NECOM

NEXCOM International Co., Ltd.

Industrial Computing Solutions
Fan-less Computer
NISE 100
User Manual

www.nexcom.com

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NEXCOM

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PREFACE

Copyright

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Acknowledgements

NISE 100 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.

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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 NEX-COM'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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http://www.nexcom-jp.com

PACKAGE CONTENTS

Before continuing, verify that the NISE 100 package that you received is complete. Your package should have all the items listed in the following table.

Item	P/N	Description	Qty
1	50311F0110X00	FLAT HEAD SCREW LONG FOR HDD USE	4
2	6012200052X00	PE ZIPPER BAG #8	1
3	6012200053X00	PE ZIPPER BAG #3	1
4	60177A0158X00	NISE100 QUICK REFERENCE GUIDE VER:A	1
5	60233MK202X00	PS/2 Y CABLE	1
6	602DCD0194X00	NISE100 CD DRIVER VER:1.0	1
7	7400060007X00	POWER ADAPTER 60W 12V/5A	1
8	7800000014X00	DVI-I TO VGA ADAPTER	1

ORDERING INFORMATION

The following provides ordering information for NISE 100.

- **Barebone**
  NISE 100-M01G-S80G (P/N: 10J00010000X0)
  - Intel® Atom™ N270 Fanless System

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CHAPTER 1: PRODUCT INTRODUCTION

Overview

Front

Rear

Key Features

- Onboard Intel® Atom™ N270 processor, 1.6GHz
- Intel® 945GSE chipset
- 1 x 10/100/1000 Mbps LAN port
- 2 x USB 2.0 ports
- 1 x DVI-I port
- 1 x Keyboard/Mouse port

- 1 x RS232/422/485 and 2 x RS232
- Onboard DC to DC power design to support +12V DC power input
- Supports ATX power mode

Hardware Specifications

Main Board

- Onboard Intel® Atom™ N270 processor, 1.6GHz
- Supports 533MHz FSB
- Intel® 945GSE and ICH7M chipsets

Main Memory

- One DDR2 SODIMM socket
- Single channel
- Supports up to 2GB DDR2 400/533 SDRAM, unbuffered, non-ECC

I/O Interface - Front

- HDD Access LED
- Power status LED
- 2 x RS232 ports
- ATX Power on/off switch

I/O Interface - Rear

- 1 x DVI-I port
- 1 x PS/2 keyboard/mouse port
- 1 x RS232/422/485 port
- 1 x 10/100/1000 LAN port
- 2 x USB 2.0 ports
- +12V DC power input

Storage

- 1 x internal 2.5" SATA HDD drive bay

Power Requirements

- DC to DC power designed for onboard support of +12V DC
- 1 x external 60W AC/DC lockable power adapter
  Power input: 100V to 240V AC 2A 50/60 Hz
  Power output: 12V DC

Dimensions

- 185mm (W) x 132mm (D) x 50mm (H) (7.28" x 5.2" x 1.97")

Construction

- Aluminum chassis with fan-less 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

Getting to Know NISE 100

Front Panel
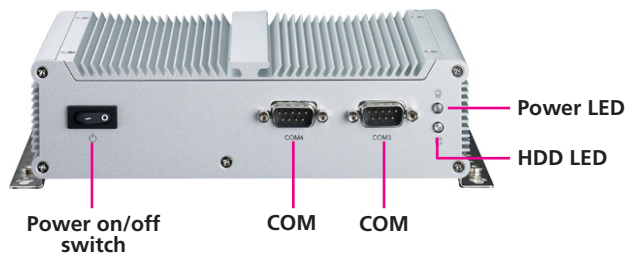
Power On/Off Switch

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

COM Ports

The COM ports support RS232 compatible serial devices.

Power LED

Indicates the power status of the system.

HDD LED

Indicates the status of the hard drive.

Rear Panel
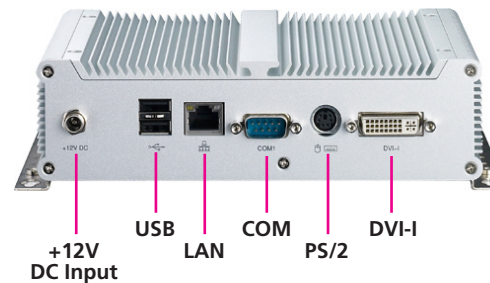
+12V DC Input

Used to plug a DC power cord.

USB

Used to connect USB 2.0/1.1 devices.

LAN

Used to connect the system to a local area network.

COM

The COM port supports RS232/422/485 compatible serial devices.

PS/2

Used to connect a PS/2 keyboard/mouse device.

DVI-I

Used to connect a digital LCD panel.

Mechanical Dimensions
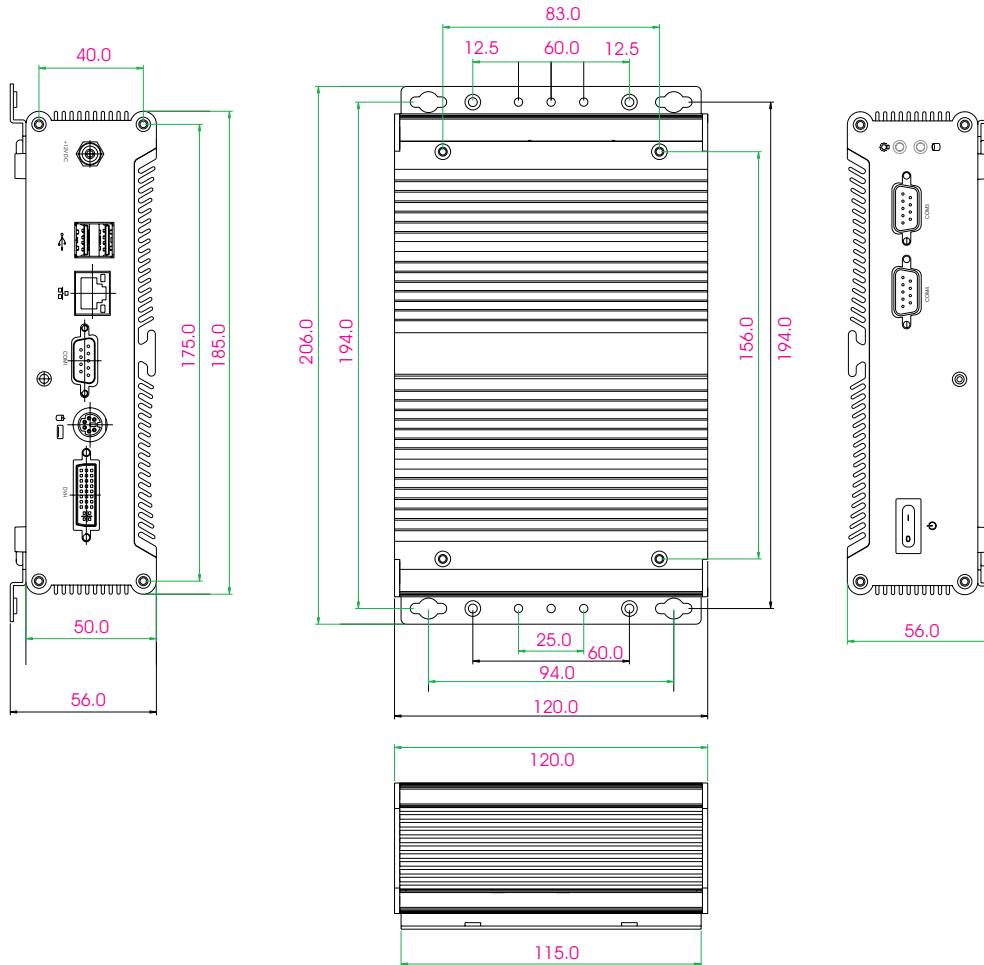
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers on the motherboard. Note that the following procedures are generic for all NISE 100 series.

