NEXCOM International Co., Ltd.

Industrial Computing Solutions
Fanless Computer
NISE 2200
User Manual

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Preface

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Acknowledgements

NISE 2200 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 B 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 B 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

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

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

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

How to recognize NEXCOM RoHS Products?

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

All new product models launched after January 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.

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

System Level

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

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

- Replace with 3rd party products if needed.

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

Board Level

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

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

Warnings

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

Cautions

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

Safety Information

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

▪ Read all instructions carefully.

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

▪ Follow all warnings and cautions in this manual.

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

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

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

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

Installation Recommendations

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

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

▪ A Philips screwdriver

▪ A flat-tipped screwdriver

▪ A grounding strap

▪ An anti-static pad

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

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

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

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

5. Keep this equipment away from humidity.

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

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

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

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

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

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

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

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

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

15. Do not place heavy objects on the equipment.

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

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

Technical Support and Assistance

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

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.

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Package Contents

Before continuing, verify that the NISE 2200 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	4NCPF00204X00	Terminal Blocks 2P Phoenix Contact	1
2	50311C0006X00	(H)I Head Screw Long	2
3	50311F0326X00	Flat Head Screw Long	4
4	60177A0283X00	(N)NISB2200 Quick Reference Guide	1
5	602DCD0535X00	(N)NISE2200 CD Driver	1

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Ordering Information

The following information below provides ordering information for NISE 2200.

- **Barebone**
  - NISE 2200 P/N: 10J00220000X0
    Intel® Atom™ Dual Core D2550 Fanless System
  - NISE 2210 P/N: 10J00221000X0
    Intel® Atom™ Dual Core D2550 Fanless System with one PCI Expansion
  - NISE 2210E P/N: 10J00221001X0
    Intel® Atom™ Dual Core D2550 Fanless System with one PCIe x1 Expansion or one PCIe x4 Expansion

Chapter 1: Product Introduction

Overview

Key Features

- On-board Intel® Atom™ Dual Core D2550 processor 1.86 GHz

- Intel® 82801JIR ICH10 RAID

- 1x DVI-I & 1x HDMI display output

- Dual Intel® 82574IT GbE LAN ports; support WoL, teaming & PXE

- 6x COM (2x RS-232/422/485 w/ isolation protection)

- 4x GPI & 4x GPO

- 6x USB2.0; 1x external CFast socket; 1x SIM card socket

- 1x internal mini-PCIe with two antenna holes

- Support +9V to 36VDC Input; support ATX power mode

Hardware Specifications

CPU Support

- On-board Intel® Atom™ Dual Core D2550 processor, 1.86GHz, 1M L2 cache
- Intel® 82801JIR ICH10 RAID

Main Memory

- 2x DDR3 SO-DIMM socket, support up to 4G DDR3/DDR3L 1066/1333/1600 SDRAM, with un-buffered and non-ECC
- Pre-installed 4G Industrial Grade Memory as the manufacture configuration for shipment

I/O Interface-Front

- ATX Power on/off switch
- HDD access/ power status LEDs
- 2x DB9, RS232/422/485 w/ 2.5KV isolation protection
- 2x USB2.0
- 1x DB15, 4x GPI & 4x GPO
- 1x Mic-in & 1x Line out
- SIM card socket
- CFast socket
- 2x antenna holes

I/O Interface-Rear

- 1x 2-pin DC input, support +9 to 36V DC input
- 1x HDMI
- 1x DVI-I
- Dual Intel® 82574IT GbE LAN ports; support WoL, teaming and PXE
- 4x USB2.0
- 2x DB9, RS232/422/485
- 2x DB9, RS232 only

Device

- 1x 2.5" SATA HDD driver bay

- 1x External CFast socket
- 1x External SIM card socket
- 1x internal mini-PCIe socket (Support optional WiFi or 3.5G wireless module, jumper free)

Power Requirements

- Support +9 to 36VDC input; support ATX power mode
- Optional 19V, 65W power adapter

Dimensions

- 195mm (W) x 200mm (D) x 65mm (H) (7.7" x 7.9" x 2.6")

Construction

- Aluminum chassis with fanless design

Environment

- Operating temperature: Ambient with air flow: -20°C to 65°C
- Storage temperature: -30°C to 85°C
- Relative humidity: 10% to 93% (Non-condensing)
- Shock protection:
  - HDD: 20G, half sine, 11ms, IEC60068-2-27
  - CFast: 50G, half sine, 11ms, IEC60068-2-27
- Vibration protection w/ HDD condition
  - Random: 0.5Grms @ 5~500 Hz according to IEC60068-2-64
  - Sinusoidal: 0.5Grms @ 5~500 Hz according to IEC60068-2-6

Certifications

- CE approval
- FCC Class A

OS Support List

- Windows XP 32-bit
- Windows 7 32-bit
- WinCE 7.0

Knowing Your NISE 2200

Front Panel

USB 2.0

GPIO w/ 2.5KV isolation protection

Antenna hole

Line-out

Power/HDD/LAN LED

COM1&2: RS232/422/485 w/ 2.5KV isolation protection

CFast

SIM card

Mic-in
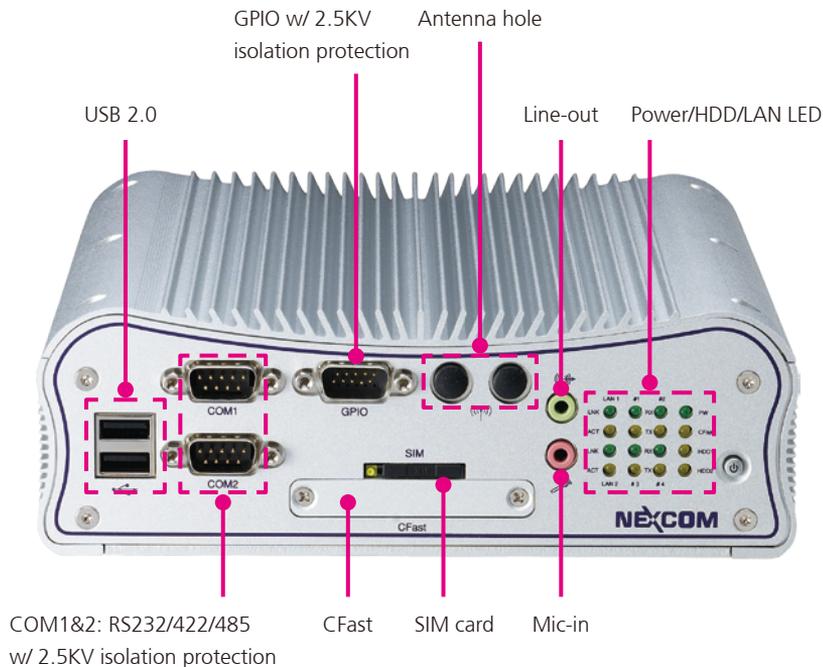
USB2.0 Ports
Two USB2.0 ports to connect the system with USB2.0/1.1 devices.

COM1 and COM2 RS232/RS422/RS485
Used to connect RS232/422/485 compatible serial devices (with 2.5 KV isolation protection).

GPIO
The GPIO connector supports 4 digital input and 4 digital output (with 2.5 KV isolation protection).

CFast
Used to insert a CFast card.

SIM Card
Used to insert a SIM card.

Antenna Hole
Empty antenna holes reserved for installing optional Mini-PCIe Wi-Fi module.

Line-out
Line-out jack to connect speakers or headphones.

Mic-in
Mic-in jack to connect microphones.

Power/HDD/LAN LED
Indicates the power status of the system, hard drive and LAN activity.

Rear Panel

DVI-I   LAN   COM3&4:
RS232/422/485

9~36 DC Input   HDMI   USB 2.0   COM5&6: RS232
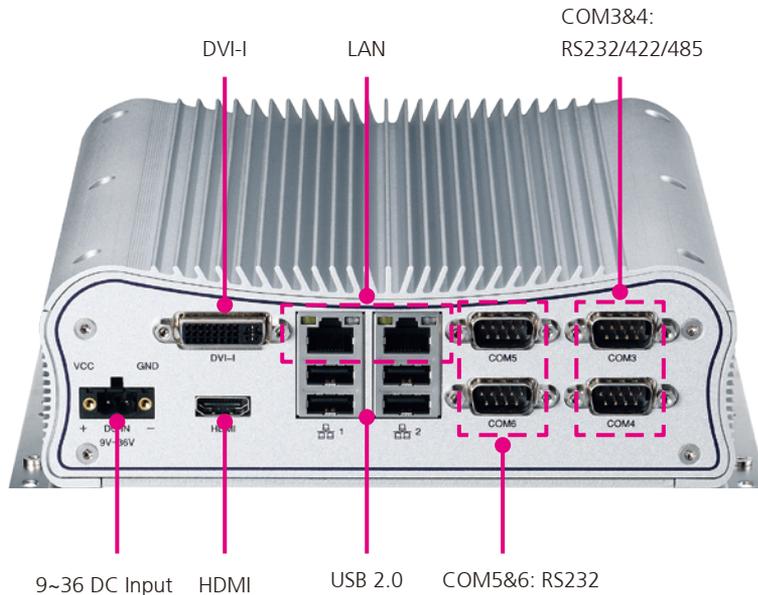
9~36V DC Input

Used to plug a DC power cord.

DVI-I

Used to connect a digital LCD panel.

HDMI

Used to connect a high-definition display.

USB2.0 Ports

Four USB2.0 ports to connect the system with USB2.0/1.1 devices.

Gigabit LAN Ports

Dual Gigabit LAN ports to connect the system to a local area network.

COM5 and COM6 RS232

Used to connect RS232 compatible serial devices.

COM3 and COM4 RS232/RS422/RS485

Used to connect RS232/422/485 compatible serial devices.

Mechanical Dimensions

NISE 2200
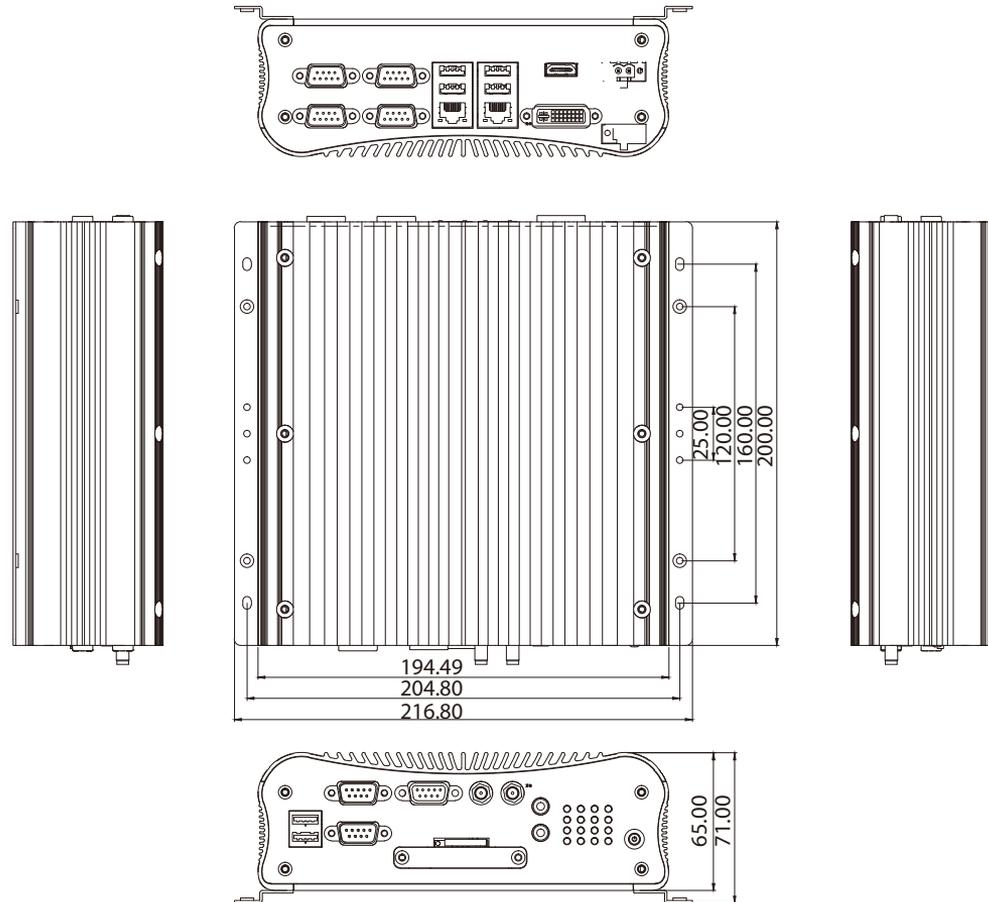
NISE 2210/ NISE 2210E
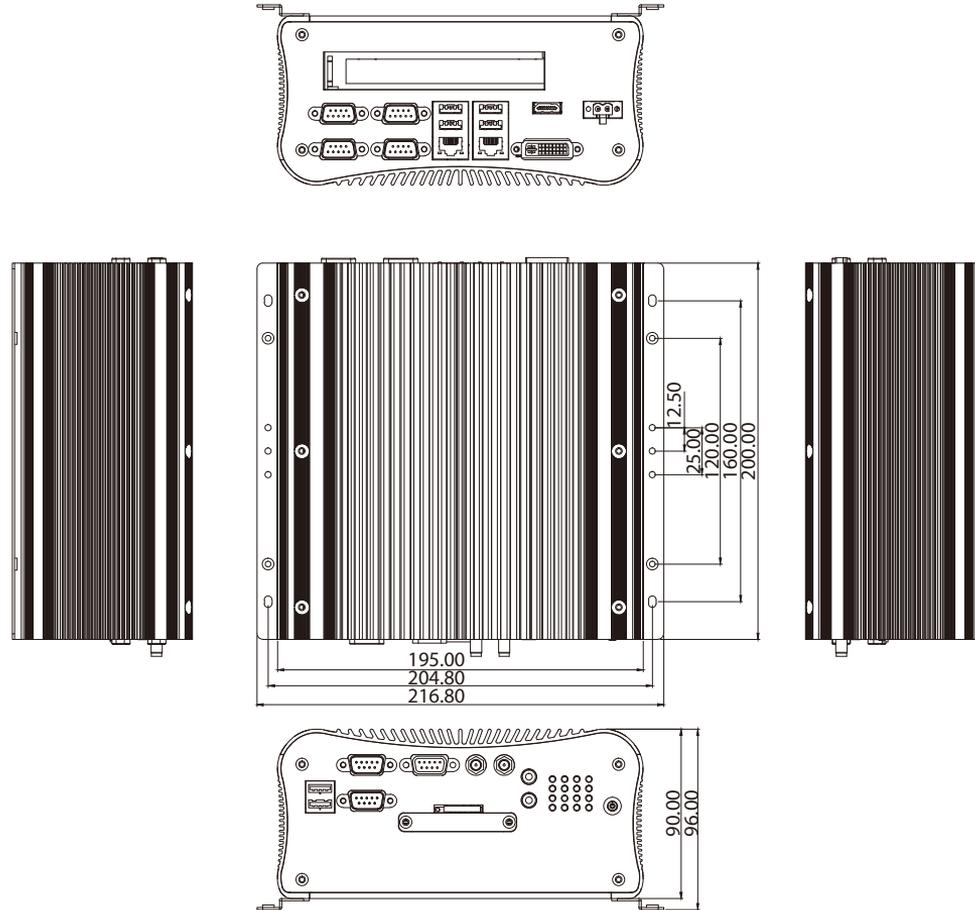
Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NISE 2200 motherboard.

Before You Begin

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

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

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

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

Precautions

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

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

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

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

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

▪ Use correct screws and do not over tighten screws.

