



**NEXCOM International Co., Ltd.**

# **Industrial Computing Solutions**

## **Fanless Computer**

### **NISE 103**

#### User Manual

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# PREFACE

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## Disclaimer

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## Acknowledgements

NISE 103 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

## Regulatory Compliance Statements

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

## Declaration of Conformity

### FCC

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

### CE

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

## RoHS Compliance



### **NEXCOM RoHS Environmental Policy and Status Update**

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

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

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

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

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

### **How to recognize NEXCOM RoHS Products?**

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

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

# Warranty and RMA

## **NEXCOM Warranty Period**

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

## **NEXCOM Return Merchandise Authorization (RMA)**

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

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

## **Repair Service Charges for Out-of-Warranty Products**

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

### **System Level**

- ❌ Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- ❌ Items will be replaced with NEXCOM products if the original one 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 needlenose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

## Safety Precautions

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



## Technical Support and Assistance

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

### Warning!

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

## Conventions Used in this Manual



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



**Caution:** Information to avoid damaging components or losing data.



**Note:** Provides additional information to complete a task easily.

# Global Service Contact Information

## Headquarters

### Taiwan

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TEL: +86-755-833 27203  
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Japan 108-0014  
Tel: +81-3-5419-7830  
Fax: +81-3-5419-7832  
<http://www.nexcom-jp.com>

# PACKAGE CONTENTS

Before continuing, verify that the NISE 103 package that you received is complete. Your package should have all the items listed in the following table.

Item	P/N	Description	Qty
1	19J00010300X0	NISE103 ASSY	1
2	4NCPF00204X00	TERMINAL BLOCKS 2P PHOENIX CONTACT:1777989 5.08 FEMALE DIP GREEN	1
3	6012200053X00	PE ZIPPER BAG #3 100x70mm,W/China RoHS SYMBOL	1
4	6012200052X00	PE ZIPPER BAG #8 170x240mm,W/China RoHS SYMBOL	1
5	60177A0225X00	(N)NISE103 QUICK REFERENCE GUIDE VER:A	1
6	602DCD0353X00	(N)NISE103 CD DRIVER VER:2.0	1
7	50311F0110X00	(H)FLAT HEAD SCREW LONG FEI:F3x5ISO+NYLOK NIGP F3x5 NI NYLOK	4

# ORDERING INFORMATION

The following provides ordering information for NISE 103.

- **Barebone**  
**NISE 103 (P/N: 10J00010300X0)**  
- Intel® Atom™ D425 Fanless System
- **12V, 60W AC/DC power adapter w/o power cord**  
**(P/N: 7400060009X00)**

# CHAPTER 1: PRODUCT INTRODUCTION

## Overview



Front



Rear

### Key Features

- Onboard Intel® Atom™ D425 processor, 1.8GHz
- Intel® ICH8M chipset
- Dual Intel 10/100/1000 Mbps LAN ports
- 4 x USB 2.0 ports
- 1 x RS232/422/485 and 3 x RS232 ports
- 1 x Mini PCIe with two antenna holes and 1 x SIM card holder
- 1 x VGA port
- 1 x DB15 Digital Input & Output
- Onboard DC to DC power designed to support +12V DC power input
- Supports ATX Power Mode, WOL, LAN Teaming and PXE functions

## Hardware Specifications

### CPU

- Onboard Intel® Atom™ D425 processor, 1.8GHz
- Intel® ICH8M chipset

### Main Memory

- One DDR3 SODIMM socket
- Single channel
- Supports up to 2GB DDR3 800 SDRAM, unbuffered, non-ECC

### I/O Interface - Front

- ATX power on/off switch
- HDD Access / Power Status LEDs
- 1 x Speaker-out
- 1 x Mic-in
- 2 x USB 2.0 ports
- 3 x COM ports  
COM2: RS232/422/485  
COM3 and COM4: RS232
- 2 x antenna holes

### I/O Interface - Rear

- 2 x Intel GbE LAN ports
- 2 x USB 2.0 ports
- 1 x RS232 COM1 port
- 1 x DB15 VGA port
- 1 x DB15 male digital input & output
- +12V DC power input
- 1 CompactFlash card socket

### Digital Input and Output

- 4 x Digital Input (Source type)
  - Input Voltage (Dry Contact)  
Logic 0: Close to GND  
Logic 1: Open
  - Input Voltage:  
Logic 0: 3V max  
Logic 1: +5V ~ +30V
- 4x Digital Output (Sink type)  
Output Voltage: 3.6V ~ 5V  
Sink current: 200 mA max. per channel

### Device

- 1 x 2.5" HDD drive bay
- 1 x external CF card socket
- 1 x SATA DOM

### Power Requirements

- DC to DC power designed for onboard support of +12V DC
- 1 x optional 12V, 60W power adapter

### Dimensions

- 185mm (W) x 131mm (D) x 54mm (H) (7.28" x 5.2" x 2.13")

### Construction

- Aluminum chassis with fanless design



## Environment

- Operating temperature:  
Ambient with airflow: -5°C to 55°C  
(According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 93% (Non-Condensing)

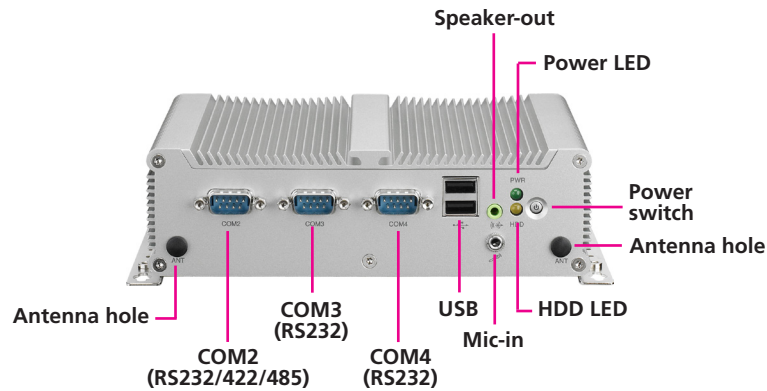
## Certifications

- CE approval
- FCC Class A



# Getting to Know NISE 103

## Front Panel



### Power Switch

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

### Power Status LED

Indicates the power status of the system.

### HDD Access LED

Indicates the status of the hard drive.

### Speaker-out Jack

Used to connect a headphone or a speaker.

### Mic-in Jack

Used to connect an external microphone.

### USB Ports

Used to connect USB 2.0/1.1 devices.

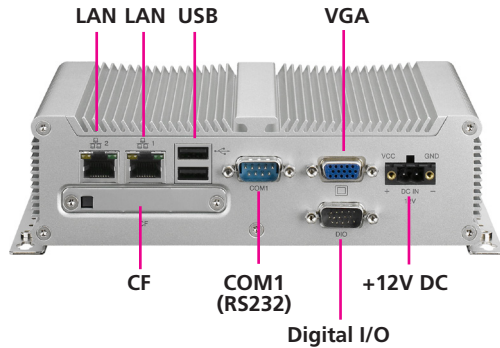
### COM Ports

COM2 supports RS232/422/485 while COM3 and COM4 support RS232 compatible serial devices.

### Antenna Hole for Optional WiFi

Used to connect an optional Mini-PCIe WiFi module.

## Rear Panel



### LAN Ports

Used to connect the system to a local area network.

### USB Ports

Used to connect USB 2.0/1.1 devices.

### COM Port

The COM1 port supports RS232 compatible serial devices.

### VGA Port

Used to connect an analog VGA monitor.

### Digital I/O

The Digital I/O connector supports 4 digital input and 4 digital output.

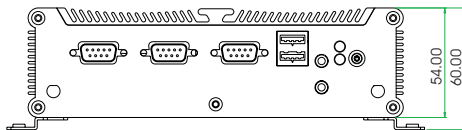
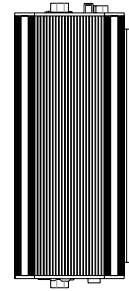
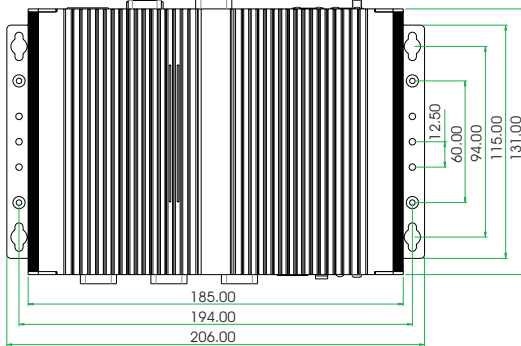
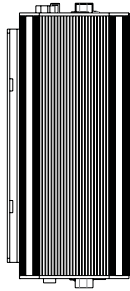
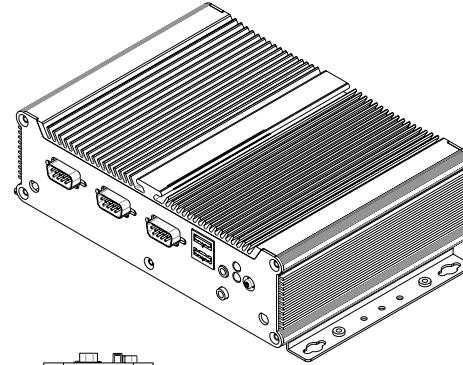
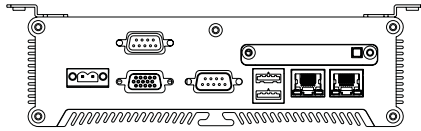
### +12V DC Input

Used to plug a DC power cord.

### CF

Used to insert a CompactFlash card.