Before You Begin

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

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

  • A Philips screwdriver
  • A flat-tipped screwdriver
  • A set of jewelers Screwdrivers
  • A grounding strap
  • An anti-static pad

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

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

Precautions

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

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

• Always disconnect the unit from the power outlet whenever you are working inside the case.

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

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

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

• Use correct screws and do not over tighten screws.

Jumper Settings

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

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

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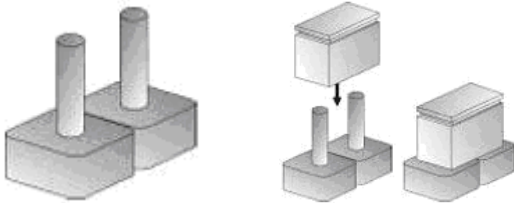
Three-Pin Jumpers: Pins 1 and 2 Are Short
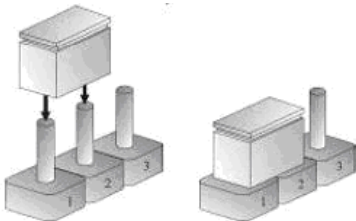
Locations of the Jumpers and Connectors

The figure on the right is the main board used in the NISE 100 system. It shows the locations of the jumpers and connectors.
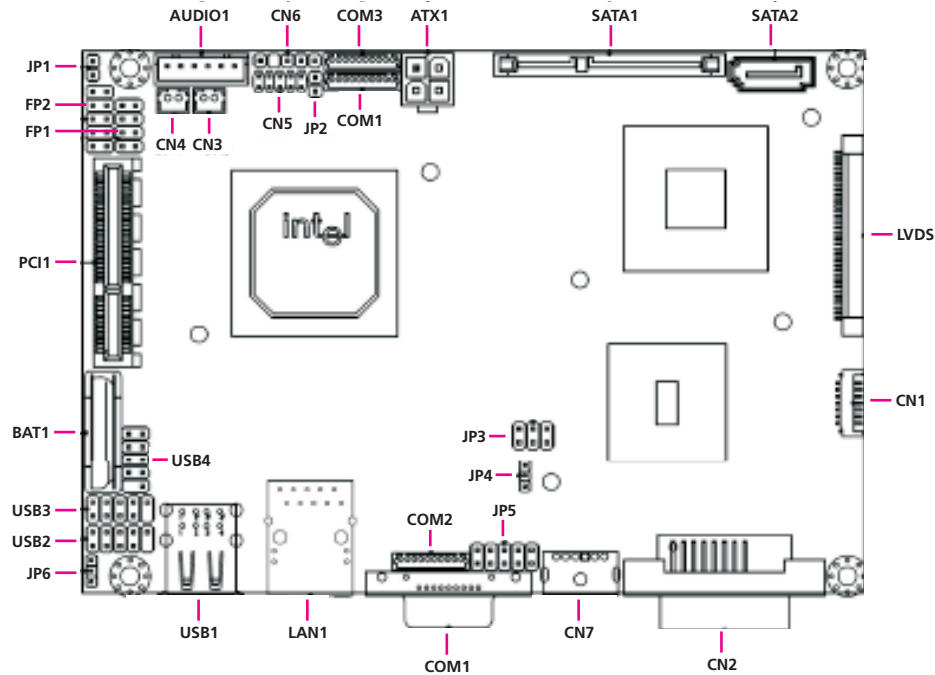
Jumpers

Clear CMOS Select

Connector size: 1x2, 2.54mm
Connector location: JP1

□ 1
○ 2

Pin	Definition
Open	Normal Operation (default)
Short	Clear CMOS

Power Mode Select

Connector size: 1x2, 2.54mm
Connector location: JP2

□ 1
○ 2

Pin	Definition
Open	AT Mode
Short	ATX Mode (default)

Backlight & Panel Power Select

Connector size: 2x3, 2.54mm
Connector location: JP3

5 3 1
6 4 2

	Settings	Status
1	1-3	Backlight Power = +12V (default)
	3-5	Backlight Power = +5V
2	2-4	Panel Power = +3.3V (default)
	4-6	Panel Power = +5V (default)

Backlight Enable Select

Connector size: 1x3, 2.0mm
Connector location: JP4

1
3

Pin	Definition
1-2	Active High (default)
2-3	Active Low

KB/MS Connector Select

Connector size: 2x5, 2.54mm
Connector location: JP5

Pin	Definition	Pin	Definition
1	+5VSB	2	GND
3	KBCLK_SIO	4	KBDAT_ SIO
5	KBCLK_CN7	6	KBDAT_CN7
7	MSCLK_SIO	8	MSDAT_SIO
9	MSCLK_CN7	10	MSDAT_CN7