Jumper Settings

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

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

Two-Pin Jumpers: Open (Left) and Short (Right)
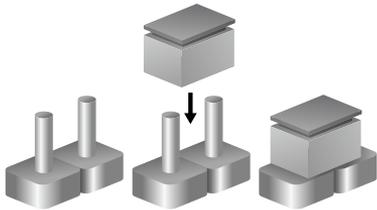
Three-Pin Jumpers: Pins 1 and 2 are Short
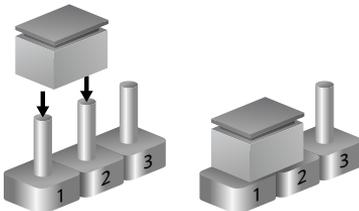
Locations of the Jumpers and Connectors for NISB 2200

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

Top View
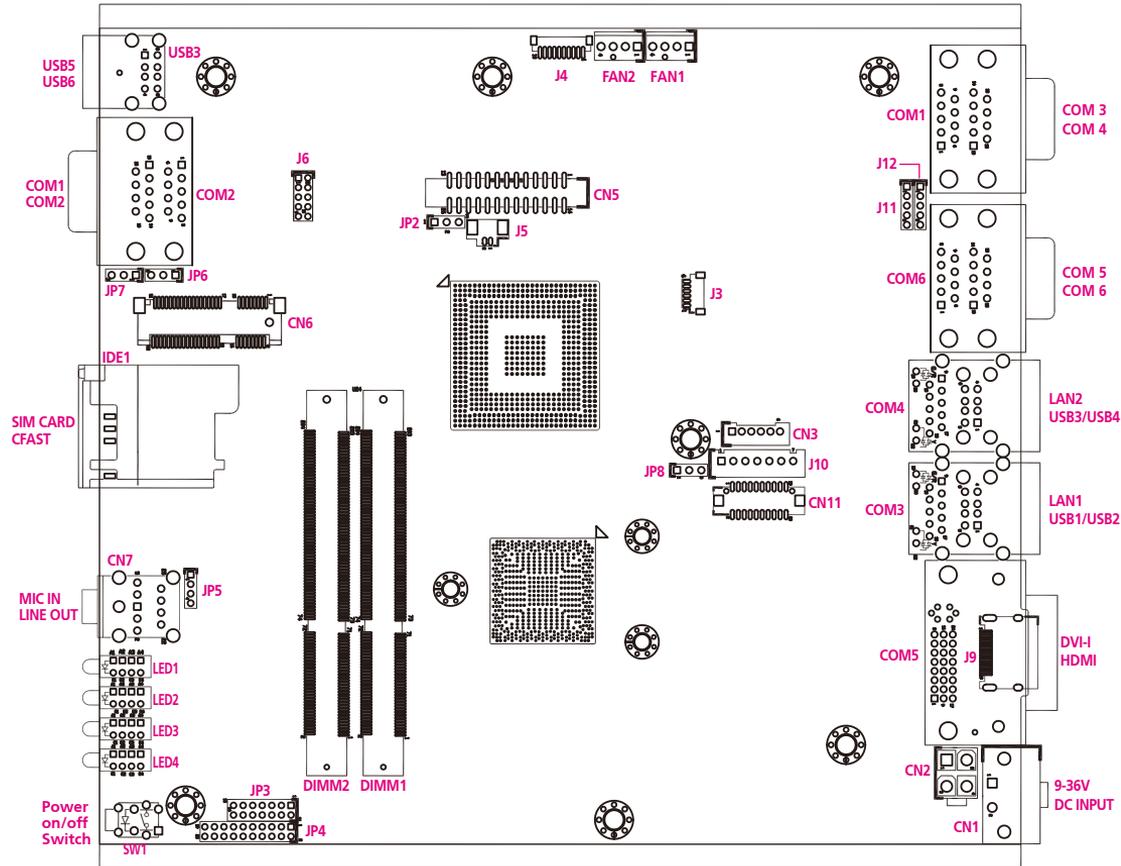
Bottom View
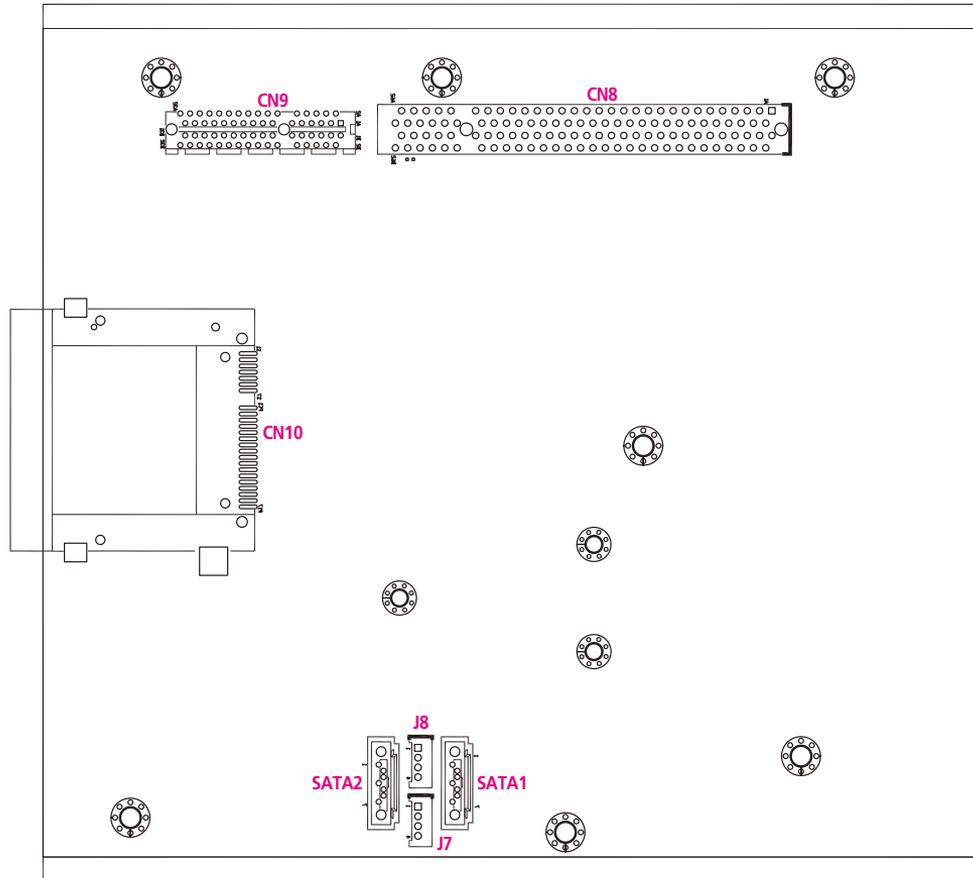
Jumpers

RTC Clear

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP2

1 □ ○ ○ 3

Pin	Settings
1-2 On	Normal
2-3 On	Clear BIOS

1-2 On: default

Panel CCFL Power Jump

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP8

1 □ ○ ○ 3

Pin	Definition
1	VCC3_S (3.3V)
2	VCC_LCD
3	VCC5_S(+5V)

1-2 On: default

COM5 RS232 RI# Pin Power Select

Connector type: 1x5 5-pin header, 2.0mm pitch
Connector location: J11

1 ▢ ○ ○ ○ ○ 5

Pin	Settings
1-2 On	+5V
2-3 On	+12V
4-5 On	RING

4-5 On: default

Pin	Definition
1	VCC5_S
2	SP5_RI_T
3	VCC12_S
4	SP5_RI_T
5	SP5_RI

COM6 RS232 RI# Pin Power Select

Connector type: 1x5 5-pin header, 2.0mm pitch
Connector location: J12

1 ▢ ○ ○ ○ ○ 5

Pin	Settings
1-2 On	+5V
2-3 On	+12V
4-5 On	RING

4-5 On: default

Pin	Definition
1	VCC5_S
2	SP6_RI_T
3	VCC12_S
4	SP6_RI_T
5	SP6_RI

Connector Pin Definitions

External I/O Interfaces – Front Panel
USB 2.0
Connector type: Dual USB port, Type A
Connector location: USB3
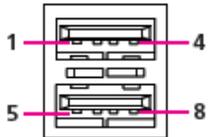
Pin	Definition	Pin	Definition
1	VCC5_A	5	VCC5_A
2	USB_4N	6	USB_5N
3	USB_4P	7	USB_5P
4	GND	8	GND

COM1 and COM2 Connector
Connector type: DB-9 port
Connector location: COM2A (COM1) and COM2B (COM2)
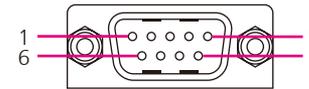
COM1 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP1_DCD	1	SP1_DATA-	1	SP1_TX-
2	SP1_RXD	2	SP1_DATA+	2	SP1_TX+
3	SP1_TXD	3	NC	3	SP1_RX+
4	SP1_DTR	4	NC	4	SP1_RX-
5	ISO_GND	5	ISO_GND	5	ISO_GND
6	SP1_DSR	6	NC	6	SP1_RTS-
7	SP1_RTS	7	NC	7	SP1_RTS+
8	SP1_CTS	8	NC	8	SP1_CTS+
9	SP1_RI	9	NC	9	SP1_CTS-

COM2 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP2_DCD	1	SP2_DATA-	1	SP2_TX-
2	SP2_RXD	2	SP2_DATA+	2	SP2_TX+
3	SP2_TXD	3	NC	3	SP2_RX+
4	SP2_DTR	4	NC	4	SP2_RX-
5	ISO_GND	5	ISO_GND	5	ISO_GND
6	SP2_DSR	6	NC	6	SP2_RTS-
7	SP2_RTS	7	NC	7	SP2_RTS+
8	SP2_CTS	8	NC	8	SP2_CTS+
9	SP2_RI	9	NC	9	SP2_CTS-

GPIO

External connector type: DB-15, 2x5 10-pin header
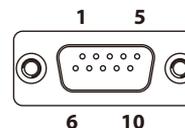
Pin	Definition	Pin	Definition
1	ISO_VCC5	6	ISO_GND
2	SIO_GPI20	7	SIO_GPO24
3	SIO_GPI21	8	SIO_GPO25
4	SIO_GPI22	9	SIO_GPO26
5	SIO_GPI23	10	SIO_GPO27

Internal connector location: J6
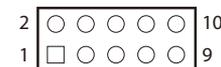
Pin	Definition	Pin	Definition
1	ISO_VCC5	2	ISO_GND
3	SIO_GPO24	4	SIO_GPI20
5	SIO_GPO25	6	SIO_GPI21
7	SIO_GPO26	8	SIO_GPI22
9	SIO_GPO27	10	SIO_GPI23

SIM Card Connector

Connector location: IDE1
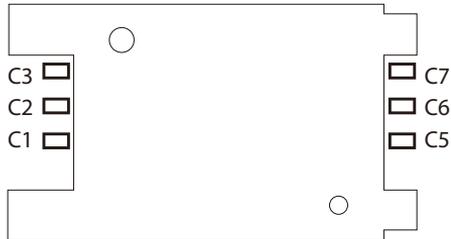
Pin	Definition	Pin	Definition
C1	UIM_PWR	C2	UIM_RESET
C3	UIM_CLK	C5	GND
C6	UIM_VPP	C7	UIM_DATA

CFast Connector

Connector location: CN10

S1   S7 PC1   PC17
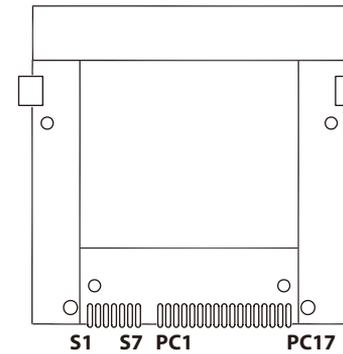
Pin	Definition	Pin	Definition
S1	GND	PC6	NC
S2	SATA_TXP1	PC7	GND
S3	SATA_TXN1	PC8	NC
S4	GND	PC9	CFAST_ACCESS
S5	SATA_RXN1	PC10	NC
S6	SATA_RXP1	PC11	NC
S7	GND	PC12	NC
PC1	CDI	PC13	+3.3V
PC2	GND	PC14	+3.3V
PC3	NC	PC15	GND
PC4	NC	PC16	GND
PC5	NC	PC17	NC

Audio Connectors

Connector type: 2x 3.5mm TRS
Connector location: CN7A (Mic-in) and CN7B (Line-out)

Line-out

Mic-in
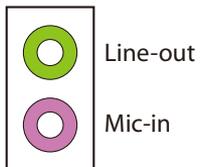
Pin	Definition	Pin	Definition
1	NC	2	MIC_L
3	GND	4	MIC_JD
5	MIC_R		
22	OUT_L	23	GND
24	EXLINEOUT_JD	25	OUT_R
NH1			

Power Switch

Connector location: SW1

Pin	Definition	Pin	Definition
1	GND	2	VCC3_A
3	VCC3_A	4	GND
A1	PWRLED_N	C1	PWRLED_P
MH1	NC	MH2	NC

LAN1/LAN2 Link/Active LEDs

Connector location: LED1 and LED2
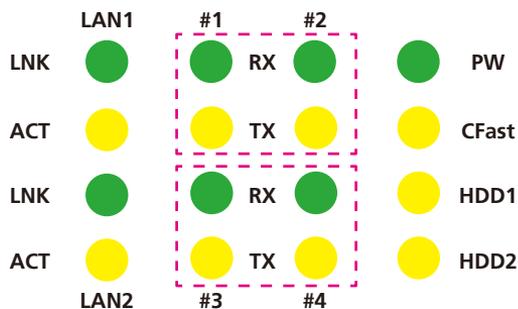
LAN Ports

Status	LED Color	Definition
LAN1/LNK	Green	Link status of LAN1
LAN1/ACT	Yellow	Network activity of LAN1
LAN2/LNK	Green	Link status of LAN2
LAN2/ACT	Yellow	Network activity of LAN2

COM1 and COM2

Status	LED Color	Definition
#1/RX	Green	Receive signal of COM1
#1/TX	Yellow	Transmit signal of COM1
#2/RX	Green	Receive signal of COM2
#2/TX	Yellow	Transmit signal of COM2

COM3 and COM4

Status	LED Color	Definition
#3/RX	Green	Receive signal of COM3
#3/TX	Yellow	Transmit signal of COM3
#4/RX	Green	Receive signal of COM3
#4/TX	Yellow	Transmit signal of COM4

Power, CFast, HDD1 and HDD2

Status	LED Color	Definition
PW	Green	Power status of the system
CFast	Yellow	Activity of CFast
HDD1	Yellow	Activity of HDD1
HDD2	Yellow	Activity of HDD2

Note: LED indication of NISE2200/NISE2300 is controlled by HDD/SSD/CFast itself. Some HDD/SSD/CFast might not flash due to its design limitation.

		Flashing	LED On	No LED
SSD	Apacer SSD APS25P6B032G-CCM 32G			✓
SSD	Apacer SSD APS25P6B032G-CTW 32G			✓
SSD	Apacer SSD APS25P6B064G-CCM 64G			✓
2.5" HDD	2.5" HDD Toshiba MK1676GSX 160G	✓		
2.5" HDD	2.5" HDD Hitachi HTS541640J9SA00 40G	✓		
2.5" HDD	2.5" HDD Seagate ST9160314AS 160G	✓		
2.5" HDD	2.5" HDD Fujitsu MHZ008DBH 80G	✓		
Cfast	Cfast Transcend 8G			✓
Cfast	Cfast Apacer APCFA004GT6HS-ETT 4G	✓		
Cfast	Cfast Unigen UGB31JAC8000A1 8G	✓		

External I/O Interfaces – Rear Panel

9~36V DC Power Input

Connector type: Phoenix Contact 1x2 2-pin terminal block
Connector location: CN1
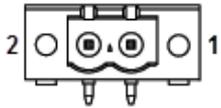
Pin	Definition
1	GND
2	VIN

DVI-I Connector

Connector type: 24-pin D-Sub, 2.0mm-M-180 (DVI)
Connector location: CON5
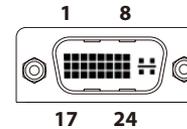
Pin	Definition	Pin	Definition
1	TX2-	2	TX2+
3	GND	4	NC
5	NC	6	DDC_CLK
7	DDC_DATA	8	VSYNC_VGA
9	TX1-	10	TX1+
11	GND	12	NC
13	NC	14	DVI_VCC(+5V)
15	GND	16	HotPlugDet
17	TX0-	18	TX0+
19	GND	20	DDCCLK_VGA
21	DDCDATA_VGA	22	GND
23	TXCLK+	24	TXCLK-

HDMI

Connector type: HDMI port
Connector location: J9

LAN1 and USB 2.0 Ports

Connector type: RJ45 port with LEDs and dual USB 2.0 ports
Connector location: CON3B (LAN1) and CON3A (USB1/2)
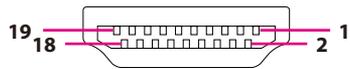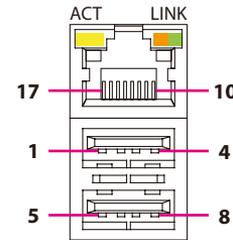
Pin	Definition	Pin	Definition
1	HDMI_DATA2_P	2	GND
3	HDMI_DATA2_N	4	HDMI_DATA1_P
5	GND	6	HDMI_DATA1_N
7	HDMI_DATA0_P	8	GND
9	HDMI_DATA0_N	10	HDMI_CLK_P
11	GND	12	HDMI_CLK_N
13	NC	14	NC
15	HDMI_CTRL_CLK	16	HDMI_CTRL_DATA
17	GND	18	HDMI_VCC5
19	HDMI_HPD_R	20	

Link	Status
Steady Green	1G network link
Steady Orange	10/100Mbps network link
Off	No link