# Mechanical Dimensions



## CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the 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 elec-

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

### Precautions

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

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

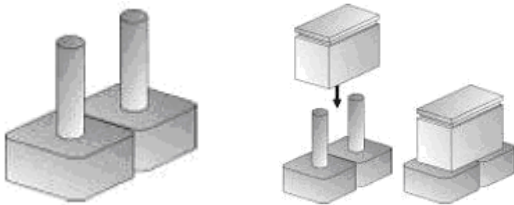
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

## Jumper Settings

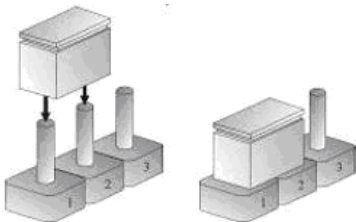
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is **short**. If you remove the jumper cap, or place the jumper cap on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

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

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



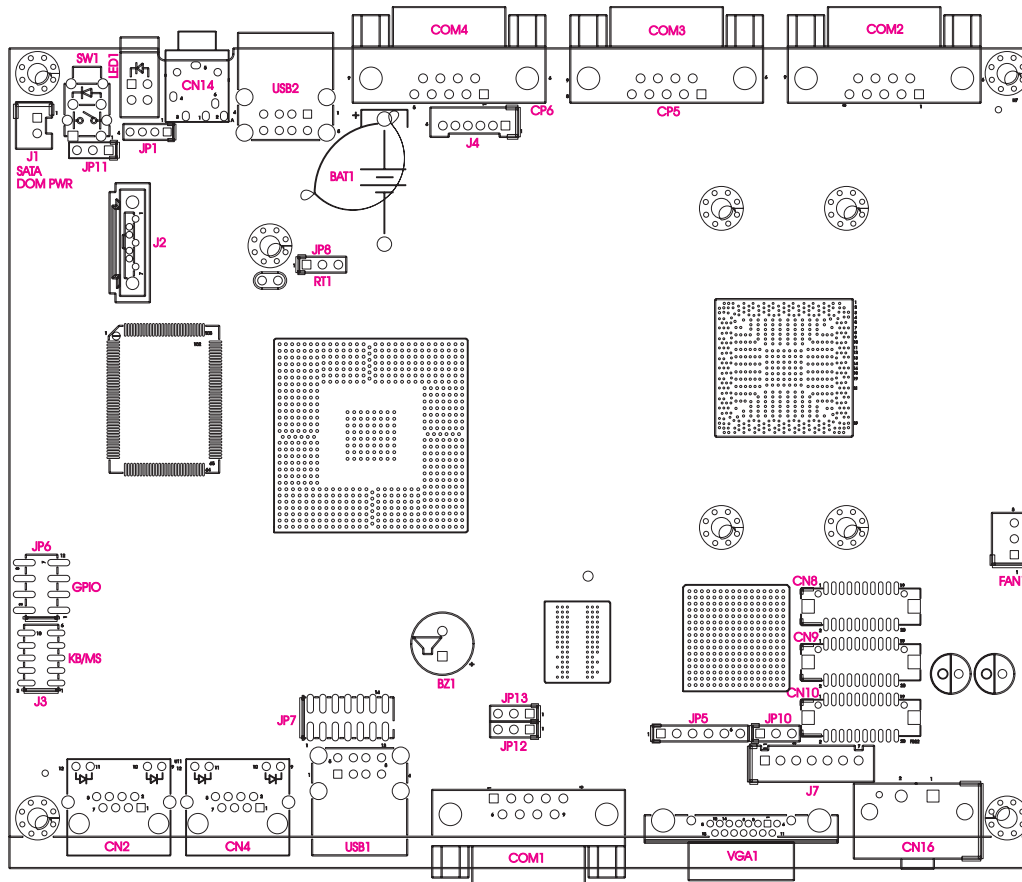
Three-Pin Jumpers: Pins 1 and 2 Are Short



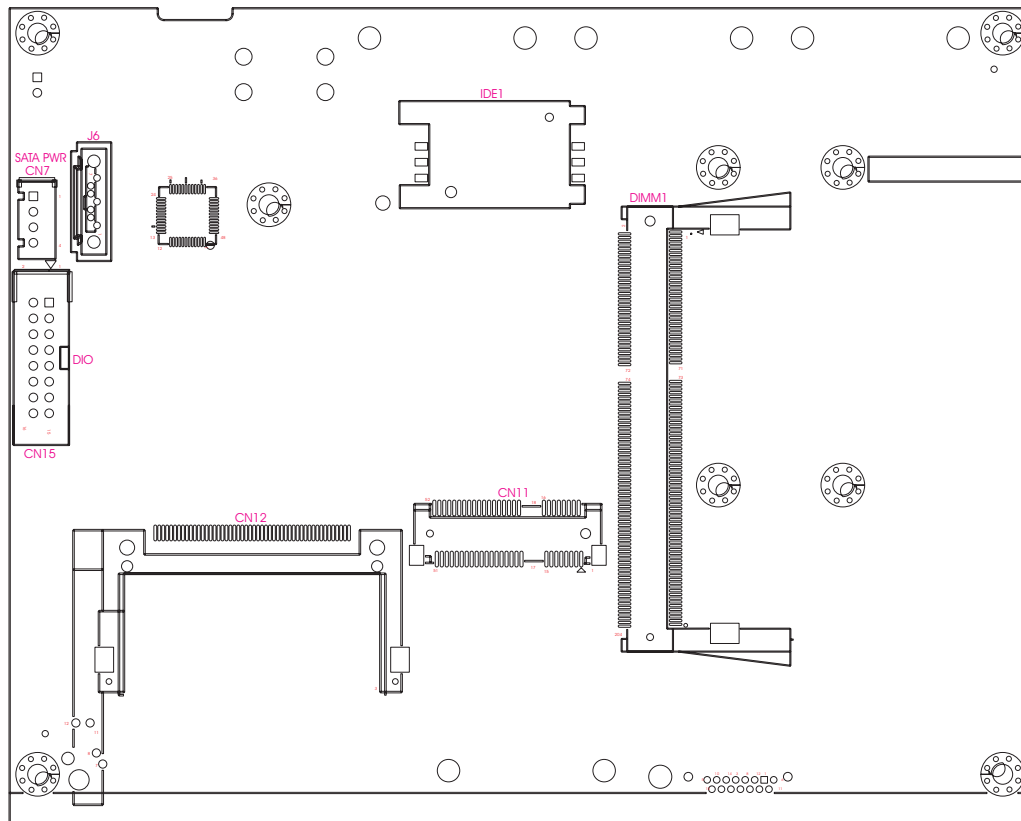
# Locations of the Jumpers and Connectors

The figure below is the NISB 103 main board which is used in the NISE 103 system. It shows the locations of the jumpers and connectors.

Top View



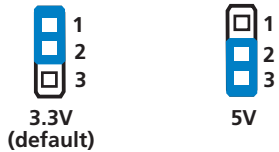
### Bottom View



## Jumpers

### LVDS Backlight Power Select

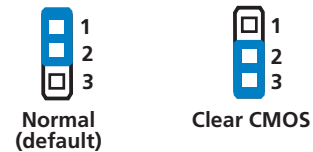
Connector type: 1x3 3-pin header, 2.54mm pitch  
Connector location: JP10



Pin	Definition
1-2	3.3V (default)
2-3	5V

### Clear CMOS Select

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



Pin	Definition
1-2	Normal (default)
2-3	Clear CMOS



## Connector Pin Definitions

### External I/O Interface - Front

#### ATX Power On/Off Switch

Connector location: SW1



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

#### Status Indicators

HDD Access LED  
Power Status LED

**PWR**



**HDD**

Status	LED Color
PWR	Green
HDD	Yellow

### Speaker-out Jack

Connector type: 5-pin jack

Connector location: Speaker-out connector

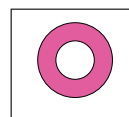


Pin	Definition
1	OUT_R
2	LOUT_JD
3	NC
4	OUT_L
5	GND
6	GND

### Mic-in Jack

Connector type: 6-pin jack, 25.9x12.6x17.0mm

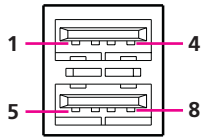
Connector location: Mic-in connector



Pin	Definition
1	MIC_R
2	MIC_JD
3	NC
4	MIC_L
5	GND
6	GND

### USB Ports

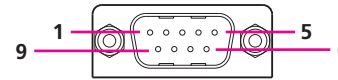
Connector type: Dual USB port, Type A  
 Connector location: USB2



Pin	Definition	Pin	Definition
1	+5V	5	+5V
2	Data 0-	6	Data 1-
3	Data 0+	7	Data 1+
4	GND	8	GND

### COM2 Port (RS232/422/485)

Connector type: DB-9  
 Connector location: COM2



#### RS232 Pin Definition

Pin	Definition	Pin	Definition
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND	6	DSR2
7	RTS2	8	CTS2
9	RI2		

#### RS422 Pin Definition

Pin	Definition	Pin	Definition
1	TXD-	2	TXD+
3	RXD+	4	RXD-
5	GND	6	RTS-
7	RTS#	8	CTS+
9	CTS-		

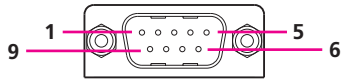
#### RS485 Pin Definition

Pin	Definition	Pin	Definition
1	TXD-	2	TXD+
	RXD-		RXD+
3	Reserved	4	Reserved
5	Reserved	6	Reserved
7	Reserved	8	Reserved
9	Reserved		

### COM3 Port (RS232)

Connector type: DB-9

Connector location: COM3

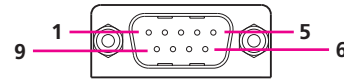


Pin	Definition	Pin	Definition
1	DCD3	2	RXD3
3	TXD3	4	DTR3
5	GND	6	DSR3
7	RTS3	8	CTS3
9	RI3		

### COM4 Port (RS232)

Connector type: DB-9

Connector location: COM4



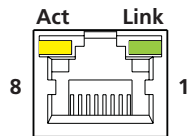
Pin	Definition	Pin	Definition
1	DCD4	2	RXD4
3	TXD4	4	DTR4
5	GND	6	DSR4
7	RTS4	8	CTS4
9	RI4		

## External I/O Interface - Rear

### LAN Ports

Connector type: RJ45 port with LEDs

Connector location: CN2 and CN4

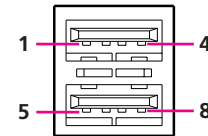


Pin	Definition	Pin	Definition
1	M0+	7	M3+
2	M0-	8	M3-
3	M1+	9	LEDLINK
4	M2+	10	+3VSB
5	M2-	11	LEDACT#
6	M1-	12	+3VSB

### USB Ports

Connector type: Dual USB port, Type A

Connector location: USB1

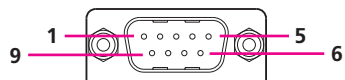


Pin	Definition	Pin	Definition
1	+5V	5	+5V
2	Data 0-	6	Data 1-
3	Data 0+	7	Data 1+
4	GND	8	GND