USB Power Select

Connector size: 1x3, 2.0mm
Connector location: JP6

Pin	Definition
1-2	+5VSB (default)
2-3	+5V

Connector Pin Definitions

External I/O Interface

Status Indicators

PWR

HDD

Status	LED Color
PWR	Green
HDD	Yellow

Power Switch Button

ATX switch, unlock

+12V DC Input

Connector size: 4-pin power jack, 15x16x17.4mm
Connector location: ATX1
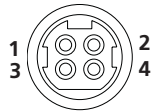
Pin	Definition	Pin	Definition
1	GND	2	GND
3	+12V	4	+12V

USB Ports

Connector size: Dual USB port, Type A
Connector location: USB1
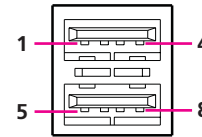
Pin	Definition	Pin	Definition
1	+5V	5	+5V
2	USB1-	6	USB0-
3	USB1+	7	USB0+
4	GND	8	GND

LAN Port

Connector size: RJ45 port with LEDs
Connector location: LAN1
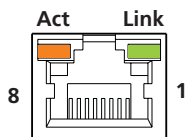
Pin	Definition	Pin	Definition
1	Tx+	5	NC
2	Tx-	6	Rx-
3	Rx+	7	NC
4	NC	8	NC

COM1 (RS232/422/485) Connector

Connector size: DB-9
Connector location: COM1
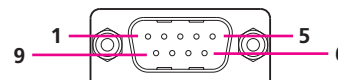
Connector Pin Definition

Pin	RS232	RS422	RS485
1	DCD (Data carrier detect)	TX+	RTX+
2	RXD (Receive data)	RX+	N/A
3	TXD (Transmit data)	TX-	RTX-
4	DTR (Data terminal ready)	RX-	N/A
5	GND (Ground)		
6	DSR (Data set ready)		
7	RTS (Request to send)		
8	CTS (Clear to send)		
9	RI (Ring indicator)		

PS/2 Keyboard/Mouse Port

Connector size: PS/2, Mini-DIN-6
Connector location: CN7
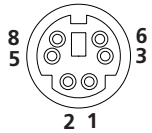
Pin	Definition	Pin	Definition
1	KBDAT	2	MSDAT
3	GND	4	+5V
5	KBCLK	6	MSCLK

DVI-I Port

Connector size: 24-pin D-Sub
Connector location: CN2
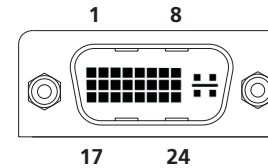
Pin	Function	Pin	Function
1	TX2N	2	TX2P
3	GND	4	TX5N
5	TX5P	6	SD_CLK
7	SD_DATA	8	VSYNC
9	TX1N	10	TX1P
11	GND	12	TX4N
13	TX4P	14	VGA_PWR
15	VGA_EN	16	HPD
17	TX0N	18	TX0P
19	GND	20	TX6N
21	TX6P	22	GND
23	TCLP	24	TXLN

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Internal Connectors

+12V Power Input Connector

Connector size: 2x2
Connector location: ATX1
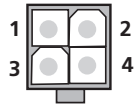
Pin	Definition
1	GND
2	GND
3	+12V
4	+12V

Panel Backlight Connector

Connector size: JST 7-pin, Pitch: 1.25mm
Connector location: CN1
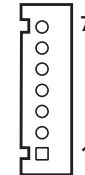
Pin	Definition
1	N.C.
2	BL_ADJ
3	GND
4	+5V / +12V **
5	+5V / +12V **
6	GND
7	BL_EN / BL_EN# *

* denotes selected by JP4
** denotes selected by JP3

FP1 Connector

Connector size: 8-pin, Pitch: 2.54mm
Connector location: FP1
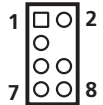
Pin	Definition	Pin	Definition
1	Reset Button +	2	Speaker +
3	Reset Button -	4	N.C.
5	HDD LED +	6	N.C.
7	HDD LED -	8	Speaker -

FP2 Connector

Connector size: 10-pin, Pitch: 2.54mm
Connector location: FP2
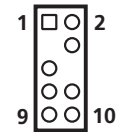
Pin	Definition	Pin	Definition
1	Power LED +	2	Power Button +
3	NC	4	Power Button -
5	Power LED -	6	N.C.
7	Keyboard Lock	8	SMBus Data
9	GND	10	SMBus Clock

SATA Connector

Connector size: Standard Serial ATAII 7P (1.27mm)
Connector location: SATA2

Pin	Definition
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

Serial ATA and HDD Power Connectors

Connector size: Standard Serial ATAII 7P+15P MALE 180D
Connector location: SATA1
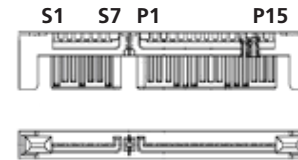
Pin	Definition
S1	GND
S2	TX+
S3	TX-
S4	GND
S5	RX-
S6	RX+
S7	GND

Pin	Definition
P1	+3.3V
P2	+3.3V
P3	+3.3V
P4	GND
P5	GND
P6	GND
P7	+5V
P8	+5V
P9	+5V
P10	GND
P11	GND
P12	GND
P13	+12V
P14	+12V
P15	+12V

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USB 2.0 Port 2,3 Connector

Connector size: 10-pin, 2.54mm
Connector location: USB2
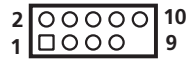
Pin	Definition	Pin	Definition
1	+5V	2	+5V
3	USB2-	4	USB3-
5	USB2+	6	USB3+
7	GND	8	GND
9	KEY	10	GND

USB 2.0 Port 4,5 Connector

Connector size: 10-pin, 2.54mm
Connector location: USB3
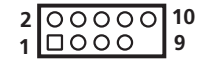
Pin	Definition	Pin	Definition
1	+5V	2	+5V
3	USB4-	4	USB5-
5	USB4+	6	USB5+
7	GND	8	GND
9	KEY	10	GND

USB 2.0 Port 6,7 Connector

Connector size: 10-pin, 2.54mm
Connector location: USB4
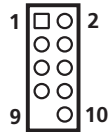
Pin	Definition	Pin	Definition
1	+5V	2	+5V
3	USB6-	4	USB7-
5	USB6+	6	USB7+
7	GND	8	GND
9	KEY	10	GND

COM2 (RS232) Connector

Connector size: 10-pin, Pitch: 1.25mm
Connector location: COM2

Pin	Definition
1	DCD (Data Carrier Detect)
2	DSR (Data Set Ready)
3	RXD (Receive Data)
4	RTS (Request To Send)
5	TXD (Transmit Data)
6	CTS (Clear To Send)
7	DTR (Data Terminal Ready)
8	RI (Ring Indicator)
9	GND (Ground)
10	+5V

