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Disclaimer

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Acknowledgements

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Regulatory Compliance Statements

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

Declaration of Conformity

FCC

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

CE

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

**NEXCOM RoHS Environmental Policy and Status Update**

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 2011/65/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 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 2013 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.

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.
- There must be a disconnect device in front of “NISE 105” to keep the worker or field side maintainer be cautious and aware to close the general power supply before they start to do maintenance. The disconnect device hereby means a 20A circuit-breaker. Power installation must be performed with qualified electrician and followed with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1.
- This product is intended to be supplied by a Listed (Certificate) power adapter, output rated 9-30Vdc minimum, 6.6-2A minimum, Tma 70 degree C minimum and altitude of 2000m. If further assistance is needed, please contact NEXCOM International Co., Ltd. for further information.

- The front of the Equipment requires wiring terminals with the following specifications:
  - Wire size: 12-24 AWG
  - Wire Type: copper wire only

  CAUTION!
  Danger of explosion if battery is incorrectly replaced. Replace with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.

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

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

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

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

1. Read these safety instructions carefully.


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

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

5. Keep this equipment away from humidity.

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

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

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

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

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

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

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

13. This equipment is not suitable for use in locations where children are likely to be present.

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.
Technical Support and Assistance

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

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   – Product name and serial number
   – Detailed information of the peripheral devices
   – Detailed information of the installed software (operating system, version, application software, etc.)
   – A complete description of the problem
   – The exact wordings of the error messages

Warning!
1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

3. CompactFlash: Turn off the unit’s power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

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

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

Safety Warning: This equipment is intended for installation in a Restricted Access Location only.
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NexAloT Co., Ltd.
Taichung Office
Ordering Information

The following information below provides ordering information for NISE 105.

**NISE 105 (P/N: 10J00010501X0)**
Intel® Atom™ Processor E3826 Dual Core Fanless System

**NISE 105A (P/N: 10J00010500X0)**
Intel® Atom™ Processor E3826 Dual Core All in one Fanless System
CHAPTER 1: PRODUCT INTRODUCTION

Overview

Key Features

- Onboard Intel® Atom™ processor E3826 dual core, 1.46GHz
- Dual Independent Display from DVI-I and HDMI
- 2 x Intel® I120IT LAN ports support WoL, Teaming and PXE
- 2 x USB 2.0 & 1 x USB 3.0
- 4 x COM ports (support RS232/422/485, jumper-free setting)

- 1 x Optional Interface for optional Wi-Fi/3.5G/Automation modules
- External RTC battery holder for easy replacement
- Support -20 ~ 70 degree C extended operating temperature
- Support 9-30VDC input
Chapter 1: Product Introduction

Hardware Specifications

CPU Support
- Onboard Intel® Atom™ processor E3826 Dual Core, 1.46GHz
- Support Intel® Atom™ E3800 processor family from Single Core E3815, Dual Core E3825/E3826/E3827 and Quad Core E3845 with different SKUs

Main Memory
- 1 x DDR3L 1066/1333 SO-DIMM socket, support up to 8GB

Display Option
- Dual Independent Display
  - HDMI and DVI-D
  - HDMI and VGA (via DVI-I to VGA converter)

I/O Interface - Front
- ATX power on/off switch
- 1 x Power Status/1 x HDD Access/1 x Battery Low/1 x Programming LEDs
- 1 x External CFast socket
- 1 x SIM Card holder
- 2 x Intel® I210IT GbE LAN Ports, support Wake on LAN, Teaming and PXE
- 1 x DVI-I Display Output
- 1 x USB 3.0 (900mA per each)
- 1 x USB 2.0 (500mA per each)
- 2 x DB9 for COM1 & COM2, both support RS232/422/485 with auto flow control
  - Jumper-free setting on RS232/422/485
  - Support 5V/12V/Ring function by jumper setting, Ring as the default (COM2 Only)
- 1 x Remote Power ON/OFF Switch
- 1 x 2-pin DC input, support +9 to 30VDC input

I/O Interface - Rear
- 1 x USB2.0
- 1 x HDMI
- 1 x RTC Battery
- 2 x DB9 for COM3 & COM4, both support RS232/422/485 with auto flow control
  - Jumper-free setting on RS232/422/485
- 1 x Mic-in & 1 x Line-out
- 2 x Antenna Holes for optional Wi-Fi/3.5G antenna
- 1 x Optional I/F for optional mini-PCIe Wi-Fi/3.5G/Hilscher Automation module output

I/O Interface - Internal
- 4 x GPI and 4 GPO (5V, TTL Type)