Act	Status
Flashing Yellow	Data activity
Off	No activity

USB1/2

Pin	Definition	Pin	Definition
1	VCC5A	5	VCC5A
2	USB_0N	6	USB_1N
3	USB_0P	7	USB_1P
4	GND	8	GND

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LAN1

Pin	Definition	Pin	Definition
9	LAN3P1V9	18	GND
10	LAN3_MDI0P	19	LAN3_LED3P
11	LAN3_MDI0N	20	LAN3_LED2P
12	LAN3_MDI1P	21	LAN3_LED_ACT#
13	LAN3_MDI1N	22	LAN3_LED1P
14	LAN3_MDI2P	MH5	GND
15	LAN3_MDI2N	MH6	GND
16	LAN3_MDI3P	MH7	GND
17	LAN3_MDI3N	MH8	GND

LAN2 and USB 2.0 Ports

Connector type: RJ45 port with LEDs and dual USB 2.0 ports
Connector location: CON4B (LAN2) and CON4A (USB3/4)
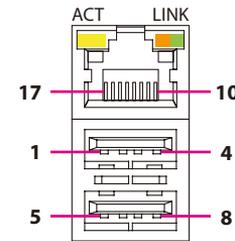
Link	Status
Steady Green	1G network link
Steady Orange	10/100Mbps network link
Off	No link

Act	Status
Flashing Yellow	Data activity
Off	No activity

USB3/4

Pin	Definition	Pin	Definition
1	VCC5A	5	VCC5A
2	USB_2N	6	USB_3N
3	USB_2P	7	USB_3P
4	GND	8	GND

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LAN2

Pin	Definition	Pin	Definition
9	LAN4P1V9	18	GND
10	LAN4_MDI0P	19	LAN4_LED3P
11	LAN4_MDI0N	20	LAN4_LED2P
12	LAN4_MDI1P	21	LAN4_LED_ACT#
13	LAN4_MDI1N	22	LAN4_LED1P
14	LAN4_MDI2P	MH5	GND
15	LAN4_MDI2N	MH6	GND
16	LAN3_MDI3P	MH7	GND
17	LAN3_MDI3N	MH8	GND

COM5 and COM6 Ports

Connector type: DB-9 port, 9-pin D-Sub
Connector location: COM6A (COM5) and COM6B (COM6)
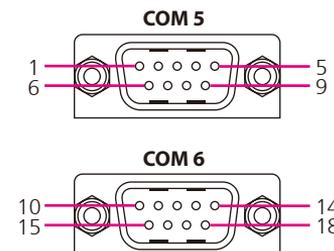
COM 5

COM 6

COM5 Connector Pin Definition

Pin	Definition	Pin	Definition
1	SP5_DCD	2	SP5_RXD
3	SP5_TXD	4	SP5_DTR
5	GND	6	SP5_DSR
7	SP5_RTS	8	SP5_CTS
9	SP5_RI		

COM6 Connector Pin Definition

Pin	Definition	Pin	Definition
10	SP6_DCD	11	SP6_RXD
12	SP6_TXD	13	SP6_DTR
14	GND	15	SP6_DSR
16	SP6_RTS	17	SP6_CTS
18	SP6_RI		

COM3 and COM4 Ports

Connector type: DB-9 port, 9-pin D-Sub
Connector location: COM1A (COM3) and COM1B (COM4)

COM 3

COM 4
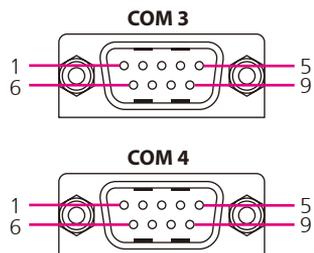
COM3 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP3_DCD	1	SP3_DATA-	1	SP3_TX-
2	SP3_RXD	2	SP3_DATA+	2	SP3_TX+
3	SP3_TXD	3	NC	3	SP3_RX+
4	SP3_DTR	4	NC	4	SP3_RX-
5	GND	5	GND	5	GND
6	SP3_DSR	6	NC	6	SP3_RTS-
7	SP3_RTS	7	NC	7	SP3_RTS+
8	SP3_CTS	8	NC	8	SP3_CTS+
9	SP3_RI	9	NC	9	SP3_CTS-

COM4 Connector Pin Definition

RS232		RS485		RS422	
Pin	Definition	Pin	Definition	Pin	Definition
1	SP4_DCD	1	SP4_DATA-	1	SP4_TX-
2	SP4_RXD	2	SP4_DATA+	2	SP4_TX+
3	SP4_TXD	3	NC	3	SP4_RX+
4	SP4_DTR	4	NC	4	SP4_RX-
5	GND	5	GND	5	GND
6	SP4_DSR	6	NC	6	SP4_RTS-
7	SP4_RTS	7	NC	7	SP4_RTS+
8	SP4_CTS	8	NC	8	SP4_CTS+
9	SP4_RI	9	NC	9	SP4_CTS-

Internal Connectors

LVDS Connector

Connector type: 2x10 20-pin header, 1.25mm pitch
Connector location: CN11

Panel CCFL Connector

Connector type: 1x7 JST, 7-pin header, 2.5mm pitch
Connector location: J10
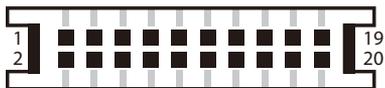
Pin	Definition	Pin	Definition
1	LVDS_DDC_CLK	2	LVDS_DDC_DAT
3	VCC_LCD(5V or 3.3V)	4	LVDS_TX0_DP
5	LVDS_TX3_DP	6	LVDS_TX0_DN
7	LVDS_TX3_DN	8	VCC_LCD(5V or 3.3V)
9	GND	10	LVDS_TX1_DP
11	LVDS_CLKP	12	LVDS_TX1_DN
13	LVDS_CLKN	14	GND
15	GND	16	V_INV (12V)
17	LVDS_TX2_DP	18	V_INV (12V)
19	LVDS_TX2_DN	20	GND
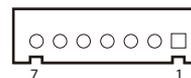
Pin	Definition
1	VCC_LCD
2	V_INV (12V)
3	V_INV (12V)
4	BKLTCTRL
5	GND
6	GND
7	BKLTEN

Mini-PCIe Connector

Connector location: CN6
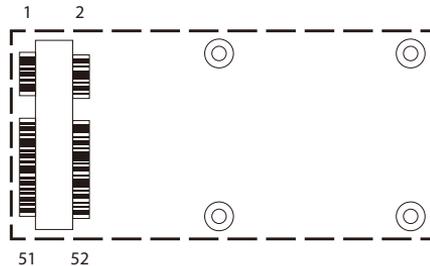
Pin	Definition	Pin	Definition
1	PCIEWAKE#	14	N/A
2	+3VSB	15	GND
3	N/A	16	N/A
4	GND	17	N/A
5	N/A	18	GND
6	+1.5V	19	N/A
7	CLKREQ#	20	Disable#
8	N/A	21	GND
9	GND	22	RST#
10	N/A	23	PCIERX0-
11	REF CLK-	24	+3VSB
12	N/A	25	PCIERX0+
13	REF CLK+	26	GND

Pin	Definition	Pin	Definition
27	GND	40	GND
28	+1.5V	41	+3VSB
29	GND	42	N/A
30	SMBCLK	43	GND
31	PCIETX0-	44	N/A
32	SMBDATA	45	N/A
33	PCIETX0+	46	N/A
34	GND	47	N/A
35	GND	48	+1.5V
36	USB_D-	49	N/A
37	GND	50	GND
38	USB_D+	51	N/A
39	+3VSB	52	+3VSB

3.5G Line-out Pin Header

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP6

1 ▢ ○ ○ 3

Pin	Definition
1	LOUT_RL
2	LOUT_RR
3	ANGND

3.5G Mic Pin Header

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP7

1 ▢ ○ ○ 3

Pin	Definition
1	MIC_RL
2	MIC_RR
3	ANGND

Line-in Pin Header

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP5

1 □ ○ ○ ○ 4

Pin	Definition
1	FLIN_L
2	LIN_JD
3	GND
4	FLIN_R

SATA1 Connector

Connector type: Standard Serial ATAII 7P (1.27mm, SATA-M-180)
Connector location: SATA1

1 □ ○ ○ ○ ○ ○ ○ 7
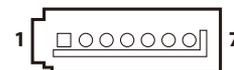
Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP0
3	SATA_TXN0	4	GND
5	SATA_RXN0	6	SATA_RXP0
7	DATA_DET0		

SATA1 Power Connector

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: J8

SATA2 Connector

Connector type: Standard Serial ATAII 7P (1.27mm, SATA-M-180)
Connector location: SATA2
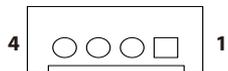
Pin	Definition	Pin	Definition
1	SATA_DET0	2	SATA_LED0
3	GND	4	VCC5_SATA0
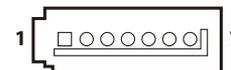
Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP1
3	SATA_TXN1	4	GND
5	SATA_RXN1	6	SATA_RXP1
7	DATA_DET1		

SATA2 Power Connector

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: J7

4 ☐○○○□ **1**
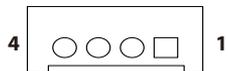
Pin	Definition	Pin	Definition
1	SATA_DET1	2	SATA_LED1
3	GND	4	VCC5_SATA1

FAN1 Connector

Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: FAN1

1 ☐□○○○☐ **4**
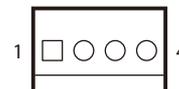
Pin	Definition	Pin	Definition
1	GND	3	FAN_TAC1 (CPU_FAN_SPEED)
2	VCC12_S	4	FAN_CTL1 (CPU_FAN_PWM)

FAN2 Connector

Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: FAN2

GPIO Pin Header

Connector type: 2x5 10-pin header, 2.0mm pitch
Connector location: J6
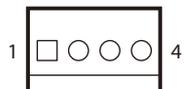
Pin	Definition	Pin	Definition
1	GND	3	FAN_TAC2 (CPU_FAN_SPEED)
2	VCC12_S	4	FAN_CTL2 (CPU_FAN_PWM)
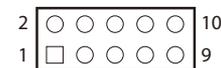
Pin	Definition	Pin	Definition
1	ISO_VCC5	2	ISO_GND
3	SIO_GPO24(Pin58)	4	SIO_GPI20(Pin52)
5	SIO_GPO25(Pin59)	6	SIO_GPI21(Pin54)
7	SIO_GPO26(Pin60)	8	SIO_GPI22(Pin56)
9	SIO_GPO27(Pin61)	10	SIO_GPI23(Pin57)

GPS Connector

Connector type: 1x6 JST, 6-pin header, 1.0mm pitch
Connector location: J3

Print Box Header

Connector type: 2x13 26-pin header, 2.0mm pitch
Connector location: CN5
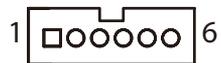
Pin	Definition	Pin	Definition
1	VCC3_A	2	NA
3	COM5_TXD	4	COM5_RXD
5	GND	6	VCC3_S

Pin	Definition	Pin	Definition
1	LPT_RP_STB#	2	LPT_RP_PRD0
3	LPT_RP_PRD1	4	LPT_RP_PRD2
5	LPT_RP_PRD3	6	LPT_RP_PRD4
7	LPT_RP_PRD5	8	LPT_RP_PRD6
9	LPT_RP_PRD7	10	LPT_ACK#R
11	LPT_BUSY	12	LPT_PE
13	LPT_SLCT	14	LPT_AFD#R
15	LPT_ERR#	16	LPT_INIT#R
17	LPT_SLIN#R	18	LPT_GND
19	LPT_GND	20	LPT_GND
21	LPT_GND	22	LPT_GND
23	LPT_GND	24	LPT_GND
25	LPT_GND	26	NC

PWR_BT/RET_BT/LED Pin Header

Connector type: 2x8 16-pin header, 2.0mm pitch
Connector location: JP3
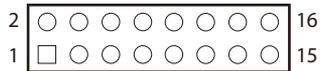
Pin	Definition	Pin	Definition
1	PWR_LED_N	2	PWR_LED_P
3	CFAST_ACCESS	4	SATA_LED_P
5	SATA_LED0_N	6	VCC5_S
7	SATA_LED1_N	8	VCC5_S
9	SLP_S3	10	PSON
11	RESET BOTTOM	12	GND
13	POWER BOTTOM	14	GND
15	AT Mode	16	GND

SMBUS/LAN1/2 LED Pin Header

Connector type: 2x10 20-pin header, 2.0mm pitch
Connector location: JP4
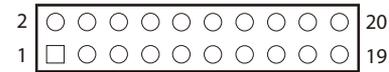
Pin	Definition	Pin	Definition
1	SMBCLK	2	SMBDAT
3	VCC3_A	4	GND
5	NC	6	VCC3_A
7	NC	8	VCC3_A
9	NC	10	VCC3_A
11	NC	12	VCC3_A
13	LAN3LINKMIX	14	VCC3_A
15	LAN3_LED_ACT#	16	VCC3_A
17	LAN4LINKMIX	18	VCC3_A
19	LAN4_LED_ACT#	20	VCC3_A

USB Internal Connector

Connector type: 1x6 JST, 6-pin header, 2.0mm pitch
Connector location: CN3

Pin	Definition	Pin	Definition
1	VCC5_A	2	USB_10N
3	USB_10P	4	USB_11N
5	USB_11P	6	GND

POE Connector

Connector type: 2x2 4-pin header, 4.2mm pitch
Connector location: CN2
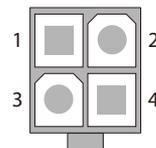
Pin	Definition	Pin	Definition
1	GND	2	GND
3	VIN	4	VIN

PCI Connector

Connector location: CN8
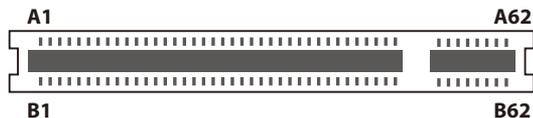
Pin	Definition	Pin	Definition
A1	TRST#	B1	-12V
A2	+12V	B2	TCK
A3	TMS	B3	GND
A4	TDI	B4	TDO
A5	+5V	B5	+5V
A6	INTA#	B6	+5V
A7	INTC#	B7	INTB#
A8	+5V	B8	INTD#
A9	RSV1	B9	PRSNT1#
A10	+5V	B10	RSV5
A11	RSV2	B11	PRSNT2#
A12	GND	B12	GND
A13	GND	B13	GND
A14	+3.3Vaux	B14	RSV6
A15	RST#	B15	GRPIMD
A16	+5V	B16	CLK
A17	GNT#	B17	GND

Pin	Definition	Pin	Definition
A18	GND	B18	REQ#
A19	PME#	B19	+5V
A20	AD30	B20	AD31
A21	+3.3V	B21	AD29
A22	AD28	B22	GND
A23	AD26	B23	AD27
A24	GND	B24	AD25
A25	AD24	B25	+3.3V
A26	IDSEL	B26	C/BE3#
A27	+3.3V	B27	AD23
A28	AD22	B28	GND
A29	AD20	B29	AD21
A30	GND	B30	AD19
A31	AD18	B31	+3.3V
A32	AD16	B32	AD17
A33	+3.3V	B33	C/BE2#
A34	FRAME#	B34	GND

Pin	Definition	Pin	Definition
A35	GND	B35	IRDY#
A36	TRDY#	B36	+3.3V
A37	GND	B37	DEVSEL#
A38	STOP#	B38	GND
A39	+3.3V	B39	LOCK#
A40	SMBCLK	B40	PERR#
A41	SMBDAT	B41	+3.3V
A42	GND	B42	SERR#
A43	PAR	B43	+3.3V
A44	AD15	B44	C/BE1#
A45	+3.3V	B45	AD14
A46	AD13	B46	GND
A47	AD11	B47	AD12
A48	GND	B48	AD10
A49	AD9	B49	GND
Connector Key			
A52	C/BE0#	B52	AD8
A53	+3.3V	B53	AD7
A54	AD6	B54	+3.3V
A55	AD4	B55	AD5
A56	GND	B56	AD3
A57	AD2	B57	GND
A58	AD0	B58	AD1
A59	+5V	B59	+5V
A60	REQ64#	B60	ACK64#
A61	+5V	B61	+5V
A62	+5V	B62	+5V

PCIe x4

Connector location: CN9
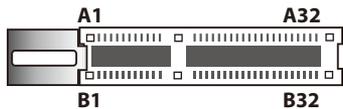
Pin	Definition	Pin	Definition
A1	PRSNT1	B1	VCC12_S
A2	VCC12_S	B2	VCC12_S
A3	VCC12_S	B3	VCC12_S
A4	GND	B4	GND
A5	NC	B5	SMBCLK
A6	NC	B6	SMBDATA
A7	NC	B7	GND
A8	NC	B8	VCC3_S
A9	VCC3_S	B9	NC
A0	VCC3_S	B10	VCC3_A
A11	PLTRST#_A	B11	PCIE_WAKE#
A12	GND	B12	NC
A13	CLK_PCIE4_P	B13	GND
A14	CLK_PCIE4_N	B14	PE_TX1_P
A15	GND	B15	PE_TX1_N
A16	PE_RX1_P	B16	GND

