

NexAIoT Co., Ltd.

IoT Automation Solutions Business Group

Fan-less Computer

NISE 3600C

User Manual



CONTENTS

Preface

Copyright	iv
Disclaimer	iv
Acknowledgements	iv
Regulatory Compliance Statements	iv
Declaration of Conformity	iv
RoHS Compliance	v
Warranty and RMA	vi
Installation Recommendations	vii
Safety Information	viii
Safety Precautions	ix
Technical Support and Assistance	x
Conventions Used in this Manual	x
Global Service Contact Information	xi
Package Contents	xiii
Ordering Information	xiv

Chapter 1: Product Introduction

Overview: NISE 3600CE	1
Hardware Specifications: NISE 3600CE	2
Overview: NISE 3600CE2/P2	4
Hardware Specifications: NISE 3600CE2/P2	5
Knowing Your NISE 3600CE	7
Front Panel	7
Rear Panel	8

Knowing Your NISE 3600CE2/P2	9
Front Panel	9
Rear Panel	10
Mechanical Dimensions	11
NISE 3600CE	11
Mechanical Dimensions	12
NISE 3600CE2/P2	12

Chapter 2: Jumpers and Connectors

Before You Begin	13
Precautions	13
Jumper Settings	14
Locations of the Jumpers and Connectors for NISE 3600C	15
NISE 3600C	15
Top View	15
Bottom View	16
DIP Switches	17
ATX_AT1	17
CLRTC1	17
COM4_V1	18
COM5_V1	18
Connector Pin Definitions	19
External I/O Interfaces	19
POWER_IN1	19
Connector location: POWER_IN1	19
Remote Connector	19

EAR Phone Jack.....	20
LAN2 and USB 2.0	20
COM5 & COM6.....	21
VGA and HDMI.....	22
LAN1 and USB 3.0 Ports.....	23
Internal Connectors.....	24
Status LED Connector.....	24
GPIO Connector.....	24
Power In2	25
COM.....	25
DIO.....	26
SPI_1.....	26
SPI_NXM.....	27
PWR_CON1	27
RST_CON1	28
SMBUS1.....	28
USB6.....	29
GPS1.....	29
CPU_FAN1/CHA_FAN1	30
LINEIN1/LINEIN2	30
DEBUG.....	31
DEBUG_NXM.....	31
SATA6G_1/SATA6G_2	32
SATA_PWR1/SATA_PWR2	32
CN2	33
Mini Card1.....	34
Mini Card2.....	35
M.2.....	36
PCIe x8 Slot.....	37
PCIe x 8 (Cont.).....	38

Chapter 3: System Setup

Removing the Chassis Cover	39
Removing the top cover	40
Installing a CPU.....	41
Installing a SO-DIMM Memory Module	44
Installing a Mini-PCIe (Internal).....	45
Installing a Mini-PCIe and M.2 (External).....	47
Installing a SIM Card	49
Installing an internal SATA Storage Drive.....	50
Installing a PCIe/PCI Expansion card	52

Chapter 4: BIOS Setup

About BIOS Setup.....	53
When to Configure the BIOS.....	53
Default Configuration	54
Entering Setup.....	54
Legends.....	54
BIOS Setup Utility.....	56
Main	56
Advanced	57
Chipset.....	67
Boot.....	73
Security	73
Save & Exit	74

Appendix A: GPI/O Programming Guide

Appendix B: Watchdog Programming Guide

PREFACE

Copyright

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

Disclaimer

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

Acknowledgements

NISE 3600C is a trademark of NexAloT 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



NexAloT RoHS Environmental Policy and Status Update

NexAloT 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, NexAloT 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 NexAloT development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NexAloT 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 NexAloT 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 NexAloT naming convention.

Warranty and RMA

NexAloT Warranty Period

NexAloT manufactures products that are new or equivalent to new in accordance with industry standard. NexAloT warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NexAloT.

NexAloT Return Merchandise Authorization (RMA)

- Customers shall enclose the “NexAloT 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 “NexAloT 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, NexAloT 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 NexAloT 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

NexAloT 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: NexAloT 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 NexAloT 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, NexAloT will return it to the customer without any charge.

Board Level

- Component fee: NexAloT 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, NexAloT 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.

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 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.
- This product is intended to be supplied by an approved power adapter, rated 12Vdc, 5A or 24Vdc, 2.5A minimum and Tma 55 degree Celsius. If further assistance is needed, please contact NexAloT for further information.



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.



ATTENTION
IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE
PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES
CONFORMÉMENT AUX INSTRUCTIONS.

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. This equipment is not suitable for use in locations where children are likely to be present.
14. Ensure to connect the power cord to a socket-outlet with earthing connection.
15. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
16. 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.
17. Do not place heavy objects on the equipment.
18. 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.
19. 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 NexAloT products, visit NexAloT's website at www.nexaiot.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.

Conventions Used in this Manual



Warning:

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



Caution:

Information to avoid damaging components or losing data.



Note:

Provides additional information to complete a task easily.

Global Service Contact Information

Headquarters

NEXCOM International Co., Ltd.

9F, No. 920, Zhongzheng Rd.,
Zhonghe District, New Taipei City, 23586,
Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
www.nexcom.com

Asia

Taiwan

NexAIoT Headquarters

Industry 4.0 and Cloud Services

13F, No.922, Zhongzheng Rd.,
Zhonghe District, New Taipei City,
23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7926
Email: jacobhuang@nexaiot.com
www.nexaiot.com

NexAIoT Co., Ltd.

Taichung Office

16F, No.250, Sec.2, Chongde Rd.,
Beitun District,
Taichung City, 406, Taiwan, R.O.C.
Tel: +886-4-2249-1179
Fax: +886-4-2249-1172
Email: jacobhuang@nexaiot.com
www.nexaiot.com

NexCOBOT Taiwan Co., Ltd.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7926
Email: jennyshern@nexcobot.com
www.nexcobot.com

GreenBase Technology Corp.

13F, No.922, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7900
Email: vivianlin@nexcom.com.tw
www.nexcom.com.tw

DivioTec Inc.

19F-1A, No.97, Sec.4, ChongXin Rd.,
Sanchong District,
New Taipei City, 24161, Taiwan, R.O.C.
Tel: +886-2-8976-3077
Email: sales@diviotec.com
www.diviotec.com

AIoT Cloud Corp.

13F, No.922, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: alantsai@aiotcloud.net
www.aiotcloud.dev

EMBUX TECHNOLOGY CO., LTD.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: info@embux.com
www.embux.com

TMR TECHNOLOGIES CO., LTD.

13F, No.916, Zhongzheng Rd.,
Zhonghe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
Email: services@tmrtek.com
www.tmrtek.com

China NEXSEC Incorporated

201, Floor 2, Unit 2, Building 15, Yard 3,
Gaolizhang Road, Haidian District,
Beijing, 100094, China
Tel: +86-10-5704-2680
Fax: +86-10-5704-2681
Email: marketing@nexsec.cn
www.nexsec.cn

NEXCOM Shanghai

Room 406-407, Building C, No 154, Lane 953,
Jianchuan Road, Minhang District,
Shanghai, 201108, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Surveillance Technology Corp.

Floor 8, Building B3, Xiufeng Industrial Zone,
GanKeng Community, Buji Street,
LongGang District,
ShenZhen, 518112, China
Tel: +86-755-8364-7768
Fax: +86-755-8364-7738
Email: steveyang@nexcom.com.tw
www.nexcom.cn

NEXGOL Chongqing

1st Building No.999,
Star Boulevard, Yongchuan Dist,
Chongqing City, 402160, China
Tel: +86-23-4960-9080
Fax: +86-23-4966-5855
Email: sales@nexgol.com.cn
www.nexcom.cn

Beijing NexGemo Technology Co.,Ltd.

Room 205, No.1, Fazhan Rd.,
Beijing International Information Industry Base,
Changping District,
Beijing, 102206, China
Tel: +86-10-8072-2025
Fax: +86-10-8072-2022
Email: sales@nexgemo.cn
www.nexgemo.com

Japan

NEXCOM Japan

9F, Tamachi Hara Bldg.,
4-11-5, Shiba Minato-ku,
Tokyo, 108-0014, Japan
Tel: +81-3-5419-7830
Fax: +81-3-5419-7832
Email: sales@nexcom-jp.com
www.nexcom-jp.com

America

USA NEXCOM USA

46665 Fremont Blvd.,
Fremont CA 94538, USA
Tel: +1-510-656-2248
Fax: +1-510-656-2158
Email: sales@nexcom.com
www.nexcomusa.com

Europe

United Kingdom NEXCOM EUROPE

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

Package Contents

Before continuing, verify that the package that you received is complete. Your NISE 3600C package should have all the items listed in the following table.

Item	Part Number	Description	Qty
1	50311F0326X00	Flat Head Screw Long Fei:F3x5 NYLOK NI+Heat Treatment	4
2	50311F0315X00	Round Head Screw Long Fei:P6#32T T10 NYLOK	1
3	50311F0100X00	(H)Round Head Screw W/Spring+Flat Washer Long Fei:P3x6L	2
4	4NCPM00203X00	Terminal Blocks 2P Phoenix Contact:1803578	2
5	5044440090X00	(H)Thermal Pad APUS:3A2015001001500	1
6	50311F0329X00	Round Head Screw Long Fei:P2.5x3 ISO+NYLON	3
7	50311F0143X00	(H)Flat Head Screw Long Fei:F#6-32x8	1
8	50322P0002X00	Plastic Nut GIN LIAN:M6HW	1
9	50311P0001X00	Price For Plastic Screw	1
10	6029900037X00	DOW CORNING 340 Silicone Heat Sink Compound(3g)	1
11	60233POW33X00	DC Cord EDI:281040051051-RS	1
12	6023344361X00	Cable EDI:231441090251-RS	1

Ordering Information

The following information below provides ordering information for NISE 3600C.

