JF1. Refer to the table below for pin definitions.

Power LED Pin Definitions (JF1)	
Pins	Definition
15	3.3 Stby
16	PWR LED

	1	2	
Power Button	○	○	Ground
Reset Button	○	○	Ground
X	○	○	X
3.3V	○	○	OH/Fan Fail LED
3.3V Stby	○	○	NIC2 Active LED
3.3V Stby	○	○	NIC1 Active LED
3.3V	○	○	HDD LED ①
3.3V Stby	○	○	PWR LED ②
	15	16	

1. HDD LED
2. Power LED

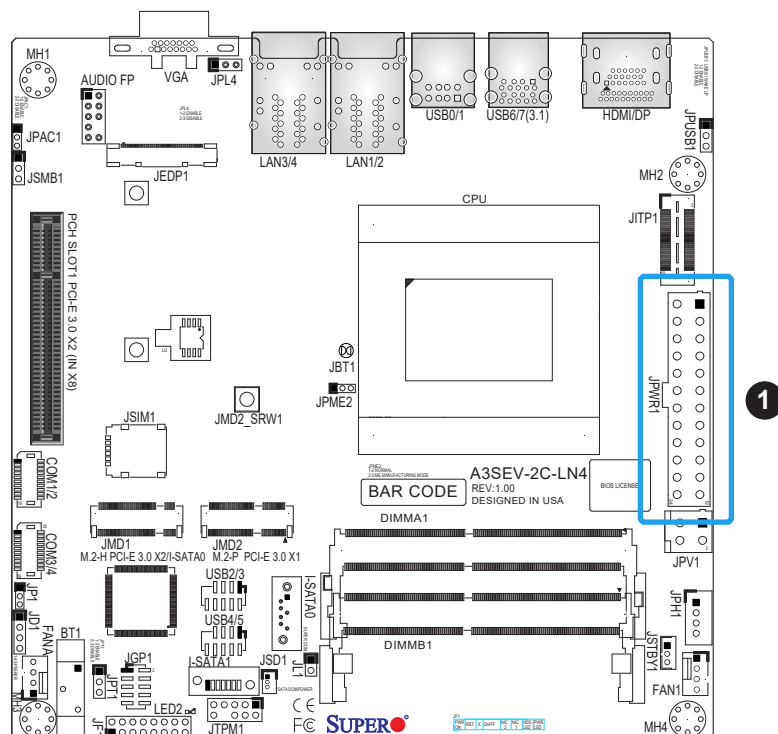
2.6 Connectors

Power Connections

ATX Power Supply Connector

The 24-pin power supply connector (JPWR1) meets the ATX SSI EPS 24-pin specification.

ATX Power 24-pin Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	Ground	3	Ground
16	PS_ON	4	+5V
17	Ground	5	Ground
18	Ground	6	+5V
19	Ground	7	Ground
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	Ground	12	+3.3V



1. 24-pin ATX Power

4-pin 12V Power Connector

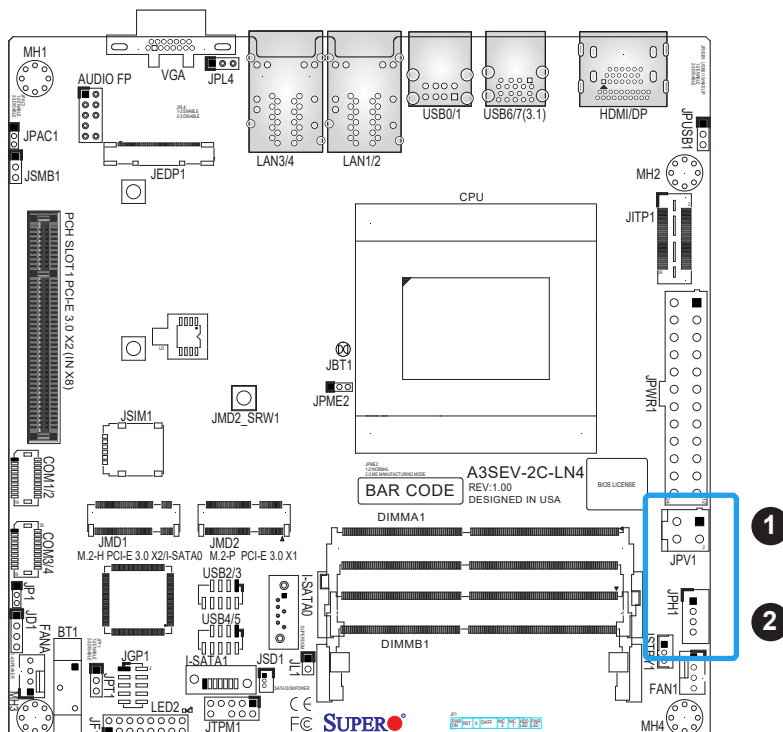
JPV1 is a 4-pin power input for alternative single power source for special enclosure when 24-pin ATX power is not in use. See the table below for pin definitions.

4-pin 12V Power Pin Definitions	
Pin#	Definition
1-2	Ground
3-4	+12V

HDD Power Connector

The 4-pin HDD power connector JPH1 provides power to onboard HDD devices. See the table below for pin definitions.

4-pin HDD Power Pin Definitions	
Pin#	Definition
1	12V
2	Ground
3	Ground
4	5V



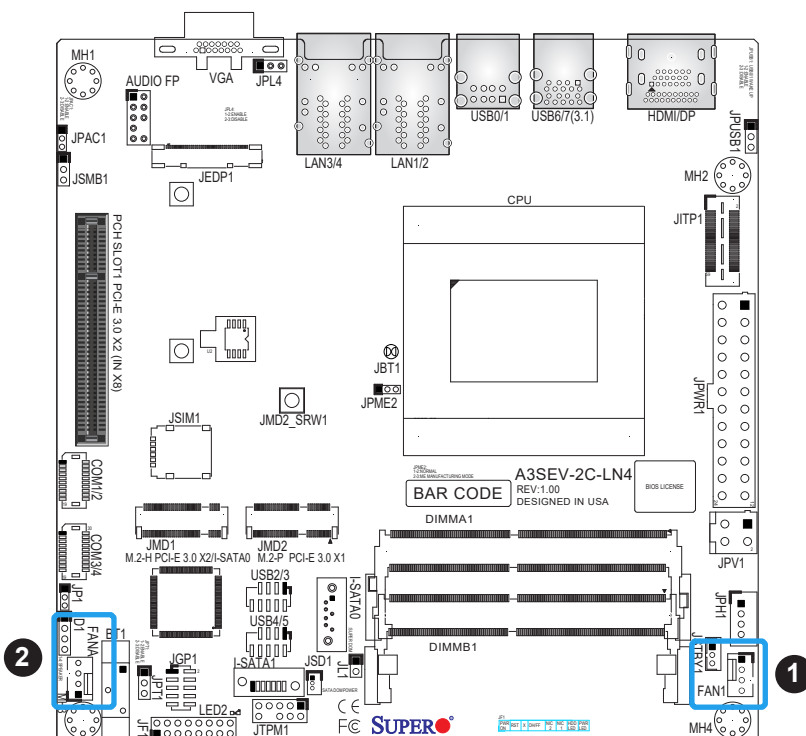
1. 4-pin 12V Power
2. HDD Power

Headers

Fan Header

There are two 4-pin fan headers on the motherboard. Pins 1-3 are backward compatible with traditional 3-pin fans. The onboard fan speeds are controlled by Thermal Management (via Hardware Monitoring) in the BIOS. When using Thermal Management setting, please use all 3-pin fans or all 4-pin fans.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground (Black)
2	+12V (Red)
3	Tachometer
4	PWM Control



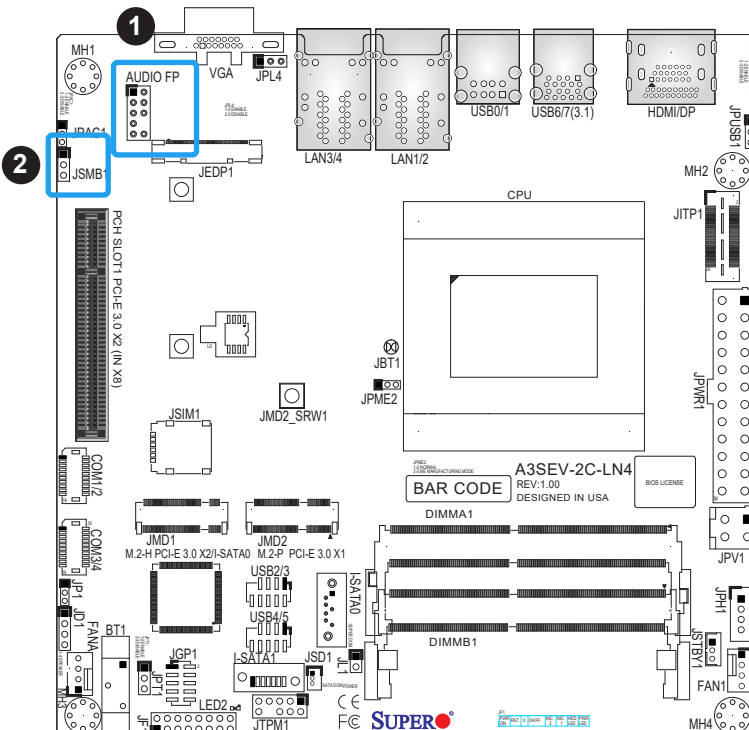
1. FAN1
2. FANA

A 10-pin audio header located AUDIO FP on the motherboard allows you to use the onboard sound for audio playback. Connect an audio cable to the this header to use this feature. See the table below for pin definitions.

Audio Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	MIC_Left	2	AUDIO_GND
3	MIC_Right	4	AUDIO_Detect
5	LINE2_Right	6	MIC2_JD
7	Front AUDIO_JD	8	NC
9	LINE2_Left	10	LINE2_JD

A System Management Bus header for additional slave devices or sensors is located at JSMB1 on the bottom side of the motherboard. See the table below for pin definitions.

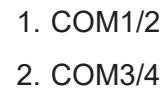
SMBus Header Pin Definitions	
Pin#	Definition
1	SMB_DATA
2	GND
3	SMB_CLK



1. 10-pin Audio Header
2. SMBus Header

The motherboard has two COM headers that provide four serial connections (COM1/2 and COM3/4). These headers support the RS-232/422/485 function. Please utilize Supermicro PN: CBL-CDAT-0685 to bridge out these serial connections.

COM3/4 Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	DCD3	2	DSR3
3	RXD3	4	RTS3
5	TXD3	6	CTS3
7	DTR3	8	RI3_N
9	GND	10	N/A
11	DCD4	12	DSR4
13	RXD4	14	RTS4
15	TXD4	16	CTS4
17	DTR4	18	RI4_N
19	GND	20	N/A

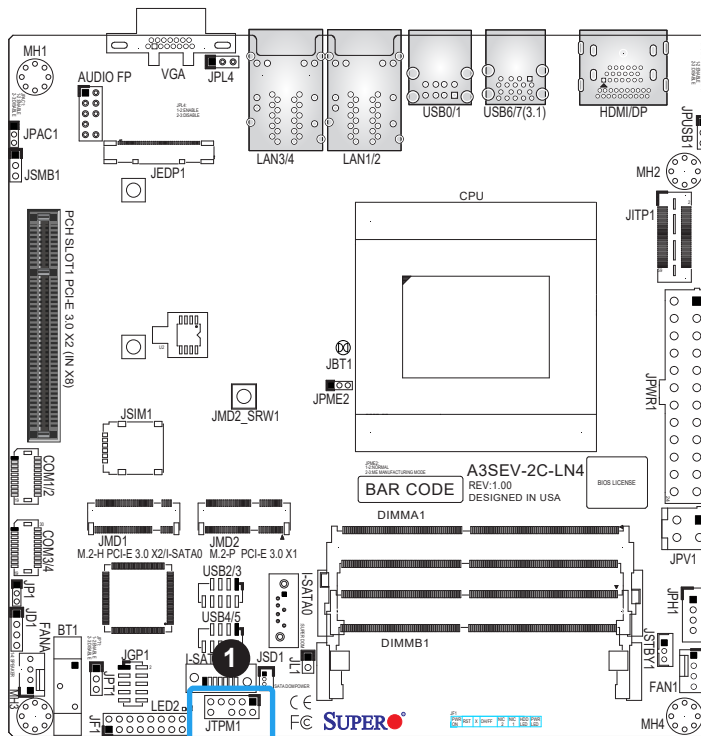


TPM/Port 80 Header

A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM support and Port 80 connection. Use this header to enhance system performance and data security. Refer to the table below for pin definitions. Please go to the following link for more information on the TPM: <http://www.supermicro.com/manuals/other/TPM.pdf>.