Pin	Definition	Pin	Definition
A17	PE_RX1_N	B17	NC
A18	GND	B18	GND
A19	RSVD3	B19	PE_TX2_P
A20	GND	B20	PE_TX2_N
A21	PE_RX2_P	B21	GND
A22	PE_RX2_N	B22	GND
A23	GND	B23	PE_TX3_P
A24	GND	B24	PE_TX3_N
A25	PE_RX3_P	B25	GND
A26	PE_RX3_N	B26	GND
A27	GND	B27	PE_TX4_P
A28	GND	B28	PE_TX4_N
A29	PE_RX4_P	B29	GND
A30	PE_RX4_N	B30	RSVD2
A31	GND	B31	PCIE4DET#
A32	RSVD4	B32	GND

Chapter 3: System Setup

Removing the Chassis Bottom Cover

Note: Installation for SATA Hard Drive and SATA DOM only

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

1. With the bottom side of the chassis facing up, remove the mounting screw of the bottom cover and then put them in a safe place for later use.
2. Lift up the cover and remove it from the chassis.
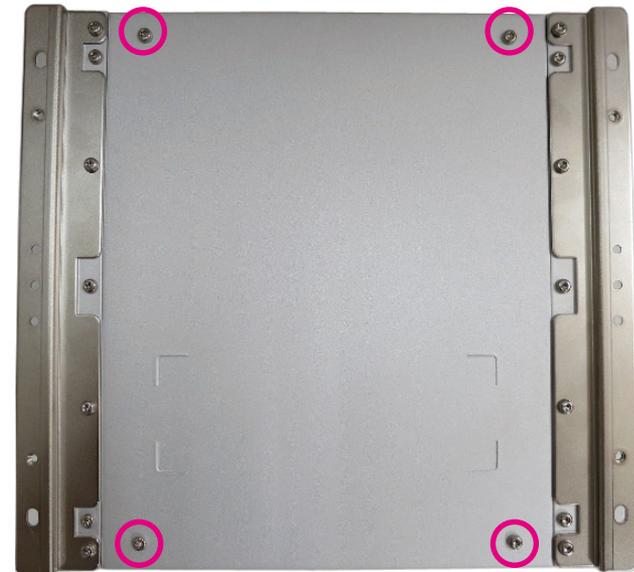
Installing a SATA Hard Drive

Note: The installation of SATA cable and SATA power cable must follow the following pairs.
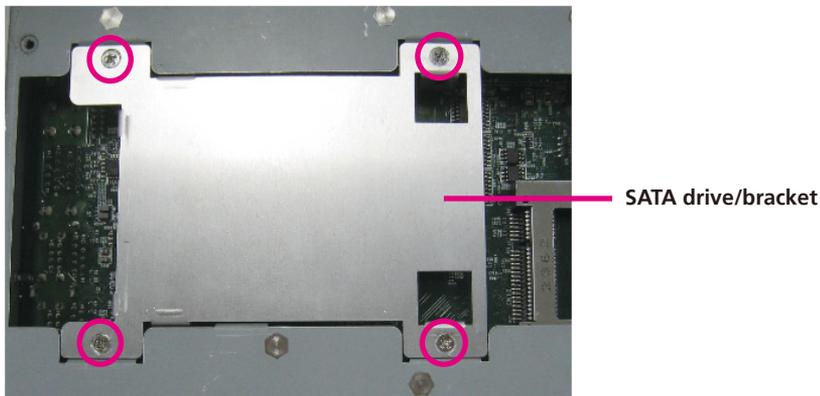
Pair 1

Pair 2

1. Remove 4 screws around the empty HDD bracket.

SATA drive/bracket

2. Use the provided screws to secure the drive in place.

Screw

3. Connect the SATA data/power cable and secure the cable with provided screws.

Screw

Screw

SATA data/power cable

4. Connect the SATA data/power cable to the system according to the
   pairing model mentioned in the previous page.
5. Secure the HDD bracket to its original place.

SATA data/power cable

Installing a SATA Hard Drive

NOTE: Installation for NISE 2210/2310/2210E/2310E

1. Remove 4 screws around the empty HDD bracket.
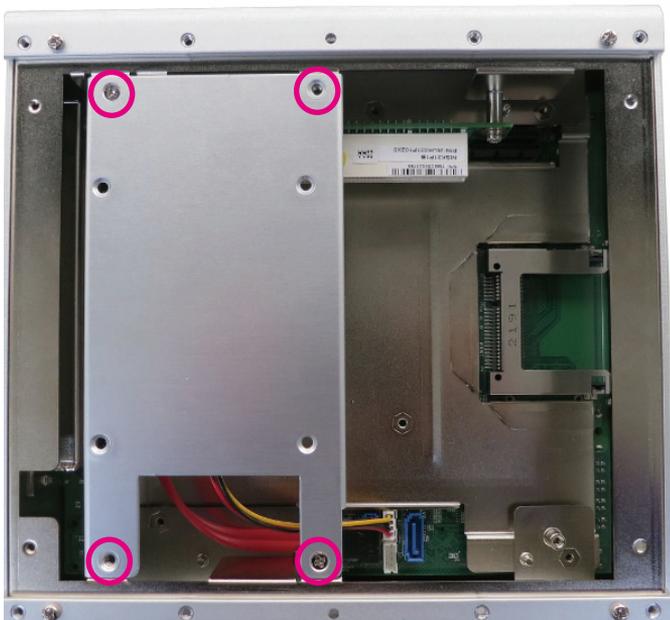
2. Use the provided screws to secure the drive in place.

**Screw to fasten HDD drive
(both sides)**

3. Connect the SATA data/power cable and secure the cable with provided screws.

SATA data/power cable   **Screw**
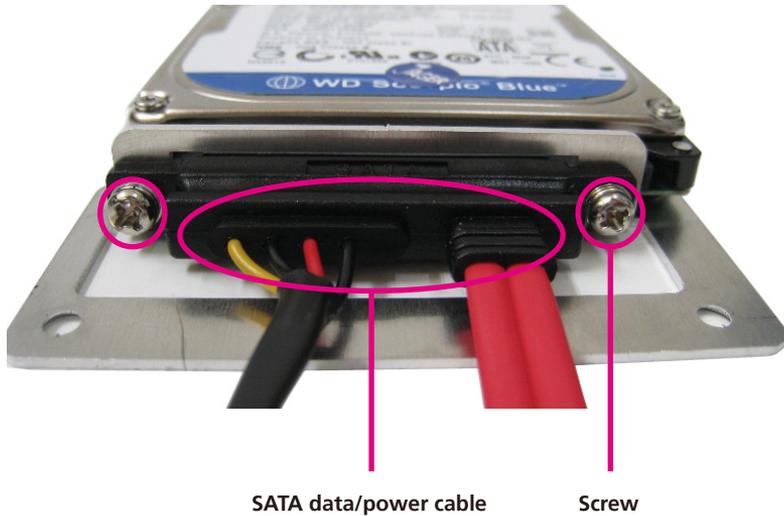
4. Connect the SATA data/power cable to the PCBA and fasten the HDD bracket to its original place.

Installing a SATA DOM

NOTE: Only available on NISE 2210/2310/2210E/2310E

1. Locate the SATA connector on the board.
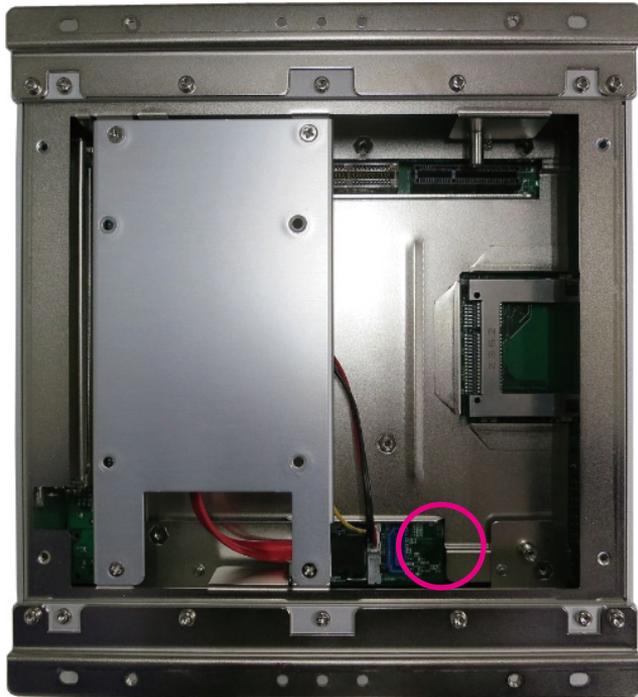
2. Connect the SATA power cable to the SATA DOM.

NOTE: Only available on NISE2210/2310/2210E/2310E
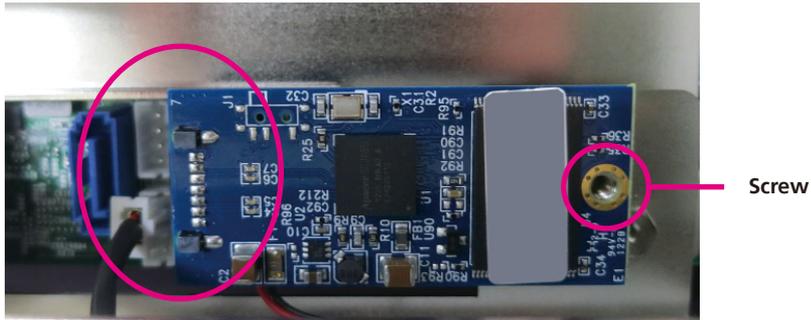
Screw

3. Insert the SATA DOM and SATA power cable.
4. Secure the SATA DOM with provided screw.

Remove the Chassis Top Cover

1. Remove the mounting screw on the top cover and then put them in a
   safe place for later use.
2. Lift up the cover and remove it from the chassis.
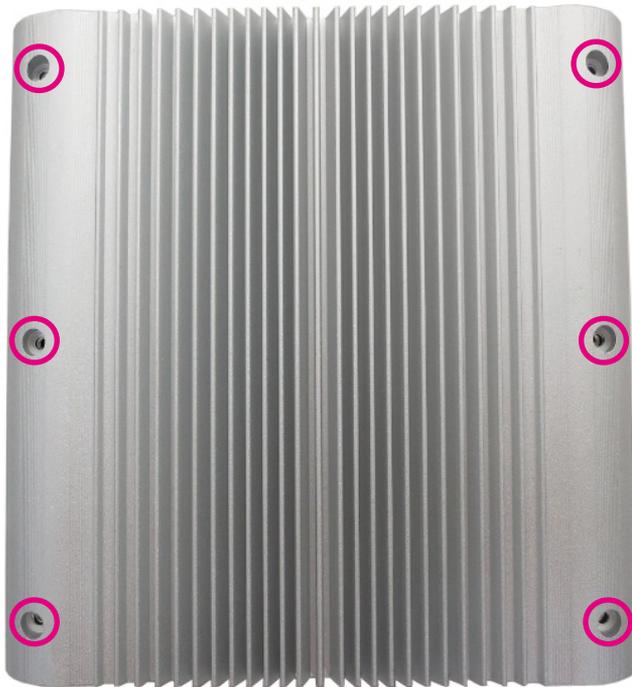
Installing a SO-DIMM

1. Locate the SO-DIMM socket.

SO-DIMM socket

2. Release the lock of the SO-DIMM socket.

Lock

3. Insert the module into the socket at an 90 degree angle. Apply firm and even pressure to each end of the module until it slips into the socket.

SO-DIMM

4. While pushing the SO-DIMM into the position, the lock will close automatically.

SO-DIMM (Lock type)

DIMM1

DIMM2:
1st DIMM to be installed
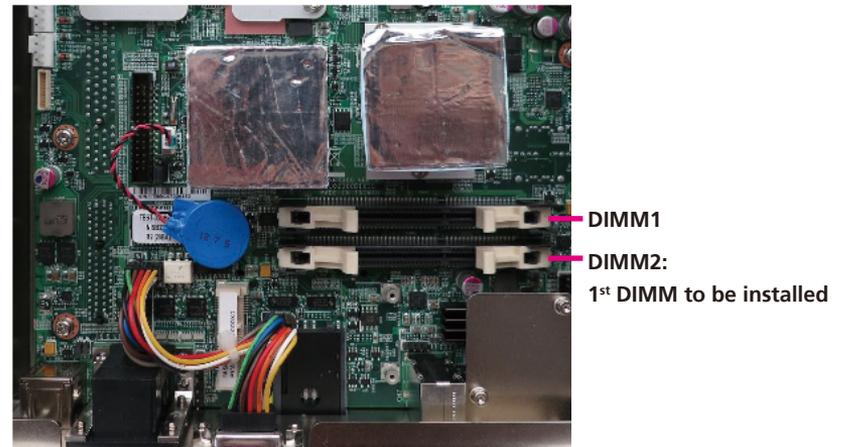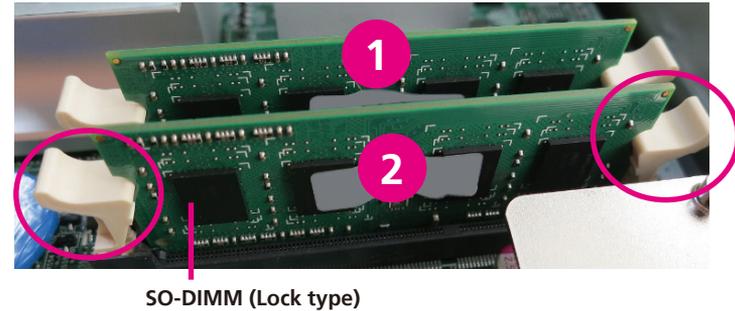
NOTE: If only one SO-DIMM will be installed, DIMM 2 must be installed first.

Installing a Wireless LAN Module (half-size)

1. Locate the Mini PCI Express slot on the board.
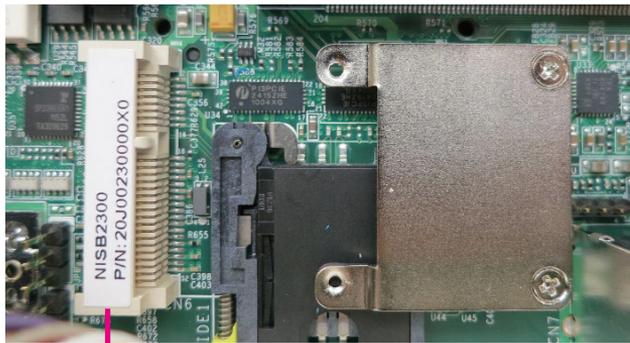
Mini PCI Express Slot

2. Insert the Wifi module into the Mini PCI Express slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

Wifi Module

3. Push the module down and then secure it with mounting screws.
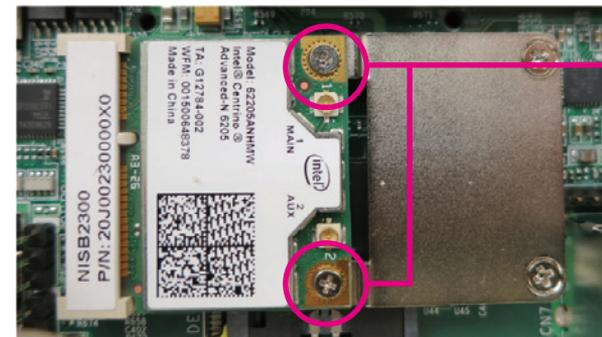
Screw

Installing a 3.5G Module (full size)

1. Locate the Mini PCI Express slot on the board. Remove the LAN module bracket and put it in a safe place.
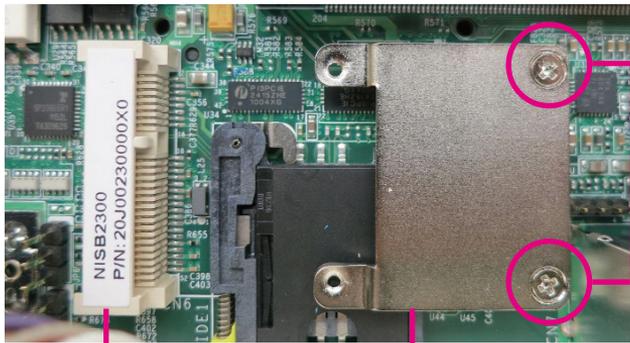
Mini PCI Express Slot   **Wifi module bracket**

2. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

3.5G module

3. Push the module down and then secure it with mounting screws.

Screw

Installing a GPS Module

1. Locate the GPS module install location.
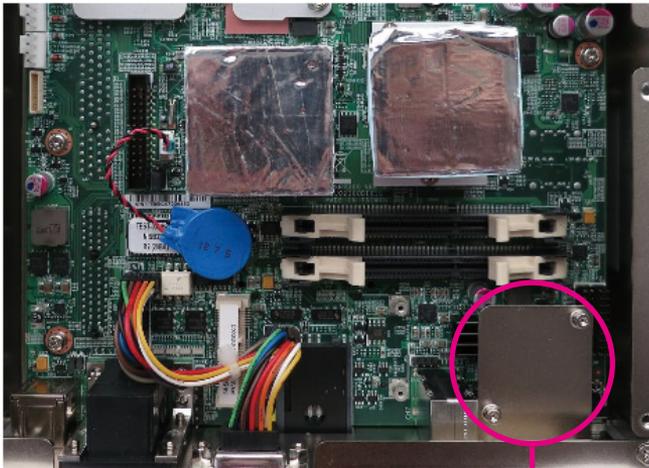
GPS module bracket

2. Connect the power cable and antenna cable to the GPS module.
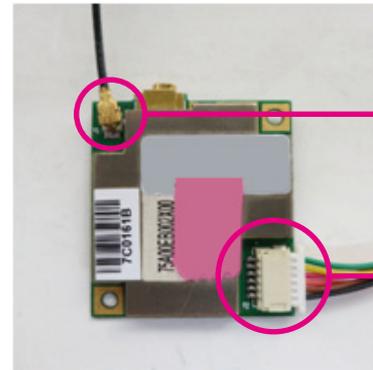
Antenna cable

Power cable

47

3. Secure the GPS module on the bracket and install the antenna if needed.

Screws
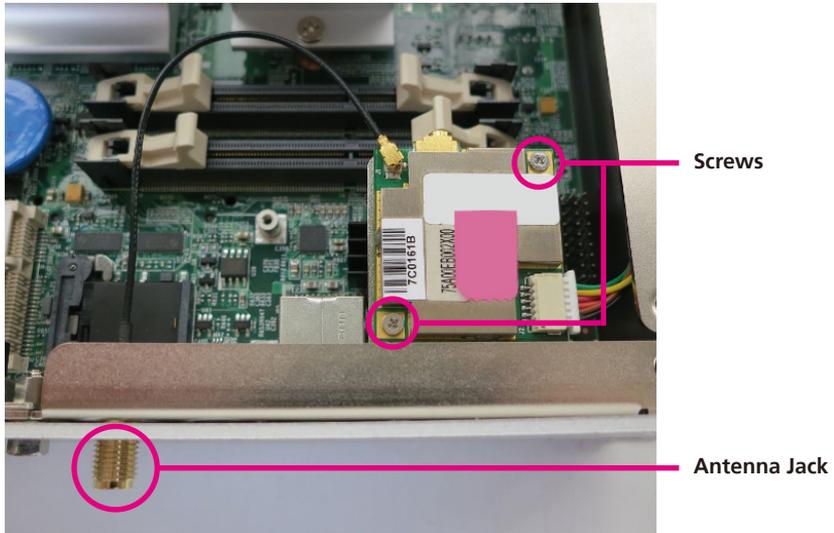
Antenna Jack

4. Connect the GPS power cable to PCBA.

GPS power cable
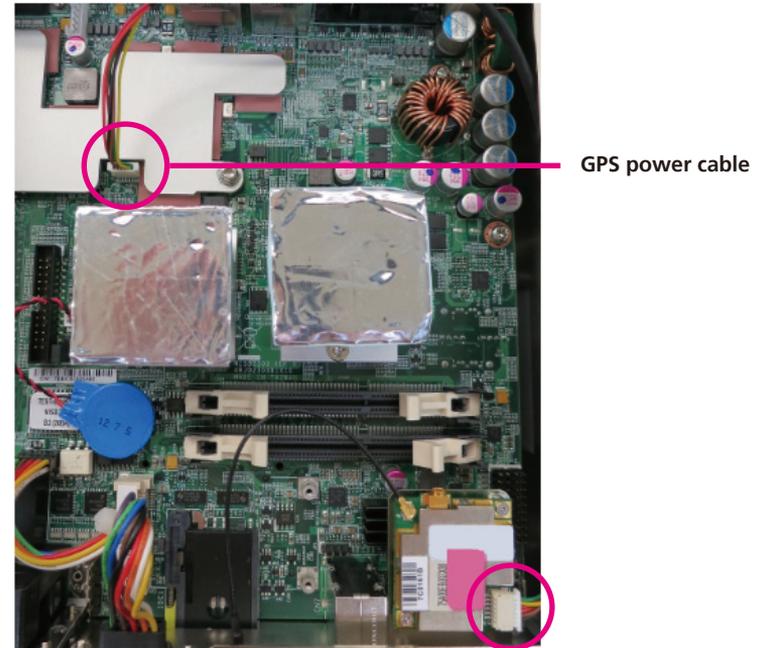
Installing Antenna

1. Remove antenna hole covers located in the front panel.

Antenna hole covers

2. Insert the antenna jack end of the cable through the antenna hole.

Jack end of the cable
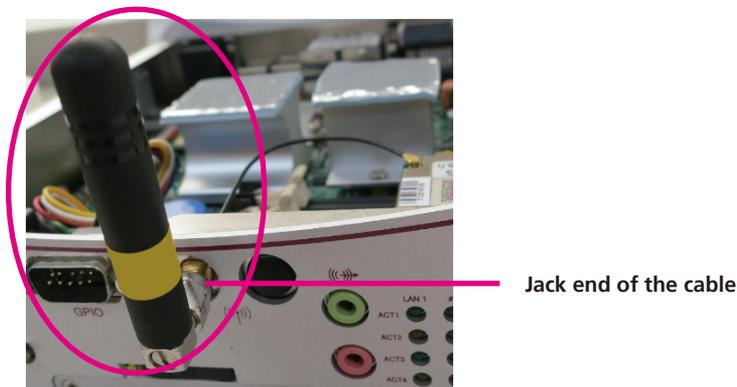
3. Insert the 2 rings (ring 1 and ring2) onto the antenna jack end of the cable.

Ring1

Ring2
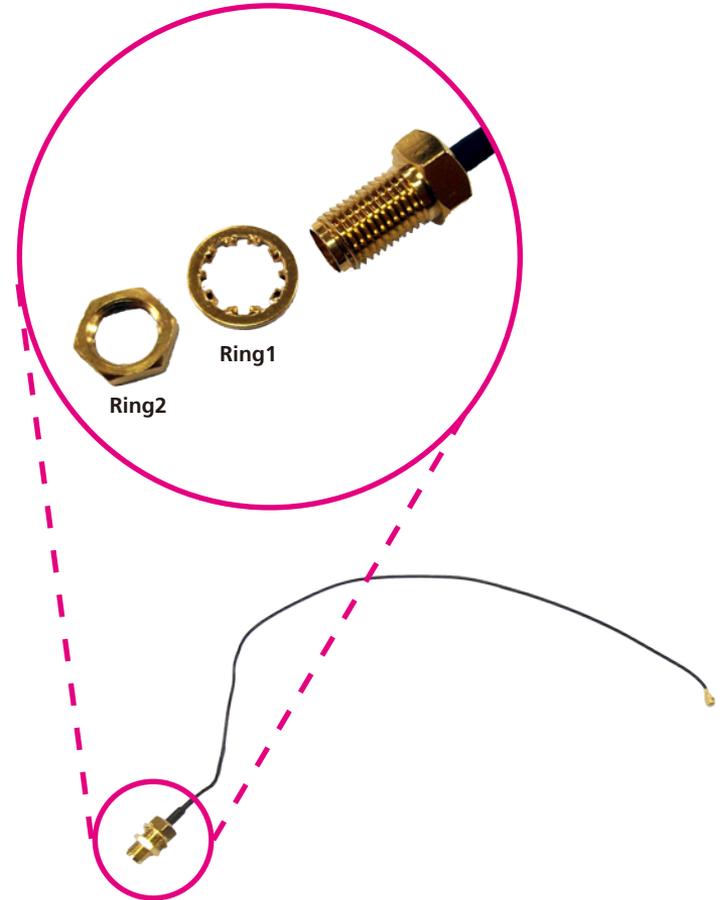
4. Attach the other end of the antenna cable onto the module.
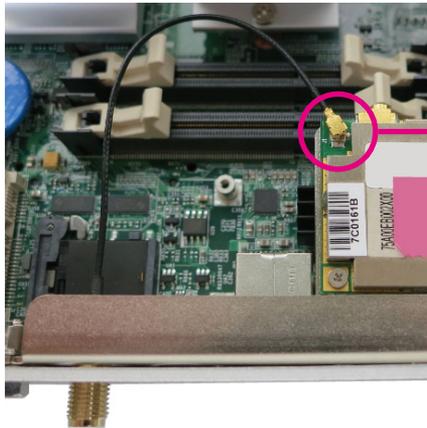
Antenna cable

Installing the SIM Card

1. Locate the SIM card socket in the front panel.

SIM card

2. Push the yellow button to release the SIM card holder
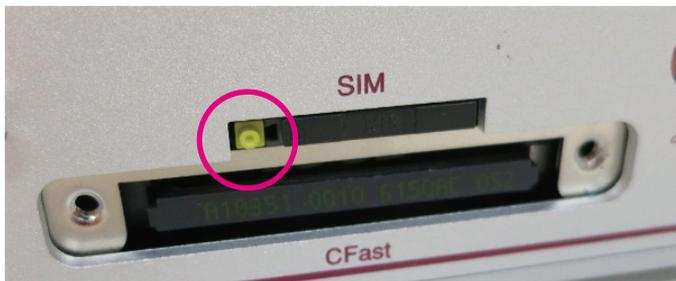
3. Place the SIM card to the SIM card holder and secure it to the original position.

Installing a CFast Card

1. The CFast socket is located at the front side of the chassis.
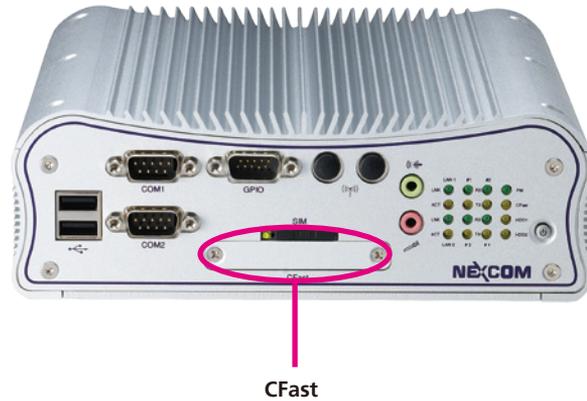
CFast

2. Remove the mounting screws and cover of the CFast socket.

Mounting screw

3. Insert the CFast Card.
4. Fasten the CFast Card cover after installation.

Wallmount Brackets

The wallmount brackets provides a convenient and economical way of mounting the system on the wall.

1. The mounting holes are located at the bottom of the system. Secure the brackets on each side of the system using the provided mounting screws.
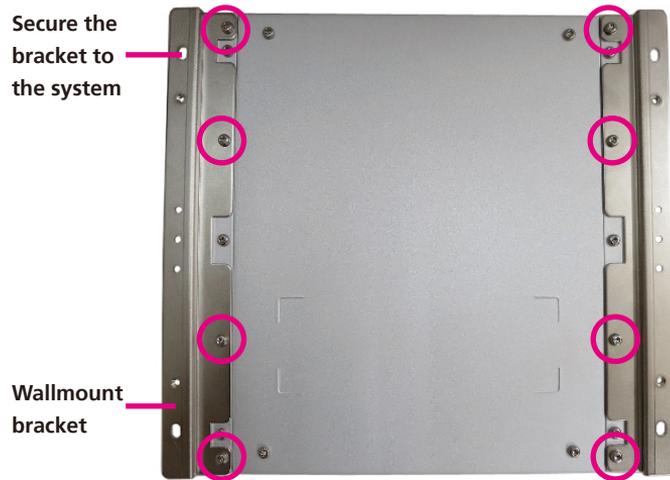
2. Now mount the system on the wall by fastening screws through the bracket's mounting holes.

Secure the bracket to the system

Wallmount bracket

Fasten screws to mount the system to the wall
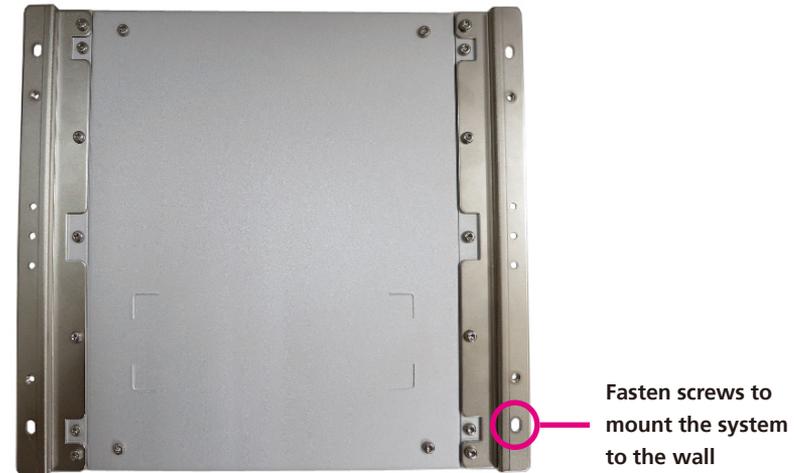
Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NISE 2200. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

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

About BIOS Setup

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

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

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

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

When to Configure the BIOS

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

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

Default Configuration

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

Entering Setup

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

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

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

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

Press the Del key to enter Setup:

Legends

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

Scroll Bar

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

Submenu

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

BIOS Setup Utility

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

Main

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

```
                Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main      Advanced      Chipset      Boot      Security      Save & Exit

 BIOS Information                                          Intel Reference Code version
 BIOS Vendor               American Megatrends
 Core Version              4.6.5.1
 Compliancy               UEFI 2.1; PI 0.9
 Project Version          N220-004
 Build Date and Time      09/21/2012 15:29:27
 ▶ Intel Reference Code Version

 System Date              [Mon 01/12/2009]
 System Time              [22:48:00]

 Access Level             Administrator

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

                Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Intel Reference Code Version

Displays the Intel Reference Code version.

```
                Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main

 Intel Reference Code Version

    Cedarview RC                  0.9.0-1
    Memory Reference Code (MRC)   0.9.1
    P-Unit Firmware (ROM)         012 [0xFFFB0000]
    P-Unit Firmware (RAM)         012 [0xBF6F0000]
    IGFX VBIOS                    1085

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

                Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

System Date

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

System Time

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

Access Level

Displays the access level of the current user in the BIOS.

Advanced

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

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

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Main      Advanced    Chipset    Boot     Security    Save & Exit

   Legacy OpROM Support                                    Enable or Disable Boot Option
   Launch Lan1 PXE OpROM            [Disabled]             for Lan1
   Launch Lan2 PXE OpROM            [Disabled]

 ► ACPI Settings
 ► CPU  Configuration
 ► SATA Configuration
 ► USB Configuration
 ► Super IO Configuration
 ► H/W Monitor
                        ┌─── Launch Lan1 PXE OpROM ───┐
                        │  Disabled                   │
                        │  Enabled                    │
                        └─────────────────────────────┘
                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```

Launch LAN1/2 PXE OpROM

Enables or disables the boot option for legacy network devices connected to LAN1 and LAN2.

ACPI Settings

This section is used to configure ACPI Settings.

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
            Advanced

   ACPI Settings                     [S3 (Suspend to RAM)]      Select the highest ACPI sleep
                                                                state the system will enter when
   ACPI Sleep State                                             the SUSPEND button is pressed.

                                                                ←     Select Screen
                                                                ↑↓    Select Item
                                                                +/-   Change Field
                                                                Tab   Select Field
                                                                F1    General Help
                                                                F10   Save & Exit
                                                                ESC   Exit

          Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

ACPI Sleep State

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Advanced

  ACPI Settings                                    Select the ACPI state the system
                                                   will enter when the SUSPEND
  ACPI Sleep State          [S3 only(Suspend to...] button is pressed.



                    ┌─────────────────────────────┐
                    │      ACPI Sleep State        │
                    │  Suspend Disabled            │
                    │  S1 (CPU Stop Clock)         │
                    │  S3 (Suspend to RAM)         │
                    └─────────────────────────────┘
                                                   ←    Select Screen
                                                   ↑↓   Select Item
                                                   +/-  Change Field
                                                   Tab  Select Field
                                                   F1   General Help
                                                   F10  Save & Exit
                                                   ESC  Exit


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```

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled, S1 (CPU Stop Clock) and S3 (Suspend to RAM).