COM3 (RS232) Connector

Connector size: DB-9
Connector location: COM3
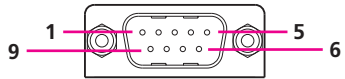
Connector size: 10-pin, Pitch: 1.25mm
Connector location: COM3

Pin	Definition
1	DCD (Data Carrier Detect)
2	DSR (Data Set Ready)
3	RXD (Receive Data)
4	RTS (Request To Send)
5	TXD (Transmit Data)
6	CTS (Clear To Send)
7	DTR (Data Terminal Ready)
8	RI (Ring Indicator)
9	GND (Ground)
10	+5V

COM4 (RS232) Connector

Connector size: DB-9
Connector location: COM4
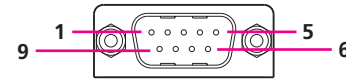
Connector size: 10-pin, Pitch: 1.25mm
Connector location: COM4

Pin	Definition
1	DCD (Data Carrier Detect)
2	DSR (Data Set Ready)
3	RXD (Receive Data)
4	RTS (Request To Send)
5	TXD (Transmit Data)
6	CTS (Clear To Send)
7	DTR (Data Terminal Ready)
8	RI (Ring Indicator)
9	GND (Ground)
10	+5V

Audio Output Connector

Connector size: 6-pin, Pitch: 2.5mm
Connector location: AUDIO1

Pin	Definition
1	LOUT_R
2	GND
3	LOUT_L
4	LIN_R
5	MIC
6	LIN_L

CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

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

This chapter will guide you on installing the SODIMM and SATA drive. You need to remove the bottom cover to access the DIMM socket and SATA cables.

1. Remove the bottom cover's mounting screws then put them in a safe place for later use.

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

Installing the SODIMM

1. Locate the SODIMM socket on the board.
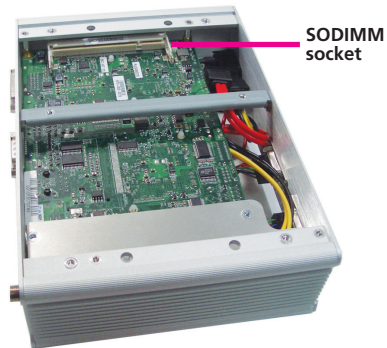
2. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips into the socket. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.
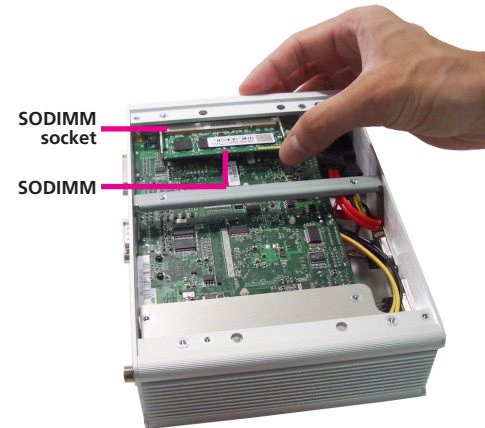
3. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive "click", indicating the module is correctly locked into position.
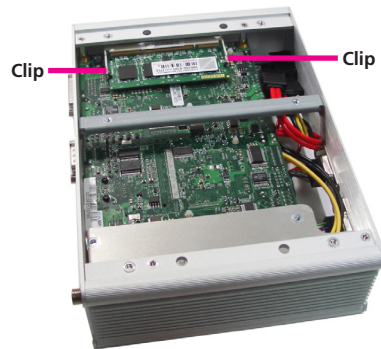
Installing a SATA Hard Drive

1. With the bottom side of the chassis facing up, remove the screws of the bottom cover.

2. Upon removing the chassis cover, turn it to the other side. This will be the inner side of the cover. This is where you will attach the SATA drive.

    The 4 mounting holes for the SATA drive are shown below.
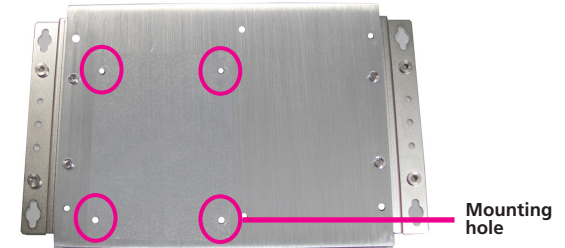
Mounting hole

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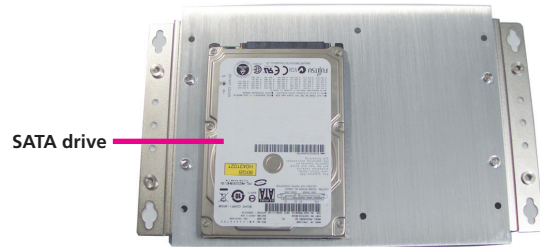
SATA drive

4. Now turn the cover to the other side. This will be the outer side of the cover. Use the provided screws to secure the drive to the chassis.
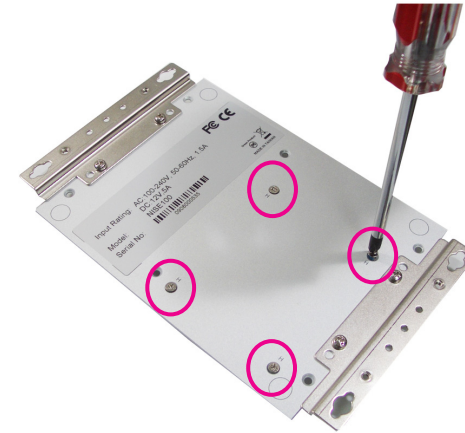
5. The SATA data cable and the SATA power cable are readily accessible upon removing the chassis cover.
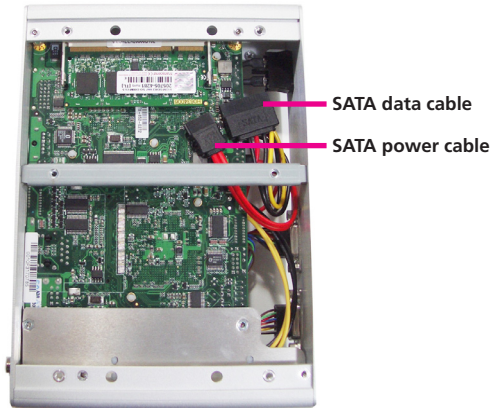
6. Connect the SATA data cable and SATA power cable to the connectors on the SATA drive.