Barebone

NISE 3600CE (P/N: 10J03600C01XE)

- 6/7/8/9th Gen Intel® Core™ i7/i5/i3 fanless system with one PCIe x4 expansion
- **Power adapter (P/N: 7400120031X00)**
24V, 120W AC to DC power adapter w/o power cord

NISE 3600CE2 (P/N: 10J03600C03XE)

- 6/7/8/9th Gen Intel® Core™ i7/i5/i3 fanless system with two PCIe x4 expansion (Only PCIe x1 signal)

NISE 3600CP2 (P/N: 10J03600C02XE)

- 6/7/8/9th Gen Intel® Core™ i7/i5/i3 fanless system with two PCI expansion

NISE 3600CP2E (P/N: 10J03600C04XE)

- 6/7/8/9th Gen Intel® Core™ i7/i5/i3 fanless system with one PCI and one PCIe x4 (only PCIe x1 signal) expansion
- **Power adapter (P/N: 7400120031X00)**
24V, 120W AC to DC power adapter w/o power cord

CHAPTER 1: PRODUCT INTRODUCTION

Overview: NISE 3600CE



Key Features

- Support 6/7/8/9th Gen Intel® Core™ i7/i5/i3 socket type processor
- Intel® H310C PCH
- Support 1 x 2.5" SATA HDD/SSD
- 1 x VGA, 1 x HDMI and 2 x display port with independent display support
- Dual Intel® GbE LAN ports; support WoL, teaming and PXE
- 4 x USB 3.0, 2 x USB 2.0, 5 x RS232 and 1 x RS232/422/485
- 2 x Internal mini-PCIe socket support optional Wi-Fi or 4G module
- 1 x External M.2 3042 Key B & 2 x mSATA
- 1 x SIM card socket
- Support +12V to 30VDC input; support ATX power mode
- One PCIe x4 expansion

Hardware Specifications:

NISE 3600CE

CPU Support

- Support 6/7/8/9th Gen Intel® Core™ i7/i5/i3 socket type processor

Main Memory

- 2 x DDR4 2133/2400/2666 SO-DIMM socket, support up to 16GB

Display Option

- Dual independent display
 - VGA and HDMI
 - Display port and VGA
 - Display port and HDMI
 - Display port and display port

I/O Interface - Front

- ATX power on/off switch
- HDD access/power status LEDs
- 2 x USB 3.0 ports
- 2 x Display port (can be converted to DVI-D or HDMI via active cables)
- 4 x Antenna holes
- 1 x External M.2 3042 Key B & 2x mSATA (via 2x mini PCIe socket)
- 1 x SIM card socket (for Mini card 2)

I/O Interface - Rear

- 1 x DB44 serial port for 4 x COM ports
 - COM1/3/4 (RS232)
 - COM2 (RS232/422/485)
- 2 x DB9 for COM5 (RS232) & COM6 (RS232)
- 2 x USB 3.0 ports (900mA per port)
- 2 x USB 2.0 ports (500mA per port)
- 1 x VGA port
- 1 x HDMI port
- 2 x Intel® I210AT GbE LAN ports; support WoL, teaming and PXE
- 1 x MIC-in and 1 x Line-out
- 1 x 4-pin remote power on/off switch
- +12V to 30V DC input

Expansion Slot

- One PCIe x4 expansion slot
 - Add-on card length: 169mm max.
 - Power consumption: 10W/slot max
- 2x Internal mini-PCIe socket support optional Wi-Fi/4G LTE

Power Requirements

- AT/ATX power mode (default: ATX power mode)
- Power input: +12 to +30V DC
- Power adapter: optional AC to DC power adapter (24V DC, 120W)

Dimensions

- 215 mm(W) x 272mm (D) x 93mm (H) without wall mount bracket (8.5" x 10.7" x 3.66")

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature:
Ambient with air flow: -5°C to 50° (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 95% (non-condensing)
- Shock protection:
 - HDD: 20G, half sine, 11ms, IEC60068-2-2
 - M.2: 50G, half sine, 11ms, IEC60068-2-27
- Vibration protection with HDD condition:
 - Random: 0.5Grms@5~500 Hz, IEC60068-2-64
 - Sinusoidal: 0.5Grms@5~500 Hz, IEC60068-2-6
- Vibration protection with SSD&M.2 condition:
 - Random: 2Grms@5~500 Hz, IEC60068-2-64
 - Sinusoidal: 2Grms@5~500 Hz, IEC60068-2-6

Certifications

- CE approval
 - EN61000-6-2
 - EN61000-6-4
- FCC Class A

OS Support

- Windows 10, 64-bit
- Windows 7

Overview: NISE 3600CE2/P2



Key Features

- Support 6/7/8/9th Gen Intel® Core™ i7/i5/i3 socket type processor
- Intel® H310C PCH
- Support 1 x 2.5" SATA HDD/SSD
- 1 x VGA, 1 x HDMI and 2 x display port with independent display support
- Dual Intel® GbE LAN ports; support WoL, teaming and PXE
- 4 x USB 3.0, 2 x USB 2.0, 5 x RS232 and 1 x RS232/422/485
- 2 x Internal mini-PCIe socket support optional Wi-Fi or 4G module
- 1 x External M.2 3042 Key B & 2 x mSATA
- 1 x SIM card socket
- Support +12V to 30VDC input; support ATX power mode
- Two PCI or PCIe x4 expansion (Only support PCIe x1 signal) expansion

Hardware Specifications:

NISE 3600CE2/P2

CPU Support

- Support 6/7/8/9th Gen Intel® Core™ i7/i5/i3 socket type processor

Main Memory

- 2 x DDR4 2133/2400/2666 SO-DIMM socket, support up to 16GB

Display Option

- Dual independent display
 - VGA and HDMI
 - Display port and VGA
 - Display port and HDMI
 - Display port and display port

I/O Interface - Front

- ATX power on/off switch
- HDD access/power status LEDs
- 2 x USB 3.0 ports
- 2 x Display port (can be converted to DVI-D or HDMI via active cables)
- 4 x Antenna holes
- 1 x External M.2 3042 Key B & 2x mSATA (via 2x mini PCIe socket)
- 1 x SIM card socket (for Mini card 2)

I/O Interface - Rear

- 1 x DB44 serial port for 4 x COM ports
 - COM1/3/4 (RS232)
 - COM2 (RS232/422/485)
- 2 x DB9 for COM5 (RS232) & COM6 (RS232)
- 2 x USB 3.0 ports (900mA per port)
- 2 x USB 2.0 ports (500mA per port)
- 1 x VGA port
- 1 x HDMI port
- 2 x Intel® I210AT GbE LAN ports; support WoL, teaming and PXE
- 1 x MIC-in and 1 x Line-out
- 1 x 4-pin remote power on/off switch
- +12V to 30V DC input

Expansion Slot

- 2 x Internal mini-PCIe socket support optional Wi-Fi/4G LTE
- NISE 3600CE2: two PCIe x4 expansion slot (Only support PCIe x1 signal)
 - Add-on card length: 169mm max. and one 240mm max.
 - Power consumption: 10W/slot max
- NISE 3600CP2: two PCI expansion slot
 - Add-on card length: 169mm max. and one 240mm max.
 - Power consumption: 10W/slot max

Power Requirements

- AT/ATX power mode (default: ATX power mode)
- Power input: +12 to +30V DC
- Power adapter: optional AC to DC power adapter (24V DC, 120W)

Dimensions

- 215 mm(W) x 272mm (D) x 114mm (H) without wall mount bracket (8.5" x 10.7" x 4.5")

Construction

- Aluminum and metal chassis with fanless design

Environment

- Operating temperature:
Ambient with air flow: -5°C to 50° (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 95% (non-condensing)
- Shock protection:- HDD: 20G, half sine, 11ms, IEC60068-2-27- M.2: 50G, half sine, 11ms, IEC60068-2-27
- Vibration protection with HDD condition:
 - Random: 0.5Grms@5~500 Hz, IEC60068-2-64
 - Sinusoidal: 0.5Grms@5~500 Hz, IEC60068-2-6
- Vibration protection with SSD&M.2 condition:
 - Random: 2Grms@5~500 Hz, IEC60068-2-64
 - Sinusoidal: 2Grms@5~500 Hz, IEC60068-2-6

Certifications

- CE approval
 - EN61000-6-2
 - EN61000-6-4
- FCC Class A

OS Support

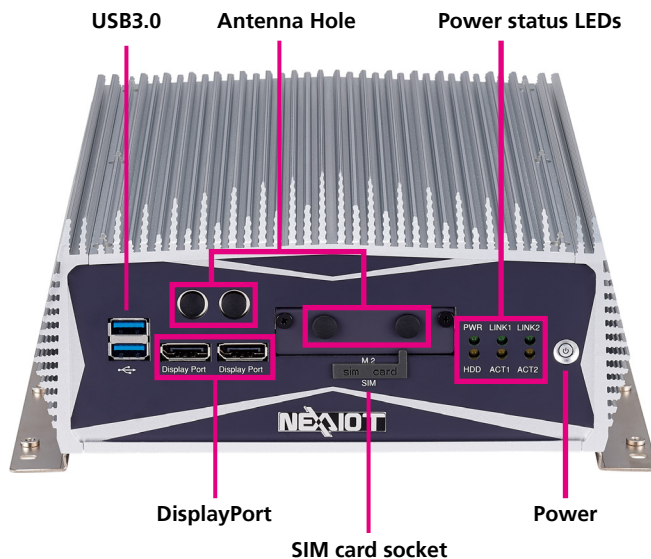
- Windows 10, 64-bit
- Windows 7

Weight Information

- Gross weight: 6.54kg
- Net weight: 5kg

Knowing Your NISE 3600CE

Front Panel



Power Switch

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

System status LED

Indicates the power status, link, activity and HDD access of the system.

Antenna Hole

Used to install external antennas.

SIM card socket

Used to install a SIM card.

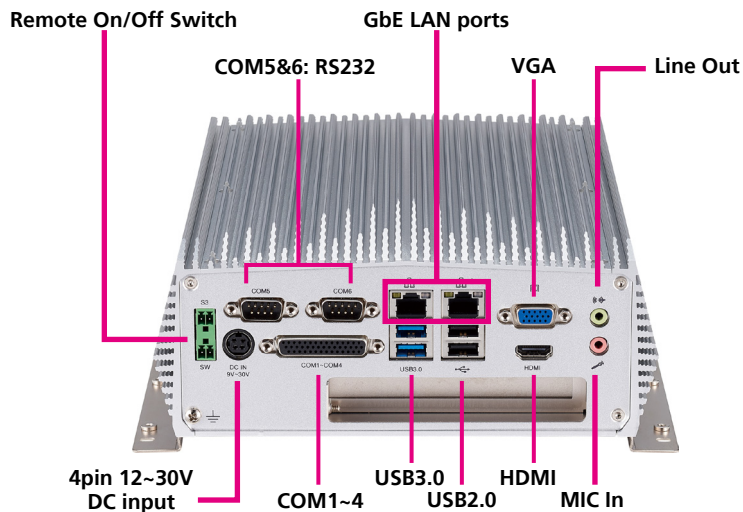
DisplayPort

A DisplayPort port used to connect DisplayPort interface displays.

USB 3.0

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

Rear Panel



Mic-In/Line-Out

Mic-In: Used to connect an external microphone

Line-Out: Used to connect a headphone or a speaker.

VGA

VGA port used to connect VGA interface display.

HDMI

HDMI port used to connect HDMI interface display.

LAN

Two I210AT GbE LAN ports, support WoL, teaming and PXE.