### COM1 Port (RS232)

Connector type: DB-9

Connector location: COM1

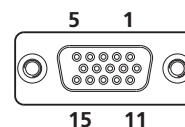


Pin	Definition	Pin	Definition
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

### VGA Port

Connector type: DB-15 port, 15-pin D-Sub

Connector location: VGA1



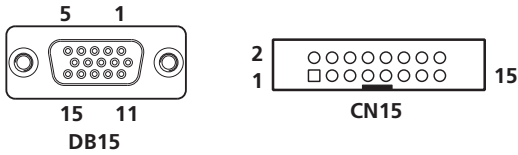
Pin	Definition	Pin	Definition
1	Red	9	+5V
2	Green	10	GND
3	Blue	11	N/C
4	N/C	12	DDC Data
5	GND	13	HSYNC
6	VGADET	14	VSYNC
7	GND	15	DDC Clock
8	GND		

### DIO Port

Connector type: DB15 port, 15-pin header

Connector location: DB15 (DIO port)

CN15 (2x8 15-pin boxed header, 2.54mm)

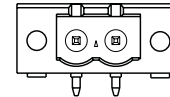


Pin (CN15)	Pin (DB15)	Definition	Pin (CN15)	Pin (DB15)	Definition	Pin (CN15)	Pin (DB15)	Definition
1	01	DI1	3	02	DI2	5	03	DI3
7	04	DI4	13	05	GND	11	06	DC INPUT
9	07	NC	10	8	NC	2	09	DO1
4	10	DO2	6	11	DO3	8	12	DO4
14	13	GND	15	14	GND	16	15	GND
12		N/A						

### DC Power Input

Connector type: Phoenix 1x2 2-pin

Connector location: CN16



Pin No.	Function Description
1	GND
2	+12VIN

## Internal Connectors

### Fan Connector

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

Connector location: FAN1



Pin	Definition
1	GND
2	+12V
3	Sense

### LVDS Panel Backlight Connector

Connector type: 1x7 7-pin JST, 2.5mm pitch

Connector location: J7



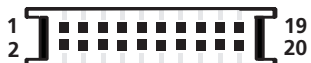
Pin	Definition
1	+5V
2	+12V
3	+12V
4	Panel Backlight Brightness Control
5	GND
6	GND
7	Panel Backlight Enable



### LVDS Connector

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

Connector location: CN8



Pin	Definition	Pin	Definition
1	DDC_CLK	11	RXCLK+
2	DDC_DATA	12	RX1-
3	VCC_LCD	13	RXCLK-
4	RX0+	14	GND
5	N/A	15	GND
6	RX0-	16	V_INV
7	N/A	17	RX2+
8	VCC_LCD	18	V_INV
9	GND	19	RX2-
10	RX1+	20	GND

### LVDS Connector

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

Connector location: CN9

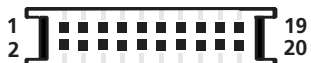


Pin	Definition	Pin	Definition
1	DDC_CLK	11	RXCLK+
2	DDC_DATA	12	RX1-
3	VCC_LCD	13	RXCLK-
4	RX0+	14	GND
5	RX3+	15	GND
6	RX0-	16	V_INV
7	RX3-	17	RX2+
8	VCC_LCD	18	V_INV
9	GND	19	RX2-
10	RX1+	20	GND

### LVDS Connector

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

Connector location: CN10



Pin	Definition	Pin	Definition
1	DDC_CLK	11	RXCLK+
2	DDC_DATA	12	RX1-
3	VCC_LCD	13	RXCLK-
4	RX0+	14	GND
5	RX3+	15	GND
6	RX0-	16	V_INV
7	RX3-	17	RX2+
8	VCC_LCD	18	V_INV
9	GND	19	RX2-
10	RX1+	20	GND

### USB Connector

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

Connector location: J4

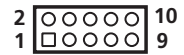


Pin	Definition
1	+5V
2	Data 4-
3	Data 4+
4	Data 5-
5	Data 5+
6	GND

### GPIO Connector

Connector type: 2x5 10-pin, 2.0mm

Connector location: J3



Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPIO24(Pin58)	4	GPIO20(Pin52)
5	GPIO25(Pin59)	6	GPIO21(Pin54)
7	GPIO26(Pin60)	8	GPIO22(Pin56)
9	GPIO27(Pin61)	10	GPIO23(Pin57)

### Power Button

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

Connector location: JP11

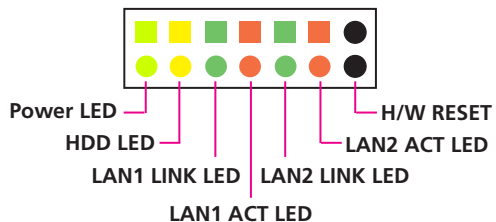
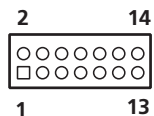


Pin	Definition
1	GND
2	PBT_PU
3	I_SLPS3#

### LED Connector

Connector type: 2x7 14-pin header, 2.0mm-M-180

Connector location: JP7



Pin	Description	Pin	Description
1	PWR_LED_N	2	PWR_LED_P
3	HDD_LED_N	4	HDD_LED_P
5	LAN1_LEDACT#	6	LAN1_ACT
7	LAN1_LINK#	8	LAN1_LINK
9	LAN2_LEDACT#	10	LAN2_ACT
11	LAN2_LINK#	12	LAN2_LINK
13	I_RESET#JP	14	GND

### Mic-in

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

Connector location: JP1



Pin	Definition
1	MIC1-L
2	MIC_JD
3	GND
4	MIC1-R

### SATA Connector

Connector size: 7-pin standard Serial ATAII (1.27mm)

Connector location: J2



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

### SATA Connector

Connector size: 7-pin standard Serial ATAII (1.27mm)

Connector location: J6



Pin	Definition
1	GND
2	SATA_TXP1
3	SATA_TXN1
4	GND
5	SATA_RXN1
6	SATA_RXP1
7	GND

### SATA Power Connector

Connector size: 1x4 4-pin, 2.5mm pitch

Connector location: CN7



Pin	Definition
1	+12V
2	GND
3	GND
4	VCC5

### SATA DOM Power Connector

Connector size: 1x2 2-pin, 2.5 mm pitch

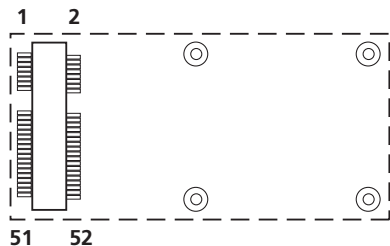
Connector location: J1



Pin	Definition
1	VCC5
2	GND

## Mini PCIe Slots

Connector location: CN11



Pin	Definition	Pin	Definition
1	MIC_R	27	GND
2	+3VSB	28	+1.5V
3	MIC_L	29	GND
4	GND	30	SMBCLK
5	LOUT_R	31	PCIETX3-
6	+1.5V	32	SMBDATA
7	LOUT_L	33	PCIETX3+
8	UIM_PWR	34	GND
9	GND	35	GND
10	UIM_DATA	36	USB_D-
11	REF CLK-	37	GND
12	UIM_CLK	38	USB_D+
13	REF CLK+	39	+3VSB
14	UIM_RESET	40	GND
15	GND	41	+3VSB

Pin	Definition	Pin	Definition
16	UIM_VPP	42	N/A
17	N/A	43	GND
18	GND	44	N/A
19	N/A	45	N/A
20	Disable#	46	N/A
21	GND	47	N/A
22	PERST#	48	+1.5V
23	PCIERX3-	49	N/A
24	+3VSB	50	GND
25	PCIERX3+	51	N/A
26	GND	52	+3VSB
MH1	GND	MH4	GND
MH2	GND	MH5	GND
MH3	GND	MH6	GND

### 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

### PS/2 Keyboard/Mouse Connector

Connector size: 2x4 8-pin header, 2.54 mm

Connector location: JP6



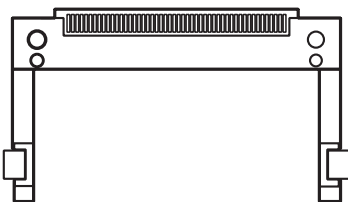
Pin	Definition	Pin	Definition
1	KBMSVCC	5	LKBCLK
2	KBMSVCC	6	LMCLK
3	LKBDAT	7	GND
4	LMDAT	8	GND



## CompactFlash

Connector type: CompactFlash Type 2

Connector location: CN12



Pin	Description	Pin	Description
1	GND	15	GND
2	IDE Data3	16	GND
3	IDE Data4	17	GND
4	IDE Data5	18	IDEAddress2
5	IDE Data6	19	IDEAddress1
6	IDE Data 7	20	IDEAddress0
7	-PCS1	21	IDE Data0
8	GND	22	IDE Data1
9	GND	23	IDE Data2
10	GND	24	NC
11	GND	25	GND
12	GND	26	GND
13	+5V	27	IDE Data11
14	GND	28	IDE Data12

Pin	Description	Pin	Description
29	IDE Data13	40	NC
30	IDE Data14	41	CF_RESET#
31	IDE Data15	42	CF_PHDRDY
32	-DCS3	43	PDDREQ
33	NC	44	IDEDDACK
34	-IDEDIOR	45	+5V
35	-IDEDIOW	46	CFPATADET
36	+5V	47	IDE Data8
37	IRQ14	48	IDE Data9
38	+5V	49	IDE Data10
39	GND	50	GND

## CHAPTER 3: SYSTEM SETUP

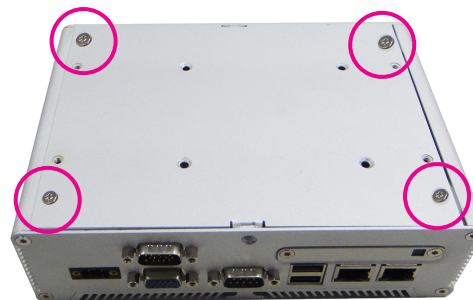
### Removing the Chassis Cover



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

This chapter will guide you on installing the SODIMM, SATA drive, Wireless LAN module and CompactFlash card. You need to remove the bottom cover to access the SODIMM socket, SATA cables, Mini PCIe slot and CompactFlash socket.