Trusted Platform Module/Port80 Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	3.3V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK#	6	GND
7	SPI_MOSI	8	NC
9	+3.3V Stdbby	10	SPI_IRQ#

1. TPM Header

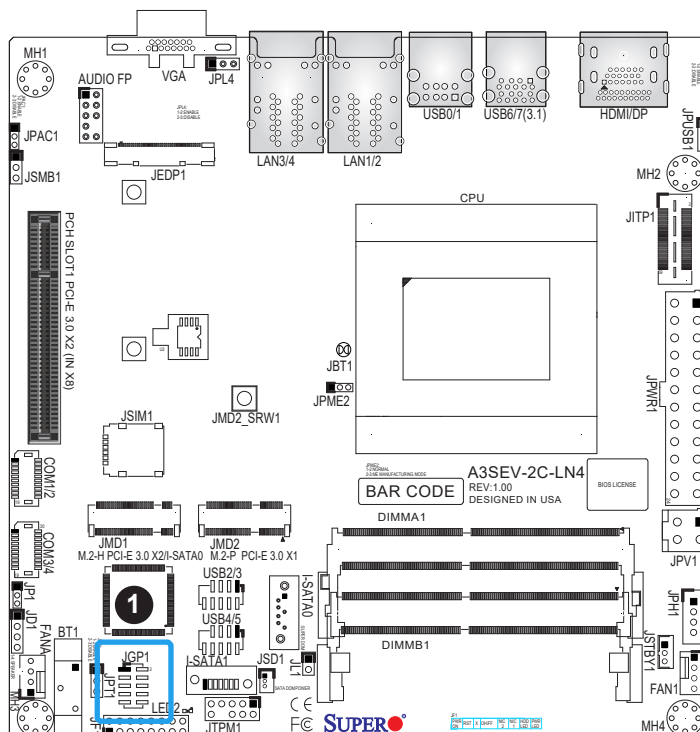


General Purpose I/O Header

The JGP1 (General Purpose Input/Output) header is a general purpose I/O expander on a pin header via the SMBus. Each pin can be configured to be an input pin or output pin in 2.0mm pitch. The GPIO is controlled via the PCA9554APW 8-bit GPIO expansion from PCH SMBus. The base address is 0xEFA0. The expander slave address is 0x70 for WRITE and 0x71 for READ. See the table below for pin definitions.

JGP1 Header Pin Definitions	
Pin#	Definition
1	P3V3_DUAL
2	GND
3	JGP1_0
4	JGP1_4
5	JGP1_1
6	JGP1_5
7	JGP1_2
8	JGP1_6
9	JGP1_3
10	JGP1_7

1. General Purpose Header



Standby Power

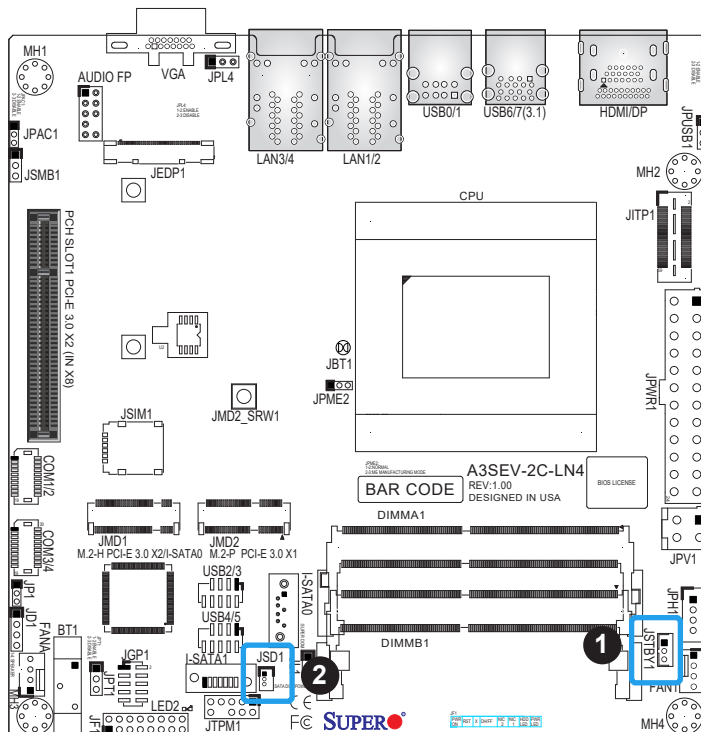
The Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature. Refer to the table below for pin definitions.

Standby Power Pin Definitions	
Pin#	Definition
1	+5V Standby
2	Ground
3	No Connection

Disk-On-Module Power Connector

One power connector for SATA DOM (Disk-On-Module) devices is located at JSD1. Connect appropriate cables here to provide power support for your Serial Link DOM devices.

DOM Power Pin Definitions	
Pin#	Definition
1	5V
2	Ground
3	Ground

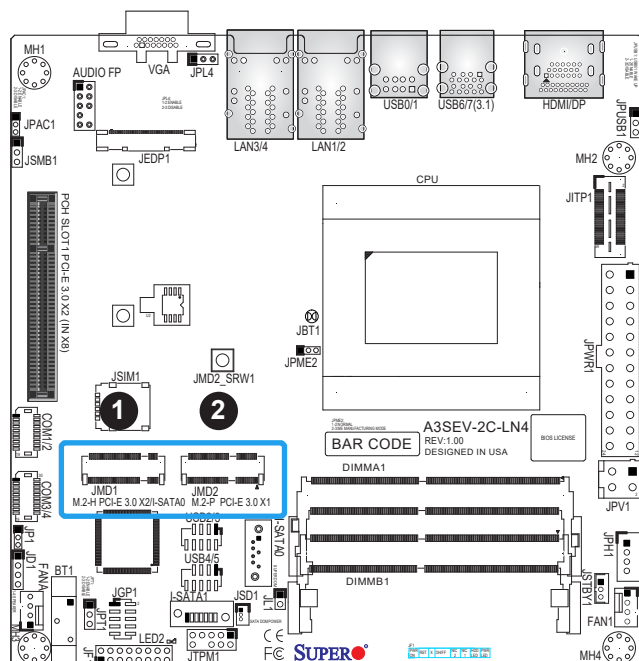


1. Standby Power
2. SATA DOM

M.2 Slots

The motherboard has two M.2 slots (JMD1 and JMD2). M.2 was formerly known as Next Generation Form Factor (NGFF) and serves to replace mini PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. JMD1 supports a B-Key PCIe 3.0 x2/SATA/USB 3.0 device in the 2282/3042 form factors (SATA is shared with I-SATA0), whereas JMD2 supports an E-Key SATA/PCIe 3.0 x1/USB 2.0 device in the 2230 form factor. The JMD1 pin definition table is on this page and the JMD2 table is on the next page.

1. JMD1
2. JMD2



M.2 Slot Pin Definitions (JMD1 B-Key)			
Pin#	Definition	Pin#	Definition
1	config3	2	P3V3_DUAL
3	GND	4	P3V3_DUAL
5	GND	6	FULL_CARD_POWER_OFF#(PU to P1V8SB only)
7	USB_D+	8	W_DISABLE1#(PU to P3V3SB only)
9	USB_D-	10	NC
11	GND	12	
13		14	
15		16	
17		18	
19		20	NC
21	config0	22	NC
23	WWAN_WAKE_N(PU to P1V8SB only)	24	NC
25	NC	26	RF_KILL_GPS_1P8_N(PU to P1V8SB only)
27	GND	28	NC
29	PERn1	30	UIM_RESET
31	PERP1	32	UIM_CLK
33	GND	34	UIM_DATA
35	PETn1	36	UIM_PWR
37	PETP1	38	DEVSLP (reserved)
39	GND	40	SMB_CLK (reserved)
41	PERn0/SATA-B+	42	SMB_DATA (reserved)
43	PERp0/SATA-B-	44	ALERT(PU to P1V8SB only)
45	GND	46	NC
47	PETn0/SATA-A-	48	NC
49	PETn0/SATA-A+	50	PERST (PLTRST)
51	GND	52	CLK_REQ_N
53	REFCLK-	54	PE_WAKE_N
55	REFCLK+	56	NC
57	GND	58	NC
59	NC	60	COEX3
61	NC	62	COEX_TXD
63	NC	64	COEX_RXD
65	NC	66	SIM_DETECT
67	NC	68	SYSCLOCK (reserved)
69	config1	70	P3V3_DUAL
71	GND	72	P3V3_DUAL
73	GND	74	P3V3_DUAL
75	NC		

M.2 Slot Pin Definitions (JMD2 E-Key)			
Pin#	Definition	Pin#	Definition
1	GND	2	P3V3_DUAL
3	USB_JMD2_DP	4	P3V3_DUAL
5	USB_JMD2_DN	6	
7	GND	8	
9		10	
11		12	
13		14	
15		16	
17		18	GND
19		20	UART_BT_WAKE_R_N
21		22	
23		24	
25		26	
27		28	
29		30	
31		32	
33	GND	34	
35	PE_PCH_TX_C_P0	36	
37	PE_PCH_TX_C_N0	38	
39	GND	40	
41	PE_M2E_RX_DP	42	
43	PE_M2E_RX_DN	44	M2E_WLAN_COEX3
45	GND	46	M2E_WLAN_COEX2
47	CLK_100M_M2E_DP	48	M2E_WLAN_COEX1
49	CLK_100M_M2E_DN	50	M2E_SUSCLK_R
51	GND	52	PLTRST_M2E_R
53	CLKREQ_M2E_R_N	54	M2E_W_DISABLE2_N_R
55	PE_WAKE_M2E_R_N	56	M2E_W_DISABLE1_N_R
57	GND	58	M2E_I2C_DAT_R
59		60	M2E_I2C_CLK_R
61		62	
63	GND	64	
65		66	
67		68	
69	GND	70	
71		72	P3V3_DUAL
73		74	P3V3_DUAL
75	GND		

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to inform you of a chassis intrusion when the chassis is opened. Refer to the table below for pin definitions.

On the JD1 header, pins 1-4 are for the external speaker. If you wish to use an external speaker, connect its cable to pins 1-4.



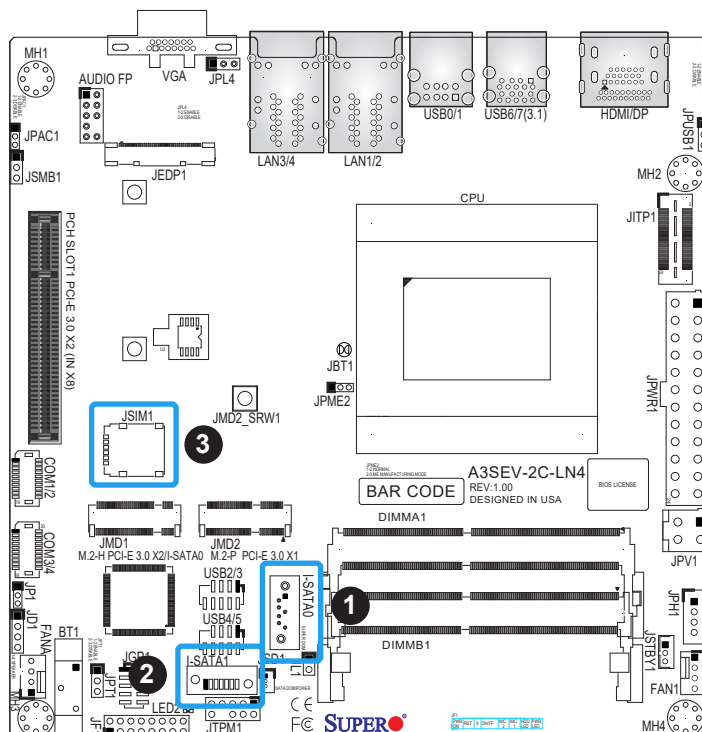
1. Chassis Intrusion
2. Speaker Buzzer

I-SATA 3.0 Ports

The A3SEV-2C/4C-LN4 has two I-SATA 3.0 ports (I-SATA0 and I-SATA1). I-SATA0 can be used with Supermicro SuperDOMs that are yellow SATA DOM connectors with power pins built in, and do not require external power cables. Supermicro SuperDOMs are backward compatible with regular SATA HDDs or SATA DOMs that need external power cables.

Nano SIM Slot

The JSIM1 slot supports a Nano SIM card. Please refer to jumper JP1 for additional settings.