SATA data cable

SATA power cable

SATA data cable

SATA power cable
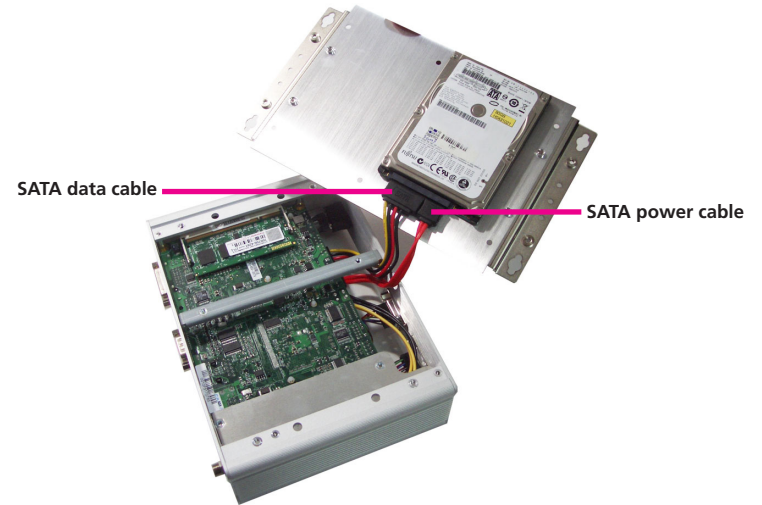
7. Replace the cover then mount back the screws you removed in step 1.

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NISE 100. 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. 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.

```
                         BIOS SETUP UTILITY
 Main      Advanced    Boot    Chipset    Power    Security     Exit

 System Date                  [Tue 08/25/2009]
 System Time                  [14:06:01]

 ▶ Primary IDE Master         : [Not Detected]
 ▶ Primary IDE Slave          : [Not Detected]
 ▶ Third IDE Master           : [Not Detected]

 ▶ System Information

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

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```
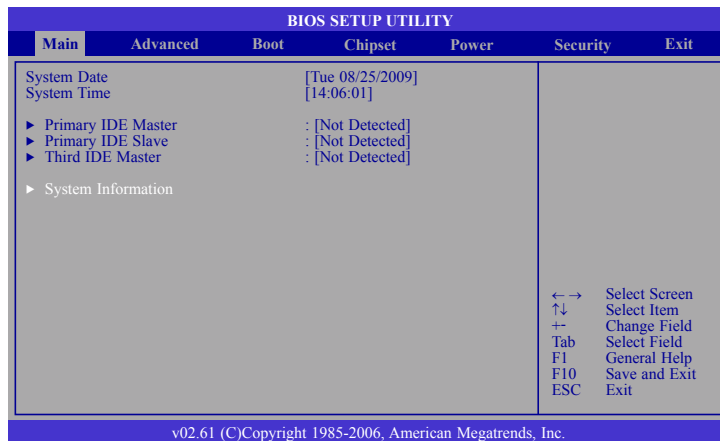
System Date

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.

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.

Primary IDE Master, Primary IDE Slave and 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>. You can select the Type, PIO mode, DMA mode, etc.

System Information

Move the cursor to this field then press <Enter>. This section displays general system specifications. The BIOS automatically detects the information in this section.

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.

```
                          BIOS SETUP UTILITY
  Main      Advanced      Boot      Chipset    Power      Security      Exit

 Advanced Settings                                    Configure CPU.

 WARNING: Setting wrong values in below sections
          may cause system to malfunction.

 ▶ I/O Configuration
 ▶ OnBoard Peripherals Configuration
 ▶ Trusted Computing
 ▶ Hardware Health Configuration


                                                 ←→     Select Screen
                                                 ↑↓     Select Item
                                                 Enter  Go to Sub Screen
                                                 F1     General Help
                                                 F10    Save and Exit
                                                 ESC    Exit

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```
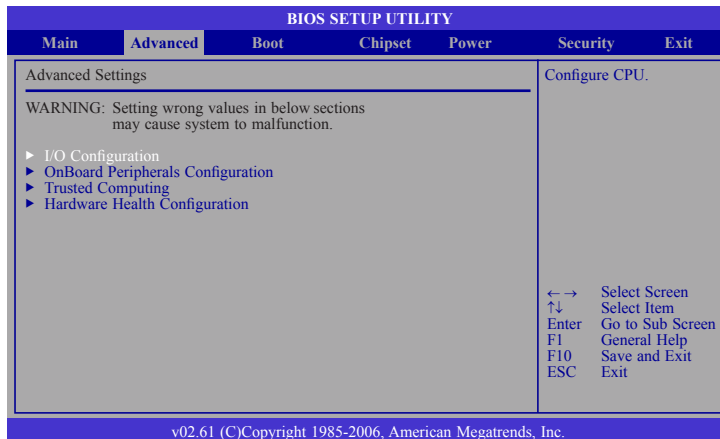
I/O Configuration

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

Onboard Peripherals Configuration

This section is used to configure USB devices, the audio controller, LAN controller, PCIE, etc.

Trusted Computing

This section is used to further configure the system.

Hardware Health Configuration

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

Onboard I/O Configuration

This section is used to configure the COM ports.

```
                         BIOS SETUP UTILITY
      Advanced
 ───────────────────────────────────────────────────────────────────
  Onboard I/O Configuration                          Allows BIOS to Select
                                                     Serial Port1 Base
  COM1 Address              [3F8]                    Addresses.
     COM1 IRQ               [4]
  COM1 Function Type        [RS232]
  COM1 Pin9 Voltage         [Normal]
  COM2 Address              [2F8]
     COM2 IRQ               [4]
  COM2 Pin9 Voltage         [Normal]
  COM3 Address              [3E8]
     COM3 IRQ               [11]
     COM3 Mode              [Normal]
  COM3 Pin9 Voltage         [Normal]
  COM4 Address              [2E8]
     COM4 IRQ               [11]              ← →    Select Screen
     COM4 Mode              [Normal]          ↑↓     Select Item
  COM4 Pin9 Voltage         [Normal]          +-     Change Option
                                              F1     General Help
                                              F10    Save and Exit
                                              ESC    Exit
 ───────────────────────────────────────────────────────────────────
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```

COM1 Address, COM2 Address, COM3 Address, COM4 Address

These fields are used to select the serial port's base address.

COM1 IRQ, COM2 IRQ, COM3 IRQ, COM4 IRQ

These fields are used to select the serial port's IRQ.

Onboard Peripherals Configuration Settings

This section is used to configure the onboard controllers.