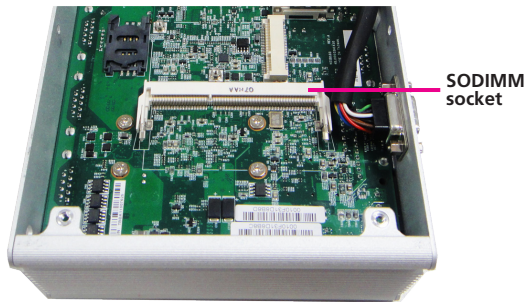
1. With the bottom side of the chassis facing up, remove the mounting screws of the bottom cover and then put them in a safe place for later use.



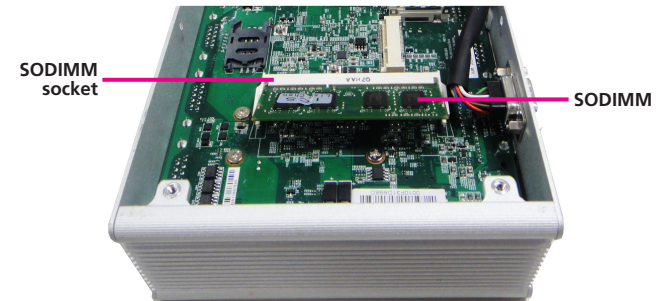
2. Lift up the cover and remove it from the chassis.

## Installing the SODIMM

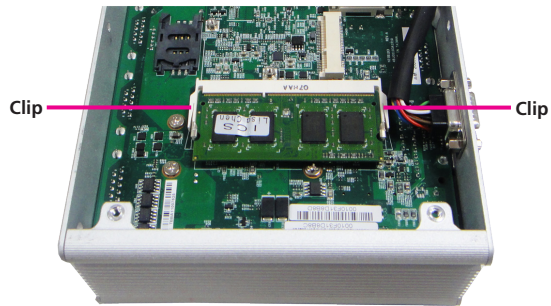
1. Locate the SODIMM socket on the board.



2. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips into the socket. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.



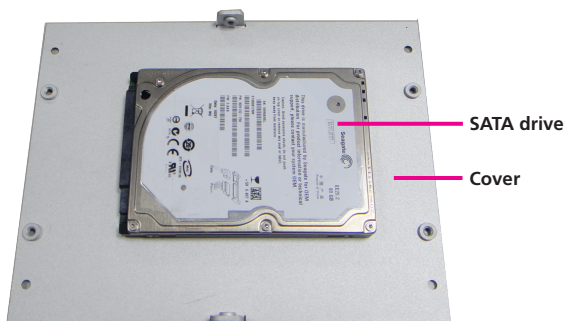
3. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive “click”, indicating the module is correctly locked into position.



## Installing a SATA Hard Drive

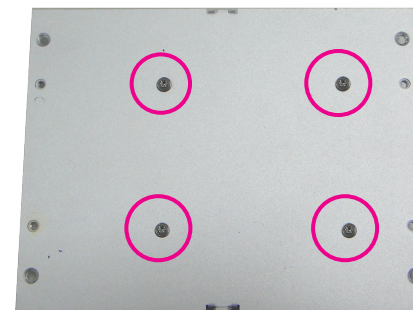
1. The inner side of the bottom cover is where you will install the SATA drive.

Align the mounting holes of the SATA drive with the mounting holes on the cover.



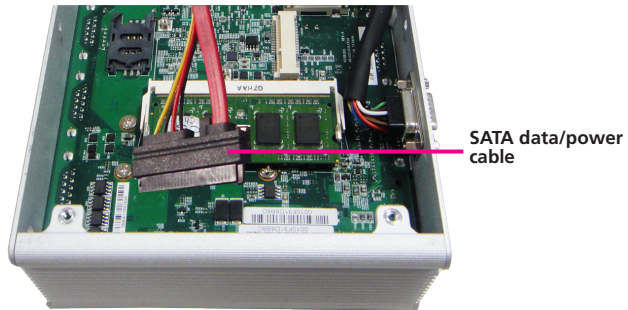
Inner Side of the Cover

2. While supporting the SATA drive, turn the cover to the other side. This will be the outer side of the cover. Use the provided screws to secure the drive in place.

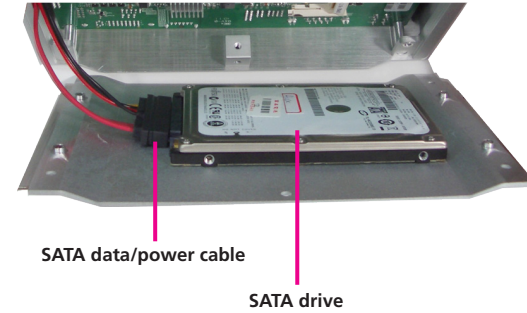


Outer Side of the Cover

3. The SATA data/power cable is readily accessible upon removing the chassis cover.

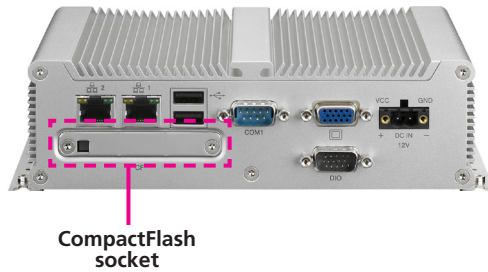


4. Connect the SATA data/power cable to the connectors on the SATA drive.

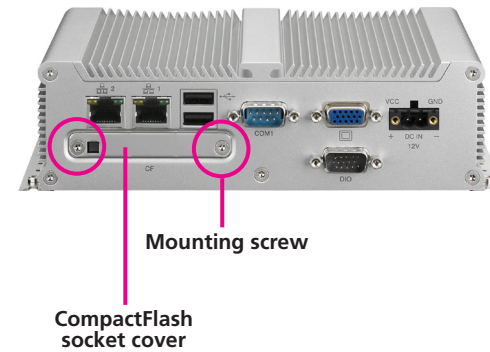


## Installing a CompactFlash Card

1. The CompactFlash socket is located at the rear side of the chassis.



2. Remove the mounting screws of the CompactFlash socket's cover.

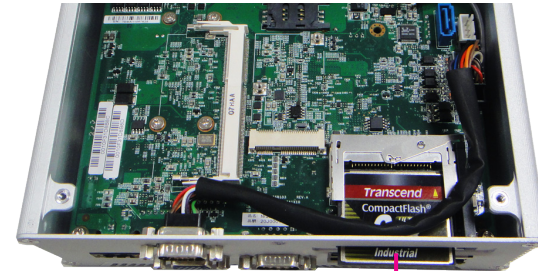


3. Remove the socket's cover to access the CompactFlash socket.



CompactFlash socket

4. With the CompactFlash card's label facing up, position the card to the socket.

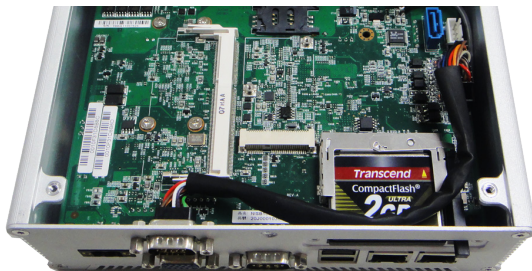


CompactFlash card



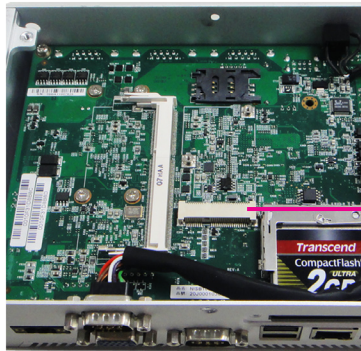


5. Insert the card until it is completely seated in the socket.



## Installing a Wireless LAN Module

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



Mini PCI Express slot

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

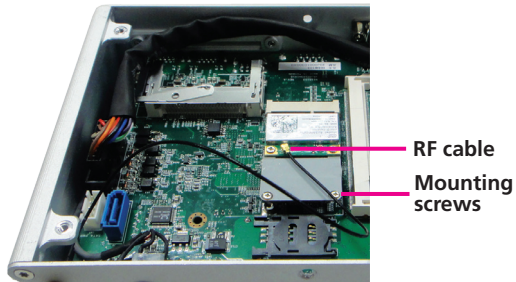


Wireless LAN module

Mini PCI Express slot

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

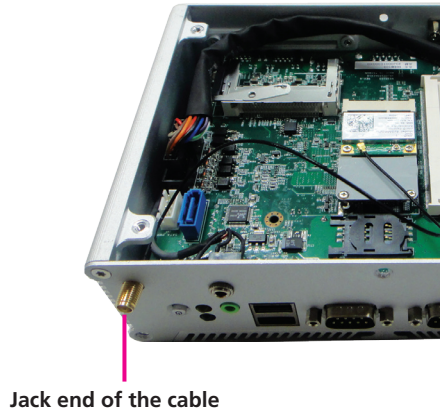
Attach one end of the RF cable onto the module.



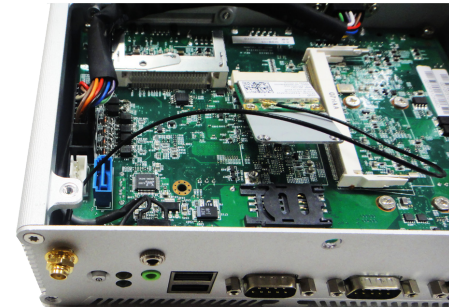
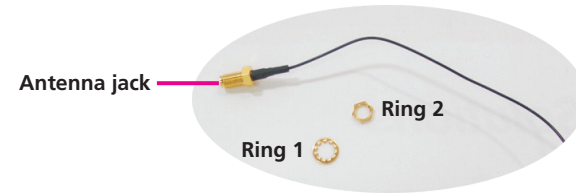
4. Remove the antenna hole cover that is located at the front panel of the chassis.



