

NEXCOM International Co., Ltd.

Network and Communication Solutions

Network Security Appliance

NSA 3130

User Manual

Contents

PREFACE	IV	CHAPTER 2: JUMPERS AND CONNECTORS.....	6
COPYRIGHT	IV	BEFORE YOU BEGIN	6
DISCLAIMER	IV	PRECAUTIONS	6
ACKNOWLEDGEMENTS	IV	JUMPER SETTINGS	7
REGULATORY COMPLIANCE STATEMENTS	IV	LOCATIONS OF THE JUMPERS AND	8
DECLARATION OF CONFORMITY	IV	CONNECTORS	8
ROHS COMPLIANCE	V	JUMPERS	9
WARRANTY AND RMA	VI	<i>RTC Clear (JP7)</i>	9
WARNINGS	VII	<i>AT/ATX Mode Selector (JP4)</i>	9
CAUTIONS	VII	<i>Console Type Selector (JP6)</i>	9
SAFETY INFORMATION	VII	<i>ME Force Update Pin Header (JP5)</i>	9
INSTALLATION RECOMMENDATIONS	VII	CONNECTOR PIN DEFINITIONS	10
SAFETY PRECAUTIONS	VIII	<i>External I/O Interface</i>	10
TECHNICAL SUPPORT AND ASSISTANCE	IX	<i>RJ45 Type Console Port (LAN1) (RS232 Only)</i>	11
CONVENTIONS USED IN THIS MANUAL	IX	<i>GPI12 Software Button (SW1)</i>	12
GLOBAL SERVICE CONTACT INFORMATION	X	<i>Internal Connector</i>	13
PACKAGE CONTENTS	XII	BLOCK DIAGRAM	20
ORDERING INFORMATION	XIII	CHAPTER 3: SYSTEM SETUP	21
CHAPTER 1: PRODUCT INTRODUCTION	1	REMOVING THE CHASSIS COVER	21
NSA 3130	1	INSTALLING THE CPU	21
<i>Overview</i>	1	INSTALLING A DIMM	27
HARDWARE SPECIFICATIONS	2	INSTALLING A SATA HARD DRIVE	29
GETTING TO KNOW THE NSA 3130	4	INSTALLING A SATA DOM	33
FRONT PANEL	4	INSTALLING A COMPACTFLASH CARD	35
REAR PANEL	5	INSTALLING A CFAST CARD	37
		INSTALLING A PCI EXPRESS CARD	38
		RACKMOUNT BRACKET KIT (OPTIONAL)	41

CHAPTER 4: BIOS SETUP	43
ABOUT BIOS SETUP	43
WHEN TO CONFIGURE THE BIOS	43
DEFAULT CONFIGURATION	44
ENTERING SETUP	44
LEGENDS	44
BIOS SETUP UTILITY	46
<i>Main</i>	46
<i>Advanced</i>	47
<i>Boot</i>	61
<i>Chipset</i>	63
<i>Security</i>	70
<i>Save & Exit</i>	72
APPENDIX A: WATCHDOG TIMER	75
APPENDIX B: GPI/O PROGRAMMING GUIDE	77
APPENDIX C: BYPASS SPECIFICATIONS	80
APPENDIX D: POWER CONSUMPTION	82



Preface

Copyright

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

Disclaimer

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

Acknowledgements

NSA 3130 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance



NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with

European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2002/95/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force in to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix “(LF)” will be added to the compliant product name.

All new product models launched after January 2006 will be RoHS compliant. They will use the usual NEXCOM naming convention.



Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

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

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

Repair Service Charges for Out-of-Warranty Products

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

System Level

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

Board Level

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

Warnings

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

Cautions

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

Safety Information

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

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

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

Installation Recommendations

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

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

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

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



Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. Do not leave this equipment in either an unconditioned environment or in a above 40°C storage temperature as this may damage the equipment.
8. The openings on the enclosure are for air convection to protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
10. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped and damaged.
 - f. The equipment has obvious signs of breakage.
16. Do not place heavy objects on the equipment.
17. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
18. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**
19. The computer is provided with CD drives that comply with the appropriate safety standards including IEC 60825.

Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.
2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
 - Product name and serial number
 - Detailed information of the peripheral devices
 - Detailed information of the installed software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.
2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.
3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual



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



Caution: Information to avoid damaging components or losing data.



Note: Provides additional information to complete a task easily.

Global Service Contact Information

Headquarters

NEXCOM International Co., Ltd.

15F, No. 920, Chung-Cheng Rd.,
ZhongHe District, New Taipei City, 23586,
Taiwan, R.O.C.

Tel: +886-2-8226-7786

Fax: +886-2-8226-7782

www.nexcom.com

America

USA

NEXCOM USA

2883 Bayview Drive,
Fremont CA 94538, USA

Tel: +1-510-656-2248

Fax: +1-510-656-2158

Email: sales@nexcom.com

www.nexcom.com

Asia

Taiwan

Central Taiwan Office

16F, No.250, Sec. 2, Chongde Rd.,
Beitun Dist., Taichung City 406, R.O.C.

Tel: +886-4-2249-1179

Fax: +886-4-2249-1172

Email: sales@nexcom.com.tw

www.nexcom.com.tw

Japan

NEXCOM Japan

9F, Tamachi Hara Bldg., 4-11-5, Shiba Minato-ku,
Tokyo, 108-0014, Japan

Tel: +81-3-5419-7830

Fax: +81-3-5419-7832

Email: sales@nexcom-jp.com

www.nexcom-jp.com

China

NEXCOM China

1F & 2F, Block A, No. 16 Yonyou Software Park,
No. 68 Beiqing Road, Haidian District,
Beijing, 100094, China

Tel: +86-010-5704-2680

Fax: +86-010-5704-2681

Email: sales@nexcom.cn

www.nexcom.cn

Shanghai Office

Room 603/604, Huiyinmingzun Plaza Bldg., 1,
No.609, Yunlin East Rd.,
Shanghai, 200062, China

Tel: +86-21-5278-5868

Fax: +86-21-3251-6358

Email: sales@nexcom.cn

www.nexcom.cn

Shenzhen Office

Room1707, North Block, Pines Bldg.,
No.7 Tairan Rd., Futian Area,
Shenzhen, 518040, China
Tel: +86-755-8332-7203
Fax: +86-755-8332-7213
Email: sales@nexcom.cn
www.nexcom.cn

Wuhan Office

1-C1804/ 1805, Mingze Liwan,
No. 519 South Luoshi Rd.,
Hongshan District,
Wuhan, 430070, China
Tel: +86-27-8722-7400
Fax: +86-27-8722-7400
Email: sales@nexcom.cn
www.nexcom.cn

Chengdu Office

9F, Shuxiangxie, Xuefu Garden,
No.12 Section 1, South Yihuan Rd.,
Chengdu, 610061, China
Tel: +86-28-8523-0186
Fax: +86-28-8523-0186
Email: sales@nexcom.cn
www.nexcom.cn

Europe

Italy

NEXCOM ITALIA S.r.l

Via Gaudenzio Ferrari 29,
21047 Saronno (VA), Italia
Tel: +39 02 9628 0333
Fax: +39 02 9286 9215
Email: nexcomitalia@nexcom.eu
www.nexcomitalia.it

United Kingdom

NEXCOM EUROPE

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

Package Contents

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

Item	P/N	Name	Description	Qty
1	19S00313000X1	NSA 3130 ASSY		1
2	50311F0100X00	(H)Round head screw w/spring+flat washer long FEI:P3x6L	P3x6 iso/SW6x0.5 NI	1
3	50311F0102X00	(H)Round head screw long FEI:P6#32Tx 1/4/SW7*0.8	w/spring+flat washer P6#32Tx 1/4/SW7x0.8 NI	6
4	5043330480X00	HPAR1 CFast card bracket VER:A CHYUAN-JYH	54.6x48x6mm SPCC T=1.0mm NI	1
5	5044440031X00	Rubber foot kang YANG:RF20-5-4P	19.8x18x5.0mm	4
6	5060900075X00	NSA1086N7 ear sets CHYUAN-JYH:L102007-3	79.5x43.5x28mm AL PANTONE 295U	1
7	6012200052X00	PE zipper bag #8	170x240mm,W/China RoHS SYMBOL	1
8	6012200053X00	PE zipper bag #3	100x70mm,W/China RoHS SYMBOL	1
9	6014401067X00	(H)NSA 3110-C8-RL membrane VER:A FERLO	424x42x0.582mm	1
10	60177A0280X00	(N)NSA 3130 Quick Reference Guide VER:1.0	KRAMER	1
11	6023309081X00	Cable EDI:232091081804-RS	COM port. DB9 female to RJ45 8P8CL:1800mm	1
12	60233ATA86X00	SATA cable CP:NEX-111223-03B	SATA 7P 90D TO 180D L=130mm	1
13	6029900037X00	DOW corning 340 Silicone Heat Sink Compound(3g)		1
14	602DCD0529X00	NSA 3130 CD DRIVER VER:1.0	JCL	1

Ordering Information

The following provides ordering information for the Panel PC series.

- **Barebone**

NSA 3130 (P/N: TBD)

- Support 2nd generation Intel® Core™ processor family,
2 DDR3 memory slots, 8 PCIe GbE LAN ports, CompactFlask socket,
CFast socket, USB ports, VGA port, one PCIe x8 expansion slot,
w/o LCM

- **Option**

NSA 3130 LCM & MEMBRANE (P/N: TBD)

Chapter 1: Product Introduction

NSA 3130

Overview



Front



Rear

Key Features

- 1U Rackmount Network Platform
- 2nd Generation Intel® Core™ Processor Family
- Support DDR3 1066/1333 Memory, up to 8GB
- 8 xGbE LAN Ports
- Support One PCIe x8 Expansion
- Internal One 3.5" HDD Bay/ Two 2.5" HDD Bay (Optional)

Hardware Specifications

Main Board

- NSB 3130
- Support 2nd generation Intel® Core™ processor family
Supported CPUs:
 - Intel® Xeon® CPU (E3-1225V2)
 - Intel® Xeon® CPU (E3-1275V2)
 - Core™ i7-3770 CPU
 - Core™ i5-3550S CPU
 - Intel® Xeon® CPU (E3-1225)
 - Intel® Xeon® CPU (E3-1275)
 - Pentium® Dual Core (G850)
 - Core™ i3-2120 CPU
- Intel® H61

Main Memory

- 2x 240-pin DDR3 1066/1333MHz DIMM sockets, up to 8GB ECC/ non-ECC SDRAM

LAN Features

- LAN Chip: Intel® 82583V
- Support 10/100/1000 link speed
- LAN Bypass: 4 pairs

Expansion

- 1x PCIe x 8 Slot

I/O Interface-Front

- Power status/ HDD status/ LAN status/ bypass status LED
- 2x USB 2.0 ports
- 1x RJ45 type console port
- 8x copper LAN ports

I/O Interface-Rear

- 1x expansion slot
- 2x USB 2.0 ports
- 1x VGA port

Devices

- 1x internal 3.5" HDD bay/ Two 2.5" HDD Bay (Optional)
- 1x SATA-DOM device space
- 1x CFast socket/ 1x CompactFlash Socket

Power Input

- 200W ATX power supply

Dimensions

- Chassis Dimension: 426mm x 365mm x 44mm
- Carton Dimension: 560mm x 570mm x 190mm

Certifications

- CE approval
- FCC Class A
- UL



Status Indicators

- Power LED
 - Lights green when the system's power is on
- HDD LED
 - Lights yellow when the HDD is being accessed
- Bypass LED
 - Lights yellow

Standard Power Supply

- Power type
 - Standard ATX power supply
- Input voltage
 - AC 100V - 240V
- Output voltage
 - DC +5V, -5V, +12V, -12V, +3.3V, +5VSB
- Maximum output power
 - Up to 200W

Environment

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

Vibration

- Sine wave vibration test (non-operating)
 - Frequency: 5 - 500 Hz
 - Acceleration: 2g

- Random vibration test (operating)
 - Frequency: 5 - 500 Hz
 - Acceleration: 0.3g
- Random vibration test (packing)
 - Frequency: 1 - 200 Hz
 - Acceleration: 1.15g

Shock

- Non-OP shock

Acoustic Noise

- ISO 11201:1995(E)/ISO 7779:1999/ Amd.1:2003(E)

Certificate

- CE
- FCC Class A

ESD

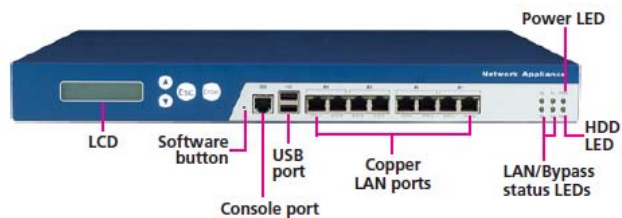
- 2/4KV contact discharge
- 2/4/8KV air discharge
- Criteria B

Safety

- UL
- LVD

Getting to Know the NSA 3130

Front Panel



Power LED

It indicates the power status of the system.

HDD LED

It indicates the status of the hard drive.

LAN/Bypass Status LEDs

They indicate the status of the LAN/Bypass.

Copper LAN Ports

They are used to connect LAN network devices.

USB Port

It is used to connect USB 2.0/1.1 devices.

Console Port

It is used to connect RJ45 type Console device.

Software Button

This is a GPIO software button.

LCD

2x16 characters LCD module, PIO interface.

Rear Panel



Power On/Off Switch

Press the switch to power on or power off the system.

Expansion Slot

It is used to install a PCI Express x8 slot.

VGA Port

It is used to connect an analog VGA monitor.