Storage Device
- 1 x CFast (SATA2.0)
- 1 x 2.5” HDD (SATA2.0)
- 1Mb NVRAM (on NISE 105A Only)

Expansion Slot
- 1 x Mini-PCIe socket for optional Wi-Fi/3.5G/Hilscher automation modules

Power Requirements
- Power input: +9VDC to 30VDC, 6.6a to 2a

Support OS
- Windows 8
- Windows Embedded Standard 8
- Windows 7
Chapter 1: Product Introduction

- Windows Embedded Standard 7
- Windows Embedded Compact 7
- Linux Kernel version 3.8.0

Dimensions
- 185mm (W) x 131mm (D) x 54mm (H) without wall-mount bracket

Construction
- Aluminum and Metal Chassis with fanless design

Environment
- Operating Temperature:
  - Ambient with air flow: -20°C to 70°C with industrial grade device
    (According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage Temperature: -30°C to 85°C
- Relative Humidity: 10% to 95% (non-Condensing)
- Shock Protection:
  - HDD: 20G, half sine, 11ms, IEC60068-27
  - CFast: 50G, half sine, 11ms, IEC60068-27
- Vibration Protection w/HDD Condition:
  - Random: 0.5Grms @ 5~500 Hz, IEC60068-2-64
  - Sinusoidal: 0.5Grms @ 5~500 Hz, IEC60068-2-6
- Vibration Protection w/CFast & SSD Condition:
  - Random: 2Grms @ 5~500 Hz, IEC60068-2-64
  - Sinusoidal: 2Grms @ 5~500 Hz, IEC60068-2-6

Certifications
- CE
- FCC Class A
- UL/cUL
Knowing Your NISE 105

Front Panel

USB 2.0
USB 2.0 port to connect the system with USB 2.0/1.1 devices.

USB 3.0
USB 3.0 port to connect the system with USB 3.0/2.0 devices.

DVI-I
Used to connect a digital LCD panel.

Remote On/Off Switch
Used to connect a remote to power on/off the system.

LAN Ports
Two LAN ports used to connect the system to a local area network.

COM1 and COM2
Two DB9 ports used to connect RS232/422/485 compatible devices.

CFast Slot
Used to insert a CFast card.

SIM Slot
Used to insert a SIM card.

9-30V DC Input
Used to plug a DC power cord.

Power/HDD LEDs
Indicates the power status and HDD activity of the system.

GPIO/Battery LEDs
Indicates the status of the battery and GPIO.

Power Button
Press to power-on or power-off the system.
Rear Panel

Line-out
Used to connect a headphone or a speaker.

Mic-in
Used to connect an external microphone.

COM3 and COM4
Two DB9 ports used to connect RS232/422/485 compatible devices.

Battery Slot
Used to hold an external battery.

HDMI
Used to connect a high-definition display.

USB 2.0
USB 2.0 port to connect the system with USB 2.0/1.1 devices.

Fieldbus
Expansion slot for add-on fieldbus modules.
Mechanical Dimensions
This chapter describes how to set the jumpers and connectors on the NISE 105 motherboard.

### Before You Begin

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

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

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

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

### Precautions

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

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

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

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

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

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

- Use correct screws and do not over tighten screws.
Jumper Settings

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

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

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

Three-Pin Jumpers: Pins 1 and 2 are Short
Chapter 2: Jumpers and Connectors

NISE 105 System Components

The NISE 105 system is made up of a NISB 105 motherboard and an I/O daughterboard. This chapter lists the location and pinout assignment of the jumpers and connectors on each component.

Locations of the Jumpers and Connectors for NISB 105
Jumpers

AT/ATX Pin Header
Connector type: 1x3 3-pin header, 2.0mm pitch
Connector location: JP5

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>AT</td>
</tr>
<tr>
<td>2-3*</td>
<td>ATX</td>
</tr>
</tbody>
</table>
Connector Pin Definitions

External I/O Interfaces - Front Panel

USB 3.0 and USB 2.0 Port
Connector type: USB 3.0 and USB 2.0 port
Connector location: CN9

DVI-I Connector
Connector type: 24-pin D-Sub, 2.0mm-M-180 (DVI)
Connector location: CN10