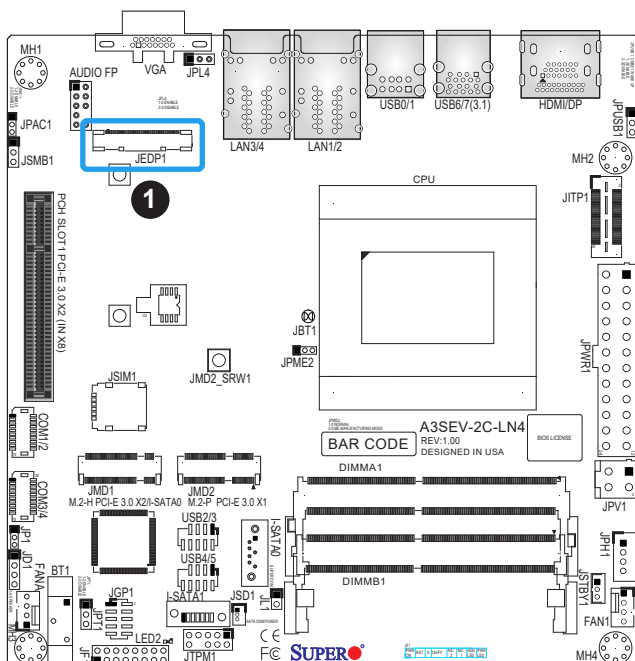


1. I-SATA0
2. I-SATA1
3. Nano SIM Slot

Embedded DisplayPort

The eDP header is used to connect an embedded display LED or LCD Panel. eDP is a companion standard to the DisplayPort interface designed for embedded display applications, including notebook PCs, tablets, netbooks and all-in-one desktop PCs. Refer to the table below for pin definitions.

1. Embedded DisplayPort



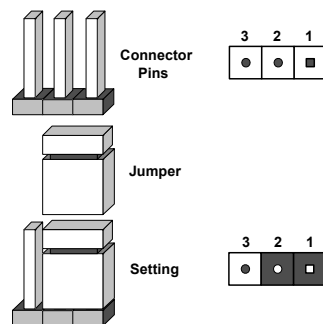
eDP Header Connector: DF80-40S-0.5V(51) Pin Definitions			
Pin#	Definition	Pin#	Definition
1	P3V3_EDP	21	eDP_TXN0
2	P3V3_EDP	22	eDP_TXP0
3	P3V3_EDP	23	GND
4	P3V3_EDP	24	eDP_AUXP
5	P3V3_EDP	25	eDP_AUXN
6	GND	26	NC
7	GND	27	P3V3
8	GND	28	NC
9	GND	29	P12V
10	EDP_HPD	30	NC
11	GND	31	GND
12	eDP_TXN3	32	P5V
13	eDP_TXP3	33	EDP_3P3_BKLTCTL
14	GND	34	EDP_3P3_BKLEN
15	eDP_TXN2	35	P12V
16	eDP_TXP2	36	P3V3
17	GND	37	GND
18	eDP_TXN1	38	SMB_CLK
19	eDP_TXP1	39	SMB_DATA
20	GND	40	NC

2.7 Jumper Settings

How Jumpers Work

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the diagram below for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

 **Note:** On two-pin jumpers, Closed means the jumper is on and Open means the jumper is off the pins.



CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

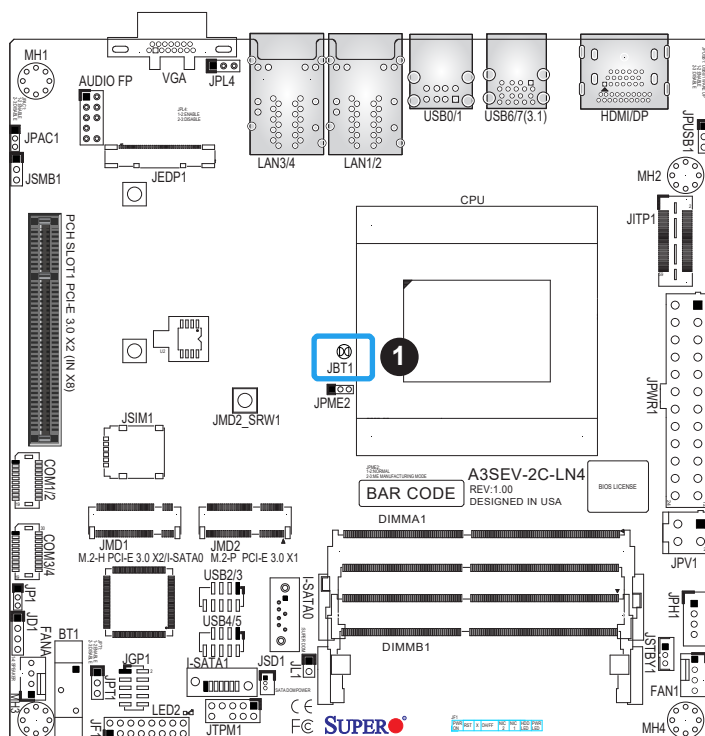
1. First power down the system and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard.
3. Remove the onboard battery from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver (or shorting device).
6. Replace the cover, reconnect the power cord(s), and power on the system.



Note: Clearing CMOS will also clear all passwords.



JBT1 contact pads



1. CMOS Clear

Onboard TPM Enable/Disable

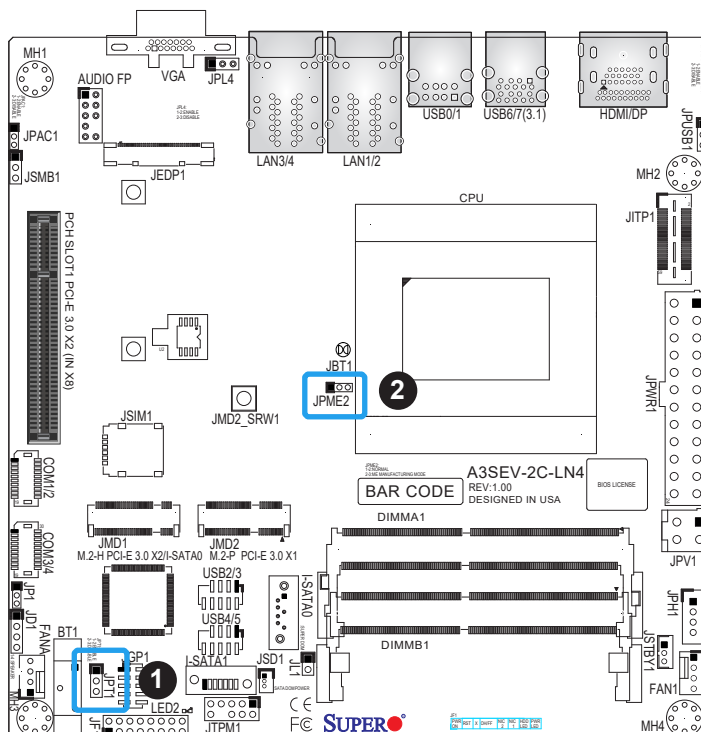
Use JPT1 to enable or disable support for the onboard TPM 2.0 module. See the table below for jumper settings.

TPM Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enable (Default)
Pins 2-3	Disable

Manufacturing Mode Select

Close JPME2 to bypass SPI flash security and force the system to use the Manufacturing Mode, which will allow you to flash the system firmware from a host server to modify system settings. See the table below for jumper settings.

Manufacturing Mode Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Normal (Default)
Pins 2-3	Manufacturing Mode



1. TPM Enable
2. Manufacturing Mode

LAN4 Port Enable/Disable

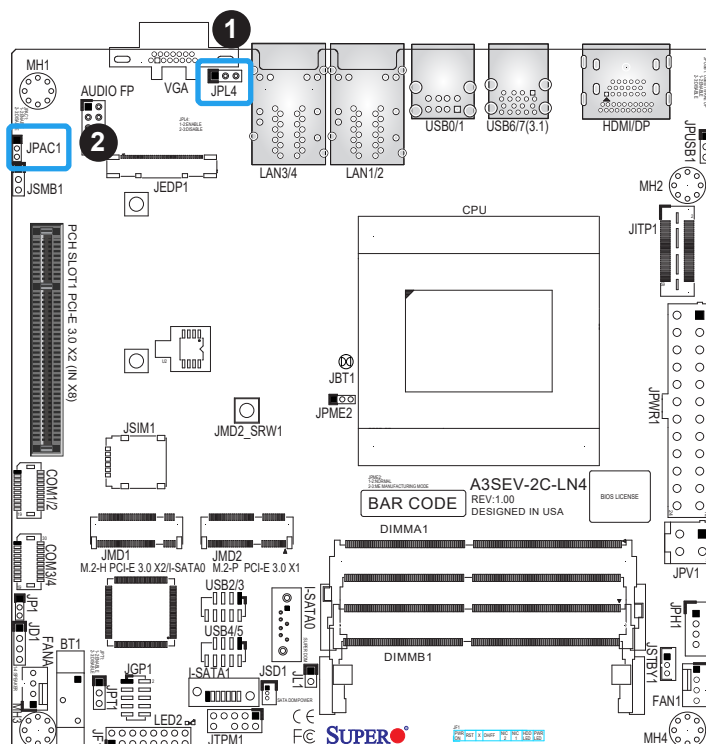
Use JPL4 to enable or disable LAN4 port. The default setting is Enabled.

LAN4 Port Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

Audio Enable/Disable

Use JPAC1 to enable or disable the onboard audio support. The default position is on pins 1-2 to enable onboard audio connections. Refer to the table below for jumper settings.

Audio Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled



1. LAN Port Enable
2. Audio Enable

USB Wake Up

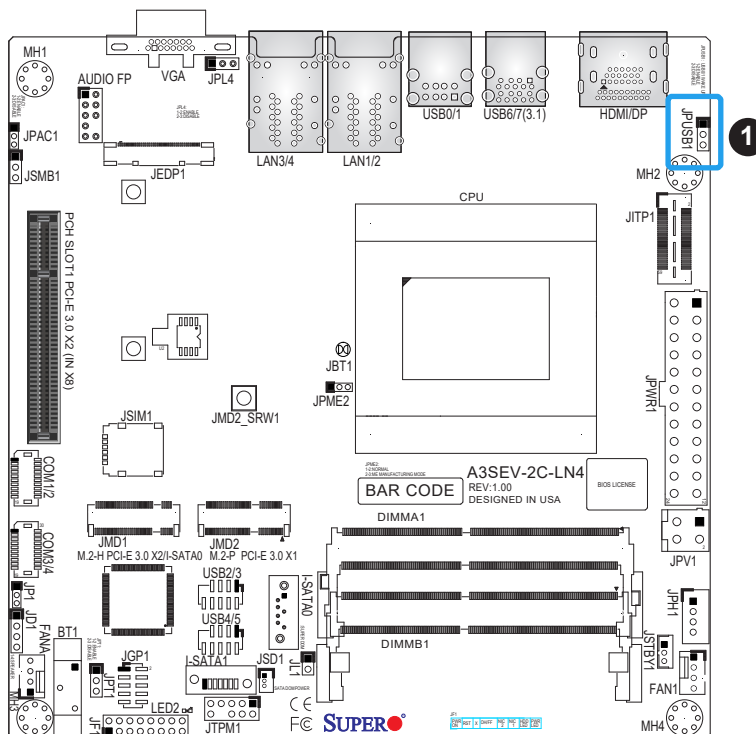
Use the JPUSE1 jumper to enable system wake up via a USB device. This jumper allows you to wake up the system by pressing a key on the USB keyboard or by clicking the USB mouse. The JPUSE1 jumper is used together with the USB Wake Up function in the BIOS. Enable both the jumper and the BIOS setting to activate this function. When the USB Wake Up function is enabled, it will be active on all USB ports. Refer to the table below for jumper settings.

USB Wake Up Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

SIM Detection

Use the JP1 jumper to set the detection type for the wireless WAN module in use. Since each WAN module vendor has a different type of detection, check with your respective vendor for the correct type.

SIM Detection Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled



1. USB0/1 Wake Up
2. SIM Detection

2.8 LED Indicators

LAN Port LEDs

Four LAN ports are located on the I/O back panel of the motherboard. Each Ethernet LAN port has two LEDs. The green LED indicates activity, while the other Link LED may be green, amber, or off to indicate the speed of the connection.

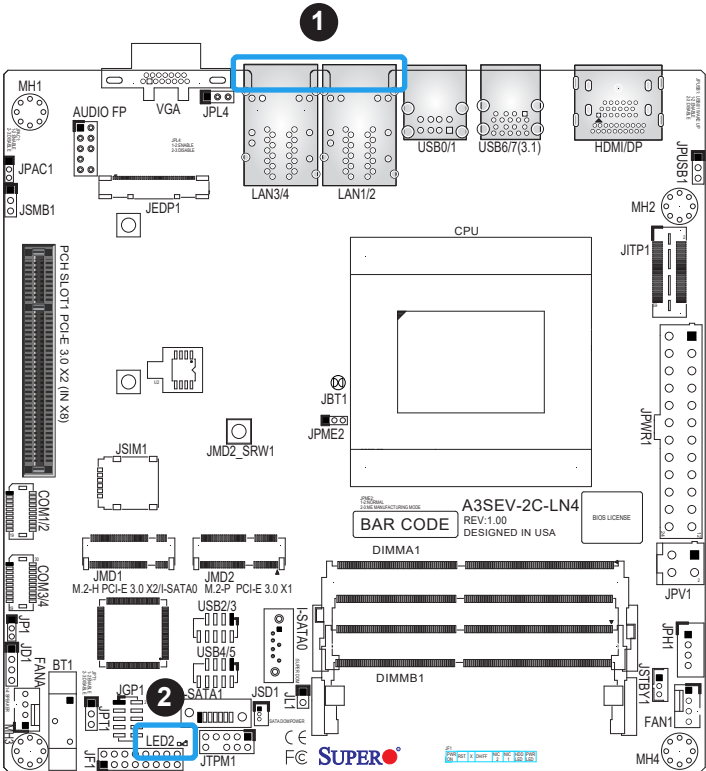
LAN1/2/3 LED (Connection Speed Indicator)	
LED Color	Definition
Yellow	Active
Orange	1G

LAN4 LED (Connection Speed Indicator)	
LED Color	Definition
Yellow	Active
Orange	1G
Green	100M

Power LED

LED2 is an onboard Power LED. When this LED is lit, it means power is present on the motherboard. In suspend mode, this LED will blink on and off. Turn off the system and unplug the power cord before removing or installing components.