USB 2.0

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

USB 3.0

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

COM

- COM1/3/4 (DB44): RS232
- COM2 (DB44): RS232/422/485
- COM5&6 (DB9): RS232

DC Input

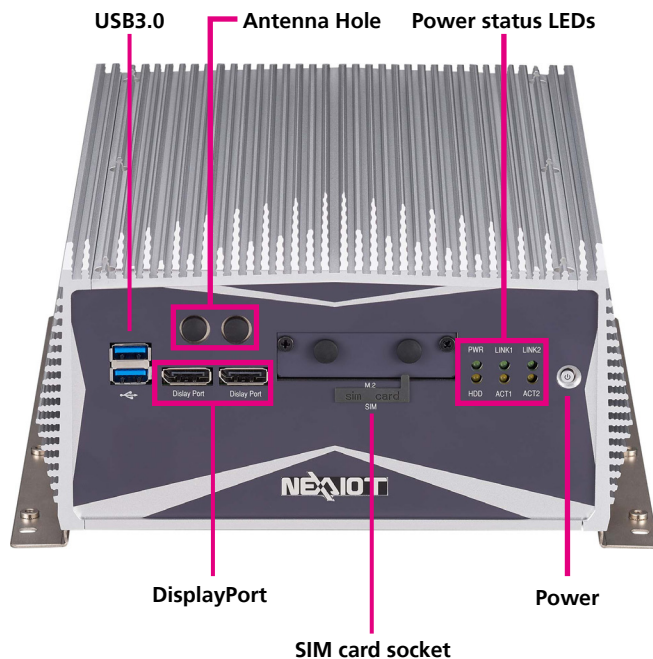
Used to plug a DC power cord.

Remote On/Off Switch

Used to connect a remote to power on/off the system.

Knowing Your NISE 3600CE2/P2

Front Panel



Power Switch

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

System status LED

Indicates the power status, link, activity and HDD access of the system.

SIM card socket

Used to install a SIM card.

Antenna Hole

Used to install external antennas.

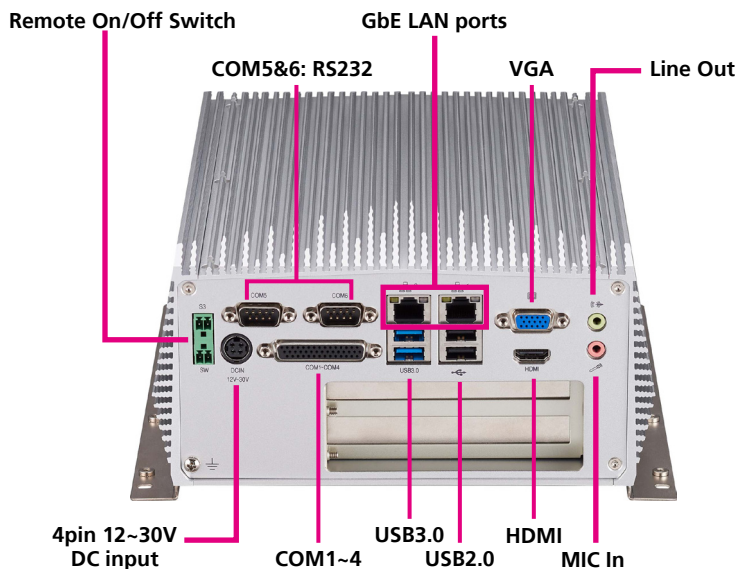
DisplayPort

A DisplayPort port used to connect DisplayPort interface displays.

USB 3.0

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

Rear Panel



Mic-In/Line-Out

Mic-In: Used to connect an external microphone

Line-Out: Used to connect a headphone or a speaker.

VGA

VGA port used to connect VGA interface display.

HDMI

HDMI port used to connect HDMI interface display.

LAN

Two I210T GbE LAN ports, support WoL, teaming and PXE.

USB 2.0

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

USB 3.0

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

COM

- COM1/3/4 (DB44): RS232
- COM2 (DB44): RS232/422/485
- COM5&6 (DB9): RS232

DC Input

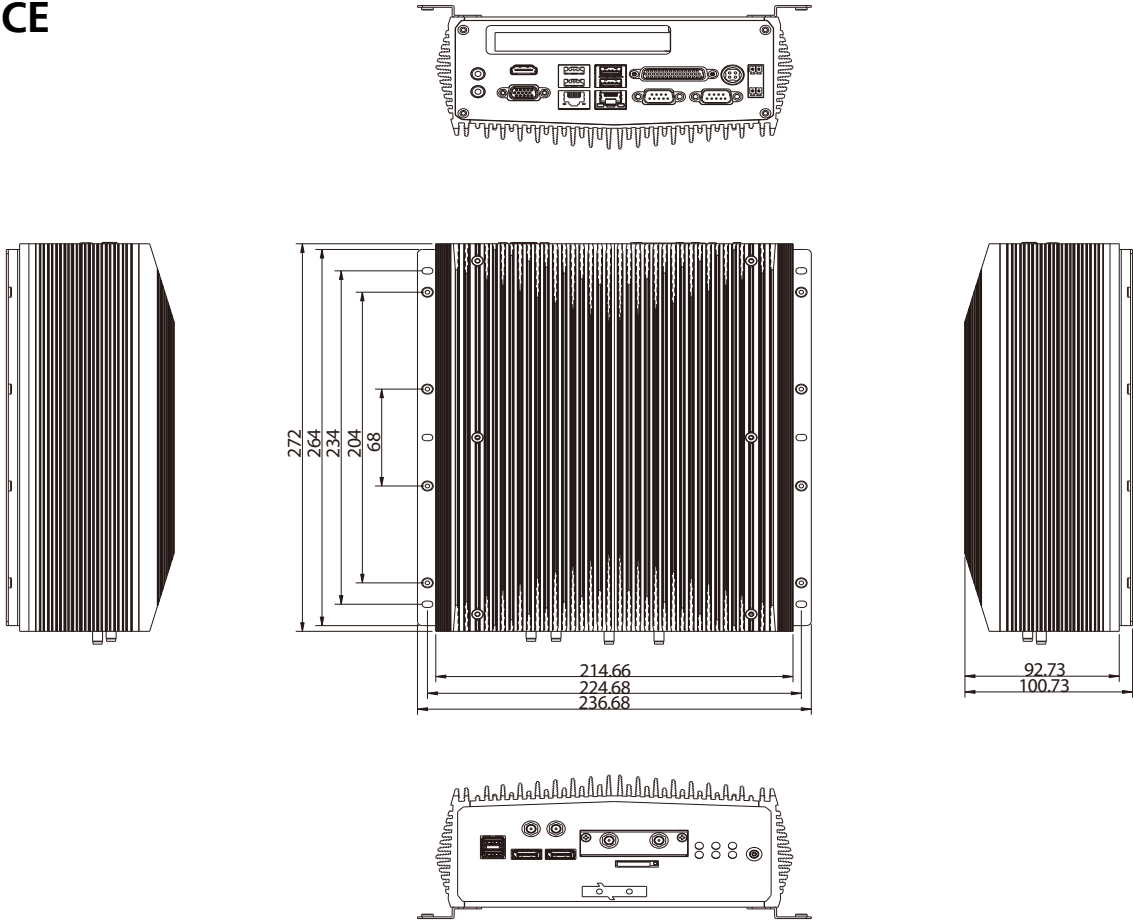
Used to plug a DC power cord.

Remote On/Off Switch

Used to connect a remote to power on/off the system.

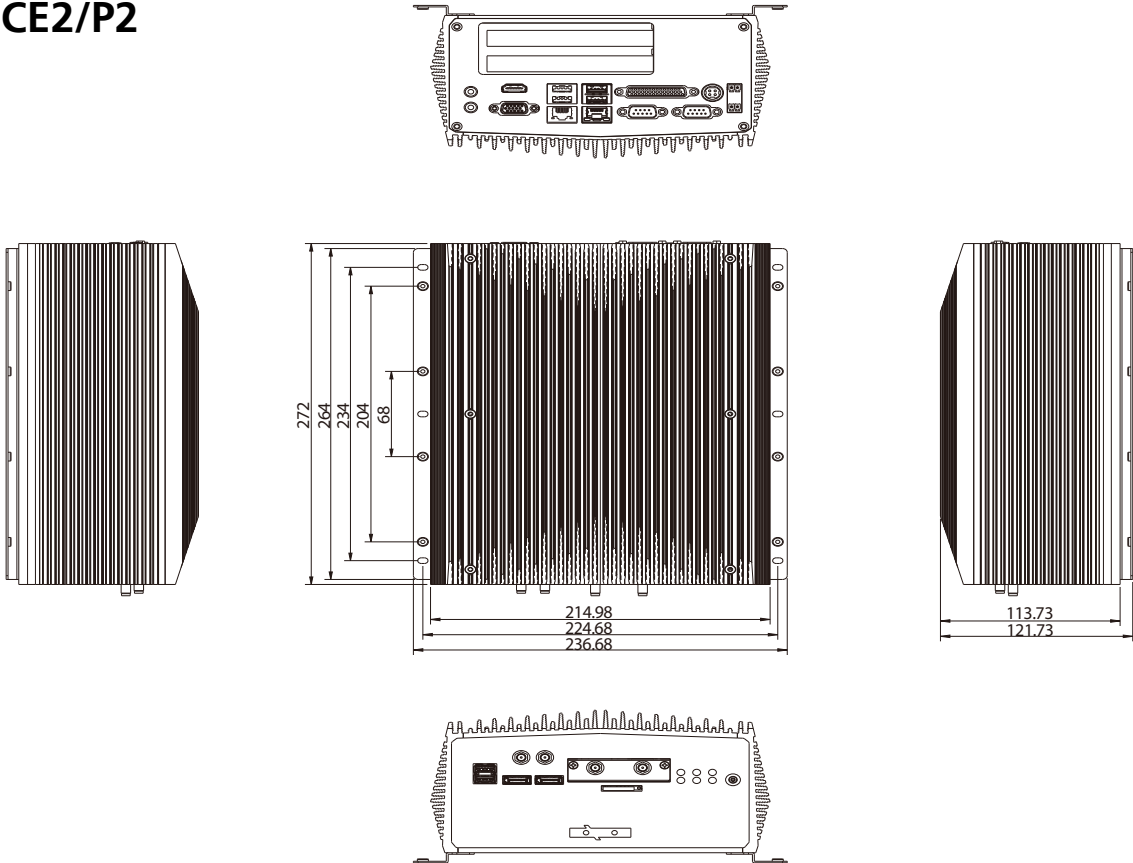
Mechanical Dimensions

NISE 3600CE



Mechanical Dimensions

NISE 3600CE2/P2



CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NISE 3600C motherboard.