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P5V_OC01_C</td>
<td>2</td>
<td>USB_ON_C</td>
</tr>
<tr>
<td>3</td>
<td>USB_OP_C</td>
<td>4</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>USB3_RX0_N_C</td>
<td>6</td>
<td>USB3_RX0_P_C</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td>8</td>
<td>USB3_TX0_N_C</td>
</tr>
<tr>
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Pin Definitions for USB 3.0 and USB 2.0 Port:
- P5V_OC01_C: Power Supply
- USB_ON_C: USB Output
- USB_OP_C: USB Output
- USB3_RX0_N_C: USB3 Receive
- USB3_RX0_P_C: USB3 Receive
- USB3_TX0_N_C: USB3 Transmit
- USB3_TX0_P_C: USB3 Transmit
- USB_1N_C: Power Supply
- USB_1P_C: USB Power
- F_GND: Ground

Pin Definitions for DVI-I Connector:
- TX2-, TX2+, GND: Analog Signal
- DDC_CLK, DDC_DATA: Digital Signal
- TX1-, TX1+, GND: Analog Signal
- DVI_VCC(+5V): Power Supply
- HotPlugDet: Hot Plug Detect
- TX0-, TX0+, DDCCLK_VGA, DDCDATA_VGA: Analog Signal
LAN1 and LAN2 Ports
Connector type: Dual RJ45 port with LEDs
Connector location: LAN1A (LAN1) and LAN1B (LAN2)

**LAN1**

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**LAN2**

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<td>MH2</td>
<td>CHASSIS_GND</td>
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</table>

**Act Status**
- Flashing Yellow: Data activity
- Off: No activity

**Link Status**
- Steady Green: 1G network link
- Steady Orange: 100Mbps network link
- Off: No link
## CFast
Connector type: Standard CFast connector
Connector location: CN8

![CFast Connector Diagram]

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<td>PC6</td>
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## Power Switch
Connector location: SW2

![Power Switch Icon]

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Chapter 2: Jumpers and Connectors

External I/O Interfaces - Rear Panel

Audio Connectors
Connector type: 2x 3.5mm TRS
Connector location: CN4 (Line-out) and CN3 (Mic-in)

COM3 Port
Connector type: DB-9 port, 9-pin D-Sub
Connector location: CN2

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## COM4 Port

Connector type: DB-9 port, 9-pin D-Sub
Connector location: CN1

![COM4 Port Diagram]

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## HDMI

Connector type: HDMI port
Connector location: CN6

![HDMI Diagram]

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USB 2.0 Port
Connector type: USB port, Type A
Connector location: CN5

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Internal Connectors

BIOS Pin Header
Connector type: 2x3 6-pin header, 2.0mm
Connector location: JFW1

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RTC Switch
Connector location: SW1

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Mic-in Pin Header
Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP2

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Line-out Pin Header
Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP1

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Line-in Pin Header
Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP6

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PS2 Keyboard/Mouse Pin Header
Connector type: 2x4 8-pin header, 2.54mm pitch
Connector location: JP8

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<tr>
<td>8</td>
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FAN Connector
Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: CN7

GPIO Pin Header
Connector type: 2x5 10-pin header, 2.00mm pitch
Connector location: JP13

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>VCC12</td>
</tr>
<tr>
<td>3</td>
<td>CPUFANIN</td>
</tr>
<tr>
<td>4</td>
<td>CPUFANOUT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC5</td>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>ICH_GPO0_OUT</td>
<td>4</td>
<td>ICH_GPI0_IN</td>
</tr>
<tr>
<td>5</td>
<td>ICH_GPO1_OUT</td>
<td>6</td>
<td>ICH_GPI1_IN</td>
</tr>
<tr>
<td>7</td>
<td>ICH_GPO2_OUT</td>
<td>8</td>
<td>ICH_GPI2_IN</td>
</tr>
<tr>
<td>9</td>
<td>ICH_GPO3_OUT</td>
<td>10</td>
<td>ICH_GPI3_IN</td>
</tr>
</tbody>
</table>
## LAN1A LED Pin Header
Connector type: 2x2 4-pin header, 2.00mm pitch
Connector location: JP11

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAN1_Act_CON</td>
</tr>
<tr>
<td>2</td>
<td>LAN1_LED_ACT#</td>
</tr>
<tr>
<td>3</td>
<td>LAN1_LINK1G#</td>
</tr>
<tr>
<td>4</td>
<td>LAN1_100#_CON</td>
</tr>
</tbody>
</table>

## LAN1B LED Pin Header
Connector type: 2x2 4-pin header, 2.00mm pitch
Connector location: JP10

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAN2_Act_CON</td>
</tr>
<tr>
<td>2</td>
<td>LAN2_LED_ACT#</td>
</tr>
<tr>
<td>3</td>
<td>LAN2_LINK1G#</td>
</tr>
<tr>
<td>4</td>
<td>LAN2_100#_CON</td>
</tr>
</tbody>
</table>
Chapter 2: Jumpers and Connectors