CPU Configuration

This section is used to configure the CPU.

```
Aptio Setup Utility - Copyright (C) 2011 America Megatrends, Inc.
  Advanced

  CPU Configuration                                Enabled for Windows XP and
                                                   Linux (OS optimized for Hyper-
  Processor Type       Intel(R) Atom (TM) CPU      Threading Technology) and
  EMT64               Not Supported                Disabled for other OS (OS not
  Processor Speed      1865 MHz                     optimized for Hyper-Threading
  System Bus Speed     533MHZ                       Technology).
  Ratio Status         14
  Actual Ratio         14
  System Bus Speed     533MHZ
  Processor Stepping   30661 (B3 Stepping)
  Microcode Revision   265
  L1 Cache RAM         2x56 k
  L2 Cache RAM         2x512 k
  Processor Core       Dual
  Hyper-Threading      Supported                   →←: Select Screen
                                                   ↑↓: Select Item
  Hyper-Threading      [Enabled]                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit


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```

Hyper-Threading

```
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    Advanced

    CPU Configuration                                              Enabled for Windows XP and
                                                                   Linux (OS optimized for Hyper-
    Processor Type              Intel(R) Atom (TM) CPU             Threading Technology) and
    EMT64                       Not Supported                      Disabled for other OS (OS not
    Processor Speed             1865 MHz                           optimized for Hyper-Threading
    System Bus Speed            533 MHz                            Technology).
    Ratio Status                14
    Actual Ratio                14
    System Bus Speed            533MHZ
    Processor Stepping          30661 (B3 Stepping)
    Microcode Revision    ┌──────────────────────────────┐
    L1 Cache RAM          │      Hyper-Threading          │
    L2 Cache RAM          │ Disabled                      │
    Processor Core        │ Enabled                       │        →←: Select Screen
    Hyper-Threading       └──────────────────────────────┘        ↑↓: Select Item
                                                                   Enter: Select
    Hyper-Threading             [Enabled]                          +/-: Change Opt.
                                                                   F1: General Help
                                                                   F2: Previous Values
                                                                   F3: Optimized Defaults
                                                                   F4: Save & Exit
                                                                   ESC: Exit

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```

This field is used to enable or disable hyper-threading.

SATA Configuration

This section is used to configure the SATA drives.

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
        Advanced

    SATA Configuration                                             Select IDE / AHCI / RAID Mode

    SATA Port0                  Hitachi HTE545 (160.0
    SATA Port1                  Not Present
    SATA Port2                  32GB SATA Flas (32.0G
    SATA Port3                  Not Present
    SATA Port4                  Not Present
    SATA Port5                  Not Present

    SATA Mode                   [IDE Mode]
    Serial-ATA Controller 0     [Compatible]
    Serial-ATA Controller 1     [Enhanced]
                                                                   →←: Select Screen
                                                                   ↑↓: Select Item
                                                                   Enter: Select
                                                                   +/-: Change Opt.
                                                                   F1: General Help
                                                                   F2: Previous Values
                                                                   F3: Optimized Defaults
                                                                   F4: Save & Exit
                                                                   ESC: Exit

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```

SATA Mode

```
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            Advanced

      SATA Configuration                                    Select IDE / AHCI / RAID Mode

      SATA Port0              Hitachi HTE545 (160.0
      SATA Port1              Not Present
      SATA Port2              32GB SATA Flas (32.0G
      SATA Port3              Not Present
      SATA Port4              Not Present
      SATA Port5              Not Present

      SATA Mode                    SATA Mode
      Serial-ATA Controller 0   Disabled
      Serial-ATA Controller 1   IDE Mode
                                               →←: Select Screen
                                AHCI Mode      ↑↓: Select Item
                                               Enter: Select
                                RAID Mode      +/-: Change Opt.
                                               F1: General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit

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```

Configures the SATA as IDE, AHCI or RAID mode.

IDE   This option configures the Serial ATA drives as Parallel ATA
        physical storage device.
RAID   This option allows you to create RAID or Intel Matrix Storage
        configuration on Serial ATA devices.
AHCI   This option configures the Serial ATA drives to use AHCI
        (Advanced Host Controller Interface). AHCI allows the storage
        driver to enable the advanced Serial ATA features which will
        increase storage performance.

Serial-ATA Controller 0

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
            Advanced

      SATA Configuration                                    Enable / Disable Serial ATA
                                                            Controller 0
      SATA Port0              Hitachi HTE545 (160.0
      SATA Port1              Not Present
      SATA Port2              32GB SATA Flas (32.0G
      SATA Port3              Not Present
      SATA Port4              Not Present
      SATA Port5              Not Present

      SATA Mode                    [IDE Mode]
      Serial-ATA Controller 0         Serial-ATA Controller 0
      Serial-ATA Controller 1   Disabled
                                               : Select Screen
                                Enhanced        Select Item
                                               : Select
                                Compatible        Change Opt.
                                                 General Help
                                               F2: Previous Values
                                               F3: Optimized Defaults
                                               F4: Save & Exit
                                               ESC: Exit

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```

Disables or sets the SATA controller operating mode as Enhanced or Compatible.

Serial-ATA Controller 1

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Advanced

SATA Configuration

Enable / Disable Serial ATA Controller 1

SATA Port0   Hitachi HTE545 (160.0
SATA Port1   Not Present
SATA Port2   32GB SATA Flas (32.0G
SATA Port3   Not Present
SATA Port4   Not Present
SATA Port5   Not Present

SATA Mode   [IDE Mode]
Serial-ATA Controller 0
Serial-ATA Controller 1

Serial-ATA Controller 1
Disabled
Enhanced

—: Select Screen
Select Item
er: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Disables or sets the SATA controller operating mode as Enhanced.

USB Configuration

This section is used to configure the USB.

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Advanced

USB Configuration

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.

USB Devices:
    1 Keyboard

Legacy USB Support   [Enabled]
EHCI Hand-off   [Disabled]

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

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Legacy USB Support

```
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  Advanced

USB Configuration                                    Enables Legacy USB support.
                                                     AUTO option disables legacy
USB Devices:                                         support if no USB devices are
    1 Keyboard                                       connected. DISABLE option will
                                                     keep USB devices available
Legacy USB Support              [Enabled]            only for EFI applications.
EHCI Hand-off                   [Disabled]

              ┌──── Legacy USB Support ────┐
              │  Enabled                    │
              │  Disabled                   │
              │                             │         →←: Select Screen
              │  Auto                       │         ↑↓: Select Item
              └─────────────────────────────┘         Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

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```

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

EHCI Hand-off

```
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  Advanced

USB Configuration                                    This is a workaround for OSes
                                                     without EHCI hand-off support.
USB Devices:                                         The EHCI ownership change
    1 Keyboard                                       should be claimed by EHCI
                                                     driver.
Legacy USB Support              [Enabled]
EHCI Hand-off                   [Disabled]

              ┌──── EHCI Hand-off ────┐
              │  Disabled              │
              │  Enabled               │
              │                        │              →←: Select Screen
              └────────────────────────┘              ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

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```

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

Super IO Configuration

This section is used to configure the serial ports.
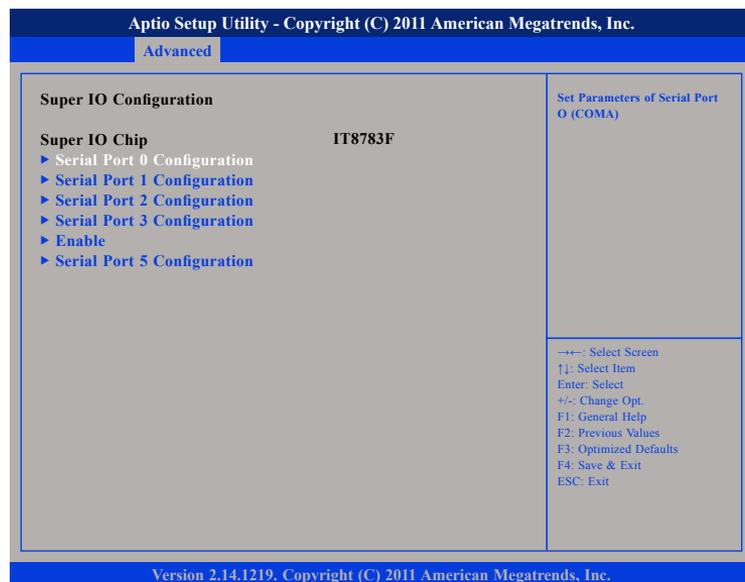
```
              Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Advanced

   Super IO Configuration                                    Set Parameters of Serial Port
                                                             0 (COMA)
   Super IO Chip                    IT8783F
 ▶ Serial Port 0 Configuration
 ▶ Serial Port 1 Configuration
 ▶ Serial Port 2 Configuration
 ▶ Serial Port 3 Configuration
 ▶ Enable
 ▶ Serial Port 5 Configuration


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


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```

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

Serial Port 0 Configuration

This section is used to configure serial port 0.

```
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   Advanced

   Serial Port 0 Configuration                              Enable or Disable Serial Port
                                                            (COM)
   Serial Port                      [Enabled]
   Device Settings                  IO=3F8h; IRQ=4;

   Change Settings                  [IO=3F8h; IRQ=4;]
   Onboard Serial Port 0 Mode       [RS232]
   Onboard Serial Port Max Baud Rate [115200 bps]


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


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```

Serial Port

```
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   Advanced

   Serial Port 0 Configuration                                  Enable or Disable Serial Port
                                                                (COM)
   Serial Port                       [Enabled]
   Device Settings                   IO=3F8h; IRQ=4;

   Change Settings                   [IO=3F8h; IRQ=4;]
   Onboard Serial Port 0 Mode        [RS232]
   Onboard Serial Port Max Baud Rate [115200 bps]

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


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```

This field is used to enable or disable the serial port.

Change Settings

```
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   Advanced

   Serial Port 0 Configuration                                  Select an optimal setting for
                                                                Super IO device.
   Serial Port                       [Enabled]
   Device Settings                   IO=3F8h; IRQ=4;

   Change Settings                   [IO=3F8h; IRQ=4;]
   Onboard Serial Port 0 Mode        [RS232]
   Onboard Serial Port Max Baud Rate [115200 bps]

                       +----------------------------+
                       |      Change Settings       |
                       |  IO=3F8h; IRQ=4;           |
                       |  IO=2F8h; IRQ=3;           |    →←: Select Screen
                       |  IO=3E8h; IRQ=6;           |    ↑↓: Select Item
                       |  IO=2E8h; IRQ=7;           |    Enter: Select
                       +----------------------------+    +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit


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```

Selects an optimal setting for the Super IO device.

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Onboard Serial Port 0 Mode


```
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  Advanced

Serial Port 0 Configuration                          Change the Serial Port 0 mode.
                                                     Select <RS232> or <RS422> or
Serial Port                    [Enabled]             <RS485> mode
Device Settings                IO=3F8h; IRQ=4;

Change Settings                [IO=3F8h; IRQ=4;]
Onboard Serial Port 0 Mode     [RS232]
Onboard Serial Port Max Baud Rate   [115200 bps]

              ┌───── Onboard Serial Port 0 Mode ─────┐
              │ RS232                                 │
              │ RS422                                 │      →←: Select Screen
              │ RS485                                 │      ↑↓: Select Item
              │ RS485 AUTO                            │      Enter: Select
              └───────────────────────────────────────┘      +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```

This field is used to configure the mode of serial port 0 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate


```
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  Advanced

Serial Port 0 Configuration                          Change the Serial Port Max Baud
                                                     Rate. Select <115200 bps> or
Serial Port                    [Enabled]             <921600 bps>
Device Settings                IO=3F8h; IRQ=4;

Change Settings                [IO=3F8h; IRQ=4;]
Onboard Serial Port 0 Mode     [RS232]
Onboard Serial Port Max Baud Rate   [115200 bps]

              ┌──── Onboard Serial Port Max Baud Rate ────┐
              │ 115200 bps                                 │
              │ 921600 bps                                 │      →←: Select Screen
              └────────────────────────────────────────────┘      ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```

This field configures the maximum baud rate of the serial port 0, the options are 115200 bps and 921600 bps.

Serial Port 1 Configuration

This section is used to configure serial port 1.

```
            Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
     Advanced

  Serial Port 1 Configuration                                   Enable or Disable Serial Port
                                                                (COM)
  Serial Port                       [Enabled]
  Device Settings                   IO=2F8h; IRQ=3;

  Change Settings                   [IO=2F8h; IRQ=3;]
  Onboard Serial Port 1 Mode        [RS232]
  Onboard Serial Port Max Baud Rate [115200 bps]




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


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```

Serial Port

```
            Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
     Advanced

  Serial Port 1 Configuration                                   Enable or Disable Serial Port
                                                                (COM)
  Serial Port                       [Enabled]
  Device Settings                   IO=2F8h; IRQ=3;

  Change Settings                   [IO=2F8h; IRQ=3;]
  Onboard Serial Port 1 Mode        [RS232]
  Onboard Serial Port Max Baud Rate [115200 bps]

                    ┌─────── Serial Port ───────┐
                    │ Disabled                  │
                    │ Enabled                   │        →←: Select Screen
                    └───────────────────────────┘        ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

This field is used to enable or disable the serial port.

Change Settings

```
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  Advanced

Serial Port 1 Configuration                              Select an optimal setting for
                                                         Super IO device.
Serial Port                     [Enabled]
Device Settings                 IO=2F8h; IRQ=3;

Change Settings                 [IO=2F8h; IRQ=3;]
Onboard Serial Port 1 Mode      [RS232]
Onboard Serial Port Max Baud Rate  [115200 bps]

              ┌────── Change Settings ──────┐
              │   IO=2F8h; IRQ=3;           │
              │   IO=3F8h; IRQ=4;           │
              │   IO=3E8h; IRQ=6;           │   →←: Select Screen
              │   IO=2E8h; IRQ=7;           │   ↑↓: Select Item
              └─────────────────────────────┘   Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit

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```

Selects an optimal setting for the Super IO device.

Onboard Serial Port 1 Mode

```
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  Advanced

Serial Port 1 Configuration                              Change the Serial Port 1 mode.
                                                         Select <RS232> or <RS422> or
Serial Port                     [Enabled]                <RS485> mode
Device Settings                 IO=2F8h; IRQ=3;

Change Settings                 [IO=2F8h; IRQ=3;]
Onboard Serial Port 1 Mode      [RS232]
Onboard Serial Port Max Baud Rate  [115200 bps]

              ┌── Onboard Serial Port 1 Mode ──┐
              │   RS232                        │
              │   RS422                        │
              │   RS485                        │   →←: Select Screen
              │   RS485 AUTO                   │   ↑↓: Select Item
              └────────────────────────────────┘   Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit

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```

This field is used to configure the mode of serial port 1 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate

```
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      Advanced

  Serial Port 1 Configuration                                Change the Serial Port Max Baud
                                                             Rate. Select <115200 bps> or
  Serial Port                       [Enabled]                <921600 bps>
  Device Settings                   IO=2F8h; IRQ=3;

  Change Settings                   [IO=2F8h; IRQ=3;]
  Onboard Serial Port 1 Mode        [RS232]
  Onboard Serial Port Max Baud Rate [115200 bps]

              Onboard Serial Port Max Baud Rate
       115200 bps
       921600 bps
                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

This field configures the maximum baud rate of the serial port 1, the options are 115200 bps and 921600 bps.

Serial Port 2 Configuration

This section is used to configure serial port 2.

```
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      Advanced

  Serial Port 2 Configuration                                Enable or Disable Serial Port
                                                             (COM)
  Serial Port                       [Enabled]
  Device Settings                   IO=3E8h; IRQ=6;

  Change Settings                   [IO=3E8h; IRQ=6;]
  Onboard Serial Port 2 Mode        [RS232]
  Onboard Serial Port Max Baud Rate [115200 bps]




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


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```

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Serial Port

```
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          Advanced

  Serial Port 2 Configuration                               Enable or Disable Serial Port
                                                            (COM)
  Serial Port                    [Enabled]
  Device Settings                IO=3E8h; IRQ=6;

  Change Settings                [IO=3E8h; IRQ=6;]
  Onboard Serial Port 2 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

                   ┌───────── Serial Port ─────────┐
                   │ Disabled                       │
                   │ Enabled                        │       →←: Select Screen
                   │                                │       ↑↓: Select Item
                   └────────────────────────────────┘       Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit


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```

This field is used to enable or disable the serial port.