```
                         BIOS SETUP UTILITY
      Advanced
 ───────────────────────────────────────────────────────────────────
  Onboard Peripherals Configuration Settings         Disabled
                                                     Enabled
  USB Controller            [Enabled]
  USB Device Legacy Support [Enabled]
  USB 2.0 Controller        [Enabled]
  Audio Controller          [Enabled]
  Onboard LAN Controller    [Enabled]
  Onboard LAN OPTROM        [Disabled]
  PCIE Port Configuration   [1 Port 4L]
  ► On-Chip ATA Devices

                                              ← →    Select Screen
                                              ↑↓     Select Item
                                              +-     Change Option
                                              F1     General Help
                                              F10    Save and Exit
                                              ESC    Exit
 ───────────────────────────────────────────────────────────────────
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```

USB Controller

This field is used to enable or disable the USB controller.

USB Device Legacy 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

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

Audio Controller

This field is used to enable or disable the audio controller.

Onboard LAN Controller

This field is used to enable or disable the onboard LAN controller.

PCIE Port Configuration

This field is used to configure the PCIE port.

On-Chip ATA Devices

This field is used to configure the IDE drives.

Hardware Health Configuration

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

```
                    BIOS SETUP UTILITY
         Advanced

 Hardware Health Configuration

 CPU Warning Temperature      [Disabled]
 CPU Shutdown Temperature     [Disabled]

 CPU Temperature              : 46°C/114°F
 SYS Temperature              : 41°C/105°F


 +VCORE                       : 1.152 V
 +1.05V                       : 1.040 V
 +3.3V                        : 3.296 V
 +5V                          : 4.972 V
 +12V                         : 12.096 V                ←→     Select Screen
 +1.8V                        : 1.797 V                 ↑↓     Select Item
                                                        F1     General Help
                                                        F10    Save and Exit
                                                        ESC    Exit



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```
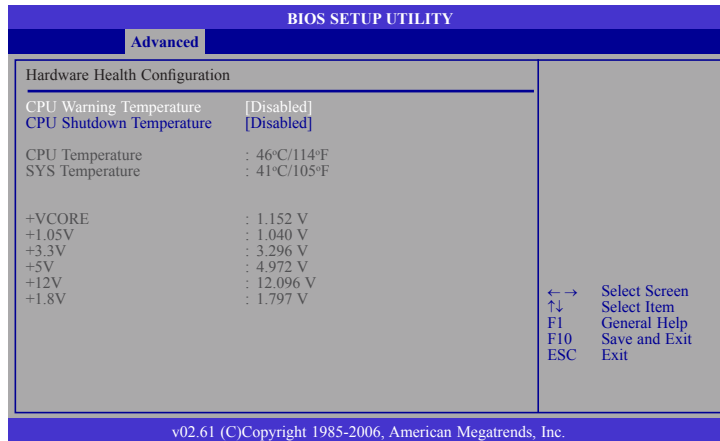
CPU Warning Temperature

This field is used to select the CPU's temperature limit. Once the system has detected that the CPU's temperature exceeded the limit, warning beeps will sound.

CPU Shutdown Temperature

You can prevent the system from overheating by selecting a temperature at which the system will shutdown. If the system detected that its temperature exceeded the one set in this field, it will automatically shutdown. This function will work only if your operating system supports the ACPI feature.

CPU Temperature and SYS Temperature

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

+VCORE to +1.8V

Detects and displays the output voltage.

Boot

```
                        BIOS SETUP UTILITY
   Main     Advanced    Boot     Chipset   Power    Security     Exit

  Boot Settings                               Configure settings
  ─────────────────────────────────          during system boot.
  Quick Boot                  [Enabled]
  Bootup Num-Lock             [On]
  Wait For 'F1' If Error      [Enabled]
  Hit 'DEL' Message Display   [Enabled]



                                              ←→     Select Screen
                                              ↑↓     Select Item
                                              Enter  Go to Sub
                                              Screen
                                              F1     General Help
                                              F10    Save and Exit
                                              ESC    Exit

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```
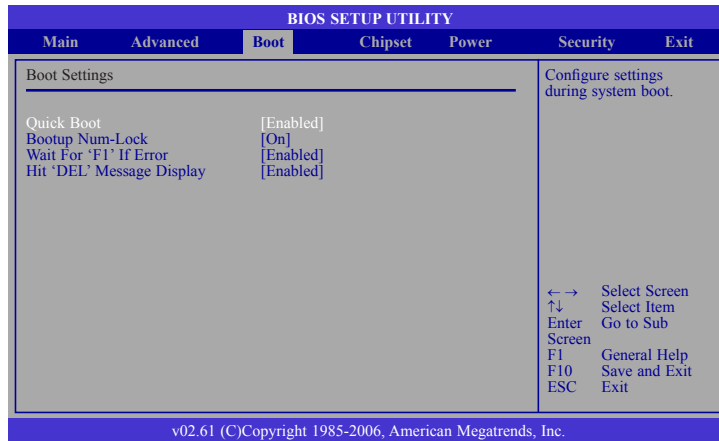
Quick Boot

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

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.

Wait for 'F1' If Error

When enabled, the system will wait for the <F1> key to be pressed when an error occurs.

Hit 'DEL' Message Display

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

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.

```
                        BIOS SETUP UTILITY
   Main      Advanced     Boot     Chipset    Power    Security     Exit

  Chipset Settings                                          Options

  DRAM Frequency              [Auto]              Auto
                                                  400 MHz
  Boots Graphic Adapter Priority    [PEG/PCI]     533 MHz
  Internal Graphics Mode Select     [Enabled, 8MB]
  Hyper Threading Technology        [Enabled]

  ▶ Video Function Configuration



                                                  ← →      Select Screen
                                                  ↑↓       Select Item
                                                  Enter    Go to Sub
                                                  Screen
                                                  F1       General Help
                                                  F10      Save and Exit
                                                  ESC      Exit

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```

DRAM Frequency

Selects the operating frequency of the DRAM.

Boots Graphic Adapter Priority

Selects which 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.

Hyper Threading Technology

This field is used to enable the functionality of the Intel® processor with Hyper-Threading Technology and will appear only when using this processor.

Video Function Configuration

This section is used to configure the display device.