Onboard Power LED Indicator	
LED Color	Definition
Off	System Off (power cable not connected)
Green	System On



- 1. LAN Port LEDs
- 2. Power LED

Chapter 3

Troubleshooting

3.1 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components.

Before Power On

1. Check that the power LED on the motherboard is on.
2. Make sure that the power connector is connected to your power supply.
3. Make sure that no short circuits exist between the motherboard and chassis.
4. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
5. Remove all add-on cards.
6. Install a heatsink and connect the power to the motherboard. Make sure that the heatsink is fully seated. Check all jumper settings as well.
7. Use the correct type of CMOS battery (CR2032) as recommended by the manufacturer.

No Power

1. Make sure that no short circuits exist between the motherboard and the chassis.
2. Verify that all jumpers are set to their default positions.
3. Check that the 115V/230V switch on the power supply is properly set.
4. Turn the power switch on and off to test the system.
5. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3VDC. If it does not, replace it with a new one.

No Video

1. If the power is on but you have no video, remove all the add-on cards and cables.
2. Use the speaker to determine if any beep codes exist. Refer to Appendix A for details on beep codes.



Note: If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended. For I/O port 80h codes, refer to Appendix B.

System Boot Failure

If the system does not display POST (Power-On-Self-Test) or does not respond after the power is turned on, check the following:

1. Check for any error beep from the motherboard speaker.
 - If there is no error beep, try to turn on the system without DIMM modules installed. If there is still no error beep, replace the motherboard.
 - If there are error beeps, clear the CMOS settings by unplugging the power cord and removing the battery from BT1, then short pins 1 and 2 for more than 10 seconds and install the battery into BT1.
2. Remove all components from the motherboard, especially the DIMM modules. Make sure that system power is on and that memory error beeps are activated.

Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 2.4 for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115V/230V switch.

Losing the System's Setup Configuration

1. Make sure that you are using a high quality power supply. A poor quality power supply may cause the system to lose the CMOS setup information. Refer to Section 1.5 for details on recommended power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3VDC. If it does not, replace it with a new one.
3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

When the System Becomes Unstable

A. If the system becomes unstable during or after OS installation, check the following:

1. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.



Note: Click on the Tested Memory List link on the motherboard product page to see a list of supported memory.

2. HDD support: Make sure that all hard disk drives (HDDs) work properly. Replace the bad HDDs with good ones.
3. Heatsink: Check that the heatsink is installed properly.
4. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.
5. Proper software support: Make sure that the correct drivers are used.

B. If the system becomes unstable before or during OS installation, check the following:

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD/DVD and CD/DVD-ROM.
2. Cable connection: Check to make sure that all cables are connected and working properly.
3. Use the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section A above for proper troubleshooting procedures.

4. Identify bad components by isolating them: If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.
5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

3.2 Technical Support Procedures

Before contacting Technical Support, please take the following steps. Also, note that as a motherboard manufacturer, we do not sell directly to end-users, so it is best to first check with your distributor or reseller for troubleshooting services. They should know of any possible problem(s) with the specific system configuration that was sold to you.

1. Please review the 'Troubleshooting Procedures' and 'Frequently Asked Questions' (FAQs) sections in this chapter or see the FAQs on our website at <http://www.supermicro.com/FAQ/index.php> before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website at http://www.supermicro.com/ResourceApps/BIOS_IPMI_Intel.html. **Note:** Not all BIOS can be flashed depending on the modifications to the boot block code.
3. If you still cannot resolve the problem, include the following information when contacting us for technical support:
 - Motherboard model and PCB revision number
 - BIOS release date/version (this can be seen on the initial display when your system first boots up)
 - System configuration

An example of a Technical Support form is posted on our website.

Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by e-mail.

3.3 Frequently Asked Questions

Question: What type of memory does my motherboard support?

Answer: The motherboard supports up to 32GB DDR4 SO-DIMM with speeds of up to 3200MHz. See Section 2.3 for details on installing memory.

Question: How do I update my BIOS?

Answer: It is recommended that you **do not** upgrade your BIOS if you are not experiencing any problems with your system. Updated BIOS files are located on our website at http://www.supermicro.com/ResourceApps/BIOS_IPMI_Intel.html. Please check our BIOS warning message and the information on how to update your BIOS on our website. Select your motherboard model and download the BIOS file to your computer. Also, check the current BIOS revision to make sure that it is newer than your BIOS before downloading.

Follow the steps below to update the BIOS:

1. Save this BIOS update package to your computer.
2. Extract the files to a USB stick. The USB stick doesn't have to be bootable, but it has to be formatted with the FAT/FAT32 file system.
3. Plug the USB stick into a USB port, boot to the Build-In UEFI Shell, and type FLASH.
nsh BIOSname#.### to start the BIOS update:
 - Shell> fs0:
 - fs0:\> flash.nsh A3SEV#.###
4. Do not interrupt the process until the BIOS update is complete.
5. When a message indicates that the BIOS update is complete, do the A/C power cycle.
6. Go to the BIOS setup screen and press F3 to load the default and then press F4 to save and exit.

Question: Why can't I turn off the power using the momentary power on/off switch?

Answer: The instant power off function is controlled in BIOS by the Power Button Mode setting. When the On/Off feature is enabled, the motherboard will have instant off capabilities as long as the BIOS has control of the system. When the Standby or Suspend feature is enabled or when the BIOS is not in control such as during memory count (the first screen that appears when the system is turned on), the momentary on/off switch must be held for more than four seconds to shut down the system. This feature is required to implement the ACPI features on the motherboard.

3.4 Battery Removal and Installation

Battery Removal

To remove the onboard battery, follow the steps below:

1. Power off your system and unplug your power cable.
2. Locate the onboard battery as shown below.
3. Using a tool such as a pen or a small screwdriver, push the battery lock outwards to unlock it. Once unlocked, the battery will pop out from the holder.
4. Remove the battery.

Proper Battery Disposal

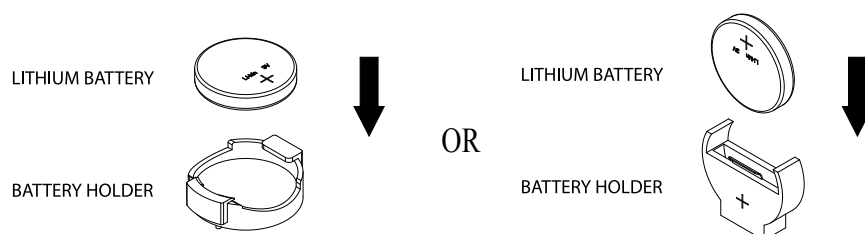
Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

Battery Installation

1. To install an onboard battery, follow steps 1 and 2 above and continue below:
2. Identify the battery's polarity. The battery's positive (+) side should face the same direction as the battery holder's positive side.
3. Insert the battery into the battery holder and push it down until you hear a click to ensure that the battery is securely locked.



Important: When replacing a battery, only use with the same type.



3.5 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (<http://www.supermicro.com/support/rma/>).

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Chapter 4

BIOS

4.1 Introduction

This chapter describes the AMIBIOS™ Setup utility for the A3SEV-2C/4C-LN4 motherboard. The BIOS is stored on a chip and can be easily upgraded using a flash program.



Note: Due to periodic changes to the BIOS, some settings may have been added or deleted and might not yet be recorded in this manual. Please refer to the Manual Download area of our website for any changes to BIOS that may not be reflected in this manual.

Starting the Setup Utility

To enter the BIOS Setup Utility, hit the <Delete> key while the system is booting-up. (In most cases, the <Delete> key is used to invoke the BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.) Each main BIOS menu option is described in this manual.

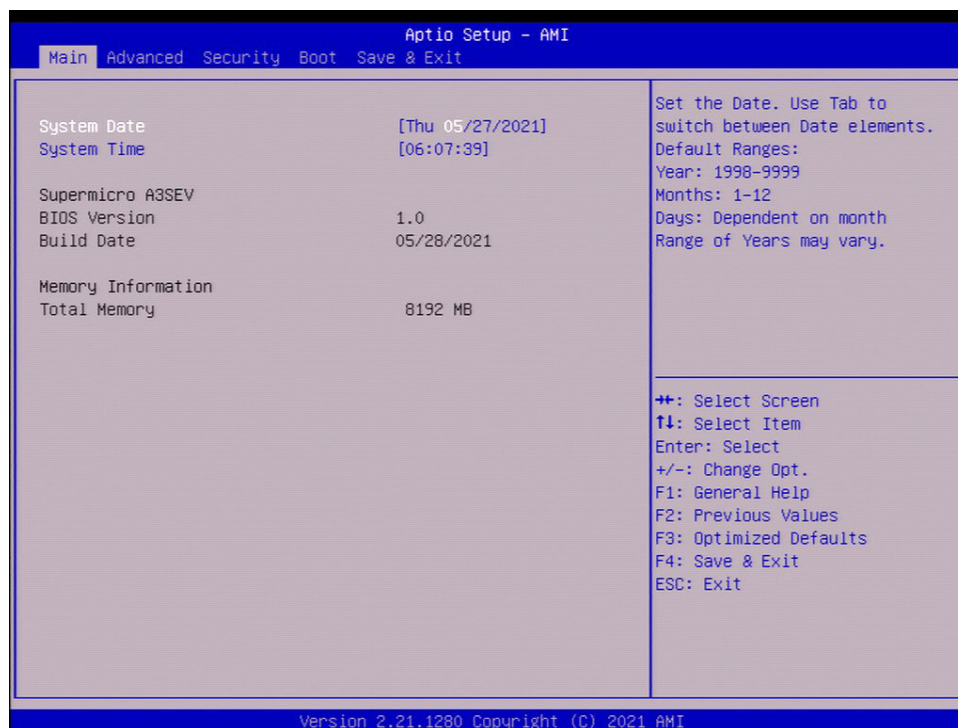
The Main BIOS screen has two main frames. The left frame displays all the options that can be configured. “Grayed-out” options cannot be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (Note that BIOS has default text messages built in. We retain the option to include, omit, or change any of these text messages.) Settings printed in **Bold** are the default values.

A " ►" indicates a submenu. Highlighting such an item and pressing the <Enter> key will open the list of settings within that submenu.

The BIOS setup utility uses a key-based navigation system called hot keys. Most of these hot keys (<F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, etc.) can be used at any time during the setup navigation process.

4.2 Main

When you first enter the AMI BIOS setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS setup screen is shown below.



System Date/System Time

Use this option to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. The time is entered in HH:MM:SS format.



Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.

Supermicro A3SEV

BIOS Version

Build Date

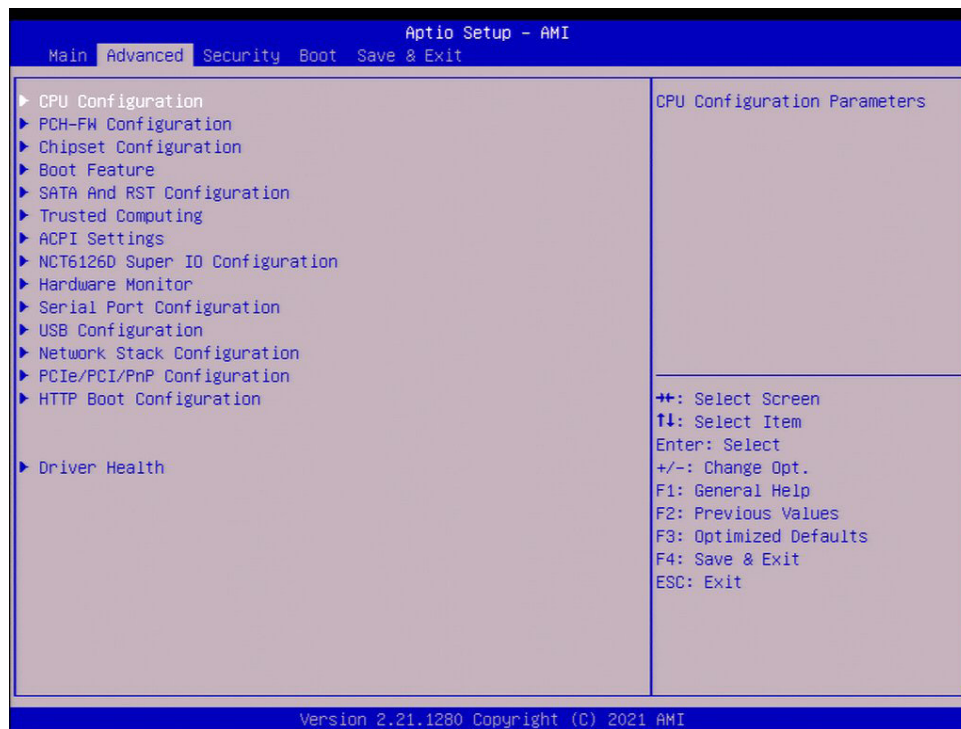
Memory Information

Total Memory: This feature displays the total size of memory available in the system.