Chapter 2: Jumpers and Connectors

This chapter describes the jumpers and connectors on the motherboard. Note that information in this chapter applies to NSA 3130.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
 - A Philips screwdriver
 - A flat-tipped screwdriver
 - A set of jewelers Screwdrivers
 - A grounding strap
 - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic

components. Humid environment tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

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

Follow the guidelines below to avoid damage to your computer or yourself:

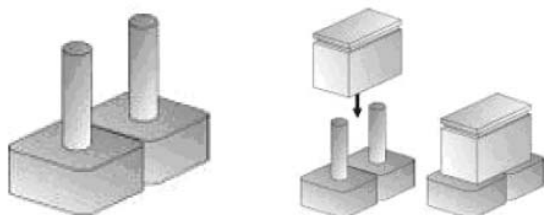
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

Jumper Settings

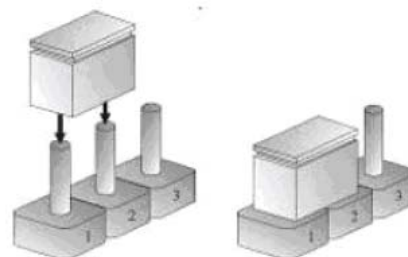
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is **short**. If you remove the jumper cap, or place the jumper cap on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

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

Two-Pin Jumpers: Open (Left) and Short (Right)



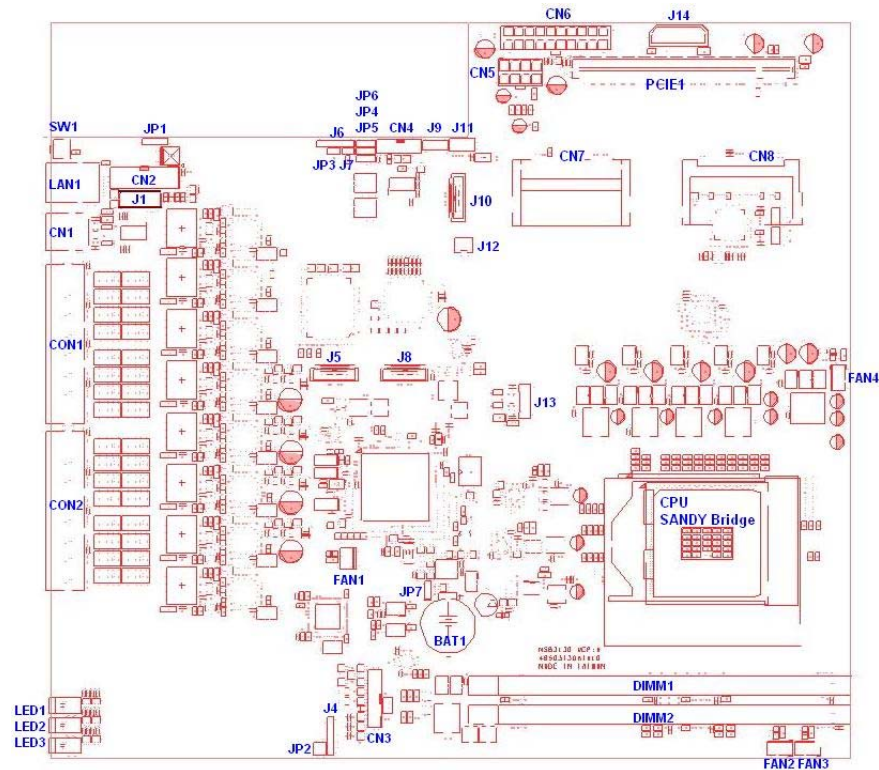
Three-Pin Jumpers: Pins 1 and 2 Are Short



Locations of the Jumpers and Connectors

NSB 3130

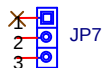
The figure on the right is the NSB 3130 main board which is the main board used in the NSA 3130 system. It shows the locations of the jumpers and connectors.



Jumpers

RTC Clear (JP7)

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



Pin Setting

1-2 On	Normal
2-3 On	CMOS Clear

1-2 ON Default

Pin Definition

1	NC
2	ICH_RTCRST_N
3	Battery GND

AT/ATX Mode Selector (JP4)

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



Pin Setting

1-2 On	ATX Mode
2-3 On	AT Mode

2-3 ON Default

Pin Definition

1	3VSB
2	AT_ATX_Select
3	GND

Console Type Selector (JP6)

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



Pin Setting

1-2 On	RTS to CTS
2-3 On	Normal

2-3 ON Default

Pin Definition

1	SP_RTS1_R
2	SP_CTS1_R
3	SP_CTS1_CON

ME Force Update Pin Header (JP5)

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



Pin Setting

1-2 On	
2-3 On	

2-3 ON Default

Pin Definition

1	NC
2	GPIO24
3	GND



Connector Pin Definitions

External I/O Interface

Status Indicators

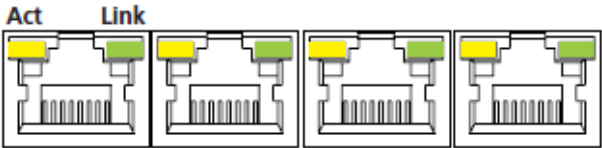
Connector location: LED14, LED15 and LED16



Status	LED Color
PWR	Green
HDD	Yellow
B1-B4	Yellow

Copper LAN Ports

Connector size: RJ45 port with LEDs Connector location:



CON1, CON2

Act	Status
Yellow Blinking	Data Activity
Off	No Activity

Link	Status
Green Always Lighted	1G and 10/100MB
Off	No link

Pin	Definition	Pin	Definition
1	TX+0	5	TX-2
2	TX-0	6	TX-1
3	TX+1	7	TX+3
4	TX+2	8	TX-3





USB Ports (CN1)

Connector Size: Dual USB port



Pin	Definition	Pin	Definition
1	VCC	5	VCC
2	USB0-	6	USB1-
3	USB0+	7	USB1+
4	GND	8	GND

RJ45 Type Console Port (LAN1) (RS232 Only)

Connector Size: RJ45 port

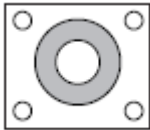


Pin	Definition	Pin	Definition
1	SP_RTS1_R	2	SP_DTR1_R
3	SP_TXD1_R	4	GND
5	SP_DCD1_R	6	SP_RXD1_R
7	SP_DSR1_R	8	SP_CTS1_CON



GPI12 Software Button (SW1)

Connector Size: 2-pin jack



Pin	Definition
1	GND
2	RW_SW_RST



Internal Connector

Reset Button (JP3)

Connector size: 1x2 2-pin header, 2.54 mm pitch



Pin	Signal
1	PCH_SYS_RESET_N_R
2	GND

Power Button (J7)

Connector Size: 1X2 2-pin header, 2.54mm pitch



Pin	Signal
1	GND
2	PCH_PWRBTN_N

VGA Connector (CN3)

Connector Size: 2x8 16-pin box header, 2.0 mm pitch



Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC5	10	GND
11	NC	12	VGADATA
13	HSYNC	14	VSYNC
15	VGACLK	16	NC

PS/2 Keyboard/Mouse Connector

Connector Size: 2x4 8-pin header, 2.54 mm pitch



Pin	Definition	Pin	Definition
1	VCC5	2	VCC5
3	KB_DATA	4	LM_DATA
5	KB_CLK	6	LM_CLK
7	GND	8	GND

COM2 Connector (CN4) (RS232)

Connector Size: 2x5 10-pin box header, 2.0 mm pitch



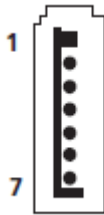
Pin	Definition	Pin	Definition
1	SP_DCD2	2	SP_RXD2
3	SP_TXD2	4	SP_DTR2
5	COM2_GND	6	SP_DSR2
7	SP_RTS2	8	SP_CTS2
9	SP_RI2	10	COM2_GND





SATA Connector (J10/J8/J5)

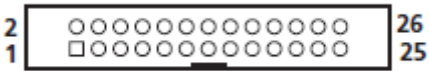
Connector Size: Standard Serial ATAII, 1.27mm



Pin	Definition
1	GND
2	TXP0
3	TXN0
4	GND
5	RXN0
6	RXP0
7	GND

LCM Module Connector (CN2)

Connector Size: 2X13 26-pin boxed header, 2.0mm pitch

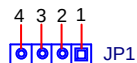


Pin	Description	Pin	Description
1	LPT_STB#R	2	LPT_AFD#R
3	LPT_PDR0	4	LPT_ERR#R
5	LPT_PDR1	6	LPT_INIT#R
7	LPT_PDR2	8	LPT_SLIN#R
9	LPT_PDR3	10	GND
11	LPT_PDR4	12	GND
13	LPT_PDR5	14	GND
15	LPT_PDR6	16	GND
17	LPT_PDR7	18	GND
19	LPT_ACK#R	20	GND
21	LPT_BUSY	22	GND
23	LPT_PE	24	GND
25	LPT_SLCT	26	NC



LCM Key Pad Connector (JP1)

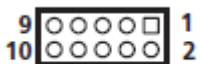
Connector Size: 1x4 4-pin header, 2.54 mm



Pin	Definition
1	KEY_PIN1
2	KEY_PIN2
3	KEY_PIN3
4	KEY_PIN4

GPIO Connector

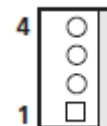
Connector Size: 2x5 10-pin box header, 2.0 mm pitch



Pin	Definition	Pin	Definition
1	VCC5	2	GND
3	SIO_GPIO10	4	SIO_GPIO14
5	SIO_GPIO11	6	SIO_GPIO15
7	SIO_GPIO12	8	SIO_GPIO16
9	SIO_GPIO13	10	SIO_GPIO17

CPU Fan

Connector Size: 4-pin Wafer, 2.54 mm pitch



Pin	Definition
1	GND
2	+12V
3	FAN_TAC
4	PWM

System Fan

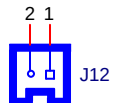
Connector Size: 3-pin Wafer, 2.54 mm pitch



Pin	Definition
1	GND
2	+12V
3	SENSE

SATA DOM PWR (J12)

Connector Size: 1X2 = 2-Pin , 2.0mm ,180°, JST



Pin	Definition
1	VCC5
2	GND

Power Connector (J14)

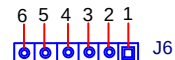
Connector Size: 1X4 = 4-pin



Pin	Definition
1	VCC12
2	GND
3	GND
4	VCC5

GAL Programming Connector (J6)

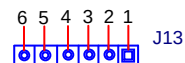
Connector Size: 1X6 = 6-Pin



Pin	Definition	Pin	Definition
1	3VSB	2	GND
3	GAL_TCK	4	GAL_TDO
5	GAL_TD1	6	GAL_TMS

USB JST 2.00mm (J13)

Connector Size: 1X6 = 6-Pin

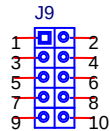


Pin	Definition	Pin	Definition
1	P5V_USB_P23	2	USB2-
3	USB2+	4	USB3-
5	USB3+	6	USB23GND



Digital IO 4 Input/4 Output Connector (J9)

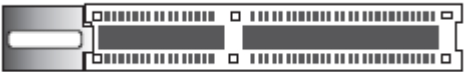
Connector Size: 2 X 5 = 10-Pin



Pin	Definition	Pin	Definition
1	VCC5	2	GND
3	SIO_GP32	4	SIO_GP06
5	SIO_GP03	6	SIO_GP07
7	SIO_GP04	8	SIO_GP76
9	SIO_GP05	10	SIO_GP77

PCIe Slot (PCIE1)

Connector Size: PCIe x 8



DIMM Socket (DIMM1, DIMM2)

Connector Size: 240-pin DDR3



- DIMM 2 = Channel B
DIMM 1 = Channel A
- Always populate DIMM1 first. The system will not boot when the first module is installed in DIMM2.



CompactFlash (CN8)

Connector Type: CompactFlash Type 2

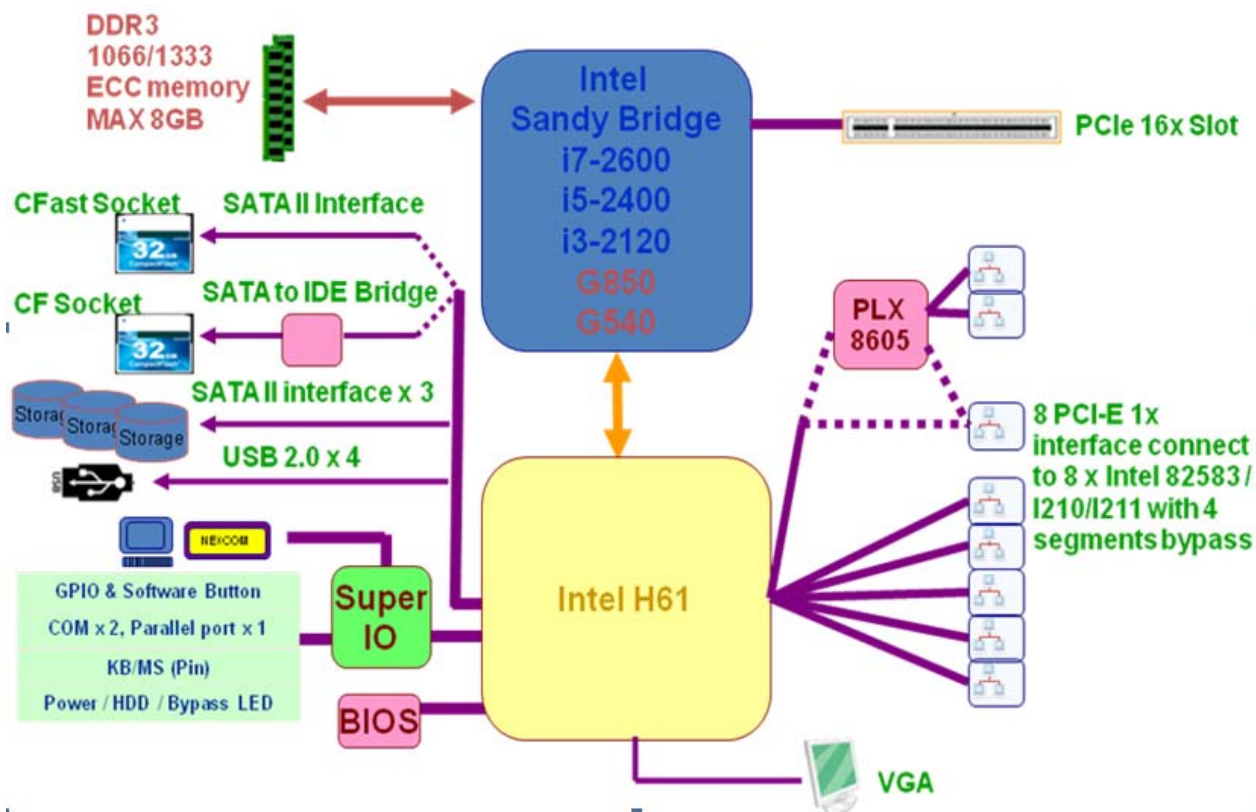


Pin	Definition	Pin	Definition
1	GND	2	SDD3A
3	SDD4A	4	SDD5A
5	SDD6A	6	SDD7A
7	SDCS#1	8	GND
9	GND	10	GND
11	GND	12	GND
13	VCC	14	GND
15	GND	16	GND
17	GND	18	SDA2A
19	SDA1A	20	SDA0A
21	SDD0A	22	SDD1A

Pin	Definition	Pin	Definition
23	SDD2A	24	NC
25	CF_CD2#	26	CF_CD1#
27	SDD11A	28	SDD12A
29	SDD13A	30	SDD14A
31	SDD15A	32	SDCS#3
33	NC	34	SDIOR#
35	SDIOW#	36	VCC
37	HDIRQ14	38	VCC
39	CF_SEL#	40	NC
41	IDERST#	42	SIORDY
43	SDREQ	44	SDDACK#
45	IDEACTP#	46	DIAG#
47	SDD8A	48	SDD9A
49	SDD10A	50	GND

Block Diagram

NSA 3130



Chapter 3: System Setup

Removing the Chassis Cover



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



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



The dots denote the locations of the screws.