Before You Begin

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

dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

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

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

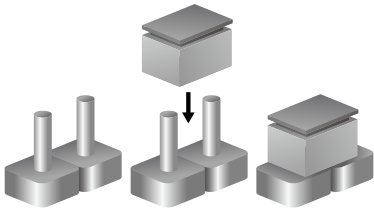
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

Jumper Settings

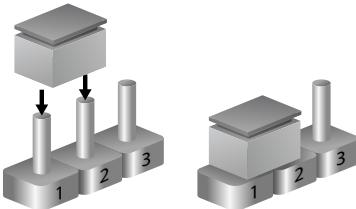
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

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

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



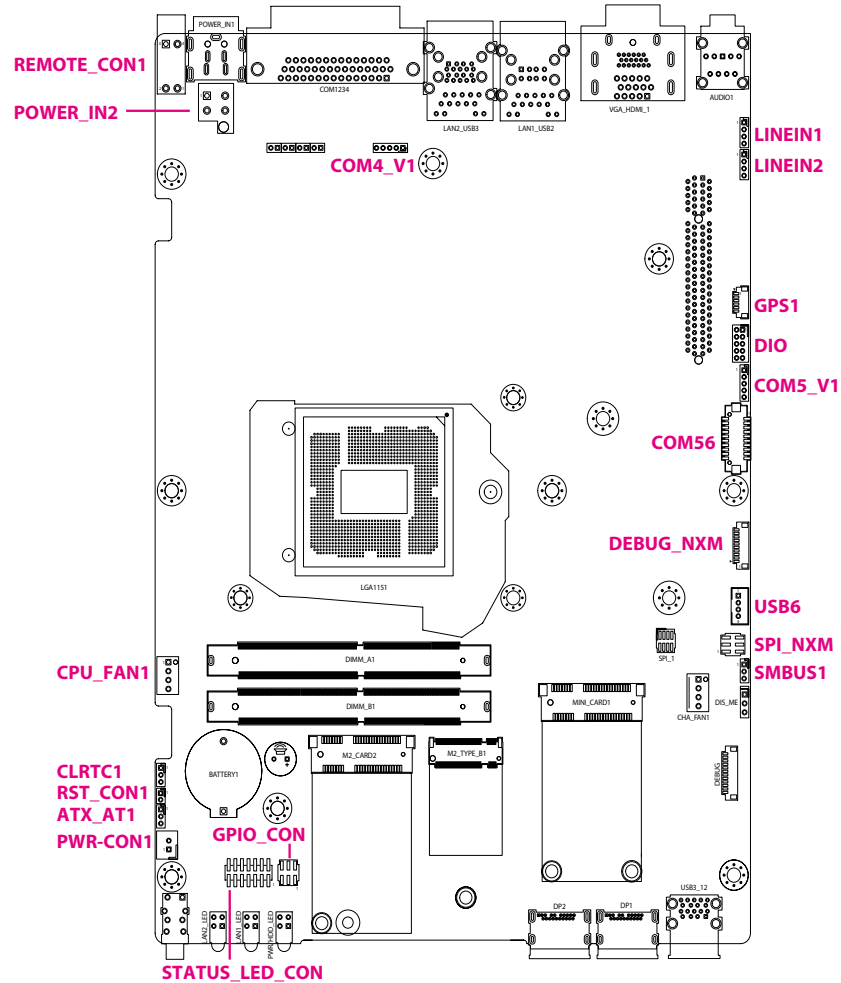
Three-Pin Jumpers: Pins 1 and 2 are Short



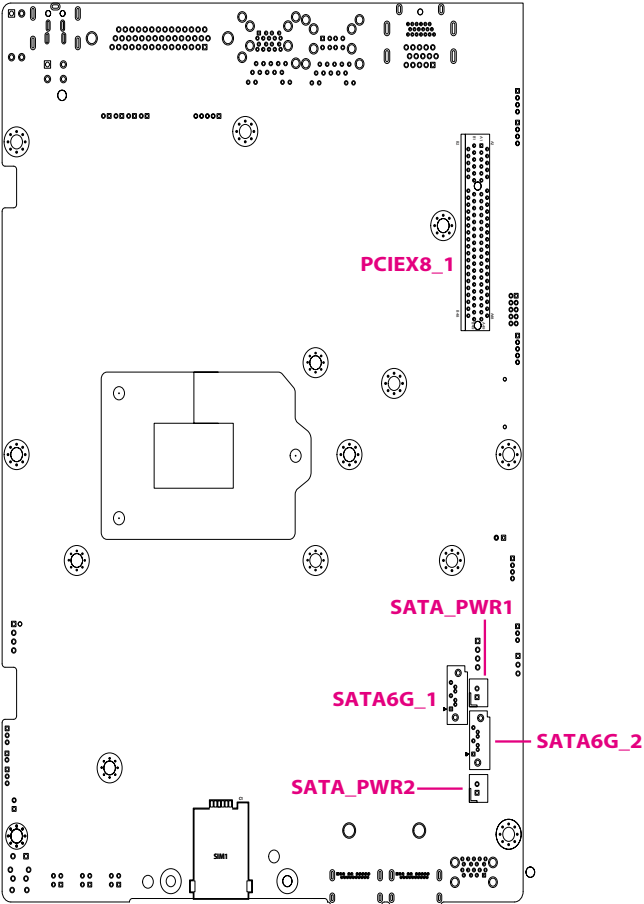
Locations of the Jumpers and Connectors for NISE 3600C

NISE 3600C

Top View



Bottom View

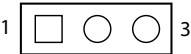




DIP Switches

ATX_AT1

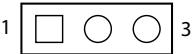
Connector location: ATX_AT1



ATX mode	2-3 (Default)
AT mode	1-2

CLRTC1

Connector location: CLRTC1



Normal	1-2 (Default)
Clear RTC	2-3





COM4_V1

Connector location: COM4_V1



+5V	1-2
+12V	2-3
Ring	4-5 (Default)

COM5_V1

Connector location: COM5_V1



+5V	1-2
+12V	2-3
Ring	4-5 (Default)

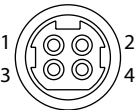


Connector Pin Definitions

External I/O Interfaces

POWER_IN1

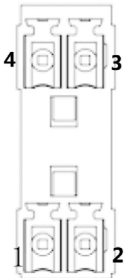
Connector location: POWER_IN1



Pin	Definition	Pin	Definition
1	+	2	+
3	-	4	-

Remote Connector

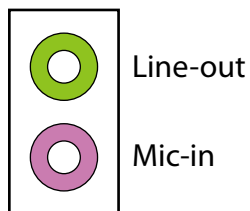
Connector location: REMOTE_CON1



Pin	Definition	Pin	Definition
1	GND	2	PWRBTN#_R
3	SLP_S3#_R	4	GND

EAR Phone Jack

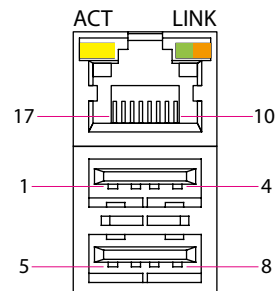
Connector location: EAR PHONE JACK



Pin	Definition	Pin	Definition
1	GND	22	FRONT_L
2	MIC_L	23	GND
3	GND	24	NC
4	NC	25	FRONT_R
5	MIC_R	NH1	NC
MH1	GND_CHASIS	MH2	GND_CHASIS
MH3	GND_CHASIS	MH4	GND_CHASIS

LAN2 and USB 2.0

Connector location: LAN2 and USB 2.0 Ports

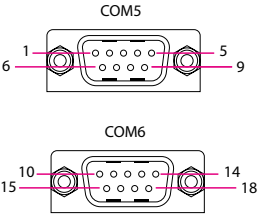


Pin	Definition	Pin	Definition
1	VCC5(+5V)	9	V1P5_LAN2(+1.5V)
2	USB2N_1	10	LAN2_MDI0P
3	USB2P_1	11	LAN2_MDI0N
4	GND	12	LAN2_MDI1P
5	VCC5(+5V)	13	LAN2_MDI1N
6	USB2N_2	14	LAN2_MDI2P
7	USB2P_2	15	LAN2_MDI2N
8	GND	16	LAN2_MDI3P
MH1	GND_CHASIS	17	LAN2_MDI3N
MH2	GND_CHASIS	18	GND
MH3	GND_CHASIS	19	LAN2_LINK1G#
MH4	GND_CHASIS	20	LAN2_LINK100#
MH5	GND_CHASIS	21	LAN2_LED_ACT#
MH6	GND_CHASIS	22	V3P3_LAN2(+3.3V)
MH7	GND_CHASIS	MH8	GND_CHASIS



COM5 & COM6

Connector location: COM5 (DB9) & COM6 (DB9)



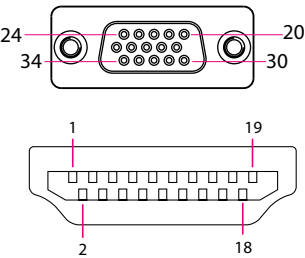
Pin	Definition	Pin	Definition
1	COM5_DCD	10	COM6_DCD
2	COM5_RXD	11	COM6_RXD
3	COM5_TXD	12	COM6_TXD
4	COM5_DTR	13	COM6_DTR
5	GND	14	GND
6	COM5_DSR	15	COM6_DSR
7	COM5_RTS	16	COM6_RTS
8	COM5_CTS	17	COM6_CTS
9	COM5_RI	18	COM6_RI





VGA and HDMI

Connector location:VGA+HDMI



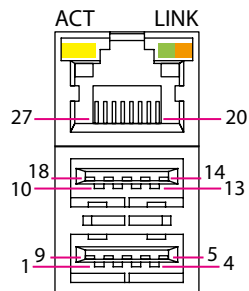
Pin	Definition	Pin	Definition
1	HDMI_D2_P	16	HDMI_SDA
2	GND	17	GND
3	HDMI_D2_N	18	HDMIPWR(+5V)
4	HDMI_D1_P	19	HDMI_HPD
5	GND	20	VGA_RED
6	HDMI_D1_N	21	VGA_GREEN
7	HDMI_D0_P	22	VGA_BLUE
8	GND	23	NC
9	HDMI_D0_N	24	GND
10	HDMI_CK_P	25	GND
11	GND	26	GND
12	HDMI_CK_N	27	GND
13	HDMI_CEC	28	VGAPWR(+5V)
14	NC	29	GND
15	HDMI_SCL	30	NC

Pin	Definition	Pin	Definition
31	VGA_DDCDATA	MH3	GND_CHASIS
32	VGA_HSYNC	MH4	GND_CHASIS
33	VGA_VSYNC	MH5	GND_CHASIS
34	VGA_DDCCLK	MH6	GND_CHASIS
NH1	NC		
MH1	GND_CHASIS		
MH2	GND_CHASIS		



LAN1 and USB 3.0 Ports

Connector location: LAN1 and USB 3.0 Ports



Pin	Definition	Pin	Definition
1	VCC5(+5V)	16	GND
2	USB2N_0	17	USB31_TXN1
3	USB2P_0	18	USB31_TXP1
4	GND	19	V1P5_LAN1(+1.5V)
5	USB31_RXN0	20	LAN1_MDI0P
6	USB31_RXP0	21	LAN1_MDI0N
7	GND	22	LAN1_MDI1P
8	USB31_TXN0	23	LAN1_MDI1N
9	USB31_TXP0	24	LAN1_MDI2P
10	VCC5(+5V)	25	LAN1_MDI2N
11	USB2N_1	26	LAN1_MDI3P
12	USB2P_1	27	LAN1_MDI3N
13	GND	28	GND
14	USB31_RXN1	29	V3P3_LAN1(+3.3V)
15	USB31_RXP1	30	LAN1_LED_ACT#

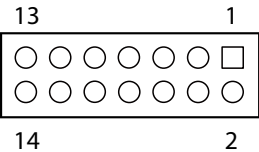
Pin	Definition	Pin	Definition
31	LAN1_LINK100#	MH6	GND_CHASIS
32	LAN1_LINK1G#	MH7	GND_CHASIS
MH1	GND_CHASIS	MH8	GND_CHASIS
MH2	GND_CHASIS		
MH3	GND_CHASIS		
MH4	GND_CHASIS		
MH5	GND_CHASIS		