```
                        BIOS SETUP UTILITY
                               Chipset

 Video Function Configuration
 ─────────────────────────────────────────────         Options
 DVMT Mode Select          [DVMT Mode]
    DVMT/FIXED Memory      [128MB]              Fixed Mode
                                                DVMT Mode
 Boot Display Device       [VGA+LVDS]           Combo Mode
 Flat Panel Type           [1024x768 18Bit 1C]
 Local Flat Panel Scaling  [Auto]
 Panel Backlight Voltage   [2.5]


                                                ←→    Select Screen
                                                ↑↓    Select Item
                                                F1    General Help
                                                F10   Save and Exit
                                                ESC   Exit


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```

DVMT Mode Select

DVMT Mode
Memory that is dynamically allocated based on memory requests made by an application and are released back to the system once the requesting application has been terminated.

Fixed Mode
Non-contiguous pagelocked memory allocated during driver initialization to provide a static amount of memory.

DVMT/FIXED Memory

Selects the graphics memory size used by the DVMT/Fixed mode.

Boot Display Device

Selects the type of display to use when the system boots.

Flat Panel Type

Selects the type of flat panel connected to the system.

Local Flat Panel Scaling

Selects the local flat panel's scaling method.

Panel Backlight Voltage

Selects the panel's backlight voltage.

Power

```
                        BIOS SETUP UTILITY
   Main      Advanced      Boot      Chipset    Power      Security      Exit

  Power Management Settings                            Enable / Disable
                                                       ACPI support for
  ACPI Function              [Enabled]                 Operating System.
  Suspend Mode               [S3 (STR)]
  Repost Video on S3 Resume  [No]                      ENABLE: If OS
  Suspend Time Out           [Disabled]                supports ACPI.
  Restore on AC Power Loss   [Power Off]
  Resume By USB Device       [Disabled]                DISABLE: If OS
  Resume On PME#             [Disabled]                does not support ACPI.
  Resume On RTC Alarm        [Disabled]


                                                       ← →     Select Screen
                                                       ↑↓      Select Item
                                                       Enter   Go to Sub
                                                       Screen
                                                       F1      General Help
                                                       F10     Save and Exit
                                                       ESC     Exit

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```
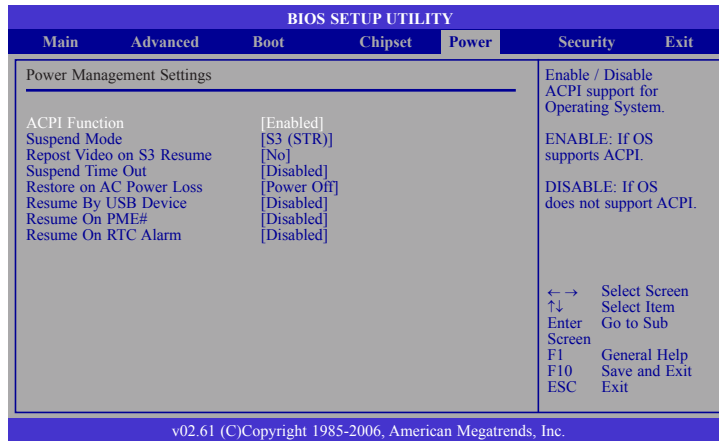
ACPI Function

Enables or disables the Advanced Configuration and Power Interface (ACPI) of the Advanced Programmable Interrupt Controller (APIC). When enabled, the ACPI APIC table pointer is included in the RSDT pointer list.

Suspend Mode

Selects the ACPI state to be used for system suspend.

S1(POS)
Enables the Power On Suspend function.

S3(STR)
Enables the Suspend to RAM function.

Suspend Time Out

Selects the time that the system enters the Suspend mode.

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.

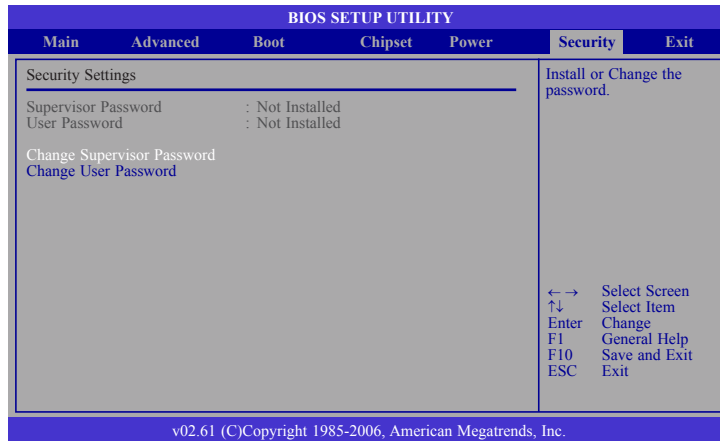**Resume By USB Device**

Enables a USB device to wake up the system.

Resume On PME#

Enables the system to wake up to respond to PCI card such as LAN card or modem card that uses the PCI PME (Power Management Event) signal to remotely wake up the system. Access to the LAN card or PCI card will cause the system to wake up.

Resume On RTC Alarm

Enables the RTC to wake up the system.

Security

```
                        BIOS SETUP UTILITY
   Main      Advanced      Boot      Chipset    Power    Security     Exit

   Security Settings                                Install or Change the
                                                    password.
   Supervisor Password        : Not Installed
   User Password              : Not Installed

   Change Supervisor Password
   Change User Password




                                                   ← →      Select Screen
                                                   ↑↓       Select Item
                                                   Enter    Change
                                                   F1       General Help
                                                   F10      Save and Exit
                                                   ESC      Exit


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```

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

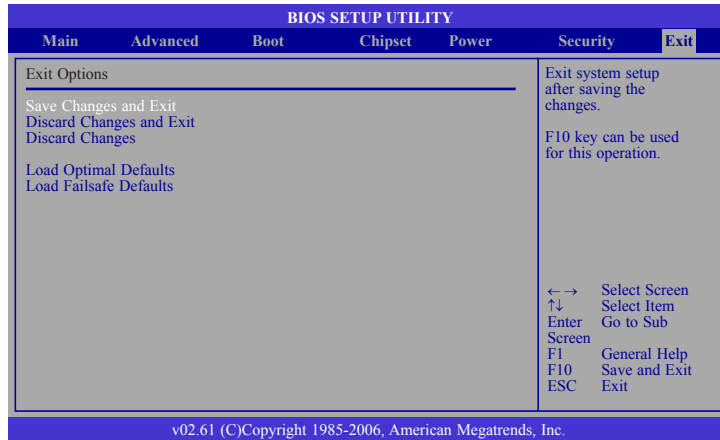This field is used to set or change the user password.