2. Lift up the cover then remove it from the chassis.

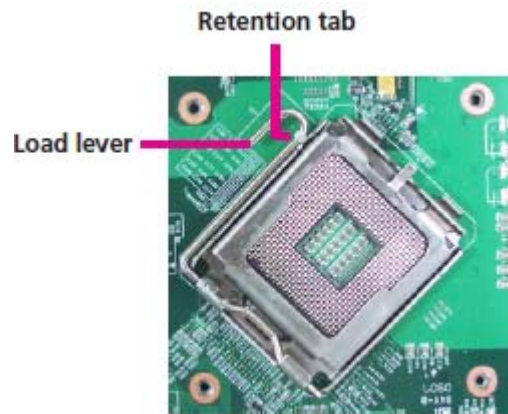
Installing the CPU

1. If the system came with the heat sink already installed, loosen the mounting screws that secure the heat sink to the board.

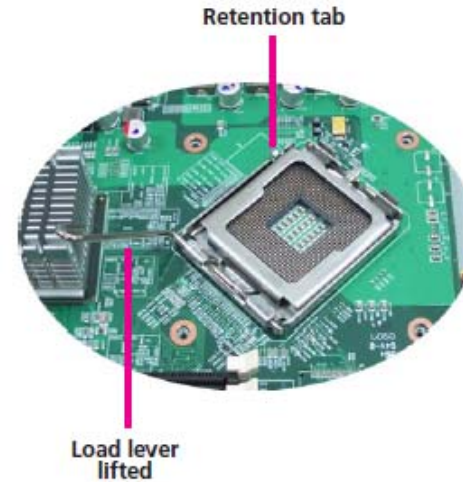


- Before you proceed, make sure (1) the CPU socket comes with a protective cap, (2) the cap is not damaged and (3) the socket's contact pins are not bent.
 - Make sure all power cables are unplugged before you install the CPU.
 - The CPU socket must not come in contact with anything other than the CPU. Avoid unnecessary exposure. Remove the protective cap only when you are about to install the CPU.
2. Remove the heat sink to access the CPU socket.

3. Unlock the socket by pushing the load lever down, moving it sideways until it is released from the retention tab.



4. Lift the load lever.



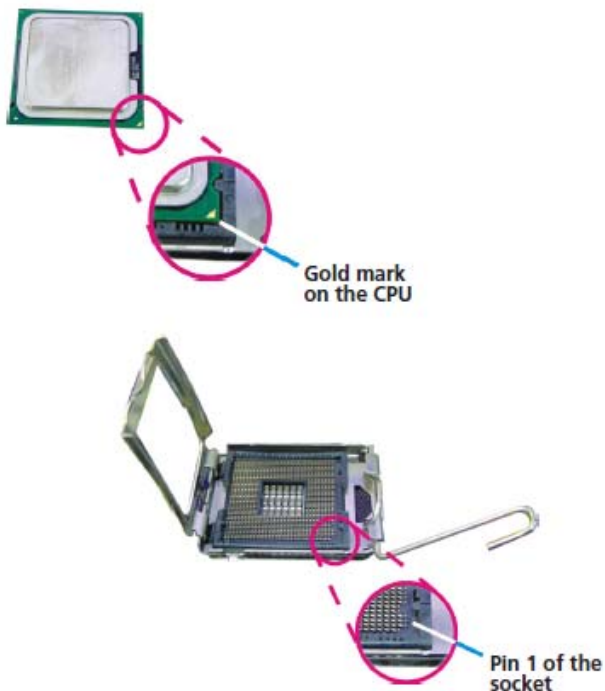
5. Lift the load plate.



6. Position the CPU above the socket by using a suction tube.



7. The gold mark on the CPU must align with pin 1 of the CPU socket.

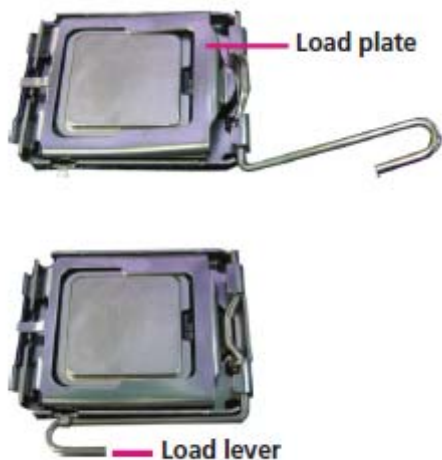


8. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

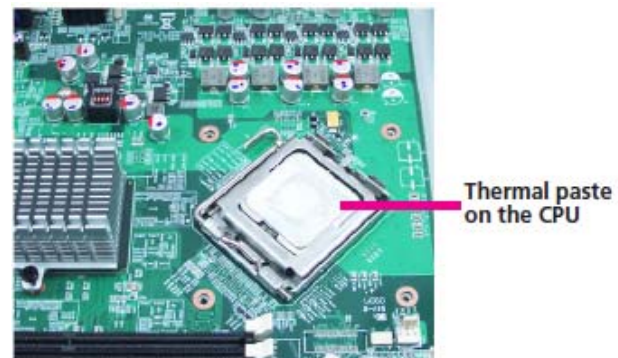


Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.

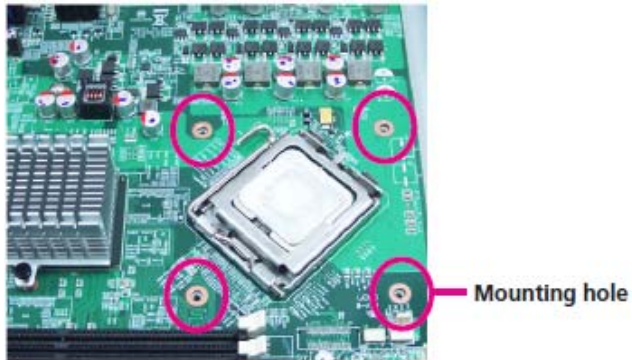
9. Once the CPU is in place, close the load plate then push the lever down until it snaps into the retention tab.



10. Apply thermal paste on top of the CPU. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.



11. The mounting holes around the CPU socket are used to mount the heat sink. Align the mounting screws of the heat sink with the mounting holes on the board. Tighten the screws to secure the heat sink in place.



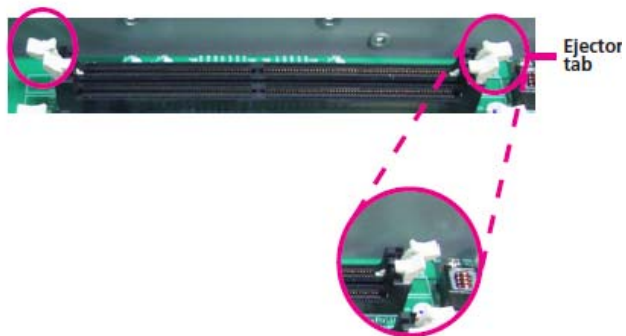
Installing a DIMM

1. The 2 DDR3 sockets are divided into 2 channels.

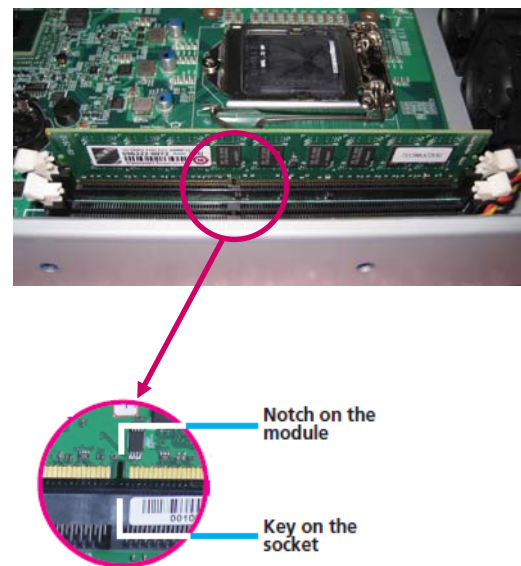


- DIMM1 = Channel A
DIMM2 = Channel B
- Always populate DIMM1 first. The system will not boot when the first module is installed in DIMM2.

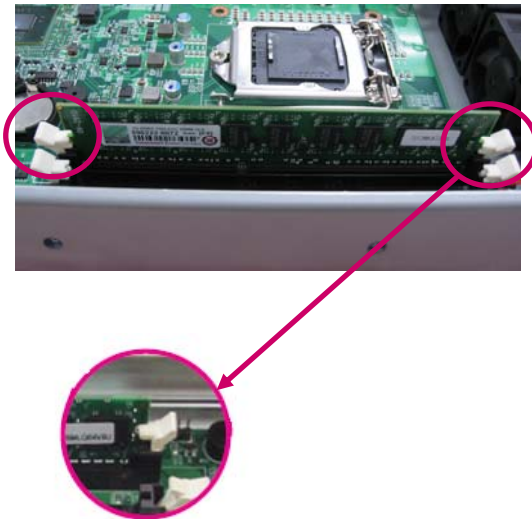
Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.



2. Note how the module is keyed to the socket. Grasping the module by its edges, align the module with the socket so that the “notch” on the module is aligned with the “key” on the socket. The key ensures the module can be plugged into the socket in only one direction.



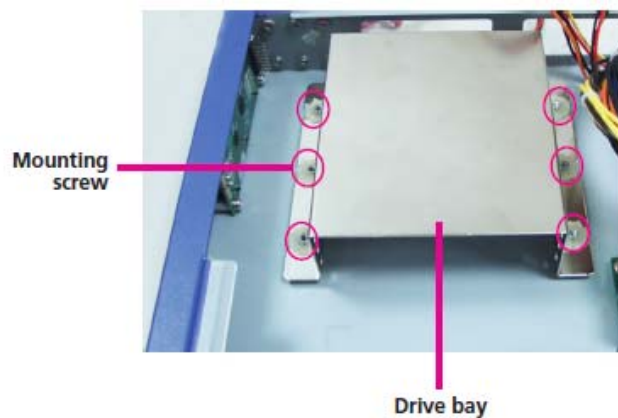
3. Seat the module vertically, pressing it down firmly until it is completely seated in the socket. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.



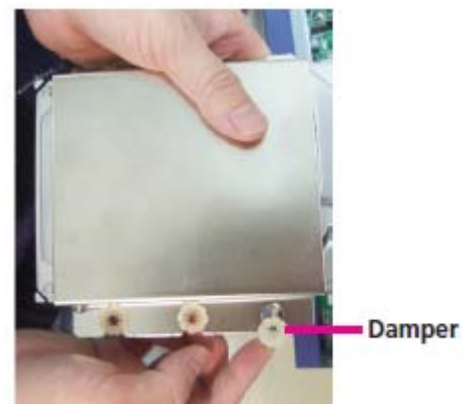
Installing a SATA Hard Drive

Before installing a SATA Hard Drive, please assemble the SATA with a HDD Bay.

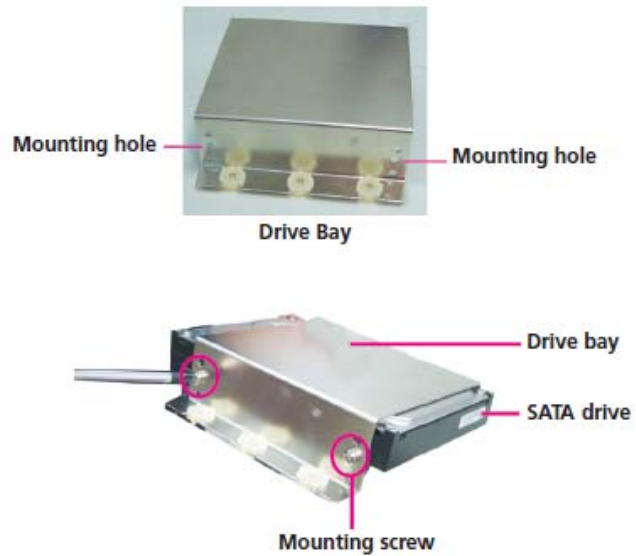
1. Secure the SATA to a HDD Bay by fixing the mounting screws around the HDD Bracket.



2. If in any case the drive bay came with the accessory package, you must first insert the dampers on the sides of the drive bay prior to proceeding to the next step.



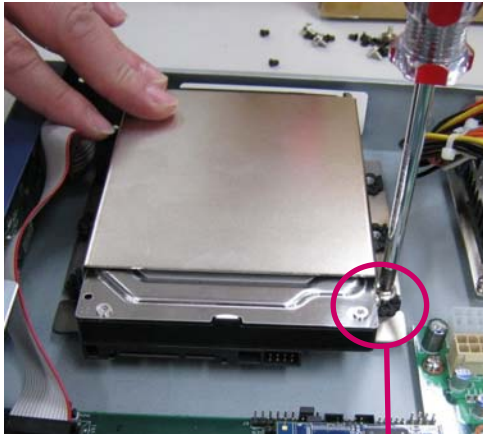
3. Place the SATA hard drive onto the drive bay. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bay. Use the provided mounting screws to secure the SATA drive in place.



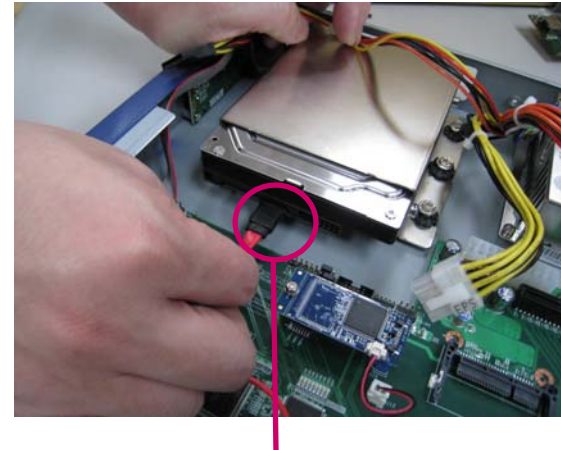


Now, please install the SATA Hard Drive step by step:

1. Align the mounting holes of the drive bay with the mounting studs on the chassis. Use the provided mounting screws to secure the drive bay in place.
2. Locate the SATA data connector on the SATA drive, and connect one end of the SATA data cable to the SATA drive and the other end to the board.