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



6. Insert the 2 rings (ring 1 and then ring 2) onto the antenna jack end of the cable.

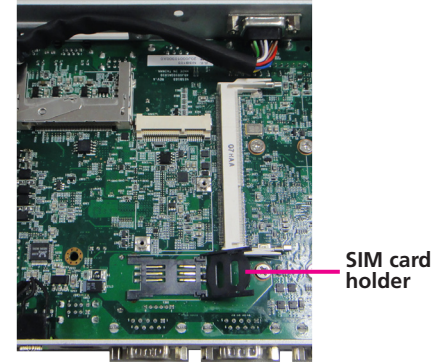
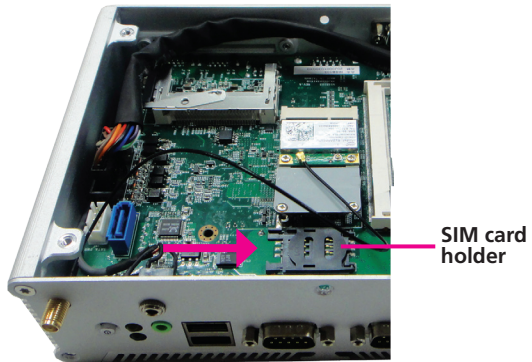


7. Connect an external antenna to the antenna jack.

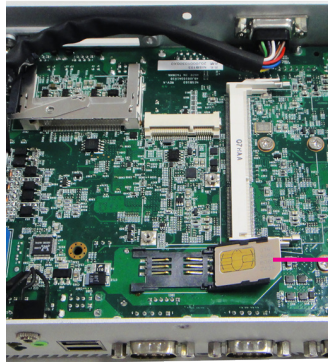


## Inserting the SIM Card

1. Slide the SIM card holder to the "OPEN" position.
2. Lift the card holder.

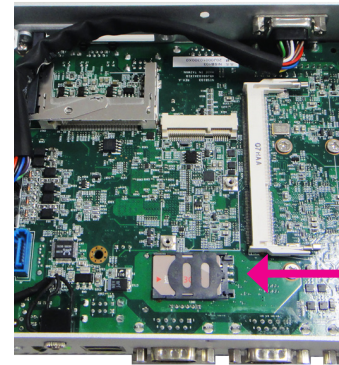


3. Slide the SIM card into the SIM card holder.



SIM card

4. Move the holder down and then slide it to the "LOCK" position.



# CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NISE 103. 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](http://www.nexcom.com.tw).

## About BIOS Setup

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

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

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

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

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

## When to Configure the BIOS

This program should be executed under the following conditions:

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

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



## Default Configuration

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

## Entering Setup

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

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

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

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

## Legends

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

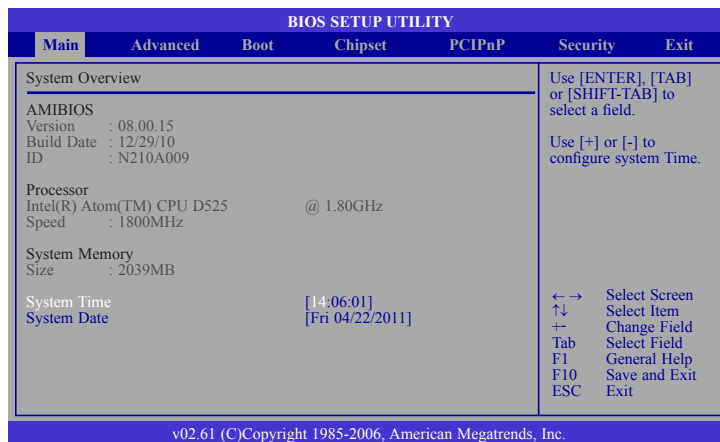
When “▶” appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

## 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 six setup functions and one exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the submenu.

### Main

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



### AMI BIOS

Displays the detected BIOS information.

### Processor

Displays the detected processor information.

### System Memory

Displays the detected system memory information.

### System Time

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

### System Date

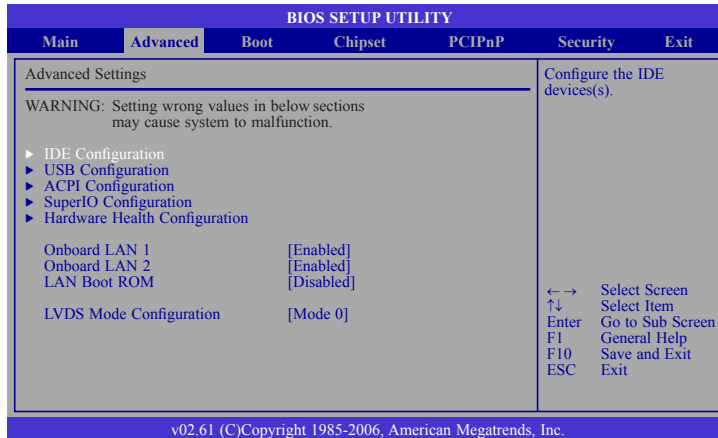
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

## Advanced

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



Setting incorrect field values may cause the system to malfunction.



## IDE Configuration

This section is used to configure the IDE drives.

## USB Configuration

This section is used to configure USB devices.

## ACPI Configuration

This section is used to configure the Advanced ACPI configuration.

## Super IO Configuration

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

## Hardware Health Configuration

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

## Onboard LAN 1 and Onboard LAN 2

Enables or disables the onboard LAN.

## LAN Boot ROM

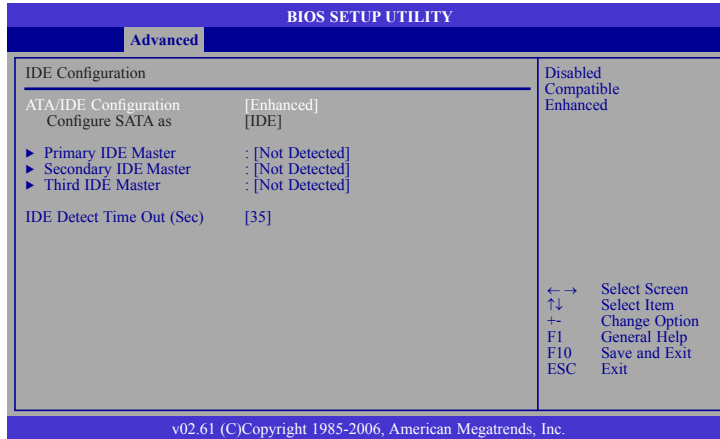
Enable this field if you wish to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly. If you wish to change the boot ROM's settings, type the <Shift> and <F10> keys simultaneously when prompted during boot-up. Take note: you will be able to access the boot ROM's program (by typing <Shift> + <F10>) only when this field is enabled.

## LVDS Mode Configuration

Configures the LVDS mode.

## IDE Configuration

This section is used to configure the IDE drives.



### ATA/IDE Configuration

This field is used to configure the IDE drives. The options are Disabled, Compatible and Enhanced.

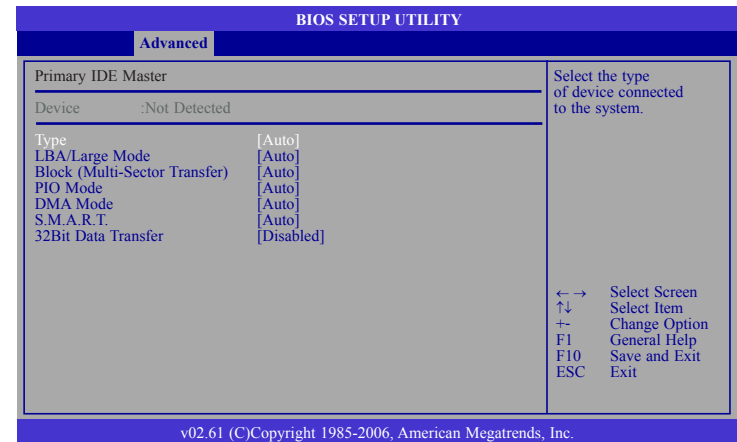
### Configure SATA As

**IDE** This option configures the Serial ATA drives as Parallel ATA physical storage device.

**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.

## Primary IDE Master to Third IDE Master

When you enter the BIOS Setup Utility, the BIOS will auto detect the existing IDE devices then displays the status of the detected devices. To configure an IDE drive, move the cursor to a field then press <Enter>.



## Type

Selects the type of IDE drive connected to the system.

### LBA/Large Mode

- Auto The LBA mode will automatically be enabled, that is, if the LBA mode was not previously disabled.
- Disabled Disables the LBA mode.

### Block (Multi-Sector Transfer)

- Auto Data transfer to and from the device occurs multiple sectors at a time.
- Disabled Data transfer to and from the device occurs one sector at a time.

### PIO Mode

Selects the data transfer mode. PIO means Programmed Input/Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. Your system supports five modes, 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode after checking your drive.

- Auto The BIOS will automatically set the system according to your hard disk drive's timing.
- Mode 0-4 You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

## DMA Mode

Selects the DMA mode.

- Auto Automatically detects the DMA mode.
- SWDMAN SingleWord DMAn.
- MWDMAN MultiWord DMAn.
- UDMAN Ultra DMAn.

### S.M.A.R.T.

The system board supports SMART (Self-Monitoring, Analysis and Reporting Technology) hard drives. SMART is a reliability prediction technology for ATA/IDE and SCSI drives. The drive will provide sufficient notice to the system or user to backup data prior to the drive's failure. SMART is supported in ATA/33 or later hard drives. The options are Auto (default), Enabled and Disabled.

### 32Bit Data Transfer

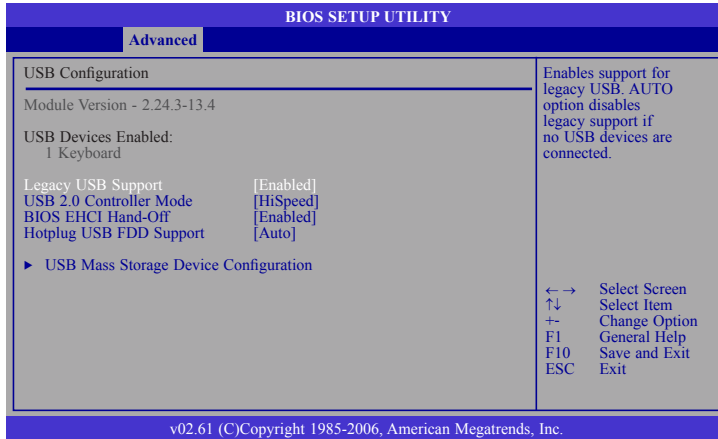
Enables or disables 32-bit data transfer.