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

```
                        BIOS SETUP UTILITY
  Main      Advanced    Boot    Chipset   Power   Security   Exit

  Exit Options                                Exit system setup
  ──────────────────────────                  after saving the
  Save Changes and Exit                       changes.
  Discard Changes and Exit
  Discard Changes                             F10 key can be used
                                              for this operation.
  Load Optimal Defaults
  Load Failsafe Defaults




                                              ← →    Select Screen
                                              ↑↓     Select Item
                                              Enter  Go to Sub
                                              Screen
                                              F1     General Help
                                              F10    Save and 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 <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: POWER CONSUMPTION

Test Configuration

System Configuration	Vendor
Chassis	CHASSIS NICE100 VER:A
CPU	Intel® Atom™ N270 1.6G/533M/512K/25W
Memory	DDR2 667 SO-DIMM 128Mx8(16) 2GB 200PIN
HDD	HDD 2.5 SATA HTS723225L99A360/7200RPM/250G/5V 800mA DC
Keyboard	LEMEL B-5201-P
Mouse	GENIVS EASY MOUSE PS/2

Power Consumption Measurement

Purpose

The purpose of the power consumption test is to verify the power dissipation of the system and the load of the power supply.

Test Equipment

PROVA CM-07 AC/DC CLAMP METER

Device Under Test

DUT: Sys #1

Test Procedure

1. Power up the DUT 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. Intel Kpower program.
5. LAN Packet Counter and Receive Program

Test Data

	Sys #1	Result
	+12V	Total
Full-Loading Mode	1.31A	1.31A
	15.72W	15.72W
Standby Mode	0.83A	0.83A
	9.96W	9.96W

APPENDIX B: GPI/O PROGRAMMING GUIDE

```
#include <windows.h>

#include <stdio.h>

#include "winio.h"

#pragma comment(lib,"WinIo.lib")

#pragma once

bool bResult;

// Call InitializeSMBUS to start the driver

bResult = InitializeSMBUS();

if(bResult) { /*Initialized the DIO program*/

DWORD RetVal=0;

/*Initialized the SMBUS controller*/

SMBUS_Write_Byte(0x30,0x01,0x07);

SMBUS_Write_Byte(0x30,0x02,0);

SMBUS_Write_Byte(0x30,0x03,0x78);

SMBUS_Write_Byte(0x30,0x04,0);

SMBUS_Write_Byte(0x30,0x09,0x08);

SMBUS_Write_Byte(0x30,0x0A,0);

SMBUS_Write_Byte(0x30,0x0B,0);
```

```
SMBUS_Write_Byte(0x30,0x0C,0);

SMBUS_Write_Byte(0x30,0x12,0xFF);

SMBUS_Write_Byte(0x30,0x13,0x3F);

SMBUS_Write_Byte(0x30,0x14,0x80);

/*Reset all output pins to zero*/

RetVal=SMBUS_Read_Byte(0x01,0x30);

RetVal=RetVal&0xF8;

SMBUS_Write_Byte(0x30,0x01,RetVal);

RetVal=SMBUS_Read_Byte(0x09,0x30);

RetVal=RetVal&0xF7;

SMBUS_Write_Byte(0x30,0x09,RetVal);

/*Checking I/O pin 1*/

//Set I/O pin 1 to 0

RetVal=SMBUS_Read_Byte(0x09,0x30);

RetVal=RetVal&0xF7;

SMBUS_Write_Byte(0x30,0x09,RetVal);

//Set I/O pin 1 to 1

RetVal=SMBUS_Read_Byte(0x09,0x30);
```

```
RetVal=RetVal|0x08;
SMBUS_Write_Byte(0x30,0x09,RetVal);
/*Checking I/O pin 3*/
//Set I/O pin 3 to 0
RetVal=SMBUS_Read_Byte(0x09,0x30);
RetVal=RetVal&0xFE;
SMBUS_Write_Byte(0x30,0x01,RetVal);
//Set I/O pin 3 to 1
RetVal=SMBUS_Read_Byte(0x09,0x30);
RetVal=RetVal|0x01;
SMBUS_Write_Byte(0x30,0x01,RetVal);
/*Checking I/O pin 5*/
//Set I/O pin 5 to 0
RetVal=SMBUS_Read_Byte(0x09,0x30);
RetVal=RetVal&0xFD;
SMBUS_Write_Byte(0x30,0x01,RetVal);
//Set I/O pin 5 to 1
RetVal=SMBUS_Read_Byte(0x09,0x30);
RetVal=RetVal|0x02;
SMBUS_Write_Byte(0x30,0x01,RetVal);
/*Checking I/O pin 7*/
//Set I/O pin 7 to 0
RetVal=SMBUS_Read_Byte(0x01,0x30);
```

```
RetVal=RetVal&0xFB;
SMBUS_Write_Byte(0x30,0x01,RetVal);
//Set I/O pin 7 to 1
RetVal=SMBUS_Read_Byte(0x09,0x30);
RetVal=RetVal|0x04;
SMBUS_Write_Byte(0x30,0x01,RetVal);
/*Reading current input*/
RetVal=SMBUS_Read_Byte(0,0x30);
RetVal=((RetVal&0x78)>>3);//LSB 4 bits of retval--Pin 8,6,4,2//}
```

Appendix C: Watchdog Timer Setting

```
TITLE EBC371FL
Watchdog Sample code
.model small
.code
main PROC
;
Initial Watch Dog Timer
Mov
dx,2eh
Mov
al,87h
Out
dx,al
Mov
al,01h
Out
dx,al
Mov al,55h
Out
dx,al
Out
dx,al

Mov
dx,2eh
Mov
al,07h
Out
dx,al

Mov
dx,2fh
Mov
al,07h
Out
dx,al

;Setting up timer for 5 sec
Mov
dx,2eh
Mov
al,73h
Out
dx,al

Mov
dx,2fh
Mov
al,05h
Out
```

```
dx,al

;Start timer
Mov
dx,2eh
Mov
al,72h
Out
dx,al

Mov
dx,2fh
Mov
al,90h
Out
dx,al
main
ENDP
END main
```