Internal Connectors

Status LED Connector

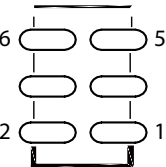
Connector type: 2x7, 14-pin header
Connector location: STATUS_LED_CON



Pin	Definition	Pin	Definition
1	LAN3_LINKN	2	LAN3_LINKP
3	L3_ACTLEDN	4	L3_ACTLEDP
5	LAN2_LINKN	6	LAN2_LINKP
7	L2_ACTLEDN	8	L2_ACTLEDP
9	PLED+	10	PLED-
11	HDLED+	12	HDLED_D-
13	BAT_LOW_P	14	BAT_LOW_N

GPIO Connector

Connector type: 2x3, 10-pin header
Connector location: GPIO_CON



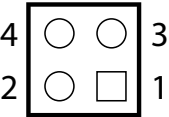
Pin	Definition	Pin	Definition
1	+3V	2	GND
3	SIO_GP02LED_P	4	SIO_GP02
5	SIO_GP01LED_P	6	SIO_GP01





Power In2

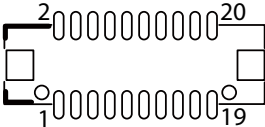
Connector type: 2x2, 4-pin header
Connector location: POWER_IN2



Pin	Definition	Pin	Definition
1	GND	2	GND
3	VIN	4	VIN

COM

Connector location: COM56

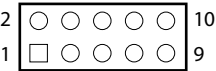


Pin	Definition	Pin	Definition
1	DDCD7	2	DDCD8
3	DTXD7	4	DTXD8
5	DRTS7	6	DRTS8
7	RI2_F_VCC	8	RI8
9	GND	10	GND
11	DRXD7	12	DRXD8
13	DDTR7	14	DDTR8
15	DDSR7	16	DDSR8
17	DCTS7	18	DCTS8
19	GND	20	GND



DIO

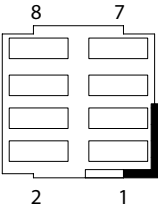
Connector type: 2x5, 10-pin header
Connector location: DIO



Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPO1#	4	GPI1#
5	GPO2#	6	GPI2#
7	GPO3#	8	GPI3#
9	GPO4#	10	GPI4#

SPI_1

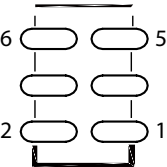
Connector type: 2x4, 8-pin header
Connector location: SPI_1



Pin	Definition	Pin	Definition
1	+3V_SPI	2	GND
3	S_BIOS_CS0#	4	S_BIOS_CLK
5	S_BIOS_MISO	6	S_BIOS_MOSI
7	(NC)	8	(NC)

SPI_NXM

Connector type: 2x3, 6-pin header
Connector location: SPI_NXM



Pin	Definition	Pin	Definition
1	+3V_SPI	2	GND
3	S_BIOS_CS0#	4	S_BIOS_CLK
5	S_BIOS_MISO	6	S_BIOS_MOSI

PWR_CON1

Connector type: 1x2, 2-pin header
Connector location: PWR_CON1



Pin	Definition
1	PWRBTN#
2	GND



RST_CON1

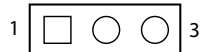
Connector type: 1x2, 2-pin header
Connector location: RST_CON1



Pin	Definition
1	RESET#
2	GND

SMBUS1

Connector type: 1x3, 3-pin header
Connector location: SMBUS1



Pin	Definition
1	SMBCLK
2	SMBDATA
3	GND





USB6

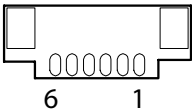
Connector type: 1x4, 4-pin header
Connector location: USB6



Pin	Definition	Pin	Definition
1	+5V	2	USB_DN
3	USB_DP	4	GND

GPS1

Connector location: GPS1

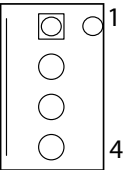


Pin	Definition	Pin	Definition
1	GPS_BAT	2	GPS_LED
3	UART_TXD	4	UART_RXD
5	GND	6	+3V



CPU_FAN1/CHA_FAN1

Connector type: 1x4, 4-pin header
Connector location: CPU_FAN1/CHA_FAN1



Pin	Definition	Pin	Definition
1	PWM	2	SENSE
3	VCC	4	GND

LINEIN1/LINEIN2

Connector location: LINEIN1/LINEIN2

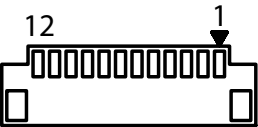


Pin	Definition	Pin	Definition
1	LINEIN-L	2	GND
3	JD	4	LINEIN-R



DEBUG

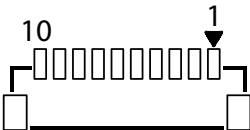
Connector location: DEBUG



Pin	Definition	Pin	Definition
1	F_LAD0	2	F_LAD1
3	F_LAD2	4	F_LAD3
5	+3V	6	F_FRAME#
7	PLTRST#	8	GND
9	PCH_24M_2_R_DEBUG	10	S_LDRQ1#
11	S_LDRQ#	12	F_SERIRQ

DEBUG_NXM

Connector location: DEBUG_NXM

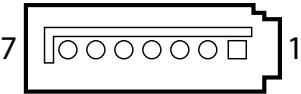


Pin	Definition	Pin	Definition
1	+3V	2	F_SERIRQ
3	F_LAD0	4	F_LAD1
5	F_LAD2	6	F_LAD3
7	F_FRAME	8	PCH_24M_2_R_DEBUG
9	PLTRST	10	GND



SATA6G_1/SATA6G_2

Connector location: SATA6G_1/SATA6G_2



Pin	Definition	Pin	Definition
1	GND	2	SATA_TX1+
3	SATA_TX-	4	GND
5	SATA_RX-	6	SATA_RX+
7	GND		

SATA_PWR1/SATA_PWR2

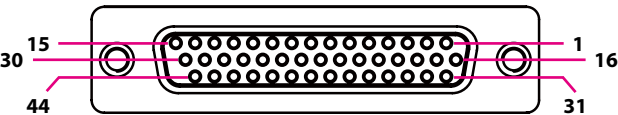
Connector location: SATA_PWR1/SATA_PWR2



Pin	Definition
1	+5V
2	GND

CN2

Connector location: CN2

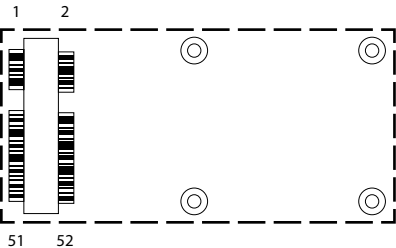


Pin	Definition	Pin	Definition
1	COM1_DCD	2	COM1_RXD
3	COM1_TXD	4	COM1_DTR
5	GND	6	COM1_DSR
7	COM1_RTS	8	COM1_CTS
9	DRI1	10	GND
11	COM2_DCD	12	COM2_RXD
13	COM2_TXD	14	COM2_DTR
15	GND	16	COM2_DSR
17	COM2_RTS	18	COM2_CTS
19	DRI2	20	GND
21	DDCD5	22	DRXD5
23	DTXD5	24	DDTR5
25	GND	26	DDSR5
27	DRTS5	28	DCTS5
29	DRI5	30	GND
31	DDCD6	32	DDXD6

Pin	Definition	Pin	Definition
33	DTXD6	34	DDTR6
35	GND	36	DDSR6
37	DRTS6	38	DCTS6
39	COM4_RI	40	GND
41	NC	42	NC
43	NC	44	NC

Mini Card1

Connector location: MINI Card1

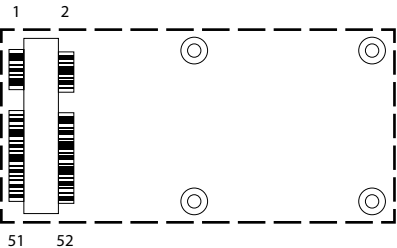


Pin	Definition	Pin	Definition
1	X_WAKE#	2	3VSUS
3	NC	4	GND
5	NC	6	1.5V
7	MINI_CLKREQ#_1	8	NC
9	GND	10	NC
11	MINI_CLKN_1	12	NC
13	MINI_CLKP_1	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	WLAN_DIS_R#
21	GND	22	MINI_RESET#
23	NC	24	3VSUS
25	NC	26	GND
27	GND	28	1.5V
29	GND	30	SM_CLK_SLOT
31	NC	32	SM_DATA_SLOT

Pin	Definition	Pin	Definition
33	NC	34	GND
35	GND	36	S_USB2DN7
37	GND	38	S_USB2DP7
39	3VSUS	40	GND
41	3VSUS	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	1.5V_W1
49	NC	50	NC
51	MINI_CARD_DET1	52	3VSUS
53	GND	54	GND
55	NC	56	NC

Mini Card2

Connector location: MINI Card2



Pin	Definition	Pin	Definition
1	X_WAKE#	2	3VSUS
3	NC	4	GND
5	NC	6	1.5V
7	MINI_CLKREQ#_2	8	MINI_UIM_PWR
9	GND	10	MINI_UIM_DATA
11	MINI_CLKN_2	12	MINI_UIM_CLK
13	MINI_CLKP_2	14	MINI_UIM_RESET
15	GND	16	MINI_UIM_VPP
17	NC	18	GND
19	NC	20	WLAN_DIS_R#2
21	GND	22	MINI_RESET#2
23	NC	24	3VSUS
25	NC	26	GND
27	GND	28	1.5V
29	GND	30	SM_CLK_SLOT_2
31	NC	32	SM_DATA_SLOT_2

Pin	Definition	Pin	Definition
33	NC	34	GND
35	GND	36	S_USB2DN9
37	GND	38	S_USB2DP9
39	3VSUS	40	GND
41	3VSUS	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	1.5V_W2
49	NC	50	NC
51	MINI_CARD_DET2	52	3VSUS
53	GND	54	GND
55	NC	56	NC

M.2

Connector location: M.2



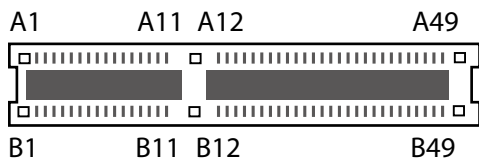
Pin	Definition	Pin	Definition
1	GND	2	3VSUS
3	GND	4	3VSUS
5	GND	6	M2_CARD_PWR
7	S_USB_PP8	8	M.2_WWAN_KILL#
9	S_USB_PN8	10	WLAN_LED1
11	GND	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	NC
19	NC	20	NC
21	NC	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	UIM_VPP
29	NC	30	UIM_RESET
31	NC	32	UIM_CLK

Pin	Definition	Pin	Definition
33	GND	34	UIM_DATA
35	NC	36	UIM_PWR
37	NC	38	NC
39	GND	40	NC
41	M2_B_RXN	42	NC
43	M2_B_RXP	44	NC
45	GND	46	NC
47	M2_B_TXN	48	NC
49	M2_B_TXP	50	O_PCIE1_RST#
51	GND	52	CLK_REQ1_M.2_WLAN#
53	C_PCIE_M2B#	54	X_WAKE#
55	C_PCIE_M2B	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	NC
67	NC	68	PCH_SUSCLK
69	NC	70	3VSUS
71	GND	72	3VSUS
73	GND	74	3VSUS
75	NC	76	NC
77	NC	78	NC
79	GND		