Memory Speed: This feature displays the memory speed.

4.3 Advanced

Use this menu to configure Advanced settings.



Warning: Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect BIOS timing setting may cause the system to malfunction. When this occurs, restore the setting to the manufacture default setting.

► CPU Configuration

The following CPU information will be displayed:

- Type
- ID
- Microcode Patch Speed
- L1 Data Cache
- L1 Instruction Cache
- L2 Cache
- L3 Cache

- L4 Cache
- VMX
- SMX/TXT

CPU Flex Ratio Override

Use this feature to enable or disable CPU Flex Ratio Prgramming. The options are **Disabled** and **Enabled**.

If the feature above is set to Enable, the next feature is available for configuration:

CPU Flex Ratio Setting

Use this feature to set the non-turbo mode processor core ratio multiplier. The default value is **20**.

Hardware Prefetcher

If set to Enable, the hardware prefetcher prefetches streams of data and instructions from the main memory to the L2 cache to improve CPU performance. The options are **Disabled** and **Enabled**.

Adjacent Cache Line Prefetch

The CPU prefetches the cache line for 64 bytes if this feature is set to **Disabled**. The CPU prefetches both cache lines for 128 bytes as comprised if this feature is set to **Enabled**. The options are **Disabled** and **Enabled**.

Intel (VMX) Virtualization Technology

Use this feature to enable or disable Vanderpool Technology. The options are **Disabled** and **Enabled**.

Active Processor Cores

Use this feature to determine how many CPU cores will be activated for each CPU. The options are **All**, 1, 2, and 3.

BIST

Use this feature to enable or disable the built-in self test on reset The options are **Disabled** and **Enabled**.

AP Threads Idle Manner

Select enabled to activate AP Threads Idle Manner. The options are **HALT Loop**, **MWAIT Loop**, and **RUN Loop**.

MachineCheck

Select enabled to activate Machine Check. The options are Disabled and **Enabled**.

MonitorMwait

Select Enabled to enable the Monitor/Mwait instructions. The Monitor instructions monitors a region of memory for writes, and MWait instructions instruct the CPU to stop until the monitored region begins to write. The options are Disabled and **Enabled**.

►PCH-FW Configuration

The following firmware information will display:

- ME Firmware Version
- ME Firmware Mode
- ME Firmware SKU
- ME Firmware Status 1
- ME Firmware Status 2

Me FW Image Re-Flash

Use this feature to enable or disable the ME firmware image reflash function. The options are **Disabled** and Enabled.

►Chipset Configuration

Warning: Setting the wrong values in the following sections may cause the system to malfunction.

►System Agent (SA) Configuration

System Agent (SA) Configuration

- VT-d

►Memory Configuration

- Memory Configuration
- Memory RC Version
- Memory Frequency
- Memory Timings (tCL-tRCD-TRP-tRAS)

Maximum Memory Frequency

Use this feature to set the maximum memory frequency for onboard memory modules. The options are **Auto**, 1067, 1200, 1333, 1400, 1600, 1800, 1867, 2000, 2133, 2200, 2400, 2600, 2667, 2800, 2933, and 3000.

Max TOLUD

This feature sets the maximum TOLUD value, which specifies the "Top of Low Usable DRAM" memory space to be used by internal graphics devices, GTT Stolen Memory, and TSEG, respectively, if these devices are enabled. The options are **Dynamic**, 1 GB, 1.25 GB, 1.5 GB, 1.75 GB, 2 GB, 2.25 GB, and 2.5 GB.

Memory Scrambler

Use this feature to enable or disable memory scrambler support. The options are Disabled and **Enabled**.

Force ColdReset

Use this feature to enable or disable a cold boot during a MRC execution. The options are Enabled and **Disabled**.

Force Single Rank

Select enabled to use only Rank 0 in each DIMM. The options are **Disabled** and Enabled.

Memory Remap

Use this feature to enable or disable memory remap above 4GB. The options are **Enabled** and Disabled.

MRC Fast Boot

Use this feature to enable or disable fast path through the memory reference code. The options are Disabled and **Enabled**.

► Graphics Configuration

Graphics Configuration

- IGFX VBIOS Version
- IGFX GOP Version

Skip Scanning of External Gfx Card

If set to enabled, the system will not scan for an external graphics card on PEG and PCIe slots. The options are **Disabled** and Enabled.

Primary Display

Use this feature to select the primary video display. The options are **Auto**, IGFX, PEG, and PCI.

Internal Graphics

Select Auto to keep an internal graphics device installed on an expansion slot supported by the CPU to be automatically enabled. The options are **Auto**, Disabled, and Enabled.

GTT Size

Use this feature to set the memory size to be used by the graphics translation table (GTT). The options are 2MB, 4MB, and **8MB**.

Aperture Size

Use this feature to set the Aperture size, which is the size of system memory reserved by the BIOS for graphics device use. The options are 128MB, **256MB**, 512MB, 1024MB, and 2048MB.

DVMT Pre-Allocated

Dynamic Video Memory Technology (DVMT) allows dynamic allocation of system memory to be used for video devices to ensure best use of available system memory based on the DVMT 5.0 platform. The options are 0M, 32M, 64M, 96M, 128M, 160M, 4M, 8M, 12M, 16M, 20M, 24M, 28M, 32M/F7, 36M, 40M, 44M, 48M, 52M, 56M, and **60M**.

DVMT Total Gfx Mem

Use this feature to set the total memory size to be used by internal graphics devices based on the DVMT 5.0 platform. The options are 128MB, **256MB**, and MAX.

PM Support

Enable this feature to activate Power Management BIOS support. The options are **Enabled** and Disabled.

PAVP Enable

Protected Audio Video Path (PAVP) decodes Intel integrated graphics encrypted video. The options are **Enabled** and Disabled.

Cdynmax Clamping Enable

Enable this feature to activate Cdynmax Clamping. The options are Enabled and **Disabled**.

Graphics Clock Frequency

Use this feature to set the internal graphics clock frequency. The options are 172.8 Mhz, 307.2 Mhz, 556.8 Mhz, 652.8 MHz and **Max CdClock freq based on Reference Clk**.

Skip Full CD Clock Init

Use this feature to enable skipping of the full CD initialization. If set to Disabled, the full CD clock will initialize. The options are Enabled and **Disabled**.

VT-d

Select Enabled to activate Intel Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to VMM through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing you with greater reliability, security and availability in networking and data-sharing. The options are Disabled and **Enabled**.

X2APIC Opt Out

Use this feature to enable or disable X2APIC_OPT_OUT bit. The options are **Enabled** and Disabled.

GNA Device

Use this feature to enable SA GNA device. The options are **Enabled** and Disabled.

►PCH-IO Configuration

- PCH-IO Configuration
- PCH SKU Name
- Stepping

►PCI Express Configuration

DMI Link ASPM Control

Use this feature to set the Active State Power Management (ASPM) state on the SA (System Agent) side of the DMI Link. The options are Disabled, L0s, L1, L0sL1, and **Auto**.

Peer Memory Write Enable

Use this feature to enable or disable peer memory write. The options are **Disabled** and Enabled.

►M.2-P PCI-E 3.0 X1

PCI Express Root Port 2

Use this feature to enable or disable this port. The options are Disabled and **Enabled**.

ASPM 1

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L0s, L1, L0sL1, and **Auto**.

L1 SubStates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and **L1.1 & L1.2**.

PCIe Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

► M.2-H PCI-E 3.0 X2**PCI Express Root Port 4**

Use this feature to enable or disable this port. The options are Disabled and **Enabled**.

ASPM 3

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L0s, L1, L0sL1, and **Auto**.

L1 SubStates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and **L1.1 & L1.2**.

PCIe Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

► CPU SLOT7 PCI-E 3.0 X2 (IN X8)**PCI Express Root Port 7**

Use this feature to enable or disable this port. The options are Disabled and **Enabled**.

ASPM 6

Use this feature to activate the Active State Power Management (ASPM) level for a PCIe device. Select Auto for the system BIOS to automatically set the ASPM level based on the system configuration. Select Disabled to disable ASPM support. The options are Disabled, L0s, L1, L0sL1, and **Auto**.

L1 SubStates

Use this feature to set the PCI Express L1 Substates. The options are Disabled, L1.1, and **L1.1 & L1.2**.

PCIe Speed

Use this feature to select the PCI Express port speed. The options are **Auto**, Gen1, Gen2, and Gen3.

PCIe PLL SSC

Use this feature to enable or disable PCIe PLL SSC. The options are **Enabled** and Disabled.

► Boot Feature

Quiet Boot

Use this feature to select the screen to display between POST messages or the OEM logo at bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are Disabled and **Enabled**.

Bootup NumLock State

This feature selects the Power-on state for the Num Lock key. The options are **Off** and On.

Wait For "F1" If Error

This feature forces the system to wait until the F1 key is pressed if an error occurs. The options are Disabled and **Enabled**.

Power Configuration

AC Loss Policy Depend On

Use this feature to set the power state after a power outage. Select Power Off for the system power to remain off after a power loss. Select Power On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay Off, Power on, and **Last State**.

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override for you to power off the system after pressing and holding the power button for four seconds or longer. Select Instant Off to instantly power off the system as soon as the you press the power button. The options are **Instant Off** and 4 Seconds Override.

Boot eDP/VGA Select

Use this feature to select eDP or VGA as the display output. The options are eDP and **VGA**.

Watch Dog Function

If this feature is enabled, the Watch Dog timer will reboot system when it is inactive for more than five minutes. The options are **Disabled** and Enabled.

► SATA and RST Configuration

SATA Controller(s)

This feature enables or disables the onboard SATA controller supported by the Intel PCH chip. The options are **Enabled** and Disabled.

SATA Mode Selection

Use this feature to select the SATA mode. The default is **AHCI**.

SATA0 - SATA2

Hot Plug

This feature designates the SATA port specified for hot plugging. Set this feature to Enabled for hot-plugging support, which allows you to replace a SATA disk drive without shutting down the system. The options are Enabled and **Disabled**.

Spin Up Device

When the value of an edge detect or the value of an image binary (pixel) of a device is from 0 to 1, select Enabled to allow the PCH to start a COMRESET initialization sequence on this device. The options are Enabled and **Disabled**.

SATA Device Type

Use this feature to specify if the SATA port should be connected to a Solid State drive or a Hard Disk Drive. The options are **Hard Disk Drive** and Solid State Drive.

► Trusted Computing

The motherboard supports TPM 2.0. The following Trusted Platform Module (TPM) information will display if a TPM 2.0 module is detected:

- Vendor Name
- Firmware Version

Security Device Support

If this feature and the TPM on the motherboard are both set to Enabled, onboard security devices will be enabled for TPM support to enhance data integrity and network security. Please reboot the system for a change on this setting to take effect. The options are Disable and **Enable**.

****If Security Device Support is set to Enabled, the following features are available for configuration:***

The following Platform Configuration Register information will be displayed:

Active PCR banks

Available PCR banks

SHA-1 PCR Bank

Use this feature to disable or enable the SHA-1 Platform Configuration Register (PCR) bank for the installed TPM device. The options are **Disabled** and **Enabled**.

SHA256 PCR Bank

Use this feature to disable or enable the SHA256 Platform Configuration Register (PCR) bank for the installed TPM device. The options are **Disabled** and **Enabled**.

Pending Operation

Use this feature to schedule a TPM-related operation to be performed by a security device for system data integrity. The options are **None** and **TPM Clear**.

Platform Hierarchy

Use this feature to disable or enable platform hierarchy for platform protection. The options are **Disabled** and **Enabled**.

Storage Hierarchy

Use this feature to disable or enable storage hierarchy for cryptographic protection. The options are **Disabled** and **Enabled**.

Endorsement Hierarchy

Use this feature to disable or enable endorsement hierarchy for privacy control. The options are **Disabled** and **Enabled**.