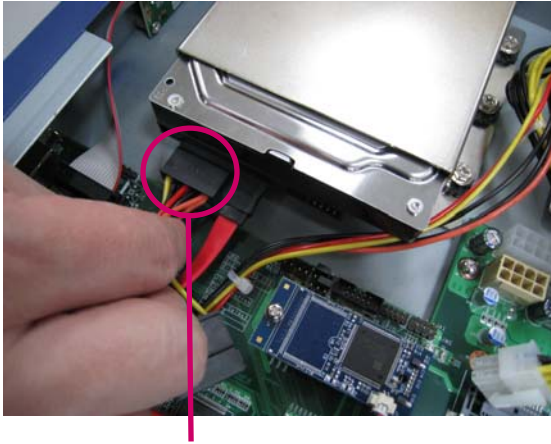
Mounting Screw



SATA Data Cable



3. Locate the SATA power connector on the SATA drive, and connect the SATA power cable from the power supply to the SATA drive.



SATA Power Cable

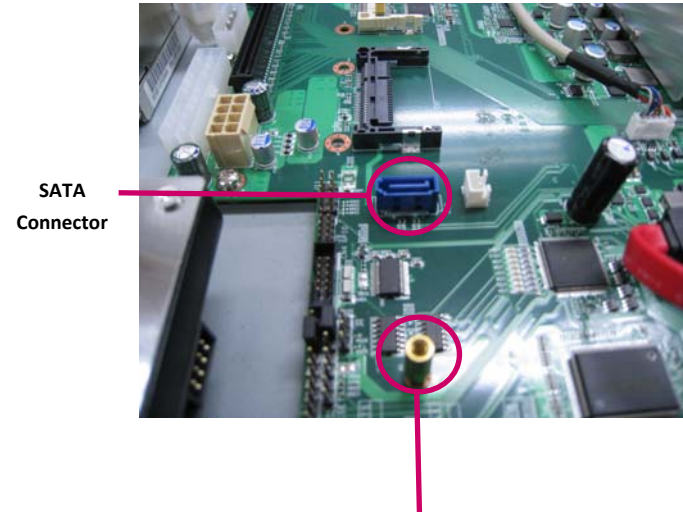
Installing a SATA DOM

1. Locate for the SATA connector on the board.



SATA Connector

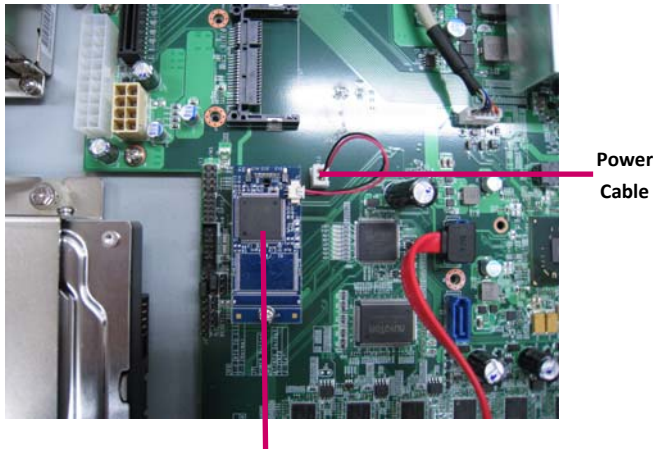
2. Install the provided mounting stud as shown in the illustration below.



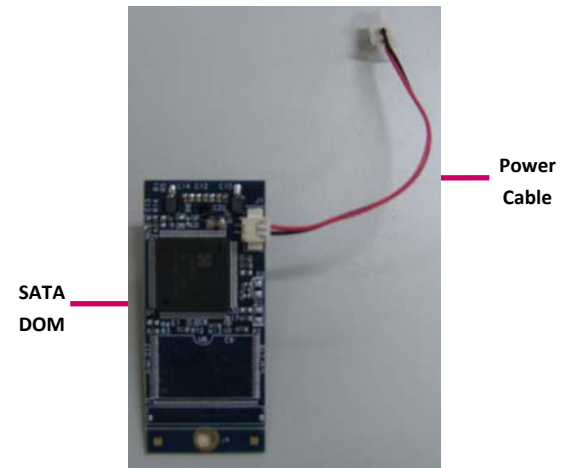
SATA
Connector

Mounting Stud

3. Insert the connector located on the solder side of the SATA DOM to the SATA connector that is on the board. Secure the SATA DOM with the provided mounting screw then connect the power cable to the power connector on the board.



SATA DOM

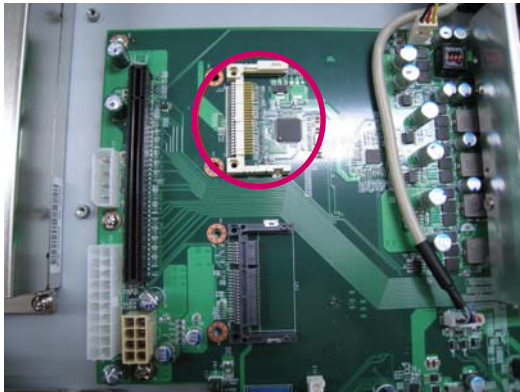
SATA DOM
(Solder Side)

Installing a CompactFlash Card

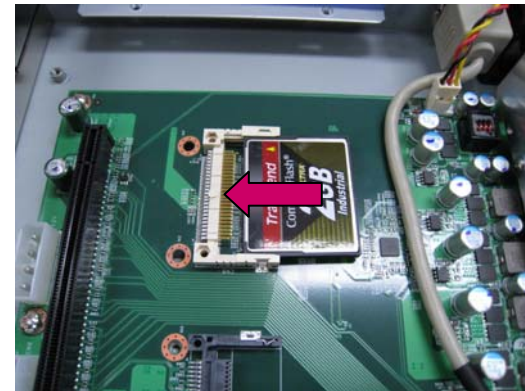


Note: You can't use the CompactFlash and CFast cards at the same time.

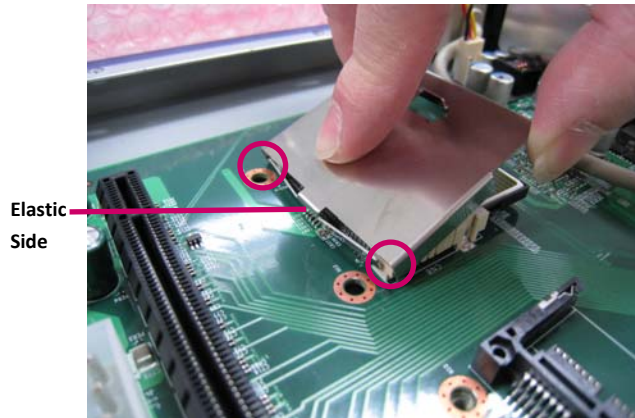
1. Locate the CompactFlash socket on the board.



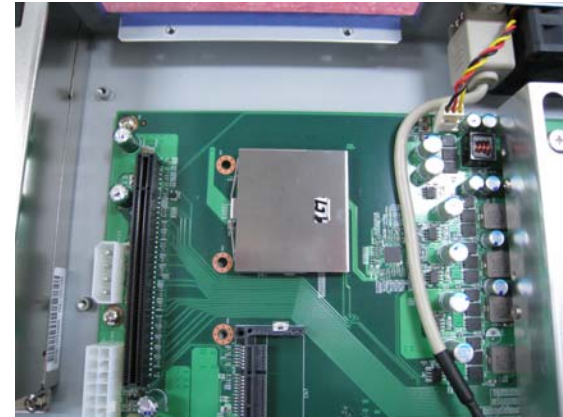
2. With the CompactFlash card's label facing up, position the card to the socket. Insert the card until it is completely seated in the socket.



3. Place a protective cover on the inserted CompactFlash card, lightly pulling the elastic side to fit two holes on the socket.



4. Close the protective cover completely.

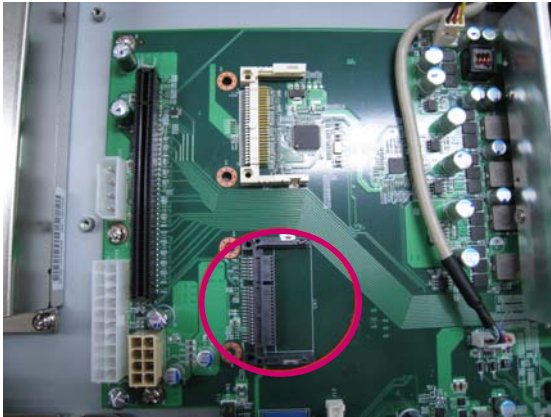


Installing a CFast Card

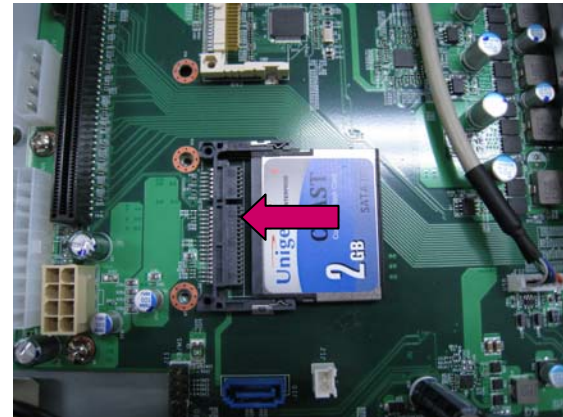


Note: You can't use the CompactFlash and CFast cards at the same time.

1. Locate the CFast socket on the board.

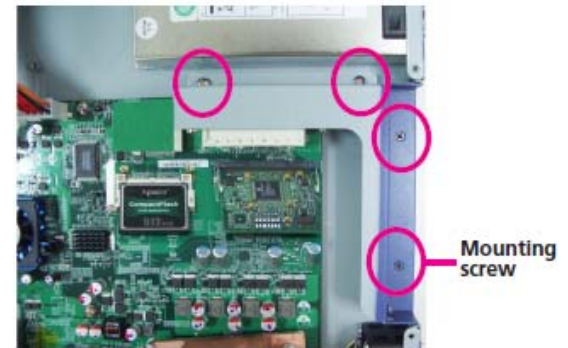
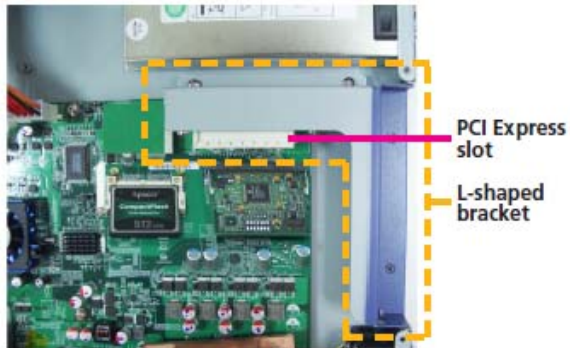


2. With the CFast card's label facing up, position the card to the socket. Insert the card until it is completely seated in the socket.

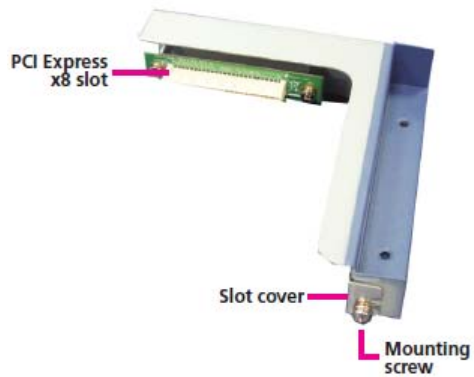


Installing a PCI Express Card

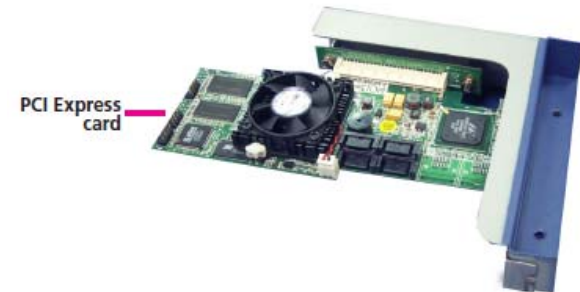
1. The PCI Express x8 slot is attached on an L-shaped bracket.
2. Remove the mounting screws that secure the L-shaped bracket to the chassis.



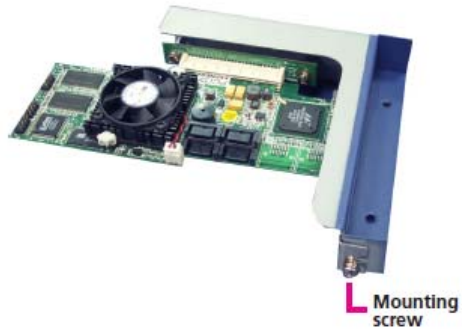
3. Remove the slot cover's mounting screw.



4. Align the PCI Express card with the PCI Express slot then push it firmly until it is completely seated in the slot.



5. Secure the card with the screw you removed in step 3.



6. Install the bracket back into the chassis then secure the bracket with the mounting screws you removed in step 2.



Rackmount Bracket Kit (Optional)

The rackmount bracket kit provides a convenient and economical way of installing the server into a rack cabinet.

Attaching the Long Rack Ears

The long rack ears are used to support the server in a rack cabinet.

1. The rackmount bracket kit comes with a pair of long rack ears and 16 screws.



2. There are 8 mounting holes on each side of the front panel.



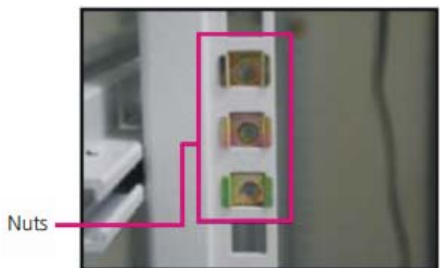
3. Align the mounting holes on the rack ear with the mounting holes on the front panel. Give special attention to the orientation of the rack ear. Secure the rack ear with mounting screws.



4. Repeat step 3 to secure the other rack ear.

Attaching the Server into a Rack Cabinet

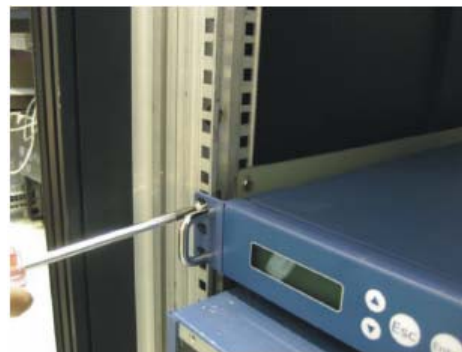
1. Select a one unit space (1U) in the rack cabinet where you intend to install the server.
2. On one side of the rack, attach 3 nuts each at the front and back. Repeat this to the other side of the rack.