PCIe x8 Slot

Connector type: PCIe x8 Slot

Connector location: PCIe x 8



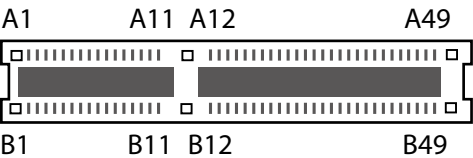
Pin	Definition	Pin	Definition
A1	GND	B1	12V
A2	12V	B2	12V
A3	12V	B3	12V
A4	GND	B4	GND
A5	NC	B5	S_SMBCLK_SLOT
A6	NC	B6	S_SMBDATA_SLOT
A7	NC	B7	GND
A8	NC	B8	3V
A9	3.3V	B9	NC
A10	3.3V	B10	3VSUS
A11	O_PCIEX1_RST#	B11	X_WAKE#
A12	GND	B12	NC
A13	C_PCIEX8_1	B13	GND
A14	C_PCIEX8#_1	B14	X_1X8_TXP0
A15	GND	B15	X_1X8_TXN0
A16	X_1X8_RXP0	B16	GND

Pin	Definition	Pin	Definition
A17	X_1X8_RXN0	B17	GND
A18	GND	B18	GND
A19	NC	B19	X_1X8_TXP1
A20	GND	B20	X_1X8_TXN1
A21	X_1X8_RXP1	B21	GND
A22	X_1X8_RXN1	B22	GND
A23	GND	B23	X_1X8_TXP2
A24	GND	B24	X_1X8_TXN2
A25	X_1X8_RXP2	B25	GND
A26	X_1X8_RXN2	B26	GND
A27	GND	B27	X_1X8_TXP3
A28	GND	B28	X_1X8_TXN3
A29	X_1X8_RXP3	B29	GND
A30	X_1X8_RXN3	B30	NC
A31	GND	B31	GND
A32	NC	B32	GND
A33	NC	B33	X_1X8_TXP4
A34	GND	B34	X_1X8_TXN4
A35	X_1X8_RXP4	B35	GND
A36	X_1X8_RXN4	B36	GND
A37	GND	B37	X_1X8_TXP5
A38	GND	B38	X_1X8_TXN5
A39	X_1X8_RXP5	B39	GND
A40	X_1X8_RXN5	B40	GND
A41	GND	B41	X_1X8_TXP6
A42	GND	B42	X_1X8_TXN6
A43	X_1X8_RXP6	B43	GND
A44	X_1X8_RXN6	B44	GND



PCIe x 8 (Cont.)

Connector location: PCIe x 8



Pin	Definition	Pin	Definition
A45	GND	B45	X_1X8_TXP7
A46	GND	B46	X_1X8_TXN7
A47	X_1X8_RXP7	B47	GND
A48	X_1X8_RXN7	B48	GND
A49	GND	B49	GND



CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

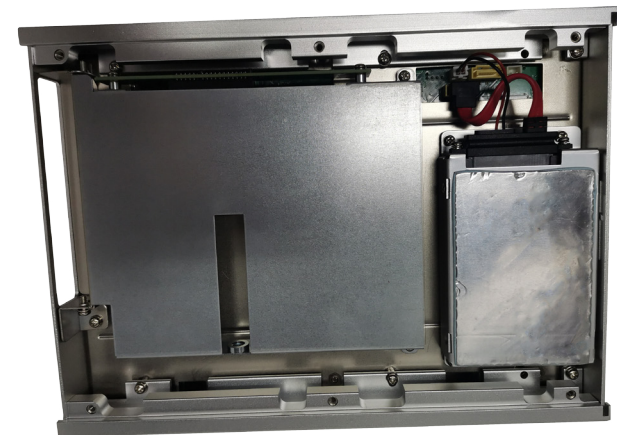


Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. Remove the six mounting screws from the bottom cover.



2. With the screws removed, lift up the cover and remove it from the chassis.

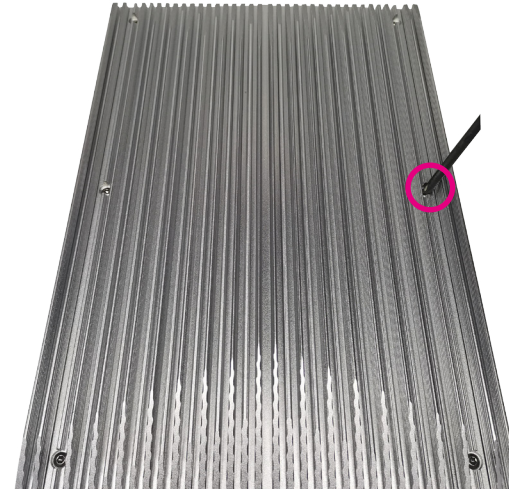


Removing the top cover

1. Locate the 6 screws on the top cover.



2. Remove the 6 screws on the top.



3. With the screws removed, lift up the cover and remove it from the chassis.

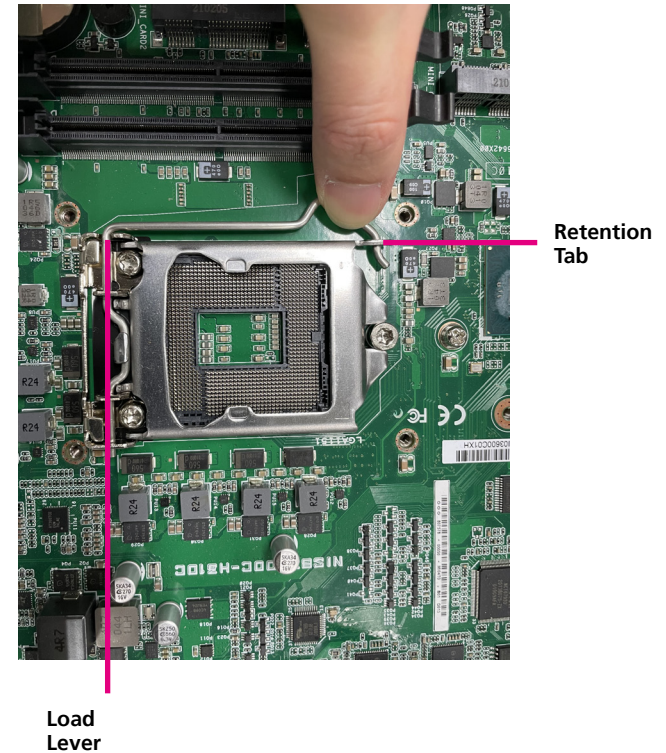


Installing a CPU

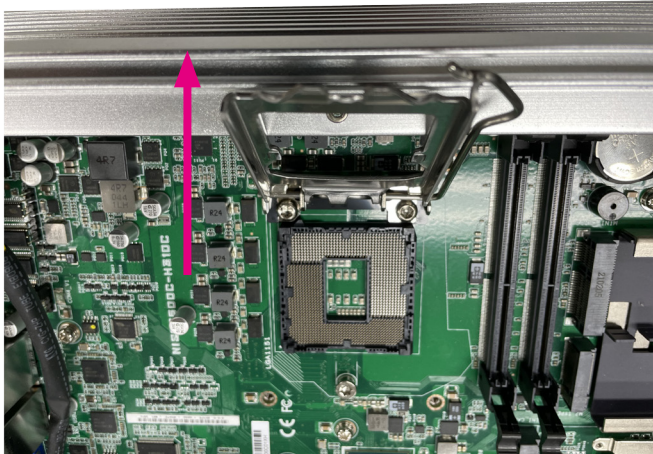
1. Remove the CPU heatsink.



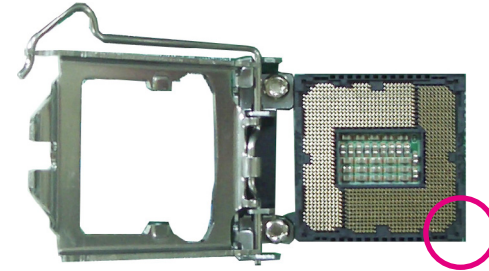
2. Locate the CPU socket on the board. Unlock the socket by pushing the load lever down, moving it sideways until it is released from the retention tab.



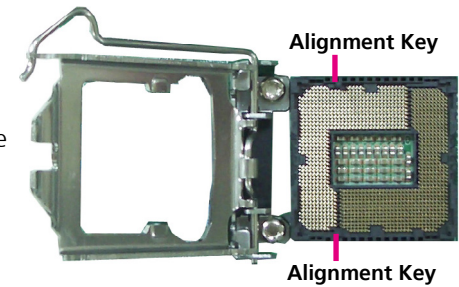
3. Lift the load lever up to open the CPU retention bracket.



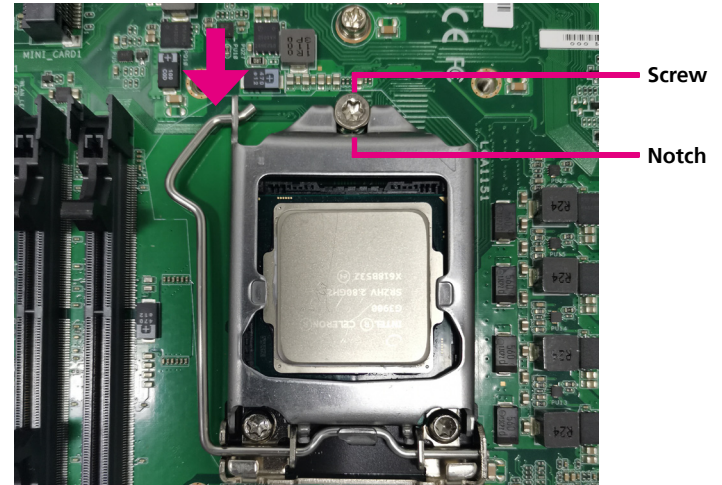
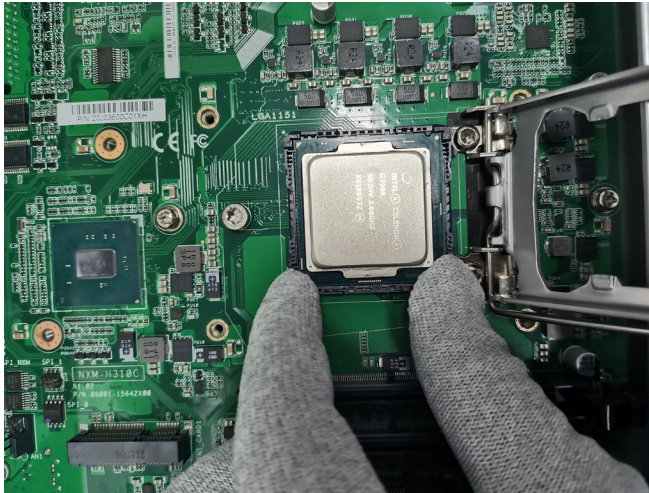
4. Insert the CPU into the socket. The triangular edge on the CPU must align with the corner of the CPU socket shown on the photo.