Change Settings

```
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          Advanced

  Serial Port 2 Configuration                               Select an optimal setting for
                                                            Super IO device.
  Serial Port                    [Enabled]
  Device Settings                IO=3E8h; IRQ=6;

  Change Settings                [IO=3E8h; IRQ=6;]
  Onboard Serial Port 2 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

                   ┌──────── Change Settings ────────┐
                   │  IO=3E8h; IRQ=4;                 │
                   │  IO=3F8h; IRQ=4;                 │
                   │  IO=2F8h; IRQ=3;                 │       →←: Select Screen
                   │  IO=3E8h; IRQ=6;                 │       ↑↓: Select Item
                   │  IO=2E8h; IRQ=7;                 │       Enter: Select
                   │  IO=2F0h; IRQ=11;                │       +/-: Change Opt.
                   │  IO=2E0h; IRQ=10;                │       F1: General Help
                   └──────────────────────────────────┘       F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit


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```

Selects an optimal setting for the Super IO device.

Onboard Serial Port 2 Mode

```
         Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
         Advanced

  Serial Port 2 Configuration                              Change the Serial Port 2 mode.
                                                           Select <RS232> or <RS422> or
  Serial Port                    [Enabled]                 <RS485> mode
  Device Settings                IO=2F8h; IRQ=3;

  Change Settings                [IO=2F8h; IRQ=3;]
  Onboard Serial Port 2 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

            ┌─────── Onboard Serial Port 2 Mode ───────┐
            │ RS232                                     │
            │ RS422                                     │   →←: Select Screen
            │ RS485                                     │   ↑↓: Select Item
            │ RS485 AUTO                                │   Enter: Select
            └──────────────────────────────────────────┘   +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit


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```

This field is used to configure the mode of serial port 2 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate

```
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         Advanced

  Serial Port 2 Configuration                              Change the Serial Port Max Baud
                                                           Rate. Select <115200 bps> or
  Serial Port                    [Enabled]                 <921600 bps>
  Device Settings                IO=3E8h; IRQ=6;

  Change Settings                [IO=3E8h; IRQ=6;]
  Onboard Serial Port 2 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

            ┌─────── Onboard Serial Port Max Baud Rate ───────┐
            │ 115200 bps                                       │
            │ 921600 bps                                       │   →←: Select Screen
            └─────────────────────────────────────────────────┘   ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit


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```

This field configures the maximum baud rate of the serial port 2, the options are 115200 bps and 921600 bps.

Serial Port 3 Configuration

This section is used to configure serial port 3.

```
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    Advanced

   Serial Port 3 Configuration                              Enable or Disable Serial Port
                                                            (COM)
   Serial Port                       [Enabled]
   Device Settings                   IO=2E8h; IRQ=7;

   Change Settings                   [IO=2E8h; IRQ=7;]
   Onboard Serial Port 3 Mode        [RS232]
   Onboard Serial Port Max Baud Rate [115200 bps]




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

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```

Serial Port

```
           Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
      Advanced

   Serial Port 3 Configuration                              Enable or Disable Serial Port
                                                            (COM)
   Serial Port                       [Enabled]
   Device Settings                   IO=2E8h; IRQ=7;

   Change Settings                   [IO=2E8h; IRQ=7;]
   Onboard Serial Port 3 Mode        [RS232]
   Onboard Serial Port Max Baud Rate [115200 bps]

                         ┌──── Serial Port ────┐
                         │ Disabled            │
                         │ Enabled             │            →←: Select Screen
                         └─────────────────────┘            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit

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```

This field is used to enable or disable the serial port.

Change Settings

```
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          Advanced

  Serial Port 3 Configuration                             Select an optimal setting for
                                                          Super IO device.
  Serial Port                    [Enabled]
  Device Settings                IO=2E8h; IRQ=7;

  Change Settings                [IO=2E8h; IRQ=7;]
  Onboard Serial Port 3 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

               ┌──────── Change Settings ────────┐
               │  IO=2E8h; IRQ=4;                 │
               │  IO=3F8h; IRQ=4;                 │        →←: Select Screen
               │  IO=2F8h; IRQ=3;                 │        ↑↓: Select Item
               │  IO=3E8h; IRQ=6;                 │        Enter: Select
               │  IO=2E8h; IRQ=7;                 │        +/-: Change Opt.
               │  IO=2F0h; IRQ=11;                │        F1: General Help
               │  IO=2E0h; IRQ=10;                │        F2: Previous Values
               └─────────────────────────────────┘        F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```

Selects an optimal setting for the Super IO device.

Onboard Serial Port 3 Mode

```
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          Advanced

  Serial Port 3 Configuration                             Change the Serial Port 3 mode.
                                                          Select <RS232> or <RS422> or
  Serial Port                    [Enabled]                <RS485> mode
  Device Settings                IO=2F8h; IRQ=3;

  Change Settings                [IO=2F8h; IRQ=3;]
  Onboard Serial Port 3 Mode     [RS232]
  Onboard Serial Port Max Baud Rate  [115200 bps]

               ┌──── Onboard Serial Port 3 Mode ────┐
               │  RS232                               │
               │  RS422                               │        →←: Select Screen
               │  RS485                               │        ↑↓: Select Item
               │  RS485 AUTO                          │        Enter: Select
               └──────────────────────────────────────┘        +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```

This field is used to configure the mode of serial port 3 as RS232, RS422, RS485 or RS485 AUTO.

Onboard Serial Port Max Baud Rate

```
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         Advanced

 Serial Port 3 Configuration                            Change the Serial Port Max Baud
                                                        Rate. Select <115200 bps> or
 Serial Port                    [Enabled]               <921600 bps>
 Device Settings                IO=2E8h; IRQ=7;

 Change Settings                [IO=2E8h; IRQ=7;]
 Onboard Serial Port 3 Mode     [RS232]
 Onboard Serial Port Max Baud Rate    [115200 bps]

         ┌──── Onboard Serial Port Max Baud Rate ────┐
         │   115200 bps                              │
         │   921600 bps                              │
         │                                           │     →←: Select Screen
         │                                           │     ↑↓: Select Item
         └───────────────────────────────────────────┘     Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit


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```

This field configures the maximum baud rate of the serial port 3, the options are 115200 bps and 921600 bps.

Enable GPS

```
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         Advanced

 Super IO Configuration                                 Enable GPS or not

 Super IO Chip                  IT8783F
 ▶ Serial Port 0 Configuration
 ▶ Serial Port 1 Configuration
 ▶ Serial Port 2 Configuration
 ▶ Serial Port 3 Configuration
   Enable GPS                   [Enabled]
 ▶ Serial Port 5 Configuration

              ┌──────── Enable GPS ────────┐
              │   Disabled                 │
              │   Enabled                  │     →←: Select Screen
              │                            │     ↑↓: Select Item
              └────────────────────────────┘     Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit


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```

This field is used to enable or disable GPS.

Serial Port

```
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         Advanced

 Serial Port 5 Configuration                              Enable or Disable Serial Port
                                                          (COM)
 Serial Port                    [Enabled]
 Device Settings                IO=2E0h; IRQ=10;

 Change Settings                [IO=2E0h; IRQ=10;]
 Onboard Serial Port Max Baud Rate   [115200 bps]

                       ┌──────Serial Port──────┐
                        Disabled
                        Enabled                          →←: Select Screen
                       └───────────────────────┘         ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

This field is used to enable or disable the serial port.

Change Settings

```
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         Advanced

 Serial Port 5 Configuration                              Select an optimal setting for
                                                          Super IO device.
 Serial Port                    [Enabled]
 Device Settings                IO=2E0h; IRQ=10;

 Change Settings                [IO=2E0h; IRQ=10;]
 Onboard Serial Port Max Baud Rate   [115200 bps]

                 ┌──────Change Settings──────┐
                   IO=2E0h; IRQ=3;
                   IO=3F8h; IRQ=4;
                   IO=2F8h; IRQ=3;
                   IO=3E8h; IRQ=6;                        →←: Select Screen
                   IO=2E8h; IRQ=7;                        ↑↓: Select Item
                   IO=2F0h; IRQ=11;                       Enter: Select
                   IO=2E0h; IRQ=10;                       +/-: Change Opt.
                 └───────────────────────────┘            F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

Selects an optimal setting for the Super IO device.

Onboard Serial Port Max Baud Rate

```
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 Advanced

Serial Port 5 Configuration                                    Change the Serial Port Max Baud
                                                               Rate. Select <115200 bps> or
Serial Port                        [Enabled]                   <921600 bps>
Device Settings                    IO=2E0h; IRQ=10;

Change Settings                    [IO=2E0h; IRQ=10;]
Onboard Serial Port Max Baud Rate  [115200 bps]

         ┌──── Onboard Serial Port Max Baud Rate ────┐
         │ 115200 bps                                 │
         │ 921600 bps                                 │
         │                              →←: Select Screen
         └────────────────────────────┘ ↑↓: Select Item
                                         Enter: Select
                                         +/-: Change Opt.
                                         F1: General Help
                                         F2: Previous Values
                                         F3: Optimized Defaults
                                         F4: Save & Exit
                                         ESC: Exit

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```

This field configures the maximum baud rate of the serial port 5, the options are 115200 bps and 921600 bps.

H/W Monitor

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

```
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 Advanced

Pc Health Status

CPU Temperature                    : +40C
System Temperature                 : +37C
CPU FAN Speed                      : N/A
System FAN Speed                   : N/A
CPU: Vcore                         : +1.184 V
+3.3V                              : +3.296 V
+12V                               : +11.827 V
+5V                                : +5.017 V

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

          Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

CPU Temperature
Detects and displays the current CPU temperature.

System Temperature
Detects and displays the current system temperature.

CPU FAN Speed
Detects and displays the CPU fan speed.

System Fan Speed
Detects and displays the system fan speed.

CPU: Vcore
Detects and displays the Vcore CPU voltage.

3.3V
Detects and displays 3.3V voltage.

5V
Detects and displays 5V voltage.

12V
Detects and displays 12V voltage.

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Chipset

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

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.	
Main **Advanced** **Chipset** **Boot** **Security** **Save & Exit**	
►Host Bridge ►South Bridge	Host Bridge Parameters
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.	

Host Bridge

Displays the memory information

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.	
Chipset	
► Intel IGD Configuration ******* Memory Information******* Memory Frequency 1067 MHZ (DDR3) Total Memory 4096 MB DIMM#0 2048 MB DIMM#1 2048 MB	Config Intel IGD Settings
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Intel® IGD Configuration

Settings for Intel® IGD.

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Chipset

Intel IGD Configuration                                   Keep IGD enabled based
Internal Graphics              [Auto]                     on the setup options.
IGFX - Boot Type               [DVI-I]
LCD Panel Type                 [1024 x 768 18bit]
Active LFP                     [Int-LVDS]




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


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```

Internal Graphics

```
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   Chipset

Intel IGD Configuration                                   Keep IGD enabled based
Internal Graphics              [Auto]                     on the setup options.
IGFX - Boot Type               [DVI-I]
LCD Panel Type                 [1024 x 768 18bit]
Active LFP                     [Int-LVDS]

              ┌──────── Internal Graphics ────────┐
              │  Disabled                         │
              │  Auto                             │
              └───────────────────────────────────┘
                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

This field is used to disable or enable the internal graphics.

IGFX – Boot Type

```
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              Chipset

Intel IGD Configuration                                    Select the Video Device
Internal Graphics           [Auto]                         which will be activated
IGFX - Boot Type            [DVI-I]                         during POST.
LCD Panel Type              [1024 x 768 18bit]              This has no effect if
Active LFP                  [Int-LVDS]                      external graphics present.


              ┌──── IGFX - Boot Type ────┐
              │                          │
              │  CRT                     │
              │                          │
              │  LVDS                    │            →←: Select Screen
              │                          │            ↑↓: Select Item
              │  DVI-I                   │            Enter: Select
              │                          │            +/-: Change Opt.
              │  CRT + LVDS              │            F1: General Help
              │                          │            F2: Previous Values
              │  CRT + HDMI              │            F3: Optimized Defaults
              │                          │            F4: Save & Exit
              └──────────────────────────┘            ESC: Exit


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```

This field is used to configure which video device will be activated during POST. This has no effect if external graphics present. The options are CRT, LVDS, DVI-I, CRT + LVDS and CRT + HDMI.

Note: Max Resolution

NISE 2200
CRT: 1920 x 1200
DVI-D: 1920 x 1080
HDMI: 1920 x 1080

NISE 2300
CRT: 1920 x 1200
DVI-I: 1920 x 1080
DVI-D: 1920 x 1080

LCD Panel Type

```
        Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
              Chipset

Intel IGD Configuration                                    Select LCD panel used
Internal Graphics           [Auto]                         by Internal Graphics
IGFX - Boot Type            [DVI-I]                         Device by selecting the
LCD Panel Type              [1024 x 768 18bit]              appropriate setup item.
Active LFP                  [Int-LVDS]


              ┌──── LCD Panel Type ────┐
              │                        │
              │  640x480       18bit   │
              │  800x600       18bit   │
              │  1024x768      18bit   │
              │  1280x1024     18bit   │           →←: Select Screen
              │  1366x768      18bit   │           ↑↓: Select Item
              │  1024x600      18bit   │           Enter: Select
              │  1024x768      24bit   │           +/-: Change Opt.
              │  1280x1024     24bit   │           F1: General Help
              └────────────────────────┘           F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit


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```

Select the LCD panel used by the internal graphics device by selecting the appropriate setup item.

Active LFP

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Chipset

Intel IGD Configuration

Internal Graphics	[Auto]
IGFX - Boot Type	[DVI-I]
LCD Panel Type	[1024 x 768 18bit]
Active LFP	[Int-LVDS]

Active LFP

No LVDS
Int-LVDS

Select the Active LFP Configuration.
No LVDS: VBIOS does not enable LVDS.
Int-LVDS: VBIOS enables LVDS driver by Integrated encoder.
SDVO LVDS: VBIOS enables LVDS driver by SDVO encoder.
eDP Port-A: LFP Driven by Int-DisplayPort encoder from Port-A.

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

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Select the Active LFP configuration.

No LVDS   VBIOS does not enable LVDS.
Int-LVDS   VBIOS enables LVDS driver by Integrated encoder.

South Bridge

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Chipset

SB Chipset Configuration

Restore AC Power Loss	[Power Off]

Audio Configuration

Azalia HD Audio	[Enabled]

► USB Configuration

Specify what state to go to when power is re-applied after a power failure (G3 state).

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

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Restore AC Power Loss

```
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Chipset

 SB Chipset Configuration                          Specify what state to go to
                                                    when power is re-applied
 Restore AC Power Loss          [Power Off]         after a power failure (G3
                                                    state).
 Audio Configuration
 Azalia HD Audio                [Enabled]

 ► USB Configuration

              ┌──────────────────────────┐
              │   Restore AC Power Loss   │
              │ Power Off                 │
              │ Power On                  │
              └──────────────────────────┘
                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit

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```

Power Off   When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Power On   When power returns after an AC power failure, the system will automatically power-on.

Azalia HD Audio

```
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Chipset

 SB Chipset Configuration                          Enable / Disable Azalia
                                                    HD Audio
 Restore AC Power Loss          [Power Off]

 Audio Configuration
 Azalia HD Audio                [Enabled]

 ► USB Configuration

              ┌──────────────────────────┐
              │     Azalia HD Audio       │
              │ Disabled                  │
              │ Enabled                   │
              └──────────────────────────┘
                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit

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```

This field is used to enable or diable Azalia HD audio.

USB Configuration

```
           Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                    Chipset

  All USB Devices                [Enabled]            Enable / Disable ALL USB
                                                      Devices
  USB 2.0(EHCI) Support          [Enabled]
  EHCI Controller 1              [Enabled]
  EHCI Controller 2              [Enabled]

  UHCI Controller 1              [Enabled]
  UHCI Controller 2              [Enabled]
  UHCI Controller 3              [Enabled]
  UHCI Controller 4              [Enabled]
  UHCI Controller 5              [Enabled]
  UHCI Controller 6              [Enabled]

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


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```

All USB Devices

```
           Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                    Chipset

  All USB Devices                [Enabled]            Enable / Disable ALL USB
                                                      Devices
  USB 2.0(EHCI) Support          [Enabled]
  EHCI Controller 1              [Enabled]
  EHCI Controller 2              [Enabled]

  UHCI Controller 1              [Enabled]
  UHCI Controller 2              [Enabled]
  UHCI Controller 3              [Enabled]
  UHCI Controller 4              [Enabled]
  UHCI Controller 5           ┌─── All USB Devices ───┐
  UHCI Controller 6           │  Disabled             │
                              │  Enabled              │  →←: Select Screen
                              └───────────────────────┘  ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit


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```

This field is used to enable or disable all the USB devices.