### IDE Detect Time Out (Sec)

Selects the time out value for detecting ATA/ATAPI devices.

## USB Configuration

This section is used to configure USB devices.



## Legacy USB Support

Due to the limited space of the BIOS ROM, the support for legacy USB keyboard (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 keyboard is not available and you need to use a USB keyboard to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

## USB 2.0 Controller Mode

Sets the USB 2.0 controller mode to HiSpeed (480 Mbps) or FullSpeed (12 Mbps).

## BIOS EHCI Hand-Off

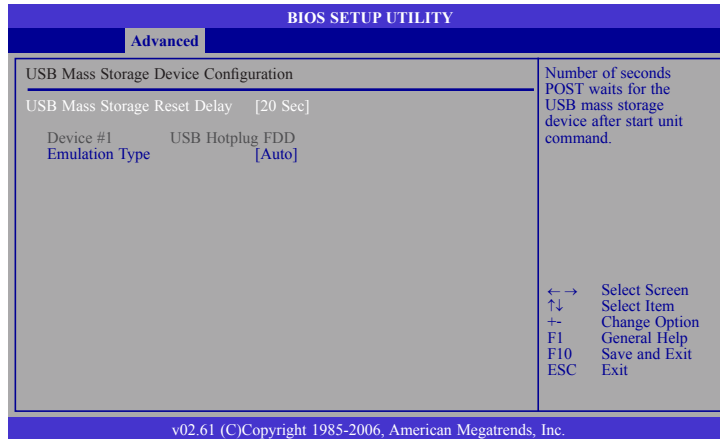
Enable this field when using operating systems without the EHCI hand-off support.

## Hotplug USB FDD Support

Enables support for USB FDD hot plug.

## USB Mass Storage Device Configuration

Configures the USB mass storage class devices.



## USB Mass Storage Reset Delay

Selects the number of seconds POST will wait for the USB mass storage device after the system starts.

## Device #1

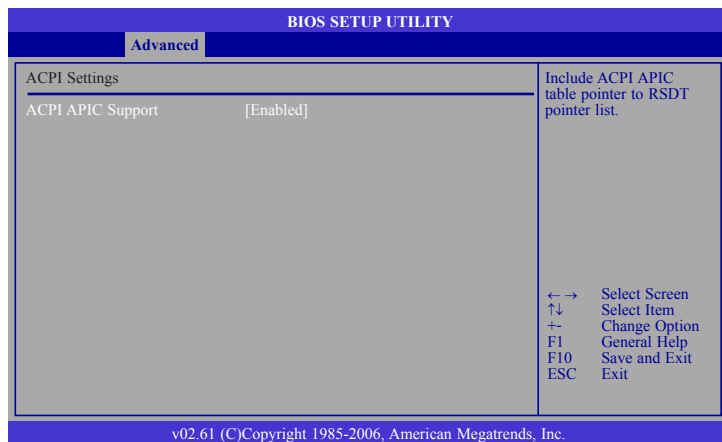
Displays the connected device.

## Emulation Type

- Auto            USB devices that are less than 530MB will be emulated as a floppy drive and the remaining as hard drives.
- Forced FDD    Forces an HDD formatted drive to boot as FDD (e.g. ZIP drive)

## ACPI Configuration

This section is used to configure the ACPI configuration.



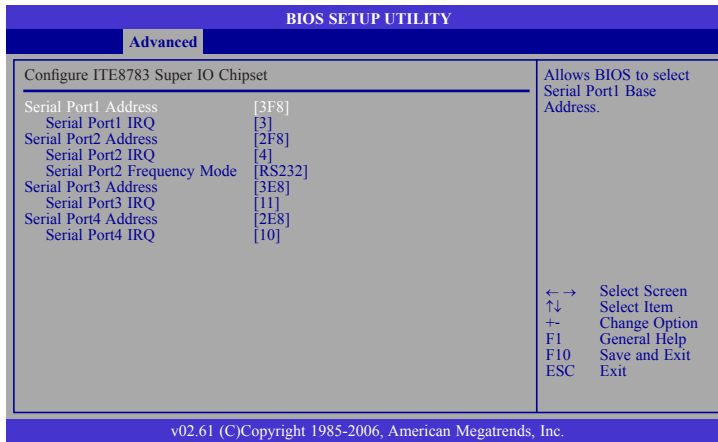
### ACPI APIC Support

Enables or disables the ACPI APIC function. It includes the ACPI APIC table pointer to RSDT pointer list.



## Super IO Configuration

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



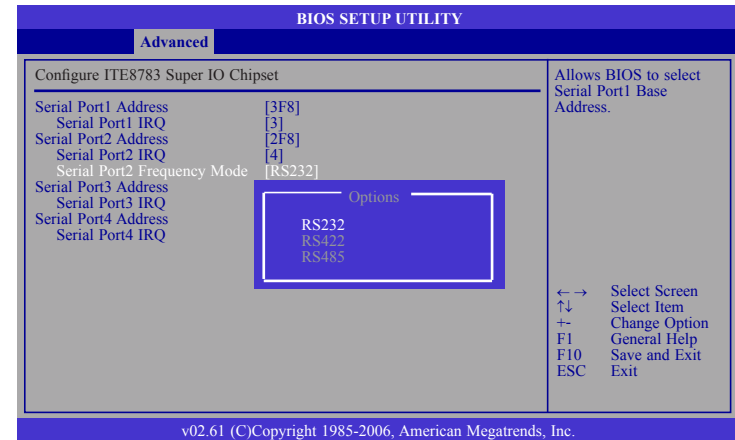
### Serial Port1 Address to Serial Port4 Address

- Auto The system will automatically select an I/O address for the on-board serial port.
- 3F8, 2F8, 3E8, 2E8, 2F0, 2E0 Allows you to manually select an I/O address for the onboard serial port.
- Disabled Disables the onboard serial port.

### Serial Port1 IRQ to Serial Port4 IRQ

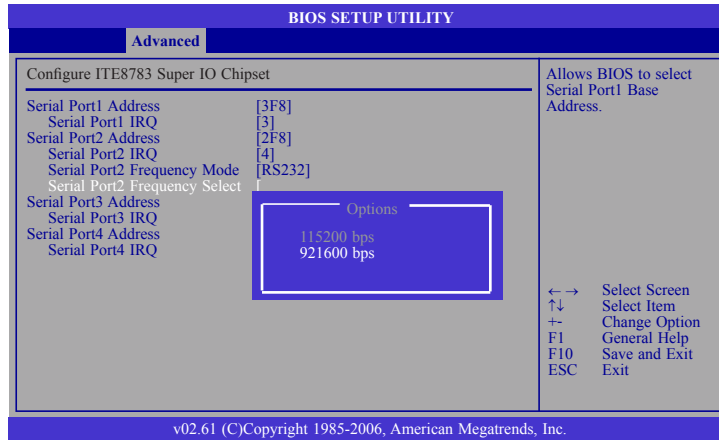
These fields are used to select an IRQ for the onboard serial port.

### Serial Port2 Frequency Mode



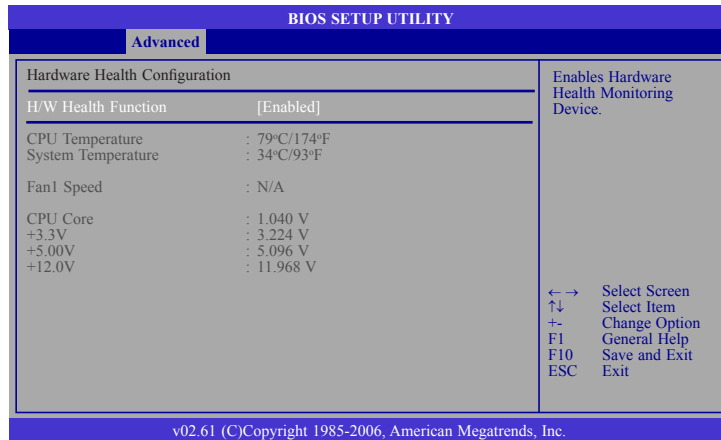
This field is used to select the frequency mode of serial port 2. The options are RS232, RS422 and RS485.

If you selected RS422 or RS485 in the “Serial Port2 Frequency Mode” field, the “Serial Port2 Frequency Select” field will appear prompting you to select the frequency setting. The options are 115200 bps and 921600 bps.



## Hardware Health Configuration

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



## Fan1 Speed

Detects and displays the speed of the cooling fan.

## CPU Core to +12.0V

Detects and displays the output voltages.

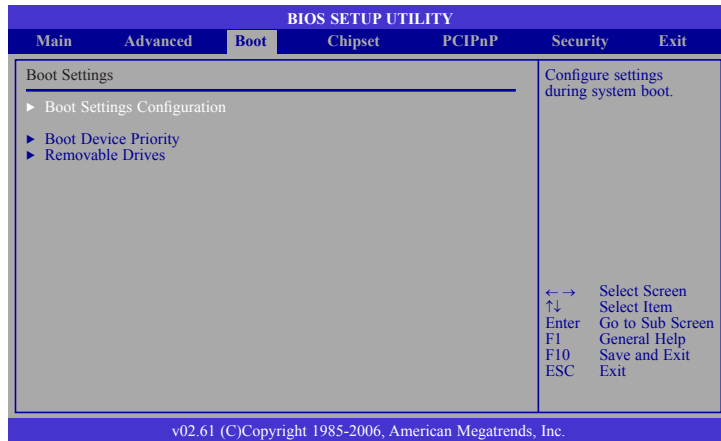
## H/W Health Function

Enables or disables the hardware monitoring function.

## CPU Temperature and System Temperature

Detects and displays the current temperature of the CPU and the internal temperature of the system.

## Boot



### Boot Settings Configuration

This section is used to configure settings during system boot.