The CPU's notch will at the same time fit into the socket's alignment key.



- With the CPU installed, close the retention bracket and then hook the load lever under the retention tab. Ensure that the notch on the retention bracket is slid under the screw before lowering the load lever as shown below.



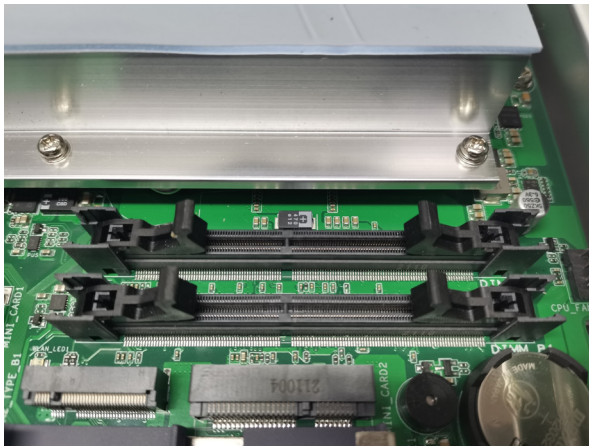
- Handle the CPU by its edges and avoid touching the pins.
- The CPU will fit in only one orientation and can easily be inserted without exerting any force.



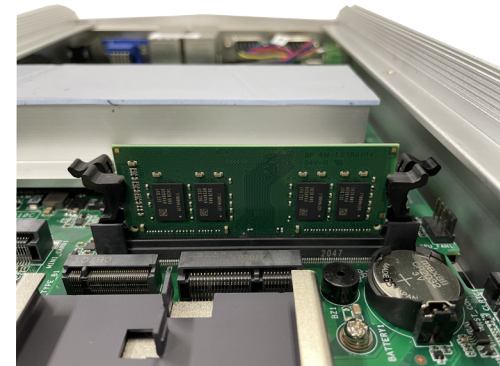
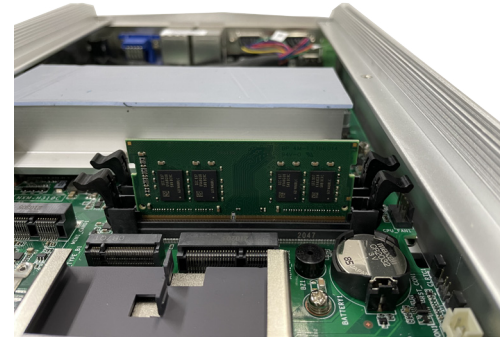
Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.

Installing a SO-DIMM Memory Module

1. Locate the SO-DIMM sockets and release the locks.



2. Insert the SO-DIMM module into the socket and apply even pressure to both ends of the module until it slips into the socket. While pushing the module into position, the locks will close automatically.



Installing a Mini-PCle (Internal)

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



Mini-PCle
Slot

2. Insert the module into the mini-PCle slot at a 30-degree angle.



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



Installing a Mini-PCle and M.2 (External)

1. Locate the M.2 bracket cover on the front panel and unscrew the screws securing it. Then remove the bracket from the system.



2. Slide the M.2 module or min-PCle module to the mounting plate on the bracket and secure it with a screw.



3. Install the M.2 bracket back to its original position. Make sure the connector on the edge of the module is plugged firmly into the connector on the board.



Installing a SIM Card

1. Locate the SIM card slot on the front panel and remove the slot cover.

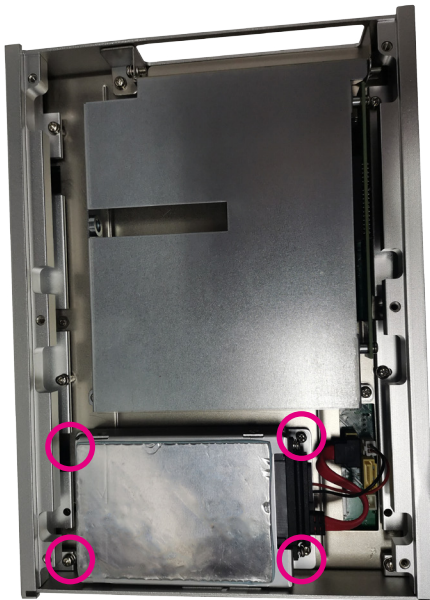


2. Insert the SIM card into the slot. Then insert the SIM card cover back to its original position.



Installing an internal SATA Storage Drive

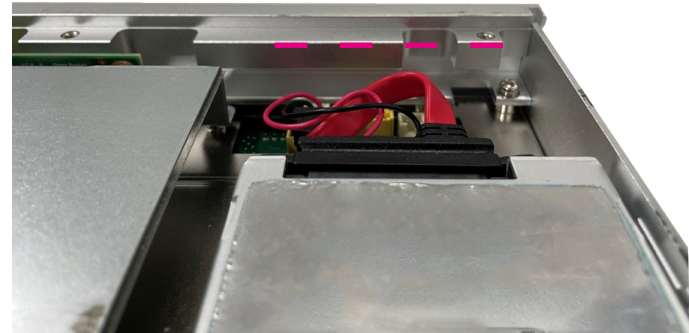
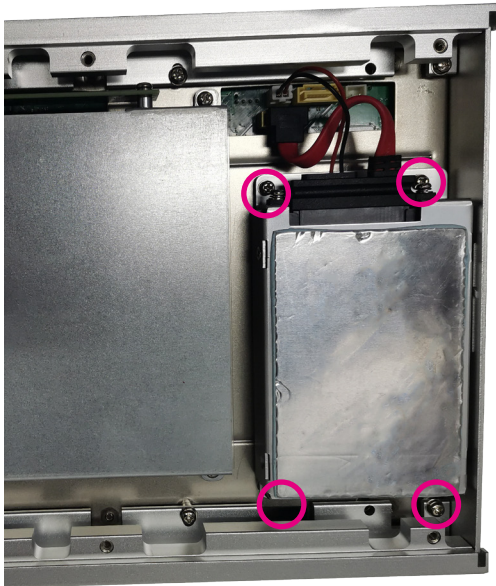
1. With the bottom cover of the chassis removed, unscrew the screws securing the storage bracket and lift it up.



2. Place the SSD into the HDD bracket and secure the SSD With screws.

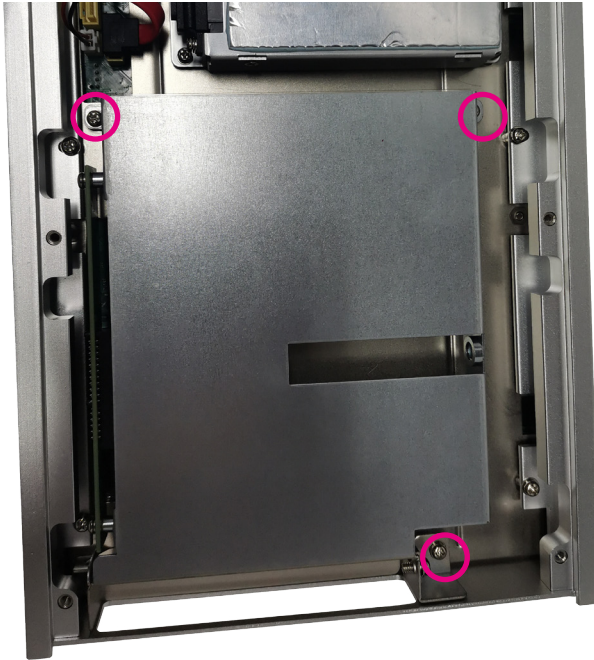


3. Connect the SATA connector to the SSD and secure the SSD bracket back to its original location.
4. Before reinstalling the bottom cover of the chassis, please rearrange the cables so that they are inside the chassis, as shown by the dotted line below.



Installing a PCIe/PCI Expansion card

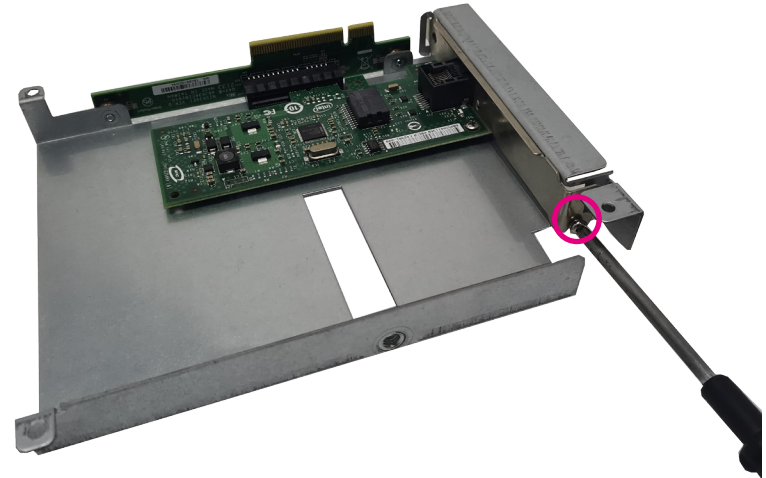
1. Remove the chassis bottom cover.



Note:

NISE3600CE is equipped with one PCIe x 4 expansion slot.
NISE3600CE2 is equipped with two PCIe x 4 expansion slot.
NISE3600CP2 is equipped with two PCI expansion slot.

2. Remove screw on the expansion cover.
3. Insert PCIe/PCI expansion card and fasten the screw.
4. Secure the riser bracket to its original position.



Note:

Example shown is NISE 3600CE

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NISE 3600C. 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 NexAIoT website at www.nexaiot.com.

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 items such as:

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

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

When to Configure the BIOS

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

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


Default Configuration

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











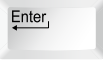
Entering Setup

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

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

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

Legends


Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub-menu or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	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

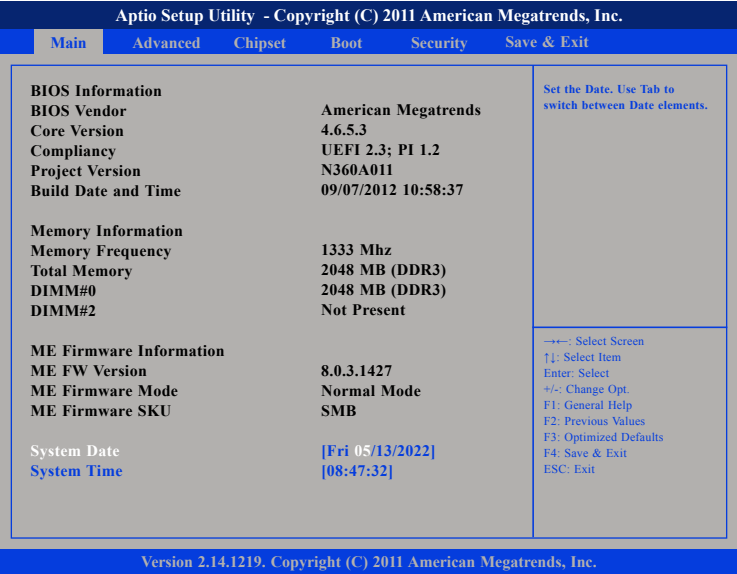
When “▶” appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press  .