TPM2.0 UEFI Spec Version

Use this feature to select the Trusted Computing Group (TCG) specification version. Version TCG_1_2 is compatible with Windows 8 and 10. Version TCG_2 is compatible with Windows 10 or later. The options are TCG_1_2 and **TCG_2**.

Physical Presence Spec Version

Use this feature to select the Physical Presence Interface version. This interface uses the ACPI and allows the operating system and BIOS to work together to provide a platform for users to administer the TPM. The options are 1.2 and **1.3**.

TPM 2.0 InterfaceType

This feature displays the TPM interface type.

►ACPI Settings

ACPI Sleep State

Use this feature to select which sleep state mode the system will enter when the Suspend button is pressed. The options are Suspend Disabled and **S3 (Suspend to RAM)**.

►NCT6126D Super IO Configuration

Super IO Chip NCT6126D

►Serial Port 1 Configuration

Serial Port 1

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 1. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=3F8h; IRQ=4), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

►Serial Port 2 Configuration

Serial Port 2

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=2F8h; IRQ=3), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

► Serial Port 3 Configuration

Serial Port 3

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=3E8h; IRQ=7), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=220h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=228h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

► Serial Port 4 Configuration

Serial Port 4

Select Enabled to enable the specified onboard serial port. The options are Disabled and **Enabled**.

Serial Port Type

Use this feature to select the serial port type. The options are **RS-232**, RS-485, and RS-422.

Device Settings

This feature displays the base I/O port address and the Interrupt Request address of the serial port.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto to allow the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options are **Auto**, (IO=2E8h; IRQ=7), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=220h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=228h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

► Hardware Monitor

- System Health

Fan Speed Control Mode

Use this feature to select the fan speed control mode. The options are **Standard** and Full Speed.

- CPU Temperature
- Front T-sensor
- Fan1 Speed
- FanA Speed
- PVDDQ
- P12V
- P5V
- VCPU (PVCCIN)
- 3.3VCC
- VSB
- VBAT

► Serial Port Console Redirection

COM1 Console Redirection

Select Enabled to enable console redirection support for the specified serial port. The options are Enabled and **Disabled**.

****If COM1 Console Redirection is set to Enabled, the following features are available for configuration:***

► **COM1 Console Redirection Settings**

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

COM1 Terminal Type

This feature allows you to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM1 Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM1 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

COM1 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM1 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

COM1 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM1 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM1 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM1 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM1 Putty KeyPad

This feature selects the settings for Function Keys and KeyPad used for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SC0, ESCN, and VT400.

COM2 Console Redirection

Select Enabled to use the SOL port for Console Redirection. The options are **Disabled** and Enabled.

****If COM2 Console Redirection is set to Enabled, the following features are available for configuration:***

►COM2 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

COM2 Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM2 Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM2 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

COM2 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM2 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and **2**.

COM2 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM2 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM2 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM2 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM2 Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

► COM3 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

COM3 Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM3 Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM3 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and 8.

COM3 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark and Space.

COM3 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are 1 and 2.

COM3 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM3 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM3 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM3 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM3 Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

►COM4 Console Redirection Settings

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer. The options are Enabled and **Disabled**.

COM4 Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, **VT100+**, VT-UTF8, and ANSI.

COM4 Bits per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600, and **115200** (bits per second).

COM4 Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 and **8**.

COM4 Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark, and Space.

COM4 Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and **2**.

COM4 Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

COM4 VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are Disabled and **Enabled**.

COM4 Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

COM4 Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

COM4 Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

The submenu allows you to configure Console Redirection settings to support Out-of-Band Serial Port management.

EMS (Emergency Management Services) Console Redirection

Select Enabled to use the COM port for EMS Console Redirection. The options are Enabled and **Disabled**.

****If EMS is set to Enabled, the following features are available for configuration:***

► EMS Console Redirection Settings

This feature allows you to specify how the host computer will exchange data with the client computer, which is the remote computer.

Out-of-Band Mgmt Port

The feature selects a serial port in a client server to be used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1**, COM2, COM3, and COM4.

Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII character set. Select VT100+ to add color and function key support. Select ANSI to use the extended ASCII character set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are VT100, VT100+, **VT-UTF8**, and ANSI.

Bits per second

This feature sets the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600, and **115200** (bits per second).

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None**, Hardware RTS/CTS, and Software Xon/Xoff.

Data Bits

Parity

Stop Bits

►USB Configuration

XHCI Hand-Off

This is a work-around solution for operating systems that do not support Extensible Host Controller Interface (XHCI) hand-off. The XHCI ownership change should be claimed by the XHCI driver. The settings are **Enabled** and Disabled.

USB Mass Storage Driver Support

Select Enabled for USB mass storage device support. The options are Disabled and **Enabled**.

► Network Stack Configuration

Network Stack

Select Enabled to enable Preboot Execution Environment (PXE) or Unified Extensible Firmware Interface (UEFI) for network stack support. The options are Disabled and **Enabled**.

IPv4 PXE Support

Select Enabled to enable IPv4 PXE boot support. The options are Disabled and **Enabled**.

IPv4 HTTP Support

Select Enabled to enable IPv4 HTTP boot support. The options are **Disabled** and Enabled.

IPv6 PXE Support

Select Enabled to enable IPv6 PXE boot support. The options are Disabled and **Enabled**.

IPv6 HTTP Support

Select Enabled to enable IPv6 HTTP boot support. The options are **Disabled** and Enabled.

PXE Boot Wait Time

Use this option to specify the wait time to press the ESC key to abort the PXE boot. Press "+" or "-" on your keyboard to change the value. The default setting is **0**.

Media Detect Count

Use this option to specify the number of times media is checked. Press "+" or "-" on your keyboard to change the value. The default setting is **1**.

► Intel(R) I210 Gigabit Network Configuration - 3C:EC:EF:31:2F:67

► NIC Configuration

Link Speed

Use this feature to specify the port speed used for the selected boot protocol. The options are **Auto Negotiated**, 10 Mbps Half, 10 Mbps Full, 100 Mbps Half, and 100 Mbps Full.

Wake On LAN

Select Enabled for wake on LAN support, which allows the system to wake up when an onboard LAN device receives an incoming signal. The options are Disabled and **Enabled**.

Blink LEDs

Use this feature to identify the physical network port by blinking the associated LED. Use the keyboard to select a value.

UEFI Driver

Adapter PBA

Device Name

Chip Type

PCI Device ID

PCI Address

Link Status

MAC Address

Virtual MAC Address

- ▶ **MAC:3CECEF312F67-IPv4 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv4 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv4 Network Configuration**
- ▶ **MAC:000000000000-IPv4 Network Configuration**

Configured

Use this feature to indicate whether the network address is configured successfully or not.
The options are **Disabled** and **Enabled**.

Save Changes and Exit

Select this feature to save the changes for the features above and exit.

- ▶ **MAC:3CECEF312F67-IPv6 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv6 Network Configuration**
- ▶ **MAC:FFFFFFFFFFFF-IPv6 Network Configuration**
- ▶ **MAC:000000000000-IPv6 Network Configuration**

▶ **Enter Configuration Menu**

Interface Name

Interface Type

MAC Address

Host addresses

Route Table

Gateway addresses

DNS addresses

Interface ID

Use this feature to set the 64-bit alternative interface ID for the device.

DAD Transmit Count

If this set feature is set to 0, the Duplication Address Detection is not performed. Set the value to a preferred selection.

Policy

Use this feature to set the policy to automatic or manual. The options are **automatic** and **manual**.

Save Changes and Exit

Select this feature to save the changes for the features above and exit.

►PCIe/PCI/PnP Configuration**Above 4GB MMIO BIOS assignment**

Use this feature to enable or disable above 4GB Memory Mapped IO BIOS assignment. This feature is automatically enabled when the Aperture size is set to 2048MB. The options are **Enabled** and **Disabled**.

NVMe Firmware Source

Use this feature to select the NVMe firmware source. The options are Vendor Defined Firmware and **AMI Native Support**.

Consistent Device Name Support

This feature controls the device naming for network devices and slots. The options are **Disabled** and **Enabled**.

PCIe/PCI/PnP Configuration**PCI / PCIX / PCIe Slot 1 OPROM**

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are **Disabled** and **EFI**.

PCI / PCIX / PCIe Slot 2 OPROM

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are **Disabled** and **EFI**.

PCI / PCIX / PCIe Slot 3 OPROM

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are **Disabled** and **EFI**.

Onboard LAN1 Option ROM

Use this feature to select which firmware type to be loaded for the add-on card in this slot. The options are Disabled and **EFI**.

► HTTP Boot Configuration

HTTP Boot Configuration

HTTP Boot Policy

Use this feature to select the boot policy. The options are Apply to all LANs, **Apply to each LAN**, and Boot Priority #1 instantly.

Priority of HTTP Boot:

Instance of Priority 1:

Use this feature to set the rank target port. The default value is **1**.

Select IPv4 or IPv6

Use this feature to select which LAN port to boot from. The options are **IPv4** and IPv6.

Boot Description

Use the feature to create a boot description. The description cannot be more than 75 characters.

Boot URI

Highlight the feature and press enter to create a boot URI.

► Driver Health

This feature provides the health status for the network drivers and controllers.

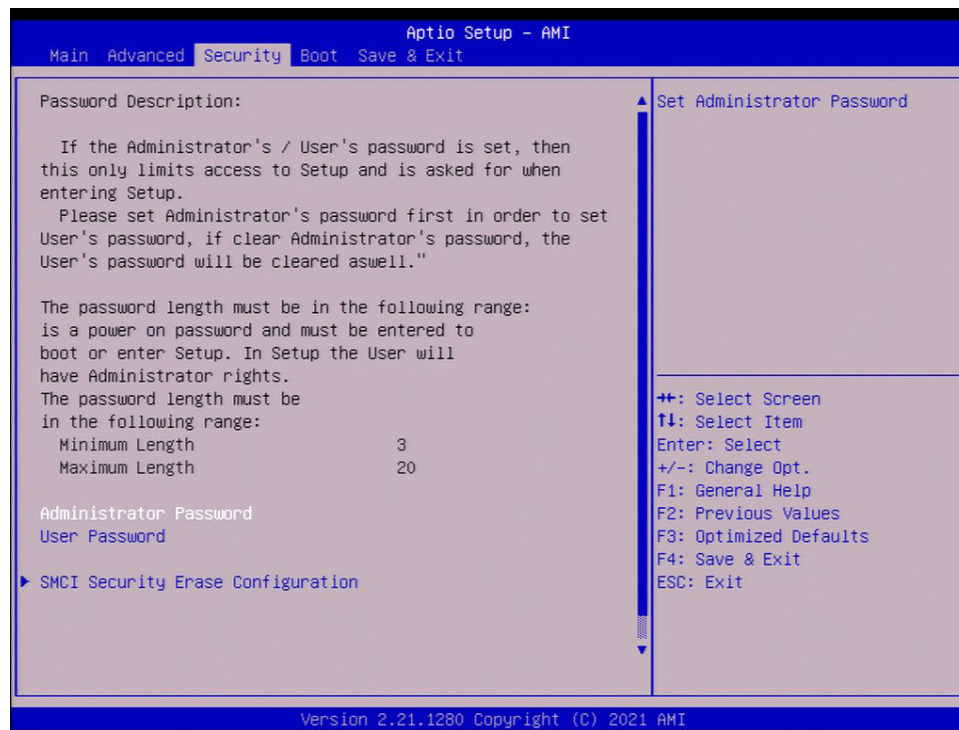
► Intel(R) PRO/1000 6.7.05 PCI-E

Controller 6F9AAE18 Child 0

Intel(R) I210 Gigabit Network Connection

4.4 Security

Use this menu to configure Security settings.



Administrator Password

Press Enter to create a new administrator password. The length of the password must be from three to 20 characters long.

User Password

Press Enter to create a new user password. The length of the password must be from three to 20 characters long.

► SMCI Security Erase Configuration

This submenu becomes configurable when a storage device has been detected. The options are Enabled and **Disabled**.

HDD Name

HDD Serial Number

Security Mode

Estimated Time

HDD UserPwd Status

Security Function

Use this feature to set Security Function. The options are **Disable**, Set Password, Security Erase - Password, and Security Erase - Without Password.

Password

Enter a numeric value to set the password.

HDD Security Configuration

Information is displayed when a storage device has been detected. A submenu also becomes available to set a password for the storage device.

Lockdown Mode

This feature is grayed out when the DCMS Key is not installed.

► Secure Boot

Secure Boot

Select Enable for secure boot support to ensure system security at bootup. The options are Disabled and **Enabled**.

Secure Boot Mode

This feature allows you to select the desired secure boot mode for the system. The options are **Standard** and Custom.

****If Secure Boot Mode is set to Custom, Key Management features are available for configuration.***

► Key Management

This submenu allows you to configure the following Key Management settings.

Factory Key Provision

Select Enabled to install the default Secure Boot keys set by the manufacturer. The options are **Disabled** and Enabled.