#### Boot Device Priority

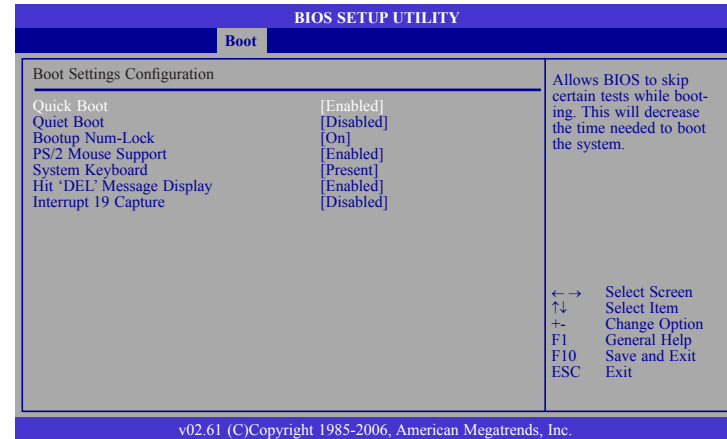
This section is used to select the boot priority sequence of the devices.

#### Removable Drives

This section is used to select the boot priority sequence of the removable drives.

### Boot Settings Configuration

This section is used to configure settings during system boot.



#### Quick Boot

When Enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.

#### Quiet Boot

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

## Bootup Num-Lock

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.

## PS/2 Mouse Support

The options are Auto, Enabled and Disabled.

## System Keyboard

Detects the system keyboard.

## Hit 'DEL' Message Display

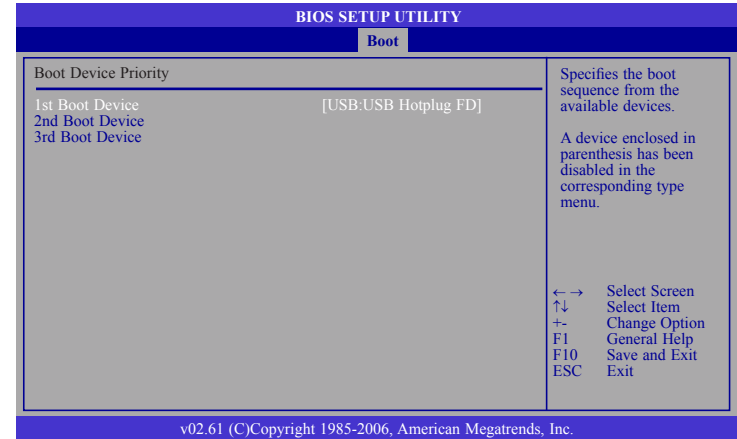
When enabled, the system displays the "Press DEL to run Setup" message during POST.

## Interrupt 19 Capture

When enabled, it allows the optional ROM to trap interrupt 19.

## Boot Device Priority

This section is used to select the boot priority sequence of the devices.

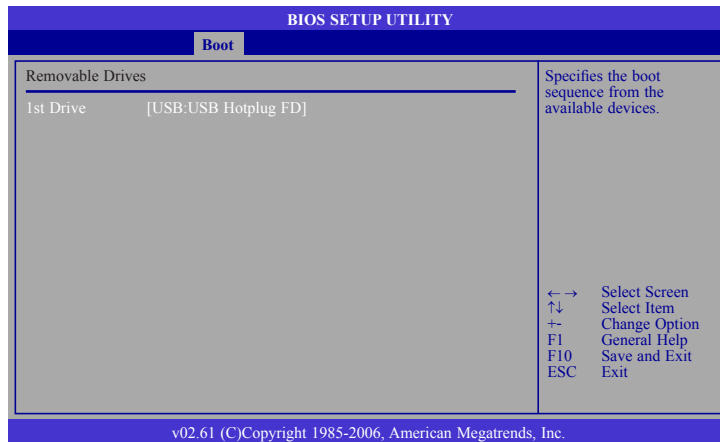


### 1st Boot Device to 3rd Boot Device

Selects the drive to boot first, second and third in the "1st Boot Device", "2nd Boot Device" and "3rd Boot Device" fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected.

## Removable Drives

This section is used to select the boot priority sequence of the hard drives.

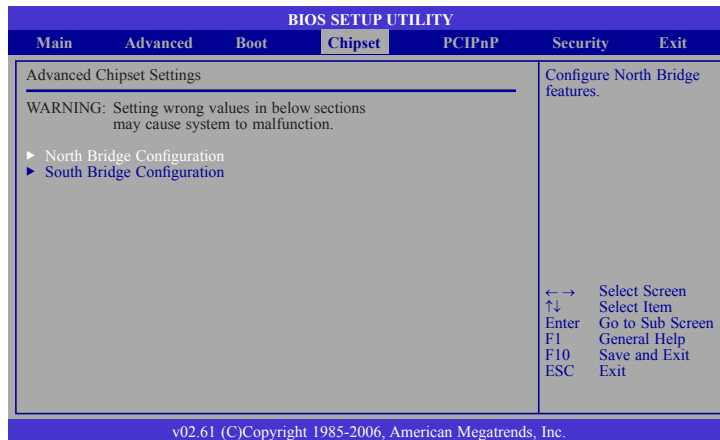


## Chipset

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

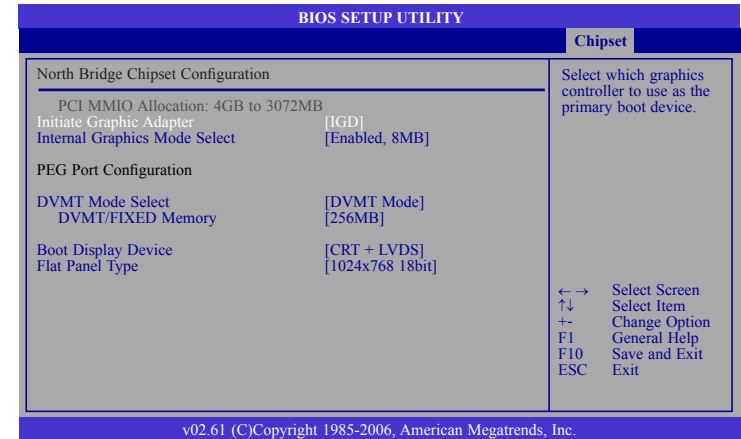


Setting incorrect field values may cause the system to malfunction.



## North Bridge Configuration

This section is used to configure the north bridge features.



### Initiate Graphic Adapter

Selects the graphics controller to use as the primary boot device.

### Internal Graphics Mode Select

Selects the amount of system memory used by the internal graphics device.

## DVMT Mode Select

The options are Fixed mode and DVMT mode.

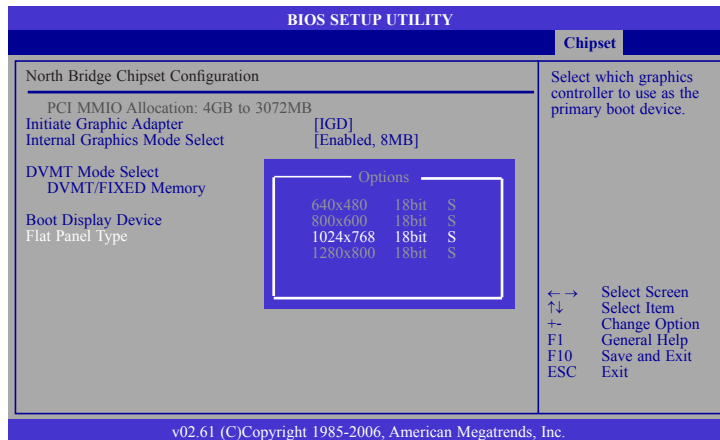
## DVMT/Fixed Memory

This field is used to select the graphics memory size used by DVMT/Fixed mode.

## Boot Display Device

This field is used to select the type of display to use when the system boots.

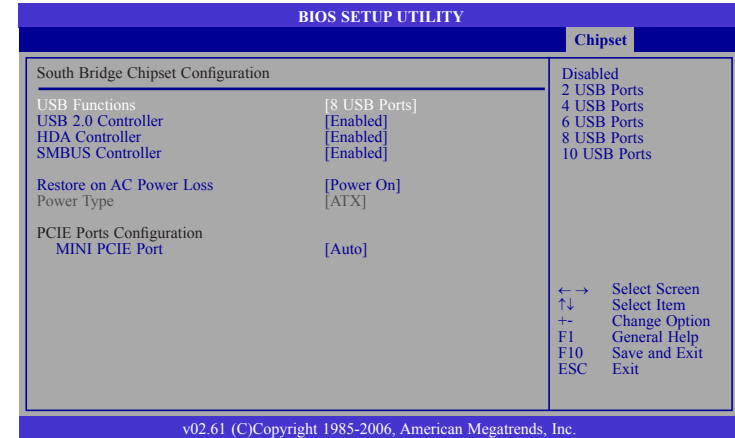
## Flat Panel Type



Selects the type of flat panel connected to the system. The supported LVDS are 640x480 18bit, 800x600 18bit, 1024x768 18bit and 1280x800 18bit.

## South Bridge Configuration

This section is used to configure the south bridge features.



## USB Functions

Enables or disables USB devices.

## USB 2.0 Controller

This field is used to enable or disable the Enhanced Host Controller Interface (USB 2.0).

## HDA Controller

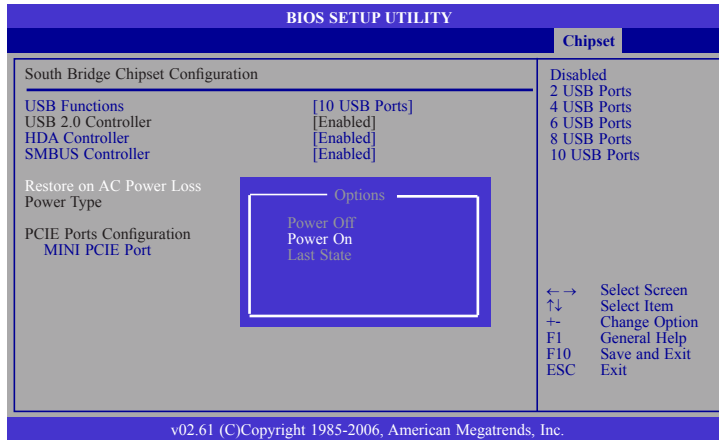
Enables or disables the onboard audio.



## SMBUS Controller

Enables or disables the SMBUS.

## Restore On AC Power Loss



**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.

**Last State** When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

## Power Type

Selects the type of power used.