Reset Pin Header
Connector type: 1x2 2-pin header, 2.0mm pitch
Connector location: JP7

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PM_RESET#_J</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
</tbody>
</table>

PWR_LED/HDD_LED/SMB_BUS/S3/SW_ON/RESET
Connector type: 2x7 14-pin header, 2.0mm pitch
Connector location: JP9

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PWR_LED_N</td>
<td>2</td>
<td>POWER_LED_PWR</td>
</tr>
<tr>
<td>3</td>
<td>HDD_LED_N</td>
<td>4</td>
<td>HDD_LED_PWR</td>
</tr>
<tr>
<td>5</td>
<td>SMB_CLK</td>
<td>6</td>
<td>SMB_DATA</td>
</tr>
<tr>
<td>7</td>
<td>3VSB</td>
<td>8</td>
<td>GND</td>
</tr>
<tr>
<td>9</td>
<td>SLP_S3#</td>
<td>10</td>
<td>PSON</td>
</tr>
<tr>
<td>11</td>
<td>PBT_SW</td>
<td>12</td>
<td>GND</td>
</tr>
<tr>
<td>13</td>
<td>PM_RESET#_J</td>
<td>14</td>
<td>GND</td>
</tr>
</tbody>
</table>
Chapter 2: Jumpers and Connectors

3.5G Line-out Pin Header
Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP3

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LOUT_RL</td>
</tr>
<tr>
<td>2</td>
<td>LOUT_RR</td>
</tr>
<tr>
<td>3</td>
<td>ANGND</td>
</tr>
</tbody>
</table>

3.5G Mic Pin Header
Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP4

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MIC_RL</td>
</tr>
<tr>
<td>2</td>
<td>MIC_RR</td>
</tr>
<tr>
<td>3</td>
<td>ANGND</td>
</tr>
</tbody>
</table>
Chapter 2: Jumpers and Connectors

Power Pin Header
Connector type: 1x6 JST, 6-pin header, 2.5mm pitch
Connector location: J2

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12VSB</td>
</tr>
<tr>
<td>3</td>
<td>12VSB</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
</tr>
</tbody>
</table>

Reset or On/Off Pin Header
Connector type: 1x3 3-pin header, 2.0mm pitch
Connector location: JP12

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>PBT_TR</td>
</tr>
<tr>
<td>2</td>
<td>PBT_SW</td>
</tr>
<tr>
<td>3</td>
<td>PM_RESET#_J</td>
</tr>
</tbody>
</table>
Flash MCU Code Pin Header
Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: JP16

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3VSB</td>
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<tr>
<td>2</td>
<td>SBW_TCK</td>
</tr>
<tr>
<td>3</td>
<td>SBW_TDI0</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
</tbody>
</table>
Locations of the Jumpers and Connectors for the I/O Daughterboard
Connector Pin Definitions

External I/O Interfaces - Front Panel

Remote Power On/Off Switch
Connector type: 2-pin switch
Connector location: JP1

COM1 Port
Connector type: DB-9 port, 9-pin D-Sub
Connector location: CN3

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PBT_PU</td>
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<tr>
<td>2</td>
<td>GND</td>
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</table>

<table>
<thead>
<tr>
<th>RS232</th>
<th>RS485</th>
<th>RS422</th>
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<tbody>
<tr>
<td>Pin</td>
<td>Definition</td>
<td>Pin</td>
</tr>
<tr>
<td>1</td>
<td>SP1_DCD</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>SP1_RXD</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>SP1_TXD</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>SP1_DTR</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>SP1_DSR</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>SP1_RTS</td>
<td>7</td>
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<tr>
<td>8</td>
<td>SP1_CTS</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>SP1_RI</td>
<td>9</td>
</tr>
</tbody>
</table>
Chapter 2: Jumpers and Connectors