3. Slide the server into the rack cabinet.



4. Use the provided mounting screws to secure the server in the rack cabinet.



Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for NSA3130. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

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

About BIOS Setup

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

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

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options

- Password protection from unauthorized use
- Power management features

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

When to Configure the BIOS

This program should be executed under the following conditions:

- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

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

Default Configuration

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

Entering Setup

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

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

Powering on the computer and immediately pressing allows you to enter Setup. Another way to enter Setup is to power on the computer and wait for the following message during the POST:

TO ENTER SETUP BEFORE BOOT PRESS
<CTRL-ALT-ESC> Press the key to enter Setup:

Legends

Key	Function
Right and Left arrows	Moves the highlight left or right to select a menu.
Up and Down arrows	Moves the highlight up or down between submenus or fields.
<Esc>	Exits to the BIOS Setup Utility.
+ (plus key)	Scrolls forward through the values or options of the highlighted field.
-(minus key)	Scrolls backward through the values or options of the highlighted field.
Tab	Select a field.
<F1>	Displays General Help.
<F10>	Saves and exits the Setup program.
<Enter>	Press <Enter> to enter the highlighted submenu.

**Scroll Bar**

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

Submenu

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

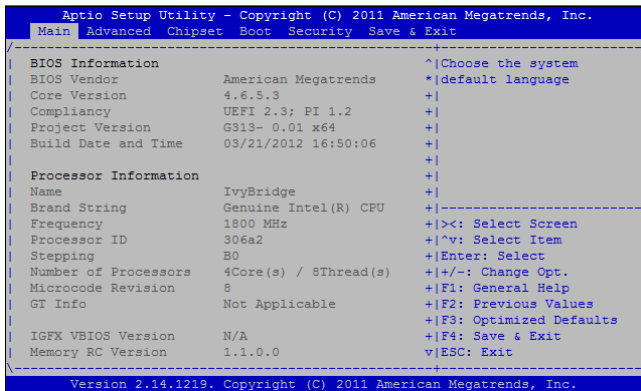


BIOS Setup Utility

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

Main

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



BIOS Information

Displays the detected BIOS information.

Processor Information

Displays the detected processor information.

System Memory

Displays the detected system memory information.

System Time

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

System Date

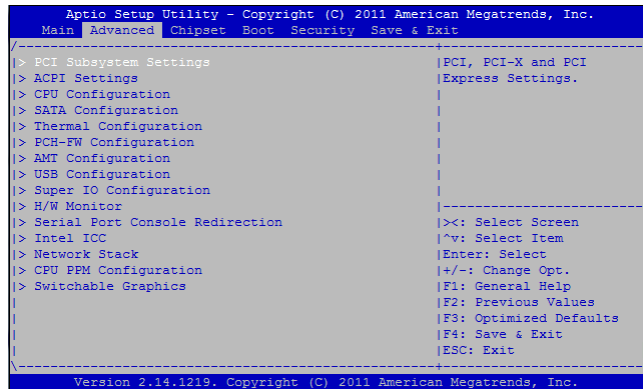
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1980 to 2099.

Advanced

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

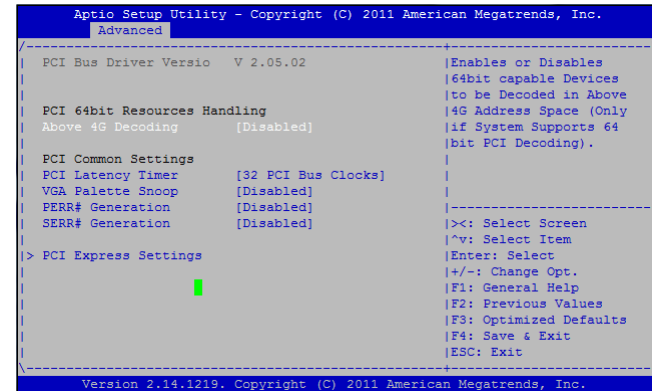


Setting incorrect field values may cause the system to malfunction.



PCI Subsystem Settings

This section is used to configure PCI, PCI-X and PCI Express Settings.



Above 4G Decoding

This item is used to enable or disable 64bit capable Devices to be Decoded in Above 4G Address Space (only if System Supports 64bit PCI Decoding).

PCI Latency Timer

This item controls how long each PCI device can hold the system bus before another PCI device takes over. By setting a higher value, each PCI device is given more time to process transactions and as a result will have improved PCI bandwidth. The higher this value is set, the better the PCI performance will be.

VGA Palette Snoop

This item determines if your graphics card should allow VGA palette snooping by a fixed-function display card. It is only useful if you use a fixed-function display card that requires a VGA-compatible graphics card to be present.

PERR# Generation

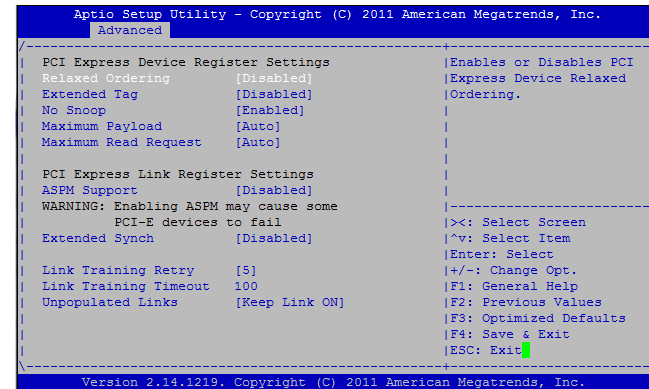
Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

PCI Express Settings

This section is used to configure PCI Express Settings.



Relaxed Ordering

This item enables or disables PCI Express Device Relaxed Ordering.

Extended Tag

If ENABLED allows Device to use 8-bit Tag field as a requester.

No Snoop

Enables or Disables PCI Express Device No Snoop option.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Maximum Read Request

Launches (Enabled/Disabled) the boot option for legacy network devices.

PCI Express Link Settings

Set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

ASPM Support

Set the ASPM Level:

Force L0 – Force all links to L0 State

AUTO – BIOS auto configure

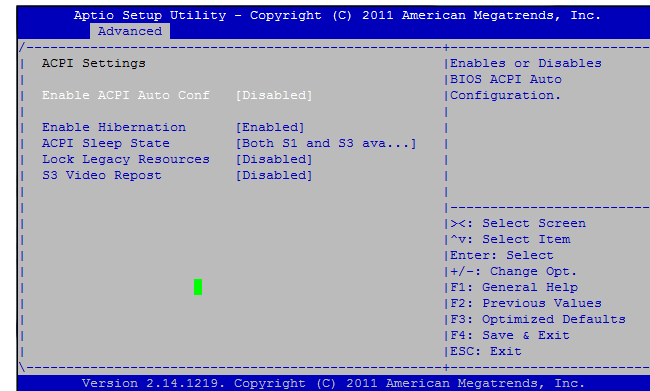
DISABLE – Disables ASPM

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

ACPI Settings

This section is used to configure PCI Express Settings.



Enable ACPI Auto Conf

This item enables or disables BIOS ACPI Auto Configuration.

Enable Hibernation

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

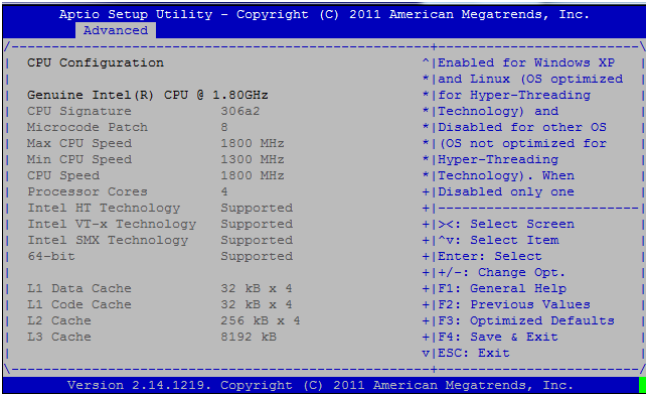
ACPI Sleep State

Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.



CPU Configuration

This section displays the CPU configuration parameters.

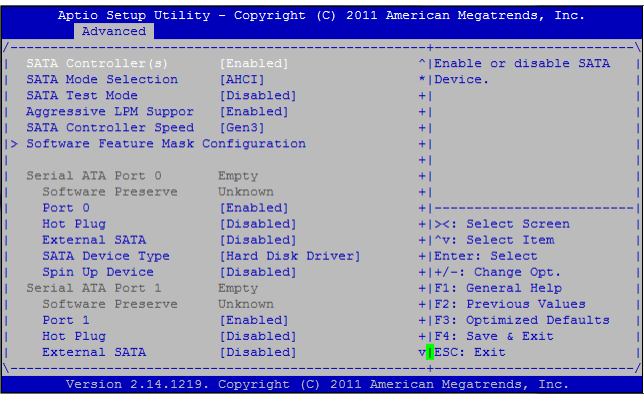


Intel HT Technology

It is enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

SATA Configuration

This section is used to configure SATA Device.



SATA Controller(s)

This section is used to enable or disable SATA controller.

SATA Mode Selection

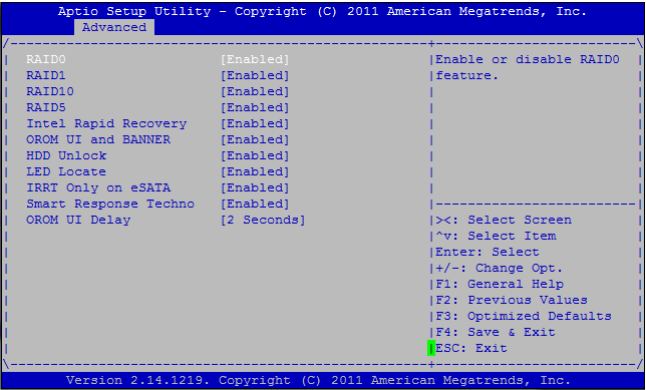
There are several options for your selection: (1) IDE Mode, (2) AHCI Mode and (3) RAID Mode.





Software Feature Mask Configuration

This section is used to configure the Software Feature Mask settings.

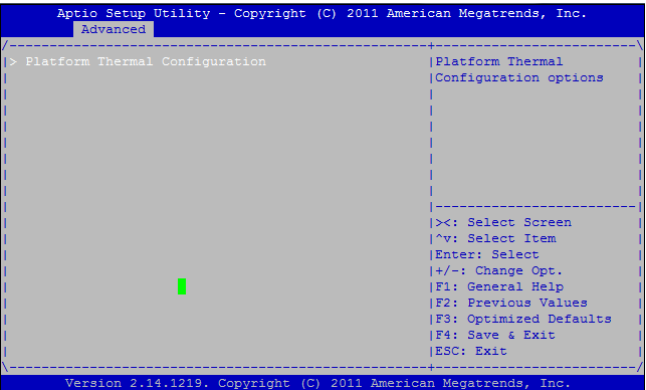


RAIDO

This section is used to enable or disable RAID0 feature.

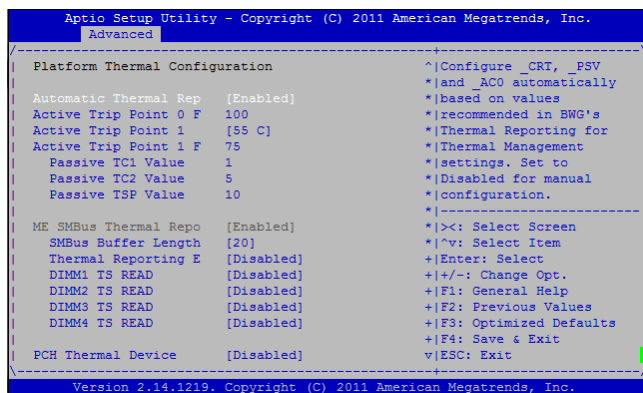
Thermal Configuration

This section provides Platform Thermal Configuration options.



Platform Thermal Configuration

This section is used to configure the Thermal settings.



Automatic Thermal Rep

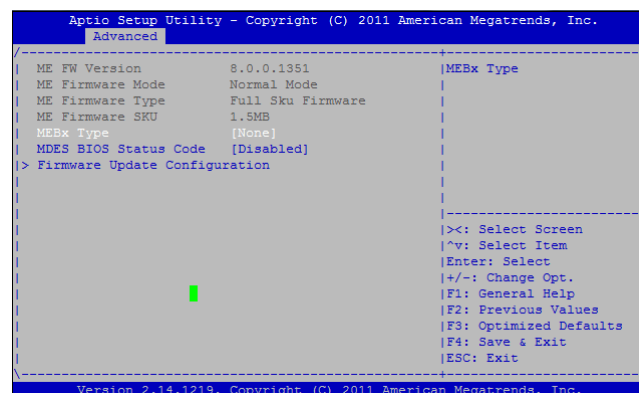
This item is used to configure _CRT, _PSV and _ACO automatically based on values recommended in BWG's Thermal Reporting for Thermal Management settings. Set to Disabled for manual configuration.

ME SMBus Thermal Reporting

Enable/Disable ME SMBus Thermal Reporting Configuration.

PCH-FW Configuration

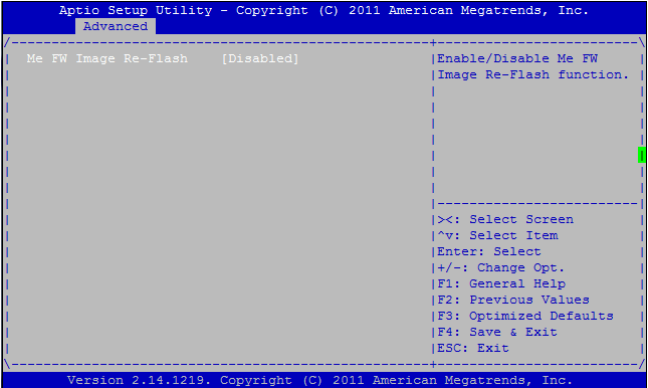
This section is used to configure the PCH-FW settings.





Firmware Update Configuration

This section is used to configure the Firmware Update settings.

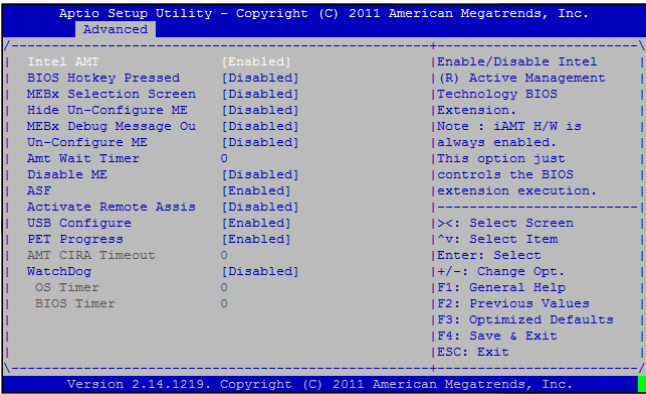


Firmware Update Configuration

This section is used to enable or disable Me FW Image Re-Flash function.

AMT Configuration

This section is used to configure the AMT settings.