****If the feature above is set to Enabled, the next four features are available for configuration:***

► Restore Factory Keys

Force System to User Mode. Install factory default Secure Boot key databases.

► Reset to Setup Mode

This feature deletes all Secure Boot key databases from NVRAM.

► **Export Secure Boot variables**

This feature allows you to copy NVRAM content of Secure boot variables to files in a root folder on a file system device.

► **Enroll EFI Image**

This feature allows the image to run in Secure Boot Mode. Enroll SHA256 Hash Certificate of the image into the Authorized Signature Database.

Device Guard Ready

► **Remove 'UEFI CA' from DB**

This feature allows you to decide if all secure boot variables should be saved.

► **Restore DB defaults**

Select Yes to restore the DB defaults.

► **Platform Key (PK)**

Details

Select this feature to view the details of the Platform Key.

Export

Select Yes to export a PK from a file on an external media.

Update

Select Yes to load a factory default PK or No to load from a file on an external media.

Delete

Select Ok to remove the PK and then the system will reset to Setup/Audit Mode.

► **Key Exchange Keys (KEK)**

Details

Select this feature to view the details of the Key Exchange Key.

Export

Select Yes to export a KEK from a file on an external media.

Update

Select Yes to load a factory default KEK or No to load from a file on an external media.

Append

Select Yes to add the KEK from the manufacturer's defaults list to the existing KEK. Select No to load the KEK from a file. The options are Yes and No.

Delete

Select Ok to remove the KEK and then the system will reset to Setup/Audit Mode.

► Authorized Signatures

Details

Select this feature to view the details of the db.

Export

Select Yes to export a db from a file on an external media.

Update

Select Yes to load a factory default db or No to load from a file on an external media.

Append

Select Yes to add the db from the manufacturer's defaults list to the existing db. Select No to load the db from a file. The options are Yes and No.

Delete

Select Ok to remove the db and then the system will reset to Setup/Audit Mode.

► Forbidden Signatures

Details

Select this feature to view the details of the dbx.

Export

Select Yes to export a dbx from a file on an external media.

Update

Select Yes to load a factory default dbx or No to load from a file on an external media.

Append

Select Yes to add the dbx from the manufacturer's defaults list to the existing dbx. Select No to load the dbx from a file. The options are Yes and No.

► Authorized TimeStamps

Details

Select this feature to view the details of the dbt.

Export

Select Yes to export a dbt from a file on an external media.

Update

Select Yes to load a factory default dbt or No to load from a file on an external media.

Append

Select Yes to add the dbt from the manufacturer's defaults list to the existing dbt. Select No to load the dbt from a file. The options are Yes and No.

► OsRecovery Signature**Details**

Select this feature to view the details of the dbr.

Export

Select Yes to export a dbr from a file on an external media.

Update

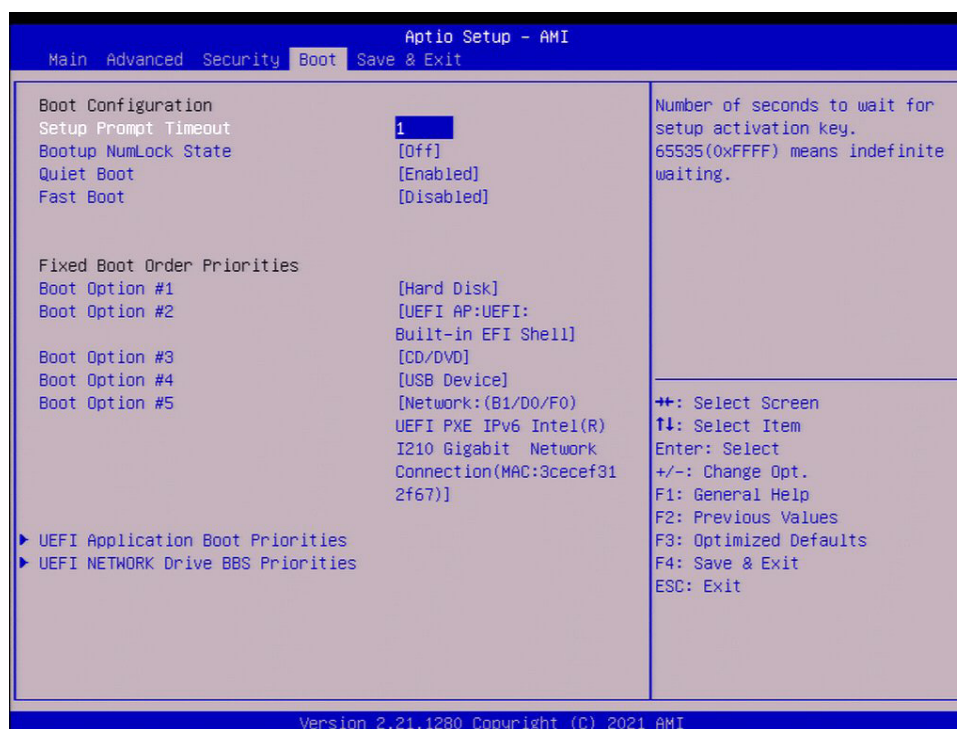
Select Yes to load a factory default dbr or No to load from a file on an external media.

Append

Select Yes to add the dbr from the manufacturer's defaults list to the existing dbr. Select No to load the dbr from a file. The options are Yes and No.

4.5 Boot

Use this menu to configure Boot settings:



Setup Prompt Timeout

Use this feature to select the number of seconds to wait for the setup activation key. The default is 1.

Fixed Boot Order Priorities

This option prioritizes the order of bootable devices that the system can boot from. Press <Enter> on each entry from top to bottom to select devices.

- Boot Option #1
- Boot Option #2
- Boot Option #3
- Boot Option #4
- Boot Option #5
- Boot Option #6
- Boot Option #7

- Boot Option #8
- Boot Option #9

►Add New Boot Option

This feature allows you to add a new boot option to the boot priority features for your system.

Add Boot Option

Use this feature to specify the name for the new boot option.

►Delete Boot Option

This feature allows you to select a boot device to delete from the boot priority list.

Delete Boot Option

Use this feature to remove an EFI boot option from the boot priority list.

►UEFI Hard Disk Drive BBS Priorities

This feature allows you to specify which UEFI devices are bootable.

- Boot Option #1

►UEFI Application Boot Priorities

This feature allows you to specify which UEFI devices are bootable.

- Boot Option #1

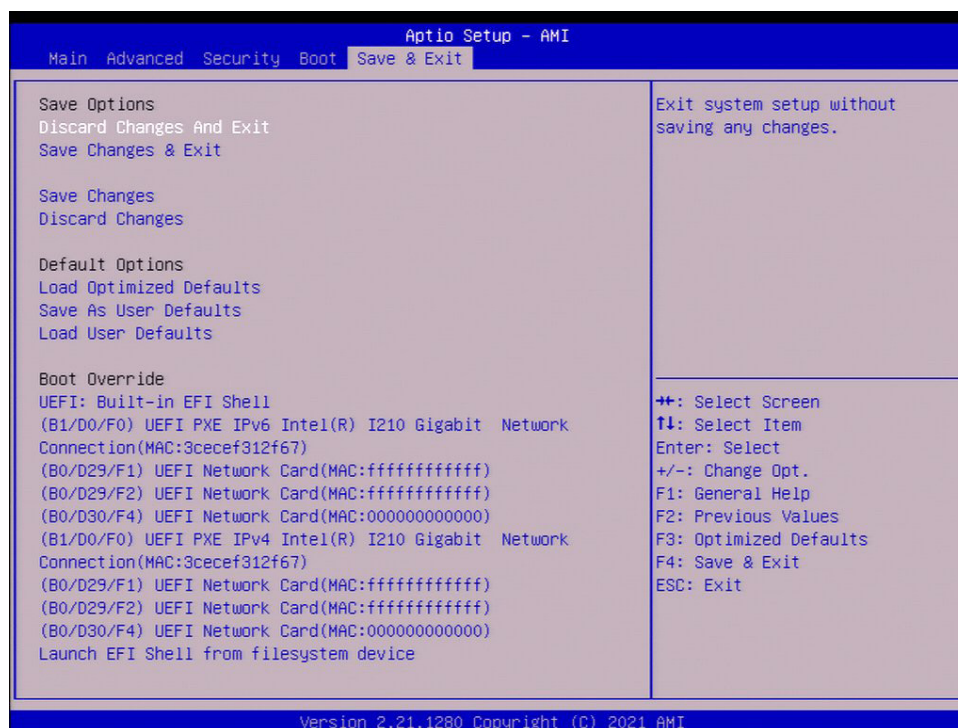
►UEFI USB Key Drive BBS Priorities

This feature sets the system boot order of detected devices.

- Boot Option #1 - Boot Option #8

4.6 Save & Exit

Use this menu to save settings and exit the BIOS.



Save Options

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Save Changes and Reset

When you have completed the system configuration changes, select this option to save all changes made and reset the system.

Save Changes

When you have completed the system configuration changes, select this option to save all changes made. This will not reboot the system.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS Utility Program.

Default Options

Load Optimized Defaults

To set this feature, select Restore Defaults from the Exit menu and press <Enter>. These are factory settings designed for maximum system performance but not for maximum stability.

Save as User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables you to save any changes to the BIOS setup for future use.

Load User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

Boot Override

This feature allows you to override the Boot Option Priorities sequence in the Boot menu, and immediately boot the system with another specified device. This is a one-time override.

UEFI: Built-in EFI Shell

(B1/D0/F0) UEFI PXE IPv6 Intel(R) I210 Gigabit Network Connection(MAC:3cecef312f67)

(B0/D29/F1) UEFI Network Card(MAC:fffffffffff)

(B0/D29/F2) UEFI Network Card(MAC:fffffffffff)

(B1/D30/F4) UEFI Network Card(MAC:000000000000)

(B1/D0/F0) UEFI PXE IPv4 Intel(R) I210 Gigabit Network Connection(MAC:3cecef312f67)

(B0/D29/F1) UEFI Network Card(MAC:fffffffffff)

(B0/D29/F2) UEFI Network Card(MAC:fffffffffff)

(B0/D30/F4) UEFI Network Card(MAC:000000000000)

Launch EFI Shell from filesystem device

Appendix A

BIOS Codes

A.1 BIOS Error POST (Beep) Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors are those which will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The table below lists some common errors and their corresponding beep codes encountered by users.

BIOS Beep (POST) Codes		
Beep Code	Error Message	Description
1 beep	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 long, 2 short	Display memory read/write error	Video adapter missing or with faulty memory
1 long continuous	System OH	System overheat condition

A.2 Additional BIOS POST Codes

The AMI BIOS supplies additional checkpoint codes, which are documented online at <http://www.supernmicro.com/support/manuals/> ("AMI BIOS POST Codes User's Guide").

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h.

For information on AMI updates, please refer to <http://www.ami.com/products/>.

Appendix B

Software Installation

B.1 Installing Software Programs

The Supermicro website that contains drivers and utilities for your system is at <https://www.supermicro.com/wdl/driver/>. Some of these must be installed, such as the chipset driver.

After accessing the website, go into the CDR_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to create a DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

After creating a CD/DVD with the ISO files, insert the disk into the CD/DVD drive on your system and the display shown in Figure B-1 should appear.

Another option is to go to the Supermicro website at <http://www.supermicro.com/products/>. Find the product page for your motherboard here, where you may download individual drivers and utilities to your hard drive or a USB flash drive and install from there.

 **Note:** To install the Windows OS, please refer to the instructions posted on our website at <http://www.supermicro.com/support/manuals/>.

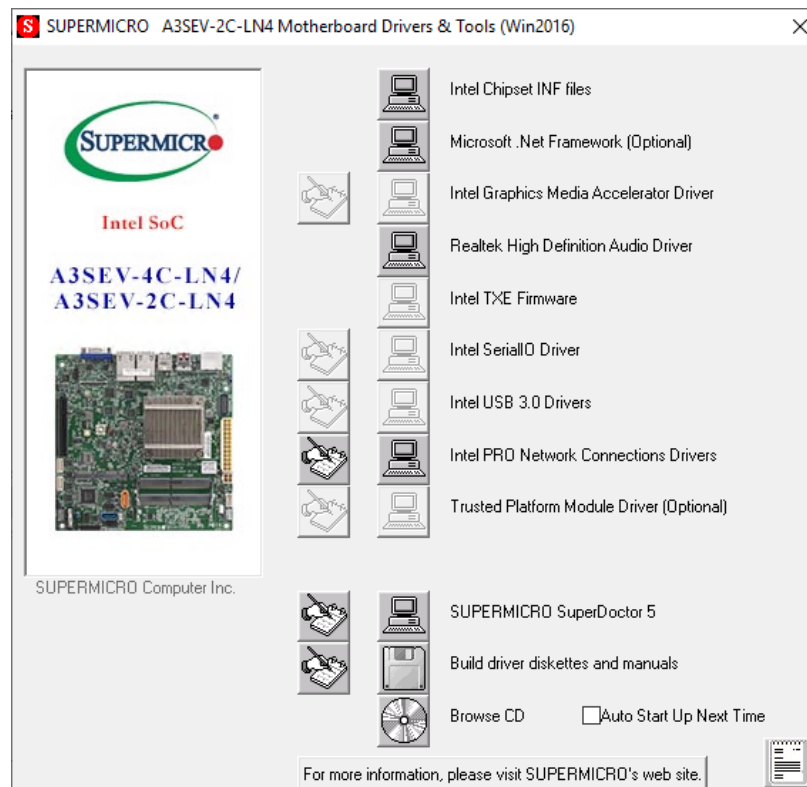


Figure B-1. Driver/Tool Installation Display Screen

Click the icons showing a hand writing on the paper to view the readme files for each item. Click a computer icon to the right of an item to install an item (from top to bottom) one at a time. After installing each item, you must reboot the system before proceeding with the next item on the list. The bottom icon with a CD on it allows you to view the entire contents of the CD.