COM2 Port
Connector type: DB-9 port, 9-pin D-Sub
Connector location: CN2

```
<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
<th>Pin</th>
<th>Definition</th>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SP1_DCD</td>
<td>1</td>
<td>SP1_DATA-</td>
<td>1</td>
<td>SP1_TX-</td>
</tr>
<tr>
<td>2</td>
<td>SP1_RXD</td>
<td>2</td>
<td>SP1_DATA+</td>
<td>2</td>
<td>SP1_TX+</td>
</tr>
<tr>
<td>3</td>
<td>SP1_TXD</td>
<td>3</td>
<td>NC</td>
<td>3</td>
<td>SP1_RX+</td>
</tr>
<tr>
<td>4</td>
<td>SP1_DTR</td>
<td>4</td>
<td>NC</td>
<td>4</td>
<td>SP1_RX-</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>5</td>
<td>GND</td>
<td>5</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>SP1_DSR</td>
<td>6</td>
<td>NC</td>
<td>6</td>
<td>SP1_RTS-</td>
</tr>
<tr>
<td>7</td>
<td>SP1_RTS</td>
<td>7</td>
<td>NC</td>
<td>7</td>
<td>SP1_RTS+</td>
</tr>
<tr>
<td>8</td>
<td>SP1_CTS</td>
<td>8</td>
<td>NC</td>
<td>8</td>
<td>SP1_CTS+</td>
</tr>
<tr>
<td>9</td>
<td>SP1_RI</td>
<td>9</td>
<td>NC</td>
<td>9</td>
<td>SP1_CTS-</td>
</tr>
</tbody>
</table>
```

DC Power Input
Connector type: 2-pin terminal block
Connector location: CN1

```
<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND_FLT</td>
</tr>
<tr>
<td>2</td>
<td>VIN</td>
</tr>
</tbody>
</table>
```
### GPIO/Battery LED
Connector location: LED2

![Diagram of GPIO/Battery LED]

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>VCC5</td>
</tr>
<tr>
<td>A2</td>
<td>BAT_LED</td>
</tr>
<tr>
<td>C1</td>
<td>GPIO_LED_N</td>
</tr>
<tr>
<td>C2</td>
<td>GND</td>
</tr>
</tbody>
</table>

### Power/HDD LED
Connector location: LED1

![Diagram of Power/HDD LED]

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>VCC5</td>
</tr>
<tr>
<td>A2</td>
<td>VCC5</td>
</tr>
<tr>
<td>C1</td>
<td>PWR_LED_N</td>
</tr>
<tr>
<td>C2</td>
<td>HDD_LED_N</td>
</tr>
</tbody>
</table>
Internal Connectors

COM2 RI Pin Header
Connector type: 1x5 5-pin header, 2.0mm
Connector location: J1

<table>
<thead>
<tr>
<th>Pin</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>VCC5</td>
</tr>
<tr>
<td>2-3</td>
<td>VCC12</td>
</tr>
<tr>
<td>4-5*</td>
<td>RING</td>
</tr>
</tbody>
</table>
CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

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

1. Locate the 6 screws on the bottom side of the chassis cover.

2. Remove the 6 screws on the bottom side of the chassis cover.
3. Remove the chassis cover.
Installing a SO-DIMM

1. Remove the bottom cover before installing a SO-DIMM.

2. Locate the SO-DIMM socket.

3. Insert the module into the socket at an approximately 30 degrees angle. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.
Installing a Wireless LAN Module (half-size)

1. Locate the mini-PCIe slot on the board.

2. Remove the mini-PCIe bracket from the board.

3. Install the mini-PCIe bracket to the mini-PCIe module.
4. Insert the mini-PCIe module into the mini-PCIe slot at 45 degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.

5. Push the module down and secure it with the screws.
Installing a Wireless LAN Module
(full-size)

1. Locate the mini-PCIe slot on the board.

2. Remove the mini-PCIe bracket from the board.

3. Insert the mini-PCIe module into the mini-PCIe slot at 45 degree angle until the gold-plated connector on the edge of the module completely disappears into the slot.
4. Push the module down and secure it with the screws.
How to Install TPM Module on NISE105

1. TPM module

2. Insert the LPC port in the J1 location
3. Push the module down and secure it with the screws. (The module will occupy the mini-PCIe slot)

4. Finish!
Installing a SIM Card

1. Locate the SIM card holder and release the cover.

![SIM card holder](image)

2. Place the SIM card onto the holder.

![SIM card](image)

3. Close the cover and secure the holder to the original position.
Chapter 3: System Setup

Installing a SATA Hard Drive

1. Remove the bottom cover before installing a SATA HDD.
2. Locate the internal HDD bracket and remove all the 3 screws on the HDD bracket.
3. Place the 2.5" HDD into the internal HDD bracket then use the screws to secure the 2.5" HDD in place.
4. Place the internal HDD bracket into its original position.

5. Secure the internal HDD bracket by screwing the screws in a clockwise direction.
Installing a CFast Card

1. Locate the CFast slot at the front and remove the cover on the slot.

2. Insert the CFast card into the slot and fasten the cover.
Installing a Battery

1. Locate the battery slot at the front and remove the cover on the slot.

2. Insert the battery into the slot and fasten the cover.
Wall Mounting Instructions

To mount the system on to a wall or some other surface using the two mounting brackets, please follow the steps below.