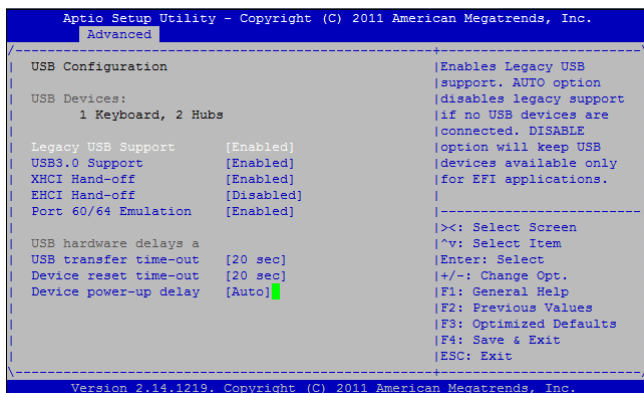
Intel AMT

This item enables/disables Intel ® Active Management Technology BIOS Extension. (Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution.)



USB Configuration

This section is used to configure USB devices.



Legacy USB Support

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

EHCI Hand-off

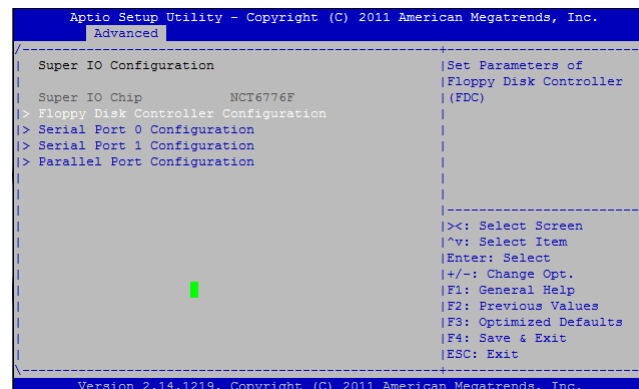
Enabled/Disabled. This is a workaround for Oses without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

Device Reset Timeout

USB mass storage device Start Unit command timeout. Options are: 10 sec / 20 sec / 30 sec / 40 sec.

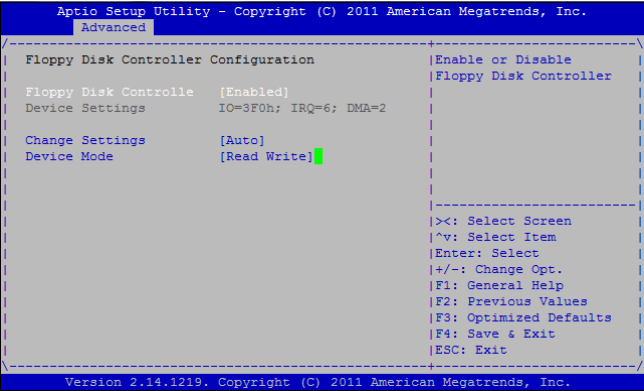
Super IO Configuration

This section is used to configure the I/O functions supported by the onboard Super I/O chip.





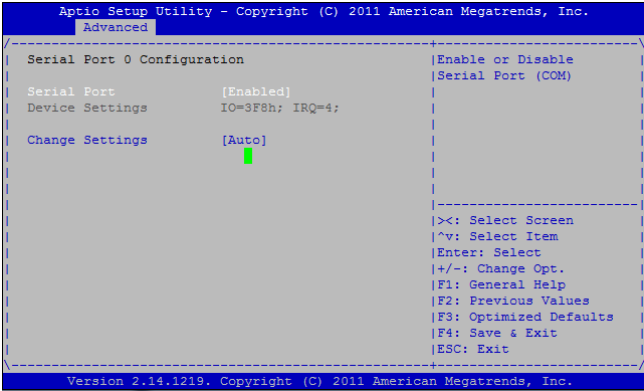
Floppy Disk Controller Configuration



Floppy Disk Controller

This item enables or disables the Floppy Disk Controller.

Serial Port0 Configuration



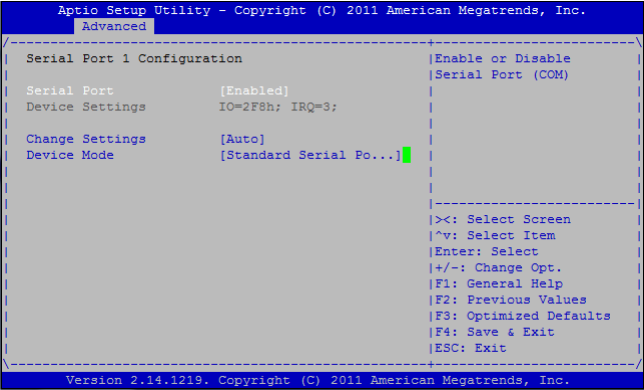
Serial Port

This item section is used to enable or disable Serial Port (COM).





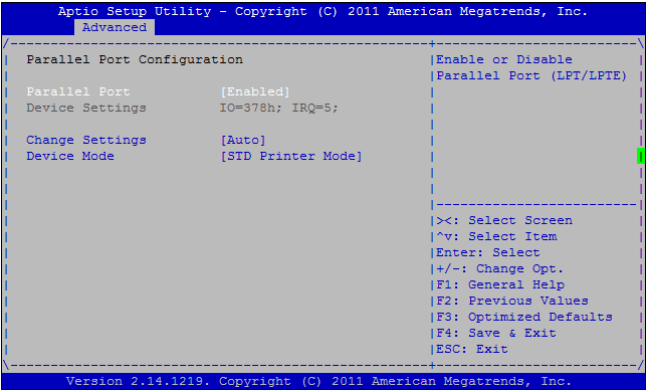
Serial Port1 Configuration



Serial Port

This item section is used to enable or disable Serial Port (COM).

Parallel Port Configuration



Parallel Port

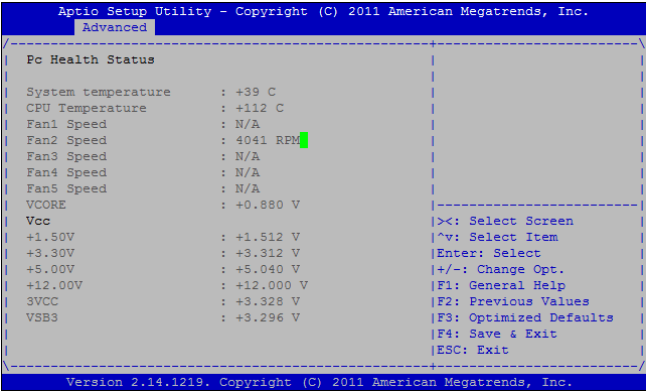
This item is used to enable or disable Parallel Port (LPT/LPTE).





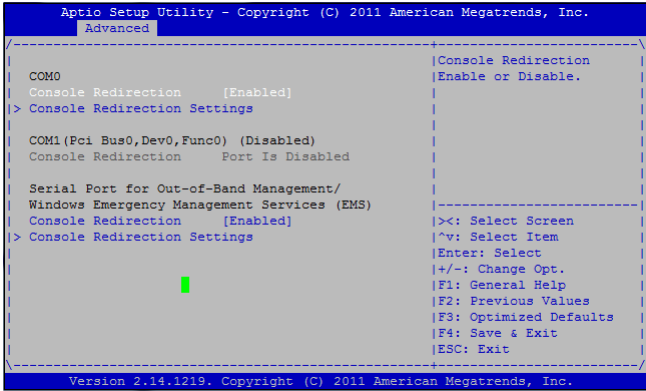
H/W Monitor

This section is used to configure the hardware monitoring events such as the temperature, fan speed and voltages.



Serial Port Console Redirection

This section is used to configure the Serial Port Console Redirection settings.

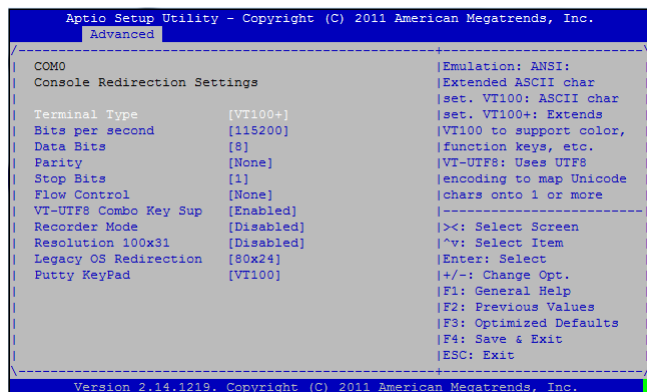


Console Redirection

This item is used to enable or disable Console Redirection.



Console Redirection Settings

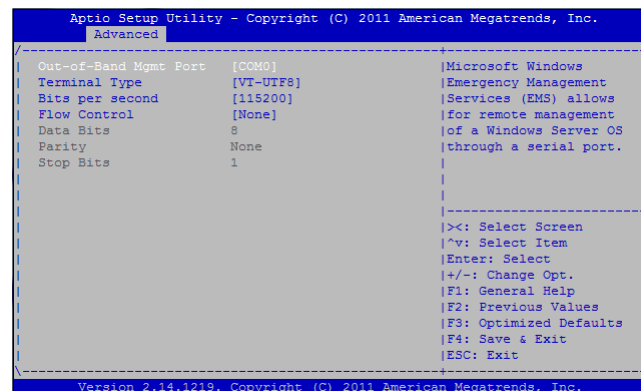


Terminal Type

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100.

Out-of-Band Mgmt Port

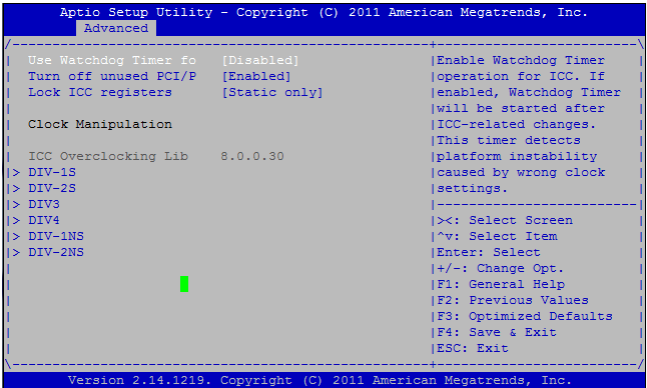
Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.





Intel ICC

This section is used to configure Intel ICC settings.

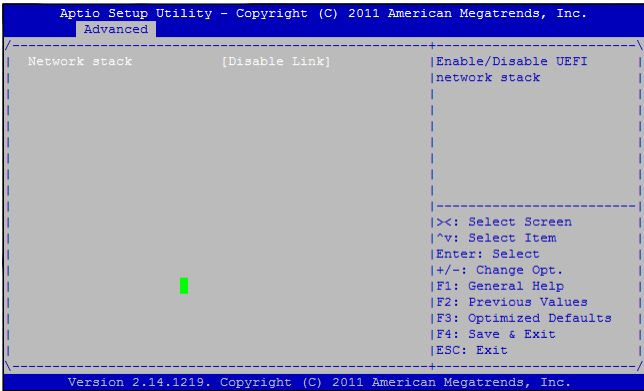


Use Watchdog Timer fo

This section enables Watchdog Timer operation for ICC. If enabled, Watchdog Timer will be started after ICC-related changes. This timer detects platform instability caused by wrong clock settings.

Network Stack

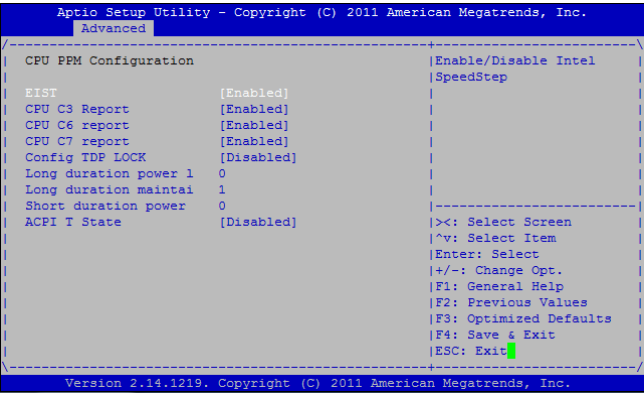
This item enables or disables UEFI network stack.





CPU PPM Configuration

This section is used to configure the CPU PPM settings.

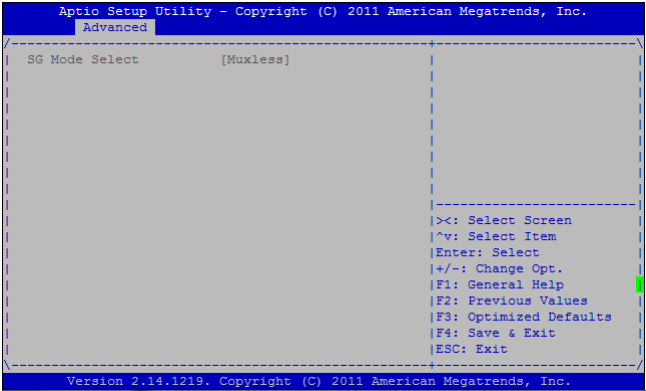


EIST

This item enables or disables Intel SpeedStep.

Switchable Graphics

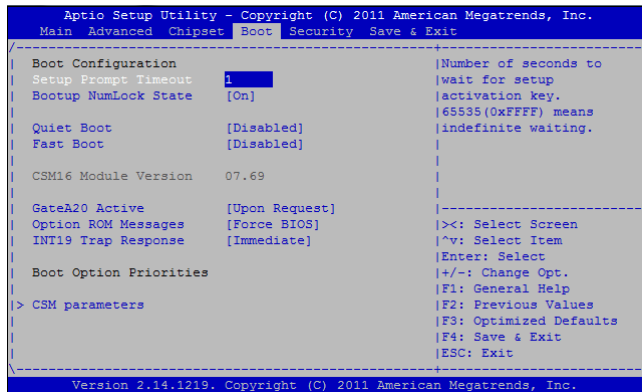
This section is used to configure the Switchable Graphics settings.



Boot

Boot Settings Configuration

This section is used to configure settings during system boot.



Setup Prompt Timeout

It is the Number of seconds to wait for setup activation key. .

Bootup Num-Lock State

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

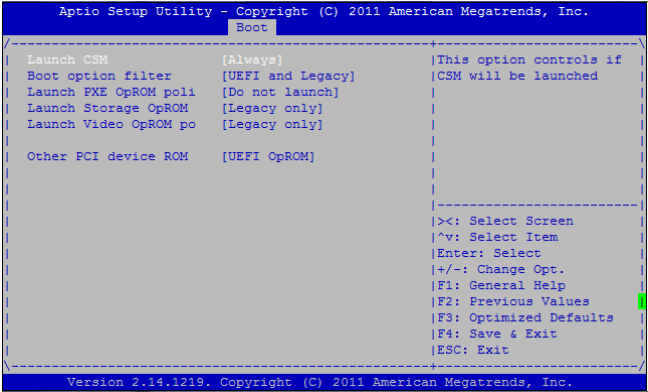
Quiet Boot

Enabled Displays OEM logo instead of the POST messages.