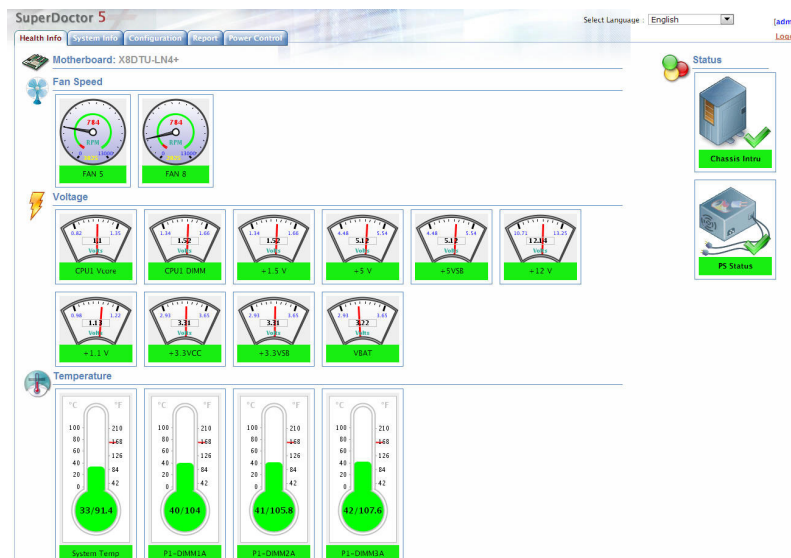
When making a storage driver disk by booting into a driver CD, please set the SATA Configuration to "Compatible Mode" and configure SATA as IDE in the BIOS Setup. After making the driver disk, be sure to change the SATA settings back to your original settings.

B.2 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a hardware monitoring program that functions in a command-line or web-based interface in Windows and Linux operating systems. The program monitors system health information such as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SD5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

Figure B-2. SuperDoctor 5 Interface Display Screen (Health Information)



Note: The SuperDoctor 5 program and user's manual can be downloaded from the Supermicro website at http://www.supermicro.com/products/nfo/sms_sd5.cfm.

Appendix C

Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this section in its entirety before installing or configuring components.

These warnings may also be found on our website at http://www.supermicro.com/about/policies/safety_information.cfm.

Battery Handling



Warning! There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推荐的功能相当的電池更換原有電池。請按制造商的說明處理廢舊電池。

警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת. סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسبدال البطارية بطريقة غير صحيحة فاعلil

اسبدال البطارية

فقط بنفس النوع أو ما يعادلها مما أوصت به الشركة المصنعة

جخلص من البطاريات المسحمة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Product Disposal



Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Appendix D

UEFI BIOS Recovery

Warning: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you need to update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

D.1 Overview

The Unified Extensible Firmware Interface (UEFI) provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism that will allow the UEFI OS loader stored in an add-on card to boot the system. The UEFI offers clean, hands-off management to a computer during system boot.

D.2 Recovering the UEFI BIOS Image

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The boot block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a new BIOS image if the original main BIOS image is corrupted. When the system power is first turned on, the boot block codes execute first. Once this process is completed, the main BIOS code will continue with system initialization and the remaining Power-On Self-Test (POST) routines.

 **Note 1:** Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS boot crashes.

 **Note 2:** When the BIOS boot block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. (For a RMA request, please see section 3.5 for more information). Also, you may use the Supermicro Update Manager (SUM) Out-of-Band (OOB) (https://www.supermicro.com.tw/products/nfo/SMS_SUM.cfm) to reflash the BIOS.

D.3 Recovering the BIOS Block with a USB Device

This feature allows the user to recover a BIOS image using a USB-attached device without additional utilities used. A USB flash or media drive can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by UEFI is FAT (including FAT12, FAT16, and FAT32) which is installed on a bootable or non-bootable USB-attached device. However, the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large due to the huge volumes of folders and files stored in the device.

To perform UEFI BIOS recovery using a USB-attached device, follow the instructions below.

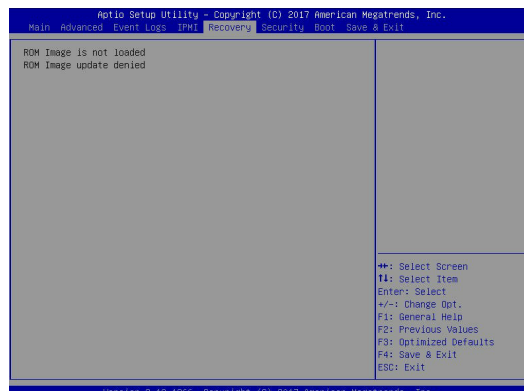
1. Using a different machine, copy the "Super.ROM" binary image file into the disc Root "\\" directory of a USB device or a writable CD/DVD.

 **Note:** If you cannot locate the "Super.ROM" file in your driver disk, visit our website at www.supermicro.com to download the BIOS image into a USB flash device and rename it "Super.ROM" for BIOS recovery use.

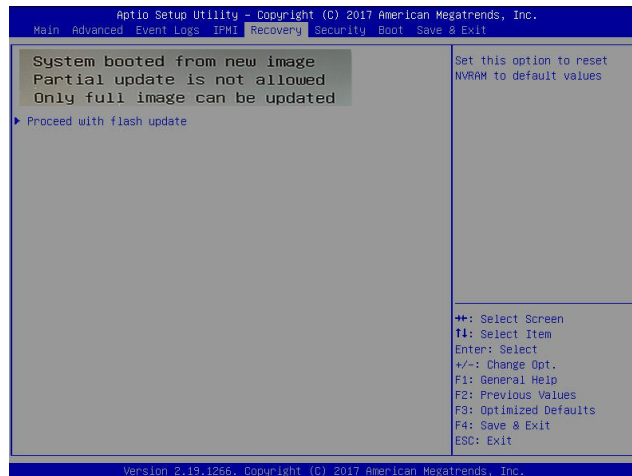
2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and power on the system



 **Note:** On the other hand, if the following screen displays, please load the "Super.ROM" file to the root folder and connect this folder to the system. (You can do so by inserting a USB device that contains the new "Super.ROM" image to your machine for BIOS recovery.)



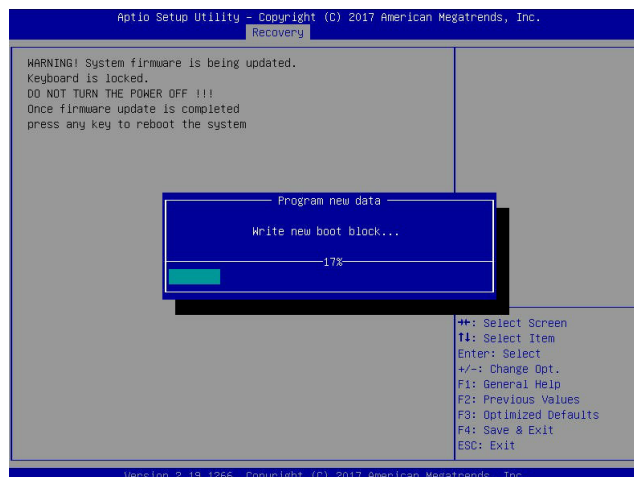
3. After locating the new BIOS binary image, the system will enter the BIOS Recovery menu as shown below.



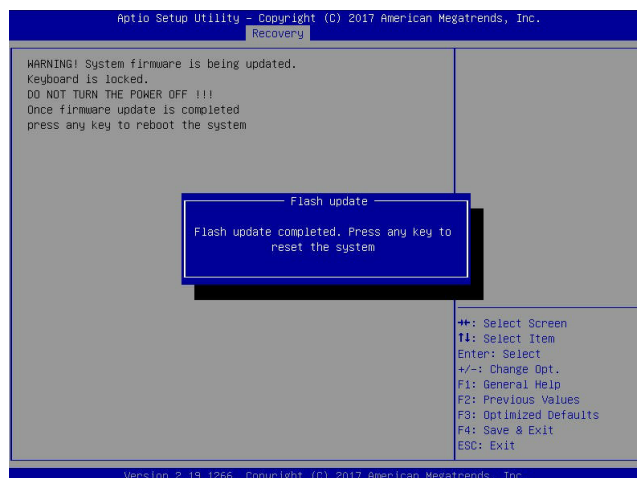
Note: At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

4. When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

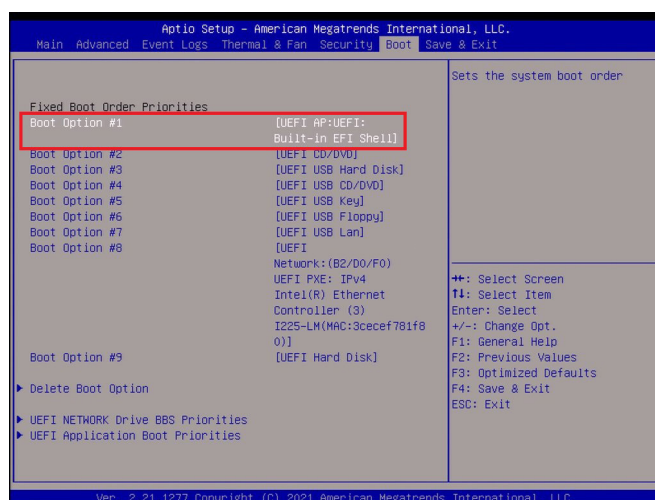
Note: Do not interrupt the BIOS flashing process until it has completed.



5. After the BIOS recovery process is completed, press any key to reboot the system.



6. Using a different system, extract the BIOS package into a USB flash drive.
7. Press <Del> continuously during system boot to enter the BIOS setup utility. From the top of the tool bar, click on Boot and press <Enter> to enter the submenu. From the submenu list, select Boot Option #1 as shown below. Then, boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press <F4> to save the settings and exit the BIOS setup utility.



8. When the UEFI Shell prompt appears, type `fs#` to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 7. Enter `flash.nsh BIOSname.###` at the prompt to start the BIOS update process.

```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):HD(0)B:BLK1:
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901072,0x800,0x1
CR3592)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press F8 in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd AFUDOS
FS0:\AFUDOS> cd SNJPME2_03162017
FS0:\AFUDOS\SNJPME2_03162017> flash.nsh X110PU7.314

```



Note: Do not interrupt this process until the BIOS flashing is complete.

```

Done.
[ Access Cmos Port Ex ]
<Read>
Index 0x51: 0x10

Done.
*****
* Program BIOS and ME (including FDT) regions...
*****
| AMT Firmware Update Utility v5.09.01.1317 |
| Copyright (C)2017 American Megatrends Inc. All Rights Reserved. |
|-----|
CPUID = 50652

Reading flash ..... done
- ME Data Size checking - ok
- FFS checksums ..... ok
- Check RomLayout ..... OK
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
Erasing Main Block ..... 0x00132000 (0%)

```

9. The screen above indicates that the BIOS update process is completed. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug the AC power cable in the power supply again to power on the system.

```

Verifying NDB Block ..... done
- Update success for FDR
- Update success for IE
- Successful Update Recovery Loader to OPRx!!
- Successful Update MFSB!!
- Successful Update FPR!!
- Successful Update MFS, IVB1 and IVB2!!
- Successful Update FLOG and UTDK!!
- ME Entire Image update success !!
WARNING : System must power-off to have the changes take effect!
Moving FS0:\AFUDOS\SNJPME2_03162017\fdtx64.efi -> FS0:\AFUDOS\SNJPME2_03162017\
dt.smc
- [ok]
Moving FS0:\AFUDOS\SNJPME2_03162017\afuef1x64.efi -> FS0:\AFUDOS\SNJPME2_0316201
7\afuef1.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*****
Deleting "afuef1.smc"
Delete successful.
FS0:\>

```

10. Press `<Del>` continuously to enter the BIOS setup utility.
11. Press `<F3>` to load the default settings.
12. After loading the default settings, press `<F4>` to save the settings and exit the BIOS setup utility.