USB 2.0(EHCI) Support

```
           Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                 Chipset

   All USB Devices              [Enabled]          Enable / Disable USB 2.0 (EHCI)
                                                   Support
   USB 2.0(EHCI) Support        [Enabled]
   EHCI Controller 1            [Enabled]
   EHCI Controller 2            [Enabled]

   UHCI Controller 1            [Enabled]
   UHCI Controller 2            [Enabled]
   UHCI Controller 3            [Enabled]
   UHCI Controller 4            [Enabled]
   UHCI Controller 5      ┌──── USB 2.0(EHCI) Support ────┐
   UHCI Controller 6      │                               │
                          │  Disabled                     │  →←: Select Screen
                          │  Enabled                      │  ↑↓: Select Item
                          │                               │  Enter: Select
                          └───────────────────────────────┘  +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit

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```

This field is used to enable or disable USB 2.0 (EHCI) support.

EHCI Controller 1 to EHCI Controller 2

```
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                 Chipset

   All USB Devices              [Enabled]          Enable / Disable USB 2.0 (EHCI)
                                                   Support
   USB 2.0(EHCI) Support        [Enabled]
   EHCI Controller 1            [Enabled]
   EHCI Controller 2            [Enabled]

   UHCI Controller 1            [Enabled]
   UHCI Controller 2            [Enabled]
   UHCI Controller 3            [Enabled]
   UHCI Controller 4            [Enabled]
   UHCI Controller 5      ┌──── EHCI Controller 1 ────┐
   UHCI Controller 6      │                           │
                          │  Disabled                 │  →←: Select Screen
                          │  Enabled                  │  ↑↓: Select Item
                          │                           │  Enter: Select
                          └───────────────────────────┘  +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```

These fields are used to enable or disable USB 2.0 (EHCI) support for controller 1 and 2.

UHCI Controller 1 to UHCI Controller 6

```
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                    Chipset

All USB Devices              [Enabled]          Enable / Disable UHCI Port 1

USB 2.0(EHCI) Support        [Enabled]
EHCI Controller 1            [Enabled]
EHCI Controller 2            [Enabled]

UHCI Controller 1            [Enabled]
UHCI Controller 2            [Enabled]
UHCI Controller 3            [Enabled]
UHCI Controller 4            [Enabled]
UHCI Controller 5                  UHCI Controller 1
UHCI Controller 6            Disabled
                             Enabled
                                                →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit


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```

These fields are used to enable or disable UHCI port 1 to port 6.

Boot

This section is used to configure the boot features.

```
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   Main        Advanced     Chipset     Boot      Security     Save & Exit

   Boot Configuration                                          Number of seconds to wait
   Setup Prompt Timeout              1                         for setup activation key.
   Bootup NumLock State              [On]                      65535(0xFFFF) means indefinite
                                                               waiting.
   Quiet Boot                        [Disabled]

   CSM16 Module Version              07.69

   GateA20 Active                    [Upon Request]
   Option ROM Messages               [Force BIOS]
   Interrupt 19 Capture              [Immediate]
   CSM Support                       [Enabled]
                                                               →←: Select Screen
   Boot Option Priorities                                      ↑↓: Select Item
   Boot Option #1                    [SATA PM: Hitachi . . .]  Enter: Select
                                                               +/-: Change Opt.
   Hard Drive BBS Priorities                                   F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit



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```

Setup Prompt Timeout

This section configures the number of seconds to wait for the setup activation key.

Bootup NumLock State

```
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   Main        Advanced     Chipset     Boot      Security     Save & Exit

   Boot Configuration                                          Select the keyboard NumLock
   Setup Prompt Timeout              1                         state
   Bootup NumLock State              [On]

   Quiet Boot                        [Disabled]

   CSM16 Module Version              07.69

   GateA20 Active                    [Upon Request]
   Option ROM Messages               [Force BIOS]
   Interrupt 19 Capture          ┌──── Bootup NumLock State ────┐
   CSM Support                   │  On                          │
                                 │  Off                         │   →←: Select Screen
   Boot Option Priorities        └──────────────────────────────┘   ↑↓: Select Item
   Boot Option #1                                               Enter: Select
                                                                +/-: Change Opt.
   Hard Drive BBS Priorities                                    F1: General Help
                                                                F2: Previous Values
                                                                F3: Optimized Defaults
                                                                F4: Save & Exit
                                                                ESC: Exit



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```

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

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Main      Advanced    Chipset    Boot    Security    Save & Exit

   Boot Configuration                                    Enables or disables Quiet Boot
   Setup Prompt Timeout              1                   option
   Bootup NumLock State              [On]

   Quiet Boot                        [Disabled]

   CSM16 Module Version              07.69

   GateA20 Active                    [Upon Request]
   Option ROM Messages               [Force BIOS]
   Interrupt 19 Capture
                               ┌──────── Quiet Boot ────────┐
   CSM Support                 │                            │
                               │ Disabled                   │
   Boot Option Priorities      │ Enabled                    │
   Boot Option #1              │                          .] │  →←: Select Screen
                               └────────────────────────────┘  ↑↓: Select Item
                                                                Enter: Select
   Hard Drive BBS Priorities                                    +/-: Change Opt.
                                                                F1: General Help
                                                                F2: Previous Values
                                                                F3: Optimized Defaults
                                                                F4: Save & Exit
                                                                ESC: Exit

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```

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

GateA20 Active

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Main      Advanced    Chipset    Boot    Security    Save & Exit

   Boot Configuration                                    UPON REQUEST - GA20 can be
   Setup Prompt Timeout              1                   disabled using BIOS services.
   Bootup NumLock State              [On]                ALWAYS - do not allow disabling
                                                         GA20; this option is useful
   Quiet Boot                        [Disabled]          when any RT code is executed
                                                         above 1MB.
   CSM16 Module Version              07.69

   GateA20 Active                    [Upon Request]
   Option ROM Messages               [Force BIOS]
   Interrupt 19 Capture
                               ┌──────── GateA20 Active ────┐
   CSM Support                 │                            │
                               │ Upon Request               │
   Boot Option Priorities      │ Always                     │
   Boot Option #1              │                          .] │  →←: Select Screen
                               └────────────────────────────┘  ↑↓: Select Item
                                                                Enter: Select
   Hard Drive BBS Priorities                                    +/-: Change Opt.
                                                                F1: General Help
                                                                F2: Previous Values
                                                                F3: Optimized Defaults
                                                                F4: Save & Exit
                                                                ESC: Exit

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```

Upon Request   GA20 can be disabled using BIOS services.
Always   Do not allow disabling GA20; this option is useful when
                 any RT code is executed above 1MB.

Option ROM Messages

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Main      Advanced     Chipset      Boot      Security      Save & Exit

   Boot Configuration                                      Set display mode for Option
   Setup Prompt Timeout           1                        ROM
   Bootup NumLock State           [On]

   Quiet Boot                     [Disabled]

   CSM16 Module Version           07.69

   GateA20 Active                 [Upon Request]
   Option ROM Messages            [Force BIOS]
   INT19 Trap Response      ┌──────────────────────────┐
   CSM Support              │     Option ROM Messages  │
                            │  Force BIOS              │   →←: Select Screen
   Boot Option Priorities   │  Keep Current            │   ↑↓: Select Item
   Boot Option #1           └──────────────────────────┘   Enter: Select
                                                        +/-: Change Opt.
   Hard Drive BBS Priorities                            F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```

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

INT19 Trap Response

```
          Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
   Main      Advanced     Chipset      Boot      Security      Save & Exit

   Boot Configuration                                      BIOS reaction on INT19 trapping
   Setup Prompt Timeout           1                        by Option ROM:
   Bootup NumLock State           [On]                     IMMEDIATE - execute the
                                                           trap right away; POSTPONED
   Quiet Boot                     [Disabled]               - execute the trap during
                                                           legacy boot.
   CSM16 Module Version           07.69

   GateA20 Active                 [Upon Request]
   Option ROM Messages            [Force BIOS]
   INT19 Trap Response      ┌──────────────────────────┐
   CSM Support              │     INT19 Trap Response   │
                            │  Immediate               │   →←: Select Screen
   Boot Option Priorities   │  Postponed               │   ↑↓: Select Item
   Boot Option #1           └──────────────────────────┘   Enter: Select
                                                        +/-: Change Opt.
   Hard Drive BBS Priorities                            F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```

Allows Option ROMs to trap Interrupt 19 when enabled.

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

CSM Support

```
              Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main      Advanced    Chipset    Boot    Security    Save & Exit

    Boot Configuration                                    Enable/Disable CSM Support, If
    Setup Prompt Timeout            1                     Auto is selected, based on OS,
    Bootup NumLock State            [On]                  CSM will be enabled/disabled
                                                          automatically.
    Quiet Boot                      [Disabled]

    CSM16 Module Version            07.69

    GateA20 Active                  [Upon Request]
    Option ROM Messages             [Force BIOS]
    INT19 Trap Response    ┌──────────────────────┐
    CSM Support            │       CSM Support     │
                           │  Disabled             │
    Boot Option Priorities │  Enabled              │       →←: Select Screen
    Boot Option #1         │  Auto                 │       ↑↓: Select Item
                           └──────────────────────┘       Enter: Select
                                                          +/-: Change Opt.
    Hard Drive BBS Priorities                             F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```

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

Boot Option Priorities (Boot Option #1)

```
              Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main      Advanced    Chipset    Boot    Security    Save & Exit

    Boot Configuration                                    Sets the system boot order
    Setup Prompt Timeout            1
    Bootup NumLock State            [On]

    Quiet Boot                      [Disabled]

    CSM16 Module Version            07.69

    GateA20 Active                  [Upon Request]
    Option ROM Messages             [Force BIOS]
    INT19 Trap Response    ┌────────────────────────────┐
    CSM Support            │       Boot Option #1        │
                           │  SATA  PM: Hitachi HTE545016B9A │
    Boot Option Priorities │  Disabled                   │       →←: Select Screen
    Boot Option #1         └────────────────────────────┘       ↑↓: Select Item
                                                          Enter: Select
    Hard Drive BBS Priorities                             +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```

This field is used to adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

Hard Drive BBS Priorities (Boot Option #1)

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                          Boot

  Boot Option #1              [SATA PM: Hitachi . . .]     Sets the system boot order
  Boot Option #2              [SATA PS: 32GB SAT . . .]




                  ┌──────── Boot Option #1 ────────┐
                  │ SATA  PM: Hitachi HTE545016B9A │      →←: Select Screen
                  │ SATA  PS: 32GB SATA Flash Drive│      ↑↓: Select Item
                  │ Disabled                       │      Enter: Select
                  └────────────────────────────────┘      +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

Sets the first legacy device to boot from.

Hard Drive BBS Priorities (Boot Option #2)

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                          Boot

  Boot Option #1              [SATA PM: Hitachi . . .]     Sets the system boot order
  Boot Option #2              [SATA PS: 32GB SAT . . .]




                  ┌──────── Boot Option #2 ────────┐
                  │ SATA  PM: Hitachi HTE545016B9A │      →←: Select Screen
                  │ SATA  PS: 32GB SATA Flash Drive│      ↑↓: Select Item
                  │ Disabled                       │      Enter: Select
                  └────────────────────────────────┘      +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

Sets the second legacy device to boot from.

Security

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Main      Advanced    Chipset     Boot    Security    Save & Exit

  Password Description                          Set Administrator Password

  If ONLY the Administrator's password is set,
  then this only limits access to Setup and is
  only asked for when entering Setup.
  If ONLY the User's password is set, then this
  is a power on password and must be entered to
  boot or enter Setup. In Setup the User Will
  have Administrator rights.
  The password length must be
  in the following range:
  Minimum length                3
  Maximum length                20

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


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```

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

User Password
Select this to reconfigure the user's password.

Save & Exit

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
  Main     Advanced    Chipset     Boot    Security    Save & Exit

  Save Changes and Exit                         Exit systm setup after
  Discard Changes and Exit                      saving the changes.
  Save Changes and Reset
  Discard Changes and Reset

  Save Options
  Save Changes
  Discard Changes

  Restore Defaults
  Save as User Defaults
  Restore User Defaults
                                                →←: Select Screen
  Boot Override                                 ↑↓: Select Item
  SATA PM: Hitachi HTE545016B9A                 Enter: Select
                                                +/-: Change Opt.
  Launch EFI Shell from filesystem device       F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit


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```

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 Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Exit
To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

Save Changes and Reset

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

Discard Changes and Reset

To exit the Setup utility and reboot the system without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting.

Save Changes

To save changes and continue configuring the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes

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

Restore Defaults

To restore the BIOS to default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Save as User Defaults

To use the current configurations as user default settings for the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Restore User Defaults

To restore the BIOS to user default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Boot Override

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

Launch EFI Shell from filesystem device

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

Appendix A: GPI/O Programming Guide

Digital I/O (Digital Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the Digital I/O pins in the NISE 2200. The pin definition is shown is the following table:

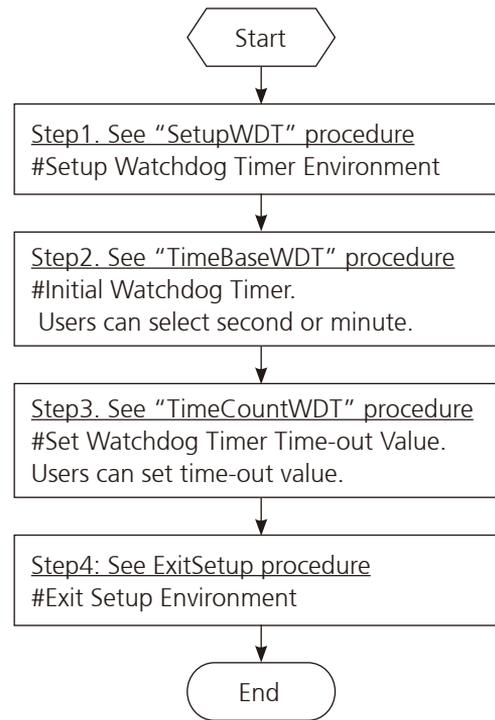| PIN	Description	PIN	Description
1	+5V	2	GND
3	GPO24	4	GPI20
5	GPO25	6	GPI21
7	GPO26	8	GPI22
9	GPO27	10	GPI23

IO base address : A00h

Bit0 : GPI20
Bit1 : GPI21
Bit2 : GPI22
Bit3 : GPI23
Bit4 : GPO24
Bit5 : GPO25
Bit6 : GPO26
Bit7 : GPO27

1. Read/Write GPIO data by I/O port A04h

Appendix B: Watchdog Timer

NISE 2200 Watch Dog Function Configuration Sequence Description:

```
                    ┌─────────────┐
                    <   Start      >
                    └──────┬──────┘
                           │
                           ▼
        ┌──────────────────────────────────────┐
        │ Step1. See "SetupWDT" procedure       │
        │ #Setup Watchdog Timer Environment      │
        └──────────────────┬───────────────────┘
                           │
                           ▼
        ┌──────────────────────────────────────┐
        │ Step2. See "TimeBaseWDT" procedure     │
        │ #Initial Watchdog Timer.               │
        │  Users can select second or minute.    │
        └──────────────────┬───────────────────┘
                           │
                           ▼
        ┌──────────────────────────────────────┐
        │ Step3. See "TimeCountWDT" procedure    │
        │ #Set Watchdog Timer Time-out Value.    │
        │ Users can set time-out value.          │
        └──────────────────┬───────────────────┘
                           │
                           ▼
        ┌──────────────────────────────────────┐
        │ Step4: See ExitSetup procedure         │
        │ #Exit Setup Environment                │
        └──────────────────┬───────────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │    End      │
                    └─────────────┘
```

```
===========================================
SetupWDT        PROC
        mov     dx, 2eh
        mov     al, 087h
        out     dx, al
        nop
        nop
        mov     al, 01h
        out     dx, al
        nop
        nop
        mov     al, 55h
        out     dx, al
        nop
        nop
        out     dx, al              ;Write operations to special address
                                    port (2E) for entering MB PnP Mode.

        mov     al, 07h
        out     2eh, al
        mov     al, 07h             ;Select logical device for Watch Dog.
        out     2fh, al
        ret
SetupWDT        ENDP
```

```
===========================================
TimeBaseWDT             PROC
        mov     al, 72h
        out     2eh, al
        mov     al, 10h     ;Set WDT reset upon PWROK
        or      al, 80h     ;Here!! set 80h for second, set 00h for minute
        out     2fh, al
        ret
TimeBaseWDT     ENDP


===========================================
TimeCountWDT    PROC
        mov     al, 73h     ;WDT Time-out register.
        out     2eh, al
        mov     al, 03h     ;Here!! Set count 3.
        out     2fh, al
        ret
TimeCountWDT    ENDP


===========================================
ExitSetup       PROC
        mov     al, 02h
        out     2eh, al
        mov     al, 02h
        out     2fh, al
        ret
ExitSetup       ENDP
===========================================
```