Disabled Displays normal POST messages.



CSM Parameters



Launch CSM

The option controls of CSM will be launched.



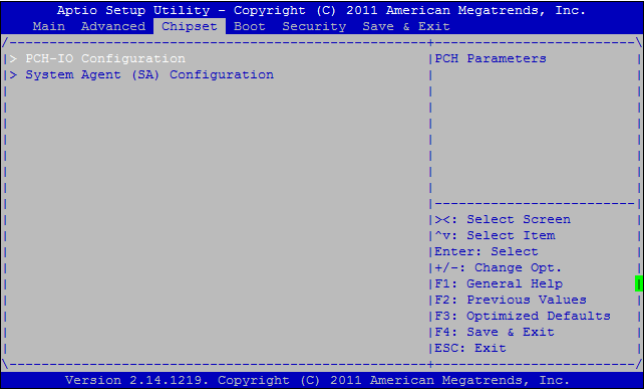


Chipset

This section is used to configure the system based on the specific features of the chipset.

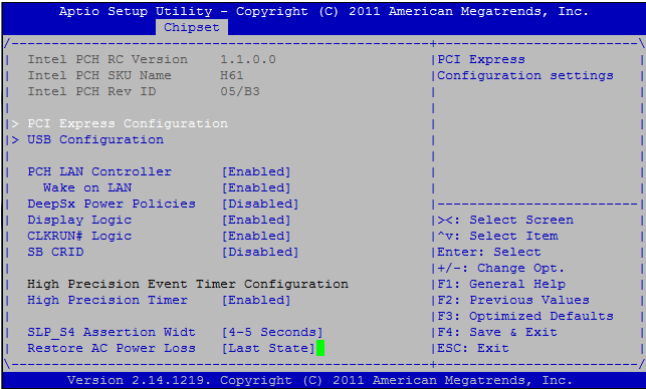


Setting incorrect field values may cause the system to malfunction.



PCH-IO Configuration

This section is to set up PCH Parameters.



PCH-IO Configuration

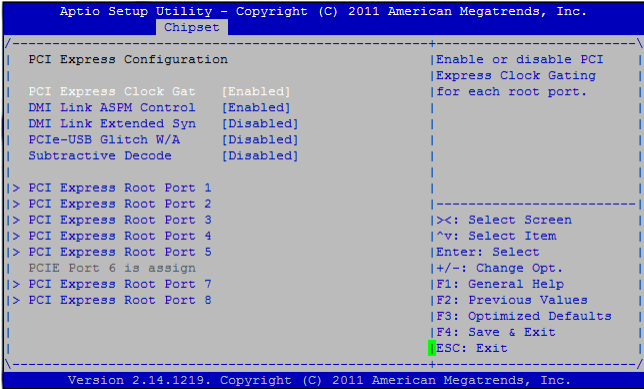
System Agent (SA) Configuration





PCI Express Configuration

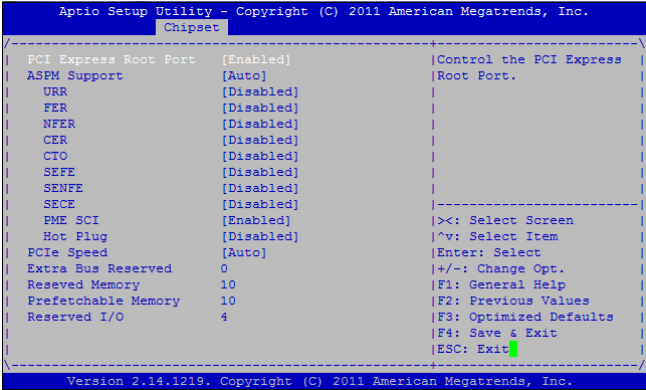
This item is used to configure the PCI Express Configuration settings.



PCI Express Clock Gat

This item enables or disables PCI Express Clock Gating for each root port.

PCI Express Root Port1



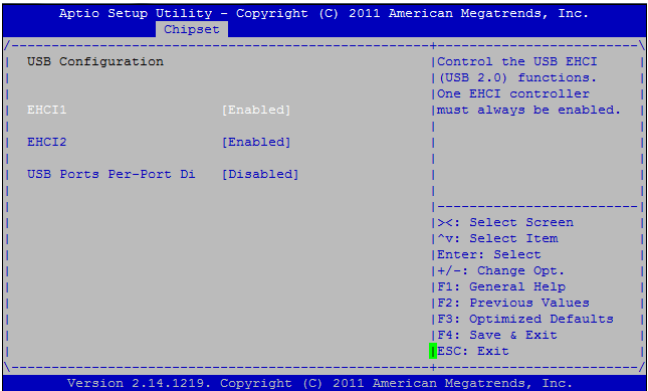
PCI Express Root Port

This item controls the PCI Express Root Port.



USB Configuration

This section is used to configure the USB devices.

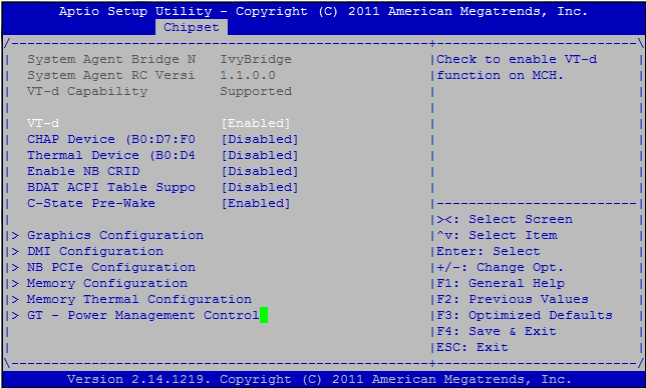


EHCI

This item controls the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

System Agent (SA) Configuration

This section is used to configure the System Agent (SA) settings.



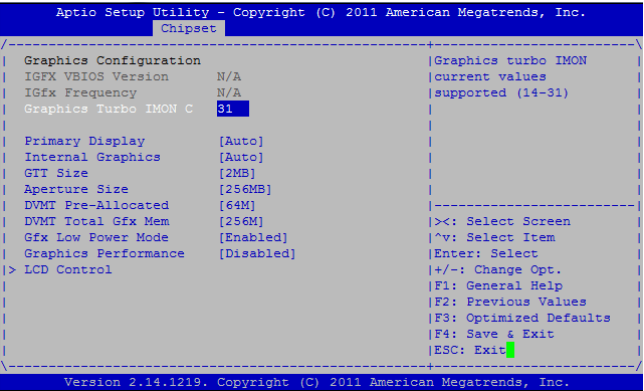
VT-d

Use this to check if VT-d function is enabled on MCH.



Graphics Configuration

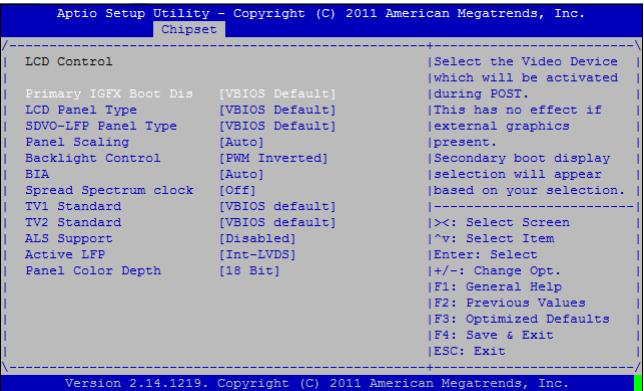
This section is used to configure the graphics settings.



Graphics Turbo IMON C

This item is Graphics turbo IMON current values supported (14-31).

LCD Control



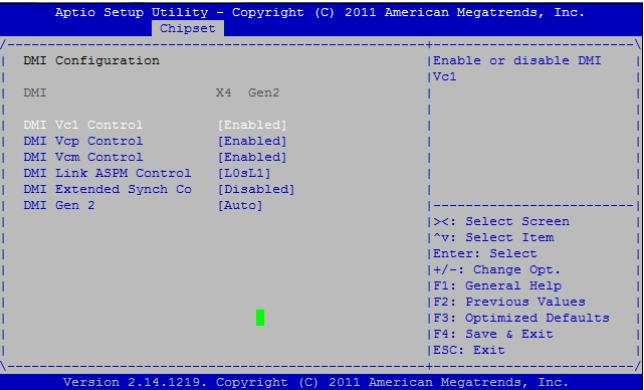
Primary IGFX Boot Dis

This item selects the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection.



DMI Configuration

This section is used to configure the DMI settings.

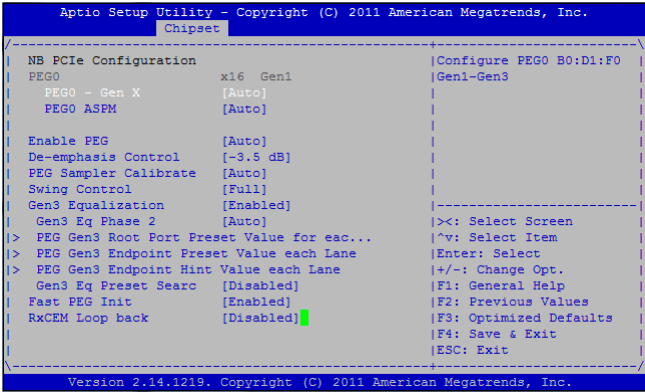


DMI Vc1 Control

This item enables or disables DMI Vc1.

NB PCIe Configuration

This section is used to configure the NB PCIe settings.



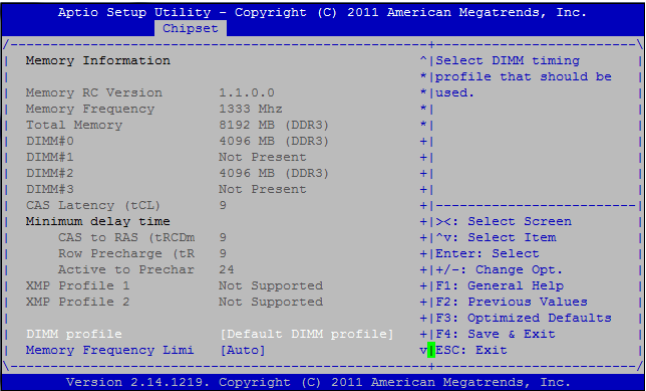
PIEGO – Gen X

This item configures PEG0 B0:D1:f0 Gen1-Gen3.



Memory Configuration

This section is used to configure the Memory settings.

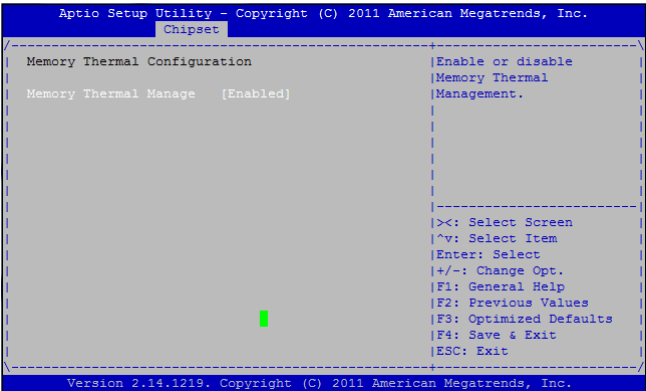


DIMM Profile

This item selects DIMM timing profile that should be used.

Memory Thermal Configuration

This section is used to configure the Memory Thermal settings.



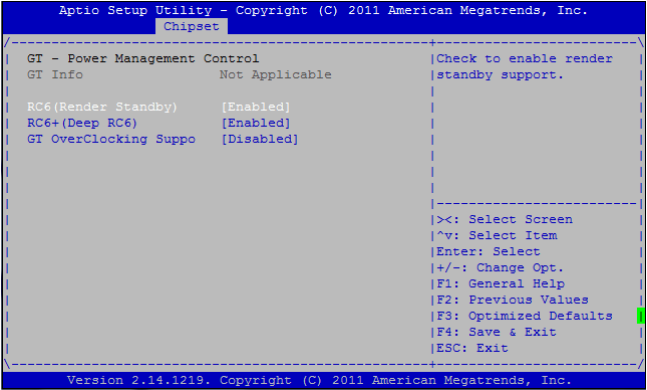
Memory Thermal Manage

This item enables or disables the Memory Thermal Management.





GT-Power Management Control



RC6 (Render Standby)

Use this to check if render standby support is enabled.



Security

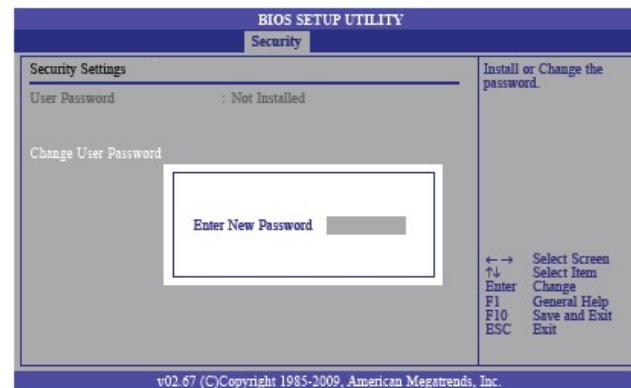


Change User Password

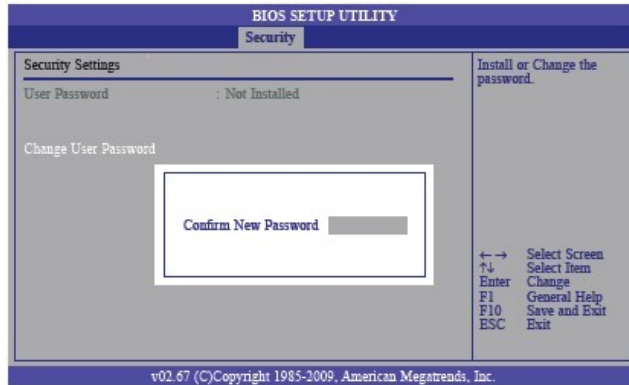
This field is used to set or change the user password.

To set a new password:

1. Select the Change User Password field then press <Enter>.
2. Type your password in the dialog box then press <Enter>. You are limited to eight letters/numbers.



3. Press <Enter> to confirm the new password.



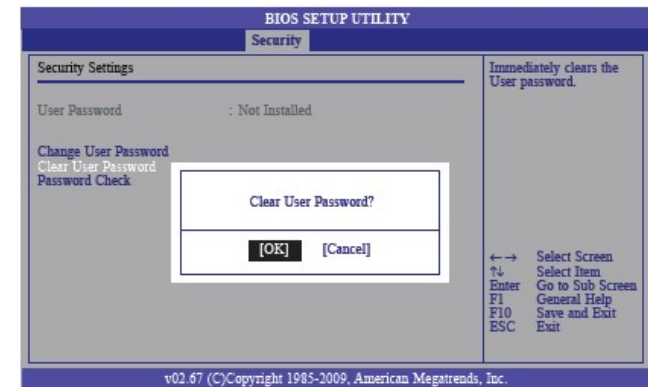
4. When the Password Installed dialog box appears, select OK.