1. Turn the system over. Align the two retention screw holes in each bracket with the retention screw holes on the sides of the bottom surface.

2. Secure the brackets to the system by inserting two retention screws into each bracket.

3. Drill holes in the intended installation surface.

4. Align the mounting holes on the sides of the mounting brackets with the predrilled holes on the mounting surface.

5. Insert four retention screws, two in each bracket, to secure the system to the wall.

Specification of the wall mount screw:
Round Head Screw Long Fei:P6#32Tx 1/4*5W7*0.8 w/Spring+Flat Washer/L6.35
Packing

NISE 105 plastic bag and EPE reference.

Front View of Packing  
Rear View of Packing
Chapter 3: System Setup

Top View of Packing

Bottom View of Packing
This chapter describes how to use the BIOS setup program for the NISE 105. 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:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>← →</td>
<td>Moves the highlight left or right to select a menu.</td>
</tr>
<tr>
<td>↑ ↓</td>
<td>Moves the highlight up or down between sub-menus or fields.</td>
</tr>
<tr>
<td>Esc</td>
<td>Exits the BIOS Setup Utility.</td>
</tr>
<tr>
<td>+ −</td>
<td>Scrolls forward through the values or options of the highlighted field.</td>
</tr>
<tr>
<td>Tab</td>
<td>Scrolls backward through the values or options of the highlighted field.</td>
</tr>
<tr>
<td>F1</td>
<td>Selects a field.</td>
</tr>
<tr>
<td>F2</td>
<td>Displays General Help.</td>
</tr>
<tr>
<td>F3</td>
<td>Load previous values.</td>
</tr>
<tr>
<td>F4</td>
<td>Load optimized default values.</td>
</tr>
<tr>
<td>Enter</td>
<td>Saves and exits the Setup program.</td>
</tr>
<tr>
<td></td>
<td>Press &lt;Enter&gt; to enter the highlighted sub-menu</td>
</tr>
</tbody>
</table>
Scroll Bar
When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

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

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

System Date

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

System Time

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

ACPI Settings

This section is used to configure ACPI Settings.

Enable Hibernation

Enables or disables system ability to hibernate (OS/S4 Sleep State). This option may not be effective with some OS.

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled and S3 (Suspend to RAM).
### IT8786E Super IO Configuration

This section is used to configure the serial ports.

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

#### Serial Port 1 Configuration
This section is used to configure serial port 1.

##### Serial Port
Enables or disables the serial port.

##### Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422, RS485 or RS485 Auto.
Serial Port 2 Configuration
This section is used to configure serial port 2.

Serial Port
Enables or disables the serial port.

Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422, RS485 or RS485 Auto.

Serial Port 3 Configuration
This section is used to configure serial port 3.

Serial Port
Enables or disables the serial port.

Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422, RS485 or RS485 Auto.
Chapter 4: BIOS Setup

Serial Port 4 Configuration
This section is used to configure serial port 4.

Serial Port
Enables or disables the serial port.

Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422, RS485 or RS485 Auto.

PPM Configuration
This section is used to configure the Processor Power Management (PPM) configuration.

EIST
Enables or disables Intel® SpeedStep.
Chapter 4: BIOS Setup

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

**Pc Health Status**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU temperature</td>
<td>+35°C</td>
</tr>
<tr>
<td>System temperature</td>
<td>+30°C</td>
</tr>
<tr>
<td>Fan Speed</td>
<td>N/A</td>
</tr>
<tr>
<td>VCore</td>
<td>+0.792 V</td>
</tr>
<tr>
<td>VCC12</td>
<td>+12.096 V</td>
</tr>
<tr>
<td>VCC5</td>
<td>+5.100 V</td>
</tr>
<tr>
<td>VCC3</td>
<td>+3.326 V</td>
</tr>
</tbody>
</table>

**CPU Temperature**
Detected and displays the current CPU temperature.

**System Temperature**
Detected and displays the current system temperature.

**Fan Speed**
Detected and displays the fan speed.

**VCore**
Detected and displays the Vcore CPU voltage.

**VCC12**
Detected and displays 12V voltage.

**VCC5**
Detected and displays 5V voltage.

**VCC3**
Detected and displays 3.3V voltage.
Chapter 4: BIOS Setup

CPU Configuration
This section is used to configure the CPU.

**Active Processor Cores**
Select the number of cores to enable in each processor package.

**Limit CPUID Maximum**
The CPUID instruction of some newer CPUs will return a value greater than 3. The default is Disabled because this problem does not exist in the Windows series operating systems. If you are using an operating system other than Windows, this problem may occur. To avoid this problem, enable this field to limit the return value to 3 or lesser than 3.