## Mini PCIE Port

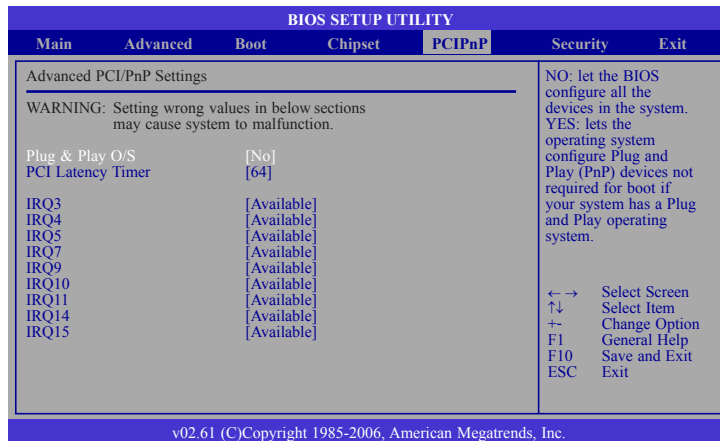
Configures the PCIE port.

## PCIPnP

This section is used to configure settings for PCI/PnP devices.



Setting incorrect field values may cause the system to malfunction.



## Plug & Play O/S

Yes Configures Plug and Play (PnP) devices that are not required to boot in a Plug and Play supported operating system.

No The BIOS configures all the devices in the system.

## PCI Latency Timer

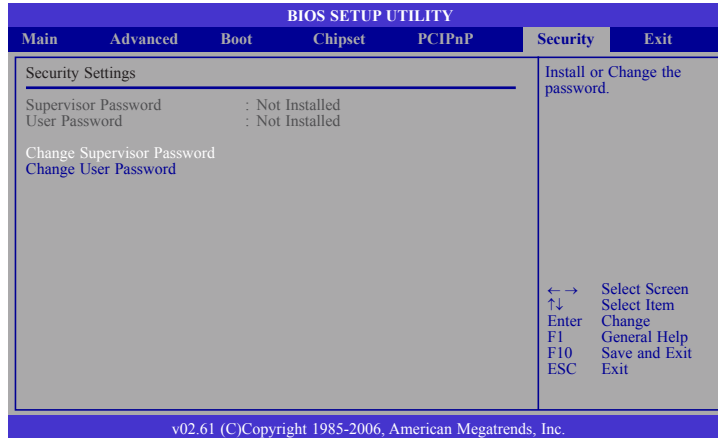
This feature is used to select the length of time each PCI device will control the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Since each access to the bus comes with an initial delay before any transaction can be made, low values for the PCI Latency Timer will reduce the effectiveness of the PCI bandwidth while higher values will improve it.

## IRQ3 to IRQ15

Available The specified IRQ is available for PCI/PnP devices.

Reserved The specified IRQ is reserved for Legacy ISA devices.

## Security



### Change Supervisor Password

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

To set a new password:

1. Select the Change Supervisor Password field then press <Enter>.
2. Type your password in the dialog box then press <Enter>. You are limited to eight letters/numbers.
3. Press <Enter> to confirm the new password.
4. When the Password Installed dialog box appears, select OK.

To change the password, repeat the same steps above.

To clear the password, select Change Supervisor Password then press <Enter>. The Password Uninstalled dialog box will appear.

If you forgot the password, you can clear the password by erasing the CMOS RTC (Real Time Clock) RAM using the RTC Clear jumper. Refer to chapter 2 for more information.

### Change User Password

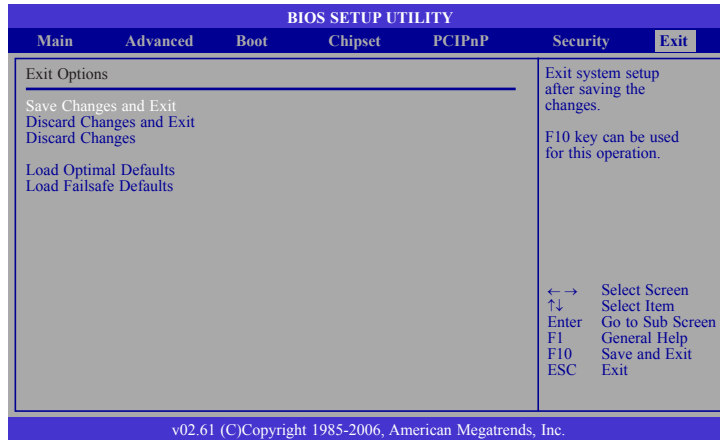
This field is used to set or change the user password.

To set a new password:

1. Select the Change User Password field then press <Enter>.
2. Type your password in the dialog box then press <Enter>. You are limited to eight letters/numbers.
3. Press <Enter> to confirm the new password.
4. When the Password Installed dialog box appears, select OK.

To change the password, repeat the same steps above.

## Exit



### Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F10> to save and exit Setup.

### Discard Changes and Exit

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

### Discard Changes

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

### Load Optimal Defaults

Loads the optimal default values from the BIOS ROM.

### Load Failsafe Defaults

Loads the fail-safe default values from the BIOS ROM.

# APPENDIX A: DIGITAL I/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 ten Digital I/O pins in the NISE 103 series. The pin definition is shown in the following table:

## CN15 - Digital I/O Connector

Pin No.	GPI/O Mode	PowerOn Default	Address	Pin No.	GPI/O Mode	PowerOn Default	Address
1	DI	High	281h (Bit0)	2	DO	Low	281h (Bit4)
3	DI	High	281h (Bit1)	4	DO	Low	281h (Bit5)
5	DI	High	281h (Bit2)	6	DO	Low	281h (Bit6)
7	DI	High	281h (Bit3)	8	DO	Low	281h (Bit7)

Control the DO pin (2/4/6/8) level from I/O port 281h bit (4/5/6/7).

The bit is Set/Clear indicated output High/Low.

## DIO Programming Sample Code

```
#define DIO_PORT      0x281
#define DO1          (0x01 << 4)
#define DO2          (0x01 << 5)
#define DO3          (0x01 << 6)
#define DO4          (0x01 << 7)

#define DO1_HI       outputb(DIO_PORT, 0x10)
#define DO1_LO       outputb(DIO_PORT, 0x00)
#define DO2_HI       outputb(DIO_PORT, 0x20)
#define DO2_LO       outputb(DIO_PORT, 0x00)
#define DO3_HI       outputb(DIO_PORT, 0x40)
#define DO3_LO       outputb(DIO_PORT, 0x00)
#define DO4_HI       outputb(DIO_PORT, 0x80)
#define DO4_LO       outputb(DIO_PORT, 0x00)
void main(void)
{
    DO1_HI;
    DO2_LO;
    DO3_HI;
    DO4_LO;
}
```

## APPENDIX B: GPIO PROGRAMMING GUIDE

GPIO (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPIO pins in NISE 103. The pin definition is shown in the following table:

### J3 - GPIO Connector

Pin No.	GPIO Mode	PowerOn Default	Address	Pin No.	GPIO Mode	PowerOn Default	Address
1	VCC	-	-	2	GND	-	-
3	GPO	Low	284h (Bit4)	4	GPI	High	284h (Bit0)
5	GPO	Low	284h (Bit5)	6	GPI	High	284h (Bit1)
7	GPO	Low	284h (Bit6)	8	GPI	High	284h (Bit2)
9	GPO	Low	284h (Bit7)	10	GPI	High	284h (Bit3)

Control the GPO pin (3/5/7/9) level from I/O port 284h bit (4/5/6/7).

The bit is Set/Clear indicated output High/Low.

## GPIO Programming Sample Code

```
#define GPIO_PORT      0x284
#define GPO3           (0x01 << 4)
#define GPO5           (0x01 << 5)
#define GPO7           (0x01 << 6)
#define GPO9           (0x01 << 7)

#define GPO3_HI        outportb(GPIO_PORT, 0x10)
#define GPO3_LO        outportb(GPIO_PORT, 0x00)
#define GPO5_HI        outportb(GPIO_PORT, 0x20)
#define GPO5_LO        outportb(GPIO_PORT, 0x00)
#define GPO7_HI        outportb(GPIO_PORT, 0x40)
#define GPO7_LO        outportb(GPIO_PORT, 0x00)
#define GPO9_HI        outportb(GPIO_PORT, 0x80)
#define GPO9_LO        outportb(GPIO_PORT, 0x00)

void main(void)
{
    GPO3_HI;
    GPO5_LO;
    GPO7_HI;
    GPO9_LO;
}
```



## APPENDIX C: WATCHDOG TIMER SETTING

### ITE8783 WatchDog Programming Guide

```

#define SUPERIO_PORT  0x2E
#define WDT_SET       0x72
#define WDT_VALUE 0x73

void main(void)
{
    #Enter SuperIO Configuration
    outputb(SUPERIO_PORT, 0x87);
    outputb(SUPERIO_PORT, 0x01);
    outputb(SUPERIO_PORT, 0x55);
    outputb(SUPERIO_PORT, 0x55);

    # Set LDN
    outputb(SUPERIO_PORT,0x07);
    outputb(SUPERIO_PORT+1 ,0x07);

    # Set WDT setting
    outputb(SUPERIO_PORT, WDT_SET);
    outputb(SUPERIO_PORT+1 , 0xC0);
    # Use the Second to come down
    # If choose the Minute, change value to 0x40
    # Set WDT sec/min
    outputb(SUPERIO_PORT, WDT_VALUE);
    outputb(SUPERIO_PORT+1 , 0x05);      #Set 5 seconds
}

```

# APPENDIX D: POWER CONSUMPTION

## Test Configuration

System Configuration	Sys#1
Chassis	CHASSIS NISE103 VER:B
CPU	Intel® Atom™ D425 processor, 1.8GHz
Memory	APACER SODIMM 1G
HDD	HITACHI 2.5 SATA HDD 80G
Power Supply	FSP060-1AD101C 12V/60W
Keyboard	LEMEL B-5201-P
Mouse	GENIUS EASY MOUSE PS/2

## Power Consumption Measurement

### Test Equipment

PROVA CM-07 AC/DC CLAMP METER

### Test Procedure

1. Power up the DUT and then boot Windows XP.
2. Enter the standby mode (HDD power down).
3. Measure the power consumption and record it.
4. Run the Burn-in test program to apply 100% full loading.
5. Measure the power consumption and record it.

### Test Data

	<b>Sys #1</b>
	+12V
Full-Loading Mode	1.85A
Total	22.2W
Standby Mode	0.75A
Total	9W