To change the password, repeat the same steps above. After you have set the user password, the Clear User Password and Password Check fields will appear.

Clear User Password

To clear the password, select Clear User Password then press <Enter>. Click OK.



Password Check

Setup

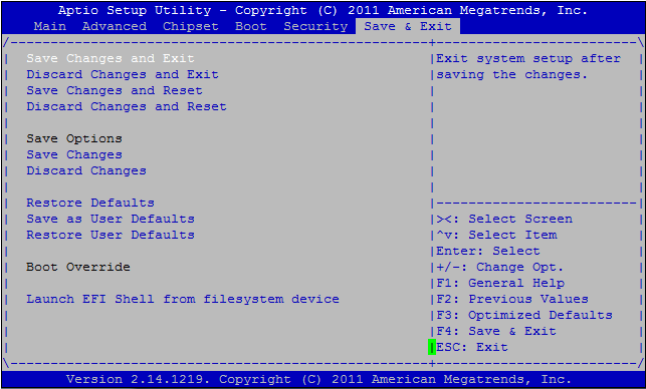
The BIOS checks for the user password whenever accessing the Setup utility.

Always

The BIOS checks for the user password when accessing the Setup utility and booting the system.



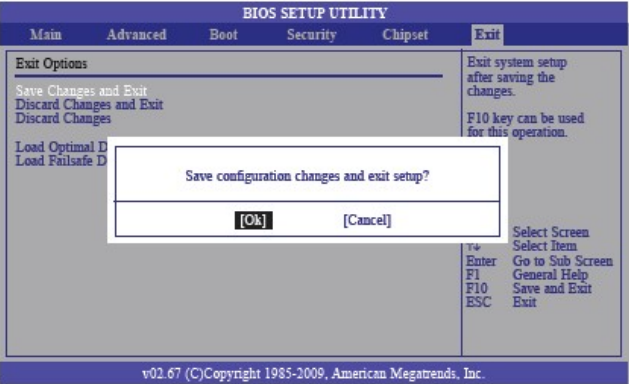
Save & Exit



Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting OK.

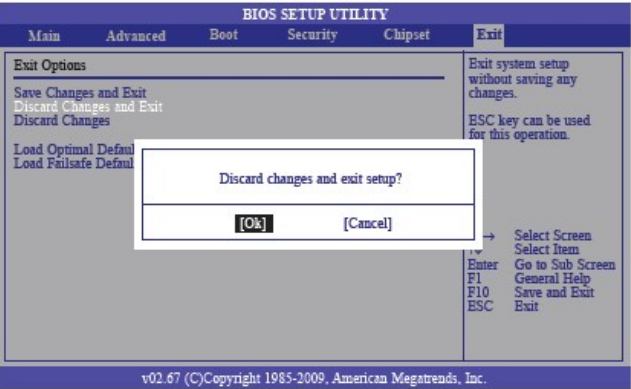
You can also press <F10> to save and exit Setup.



Discard Changes and Exit

To exit the Setup utility without saving the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting OK.

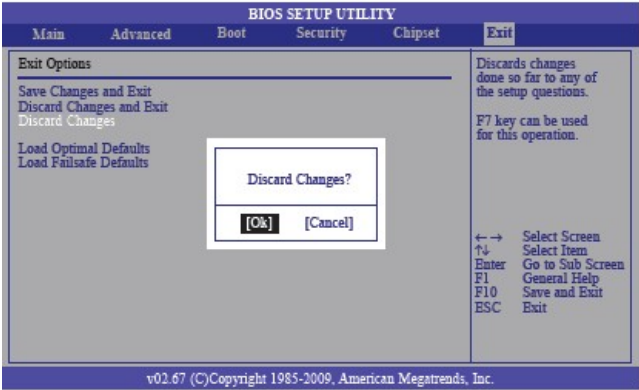
You can also press <ESC> to exit without saving the changes.



Discard Changes

To discard the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting OK to discard all changes made and restore the previously saved settings.

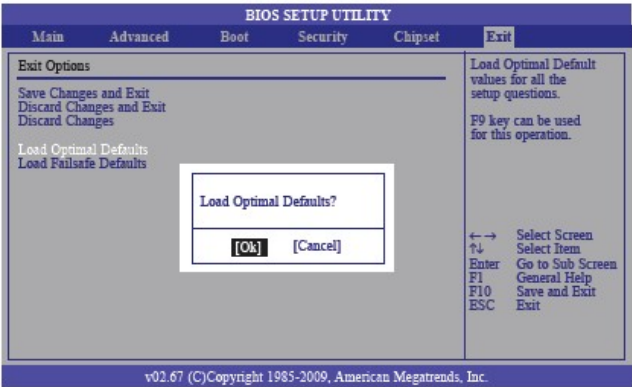
You can also press <F7> to discard the changes.



Load Optimal Defaults

To load optimal default values from the BIOS ROM, select this field then press <Enter>. A dialog box will appear. Confirm by selecting OK.

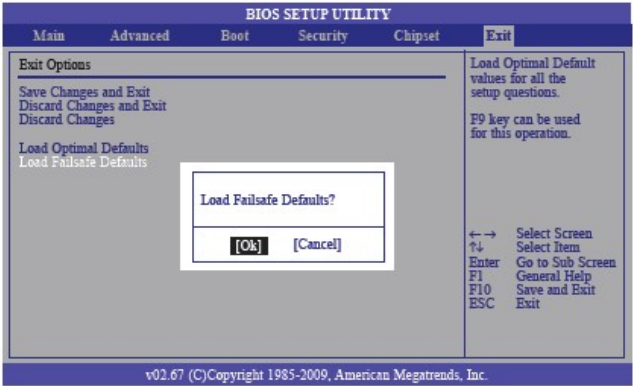
You can also press <F9> to load optimal default values.



Load Failsafe Defaults

To load failsafe default values from the BIOS ROM, select this field then press <Enter>. A dialog box will appear. Confirm by selecting OK.

You can also press <F9> to load failsafe default values.



Appendix A: Watchdog Timer

Watchdog Timer Setting

NSA 3130 features a watchdog timer that resets the CPU or generates an interrupt if the processor stops operating for any reason. This feature ensures system reliability in industrial standalone or unmanned environments. Set pin 89 as a WDTO output. Write '0' to CR2B[4].

1. Select timer type (Sec/Min). LD8 CRF5[3] (0: sec, 1: min)
2. Clear timeout status. Write '0' to LD8 CRF7[4].
3. Set the timeout value. Meanwhile the timer will start to count down.
4. Write a value to LD8 CRF6. When a timeout occurs, pin 89 will become active (high level).
5. CRF6 must be 0x0. Write another 0x00 to CRF6 (timeout disable) even though it is already 0x00. Clear the timeout status. Write '0' to LD8 CRF7[4]. pin 89 will fall at the same time.

CRFC6 (Default 0x00)

Watchdog Timer Time-out Value

Writing a non-zero value to this register causes the counter to load the value to Watchdog Counter and start counting down. If Bit 7 and Bit 6 are set, any Mouse Interrupt or Keyboard Interrupt event will also cause the reload of previously-loaded non-zero value to Watchdog Counter and start counting down. Reading this register returns current value in Watchdog Counter.

Dog Timer Time-out Value

BIT	Definition
7-0	0x00 time-out disabled 0x01 time-out occurs after 1sec./min. 0x02 time-out occurs after 2 sec./min. 0x03 time-out occurs after 3 sec./min. 0xFF time-out occurs after 255 sec./min.

Watch Dog Sample Code

```

;#####
;ENTER THE SIO CONFIGURATION MODE
;#####
MOV    DX, 2EH
MOV    AL, 87H
OUT    DX, AL
OUT    DX, AL

MOV    AL, 07H      ;POINT TO LOGICAL DEVICE NUMBER REG
OUT    DX, AL
INC    DX
MOV    AL, 08H
OUT    DX, AL

;#####
;SET UNITS
;#####
MOV    DX, 2EH
MOV    AL, 0F5H
OUT    DX, AL
INC    DX
IN     AL, DX
AND    AL, NOT 8     ;SECEND MODE.
OUT    DX, AL

;#####
;SET TIME OUT VALUE
;#####
MOV    DX, 2EH

```

```

MOV    AL, 0F6H
OUT    DX, AL
MOV    AL, NUMBER OF TIME OUT VALUE IN SECENDS (0-255)
INC    DX
OUT    DX, AL

```

```

;#####
;EXIT THE SIO CONFIGURATION MODE
;#####

```

```

MOV    DX, 2EH
MOV    AL, 0AAH
OUT    DX, AL

```

Appendix B: GPI/O Programming Guide

This appendix provides definitions for the four GPI/O pins on NSA 3130. GPI/O (General Purpose Input/Output) pins are provided for custom system design. The pin programmed as input mode (GPI) or output mode (GPO) depends on the configuration.

GPIO (J6)

Pin 3	Pin 5	Pin 7	Pin 9	Pin 4	Pin 6	Pin 8	Pin 10
GPIN10	GPIN11	GPIN12	GPIN13	GPOUT14	GPOUT15	GPOUT16	GPOUT17

GPIO Sample Code

```
#####
;MSB LSB
GPIO17 GPIO16 GPIO15 GPIO14 GPIO13 GPIO12 GPIO11 GPIO10
#####
#####
;Enable Configuration mode.
#####
out 2eh, 87h
out 2eh, 87h
#####
;Select logical device (GPIO1).
#####
out 2eh, 07h
out 2fh, 07h
#####
;Activate GPIO Function.
#####
out 2eh, 30h
out 2fh, 01h
#####
```

```
;CRF0 (GP10-GP17 I/O selection register. Default 0xFF)
;When set to a '1', respective GPIO port is programmed as an input port.
;When set to a '0', respective GPIO port is programmed as an output port.
#####
out 2eh, 0f0h
out 2fh, f0h ;GPIO10-13 as output pin , GPIO14-17 as input pin
#####
;CRF1 (GP10-GP17 data register. Default 0x00)
;If a port is programmed to be an output port, then its respective bit can
be read/written.
;If a port is programmed to be an input port, then its respective bit can
only be read.
#####
out 2eh, 0f1h
in 2fh
```

SW1

Read GPI12 Sample Code

```
mov dx,48Dh
```

```
in al,dx
```

and al,10h ;now al (bit4) is GPIO12 value.



Appendix C: Bypass Specifications

NSA 3130 provides LAN bypass functionality to ensure that data can still pass through the device, even when it is powered off. This feature helps ensure the continuous flow of data through the device in the event of a hardware failure. For network security appliances deployed at the gateway, for example, it is crucial that they provide LAN bypass functionality to ensure that hardware failure on these appliances will not bring down the entire network.

BTCCR - Bypass Timer Configuration Register = 0XF2

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
R	X	X	X	W	W	W	W

Bit 7: Timer Expired

0 - Timer has not expired

1 - Timer has expired

Bit [2:0]: Timer Value

000 - 0 second

001 - 1 second

010 - 2 second

011 - 4 second

100 - 8 second

101 - 16 second

110 - 32 second

111 - 64 second

Bypass Control Function

BCSR - Bypass Control Status Register = 0XF3

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
W	W	R/W	R/W	R/W	R/W	R/W	R/W

Bit [7:6]: Bypass Mode

00 - Ignore, no action taken

01 - Force enable

10 - Force disable

11 - Timer enable

Bit [5:0]: Segment Control Bit

Bit 0: Segment 1 (facing the front panel, the rightmost is the 1st Bypass)

Bit 1: Segment 2 (facing the front panel, the second from the right is the 2nd Bypass)

Bit 2: Segment 3 (facing the front panel, the third from the right is the 3rd Bypass)

Bit 3: Segment 4 (facing the front panel, the fourth from the right is the 4th Bypass)

Power OFF state Bypass Control Function**Power Off state Bypass Configuration Register = 0XF7**

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
X	X	W	W	W	W	W	W

Bit 0: Segment 1 (facing the front panel, the rightmost is the 1st Bypass)

Bit 1: Segment 2 (facing the front panel, the second from the right is the 2nd Bypass)

Bit 2: Segment 3 (facing the front panel, the third from the right is the 3rd Bypass)

Bit 3: Segment 4 (facing the front panel, the fourth from the right is the 4th Bypass)

0 - Set segment bypass Disable when power off

1 - Set segment bypass Enable when power off

Appendix D: Power Consumption

Power Consumption

Voltage	12V	5VSB	3VSB	5V	3.3V	VCORE 1.15V-1.5V	1.1V	1.2V	1.5V	0.75V	1.05V	2.5V	1V
Net Name	P12V	P5VSB	P3V3SB	P5V	P3V3	VCORE	P1V1_CORE	FSB_VTT	P1V5_SM	P0V75_SM- VTT	P1V05_ICH	P2V5_SWITCH	P1V_SWITCH
CPU						70		5.8					
G41					0.1		22						
ICH7-R		0.02	0.7	0.01	0.58				2		1.4		
DDR3									7.2	0.83			
CK505					0.55								
Clock Buffer					0.5								
82574L x 8					2.15								
Relay x 32				3.2									
PLX8604												0.03	3.03
PS2 KB/MS				0.5									
FAN x 4	1												
USB x 4				2									
Mini PCI Slot			0.375	0.4	0.6								
PCI-E x8 slot	2.1		0.375		3								
Total Current	3.1	0.02	1.45	6.11	7.48	70	22	5.8	9.2	0.83	1.4	0.03	3.03

Power Supply Must Consumed Watts and Currents

Power Type	12V	5V	3.3V	12V-to-Vcore DC/DC		5V-to-1.1V DC/DC	5V-to-1.2V DC/DC	5V-to-1.5V DC/DC	5V-to-0.75V DC/DC	5V-to-1.05V DC/DC	3.3V-to-2.5V DC/DC	3.3V-to-1V DC/DC
Consumed watts	37.2W	30.55W	24.684W	130W	95W	24.2W	6.96W	13.8W	0.623W	1.47W	0.075W	3.03W
Consumed currents (Item A)	3.1A	6.11A	7.48A	10.833A	7.917A	4.84A	1.392A	2.76A	0.125A	0.294A	0.023A	0.918A
Actually required currents (Item A/0.80)				13.541A	9.896A	6.05A	1.74A	3.45A	0.156A	0.368A	0.029A	1.148A
12V needed	16.641A – 130W Vcore (12.996A – 95W Vcore)											
5V needed	17.874A											
3.3V needed	8.657A											
5vSB needed	1.216A											