**Execute Disable Bit**
When this field is set to Disabled, it will force the XD feature flag to always return to 0. XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3).

**Intel® Virtualization Technology**
Enables or disables Intel® Virtualization technology.

**Socket 0 CPU Information**
This section displays the information of the CPU installed in Socket 0.
Chapter 4: BIOS Setup

IDE Configuration
This section is used to configure the SATA drives.

### IDE Configuration

<table>
<thead>
<tr>
<th>Serial-ATA (SATA)</th>
<th>[Enabled]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SATA Speed Support</td>
<td>Gen2</td>
</tr>
<tr>
<td>SATA Mode</td>
<td>AHCI Mode</td>
</tr>
<tr>
<td>Serial-ATA Port 0</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>SATA Port0 HotPlug</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>Serial-ATA Port 1</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>SATA Port1 HotPlug</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

**Serial-ATA (SATA)**
Enables or disables SATA device.

**SATA Speed Support**
Configures the SATA controller to Gen1 or Gen2 speed.

**SATA Mode**
Configures the SATA as IDE, AHCI or RAID mode.

### SATA Mode

- **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.

- **Serial-ATA Port 0 and Serial-ATA Port 1**
  Enables or disables SATA port 0 and SATA port 1.

- **SATA Port1 Hotplug and SATA Port2 Hotplug**
  Enables or disables hotplug support on SATA port 1 and SATA port 2.
USB Configuration
This section is used to configure the USB.

### USB Configuration

<table>
<thead>
<tr>
<th>Function</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legacy USB Support</td>
<td>Enable</td>
</tr>
<tr>
<td>Auto</td>
<td>Disable</td>
</tr>
<tr>
<td>Disable</td>
<td></td>
</tr>
</tbody>
</table>

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

**USB3.0 Support**
Enables or disables USB 3.0 controller support.

**XHCI Hand-off and EHCI Hand-off**
This is a workaround for OSs that does not support XHCI hand-off and EHCI Hand-off. The XHCI and EHCI ownership change should be claimed by the XHCI and EHCI driver respectively.

Chipset
This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.
South Bridge
This section is used to configure the south bridge features.

High Precision Timer
Enables or disables the high precision event timer.

Restore 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.
PCH Azalia Configuration

Azalia
Control detection of the Azalia device.

Disabled   Azalia will be unconditionally disabled.
Enabled    Azalia will be unconditionally Enabled.

Azalia HDMI Codec
Enables or disables internal HDMI codec for Azalia.

USB Configuration

USB 2.0(EHCI) Support
Enables or disables the Enhanced Host Controller Interface (USB 2.0), one EHCI controller must always be enabled.

USB RMH Mode
Enables or disables PCH USB rate matching hubs mode.

USB EHCI Debug
Enables or disables PCH EHCI debug capability.
### PCI Express Configuration

<table>
<thead>
<tr>
<th>PCI Express Configuration</th>
<th>[Enabled]</th>
<th>Enable or Disable the PCI Express Port 0 in the Chipset.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Express Port 0</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>PCI Express Port 1</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>PCI Express Port 2</td>
<td>[Enabled]</td>
<td></td>
</tr>
</tbody>
</table>

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**PCI Express Port 0 to PCI Express Port 2**

Enables or disables the PCI Express ports 0 to 2 on the chipset.
Chapter 4: BIOS Setup

Security

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Password Description

If ONLY the Administrator’s password is set, then this only limits access to Setup and is only asked for when entering Setup.

If ONLY the User’s password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User Will have Administrator rights.

The password length must be in the following range:
Minimum length 3
Maximum 20

Administrator Password

Select this to reconfigure the administrator’s password.

User Password

Select this to reconfigure the user’s password.

Boot

This section is used to configure the boot features.

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Bootup NumLock State

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

Fast Boot

When enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.
Network
Controls the execution of UEFI and legacy PXE OpROM.

Video
Controls the execution of UEFI and legacy video OpROM.

Boot Option Priorities
Adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

Hard Drive BBS Priorities
Boot Option #1

Save & Exit

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

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

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

Sets the system boot order.
Appendix A: Power Consumption

Power Consumption Management

Purpose
The purpose of the power consumption test is to verify the power dissipation of system, and the loading of power supply.

Test Equipment
PROVA CM-07 AC/DC CLAMP METER

Device Under Test
DUT: NISE105
CPU: Intel® Atom™ processor E3826 dual core, 1.46GHz
Memory: Transcend 4GB DDR3 SODIMM (TS512MSK64W6H)
HDD: SATA2 HDD 2.5 40GB 5400RPM (ST940817SM)
CFast: Transcend CFast 32GB (TS32GCFX500I)
Power Supply: LABORATORY DC POWER SUPPLY GWINSTEK GPC-60300
Add-on Card: MINI_PCIE CARD 8790V
CPU Cooler: NISE105CPU HEATSINK SHYUNG SHUHN
System FAN: N/A
Keyboard: Microsoft Wired Keyboard 600
Mouse: Microsoft Basic Optical Mouse

Test Procedure
1. Power up the DUT, boot into Windows 8 x32 Pro
2. Entering standby mode (HDD power down)
3. Measure the power consumption and record it.
4. Run Burn-in test program to apply 100% full loading
5. Measure the power consumption and record it.

Test Data

<table>
<thead>
<tr>
<th></th>
<th>Sys #1</th>
<th>Sys #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>+12V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-Loading Mode</td>
<td>2.03A</td>
<td>1.11A</td>
</tr>
<tr>
<td>Total</td>
<td>24.36W</td>
<td>26.64W</td>
</tr>
<tr>
<td>Standby S3 Mode</td>
<td>0.93A</td>
<td>0.49A</td>
</tr>
<tr>
<td>Total</td>
<td>11.16W</td>
<td>11.76W</td>
</tr>
</tbody>
</table>
APPENDIX B: GPI/O PROGRAMMING GUIDE

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

<table>
<thead>
<tr>
<th>Pin</th>
<th>GPI/O mode</th>
<th>PowerOn Default</th>
<th>Address</th>
<th>Pin</th>
<th>GPI/O mode</th>
<th>PowerOn Default</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>GND</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>GPO0</td>
<td>Low</td>
<td>A03h (Bit6)</td>
<td>4</td>
<td>GPI0</td>
<td>High</td>
<td>A03h (Bit1)</td>
</tr>
<tr>
<td>5</td>
<td>GPO1</td>
<td>Low</td>
<td>A02h (Bit5)</td>
<td>6</td>
<td>GPI1</td>
<td>High</td>
<td>A05h (Bit5)</td>
</tr>
<tr>
<td>7</td>
<td>GPO2</td>
<td>Low</td>
<td>A07h (Bit0)</td>
<td>8</td>
<td>GPI2</td>
<td>High</td>
<td>A05h (Bit4)</td>
</tr>
<tr>
<td>9</td>
<td>GPO3</td>
<td>Low</td>
<td>A07h (Bit1)</td>
<td>10</td>
<td>GPI3</td>
<td>High</td>
<td>A00h (Bit1)</td>
</tr>
</tbody>
</table>

Control the GPO 0/1/2/3 level from I/O port A03h bit6/ A02h bit5/ A07h bit0/ A07h bit1. The bit is Set/Clear indicated output High/Low.
GPIO programming sample code

```c
#define GPO0   (0x01 << 6)
#define GPO1   (0x01 << 5)
#define GPO2   (0x01 << 0)
#define GPO3   (0x01 << 1)

#define GPO0_HI outportb(0xA03, GPO0)
#define GPO0_LO outportb(0xA03, 0x00)
#define GPO1_HI outportb(0xA02, GPO1)
#define GPO1_LO outportb(0xA02, 0x00)
#define GPO2_HI outportb(0xA07, GPO2)
#define GPO2_LO outportb(0xA07, 0x00)
#define GPO3_HI outportb(0xA07, GPO3)
#define GPO3_LO outportb(0xA07, 0x00)

void main(void)
{
    GPO0_HI;
    GPO1_LO;
    GPO2_HI;
    GPO3_LO;
}
```
Appendix C: Watchdog Timer Setting

ITE8783 WatchDog Programming Guide

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

void main(void) {
    // Enter SuperIO Configuration
    outportb(SUPERIO_PORT, 0x87);
    outportb(SUPERIO_PORT, 0x01);
    outportb(SUPERIO_PORT, 0x55);
    outportb(SUPERIO_PORT, 0x55);

    // Set LDN
    outportb(SUPERIO_PORT, 0x07);
    outportb(SUPERIO_PORT+1, 0x07);

    // Set WDT setting
    outportb(SUPERIO_PORT, WDT_SET); // Use the second
    outportb(SUPERIO_PORT+1, 0x90);  // Set the minute, change value to 0x10

    // Set WDT sec/min
    outportb(SUPERIO_PORT, WDT_VALUE);
    outportb(SUPERIO_PORT+1, 0x05);  // Set 5 seconds
}
```