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  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 2005 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.

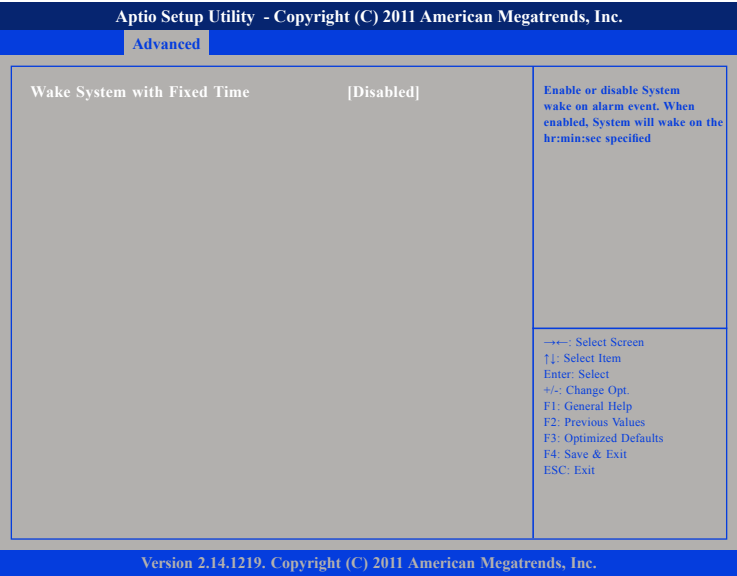
ACPI Sleep State

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).



RTC Wake Settings

This section is used to configure RTC Wake settings.



Wake System with Fixed Time

Enables or disables system wake on alarm event. When enabled, system will wake on the hr::min::sec specified.

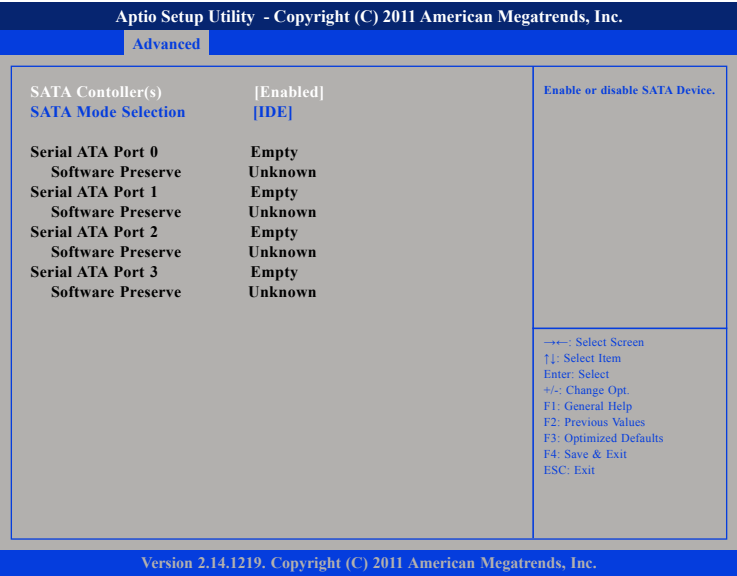
CPU Configuration

This section is used to configure the CPU.



SATA Configuration

This section is used to configure the SATA drives.



SATA Controller(s)

Enables or disables SATA device.

SATA Mode Selection

Determines how SATA controller(s) operate.

SATA Mode

IDE Mode This option configures the Serial ATA drives as Parallel ATA storage devices.

AHCI Mode This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

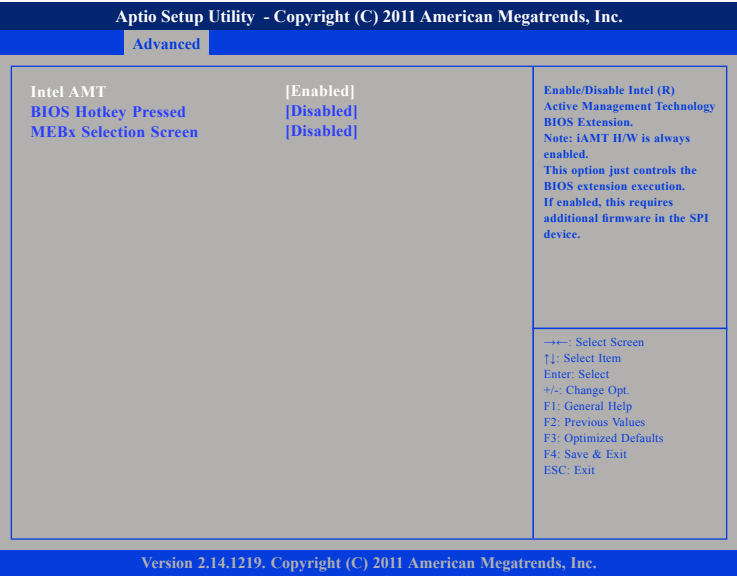
RAID Mode This option allows you to create RAID or Intel Matrix Storage configuration on Serial ATA devices.

Serial ATA Port 0 to Serial ATA Port 3

Displays information on the SATA devices detected.

AMT Configuration

This section is used to configure the AMT function.



Intel AMT

Enables or disables Intel (R) Active Management Technology BIOS Extension. Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.

BIOS Watchdog Timer

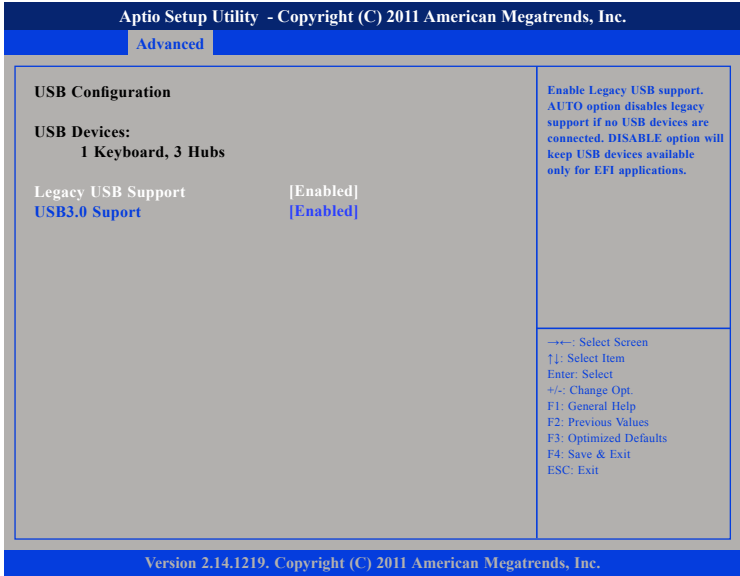
Selects the time interval of the BIOS Watchdog Timer.

MEBx Selection Screen

Enables or disables MEBx selection screen.

USB Configuration

This section is used to configure the USB.



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

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 0 to Serial Port 5 Configuration

Configuration settings for serial port 0 to port 5.

Serial Port 0 Configuration

This section is used to configure serial port 0.



Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate.
Select 115200 bps or 921600 bps.



Serial Port 1 Configuration

This section is used to configure serial port 1.

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

Advanced

Serial Port 1 Configuration

Serial Port

[Enabled]

Device Settings

I0=2F8h; IRQ=3;

Change Settings

[I0=2F8h; IRQ=3;]

Onboard Serial Port 1 Mode

[RS232]

Onboard Serial Port Max Baud Rate

[115200 bps]

Enable or Disable Serial Port (COM)

→←: Select Screen

↑↓: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC: Exit

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

Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate. Select 115200 bps or 921600 bps.

Serial Port 2 Configuration

This section is used to configure serial port 2.

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

Advanced

Serial Port 2 Configuration

Serial Port

[Enabled]

Device Settings

I0=3E8h; IRQ=10;

Change Settings

[I0=3E8h; IRQ=10;]

Onboard Serial Port Max Baud Rate

[115200 bps]

Enable or Disable Serial Port (COM)

→←: Select Screen

↑↓: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC: Exit

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

Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

Onboard Serial Port 2 Mode

Change the Serial Port 2 mode.
Select RS232 or RS422 or RS485.

Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate.
Select 115200 bps or 921600 bps.





Serial Port 3 Configuration

This section is used to configure serial port 3.

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

Advanced

Serial Port 3 Configuration

Serial Port
Device Settings

[Enabled]
IO=2E8h; IRQ=11;

Change Settings

[IO=2E8h; IRQ=11;]
Onboard Serial Port Max Baud Rate [115200 bps]

Enable or Disable Serial Port (COM)

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

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

Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate. Select 115200 bps or 921600 bps.

Serial Port 4 Configuration

This section is used to configure serial port 4.

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

Advanced

Serial Port 4 Configuration

Serial Port
Device Settings

[Enabled]
IO=2F0h; IRQ=6;

Change Settings

[IO=2F0h; IRQ=6;]
Onboard Serial Port Max Baud Rate [115200 bps]

Enable or Disable Serial Port (COM)

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

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

Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

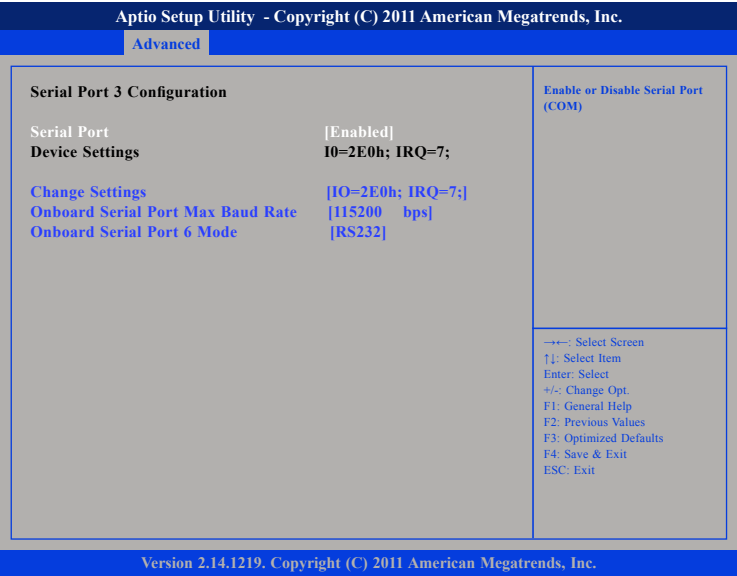
Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate.
Select 115200 bps or 921600 bps.



Serial Port 5 Configuration

This section is used to configure serial port 3.



Serial Port

Enables or disables the serial port.

Change Settings

Select an optimal setting for Super IO device.

Onboard Serial Port Max Baud Rate

Change the Serial Port Max Baud Rate. Select 115200 bps or 921600 bps.

Onboard Serial Port 6 Mode

Change the Serial Port 6 mode. Select RS232 or GPS mode.

Smart Fan Function

This section is used to configure the fan's function

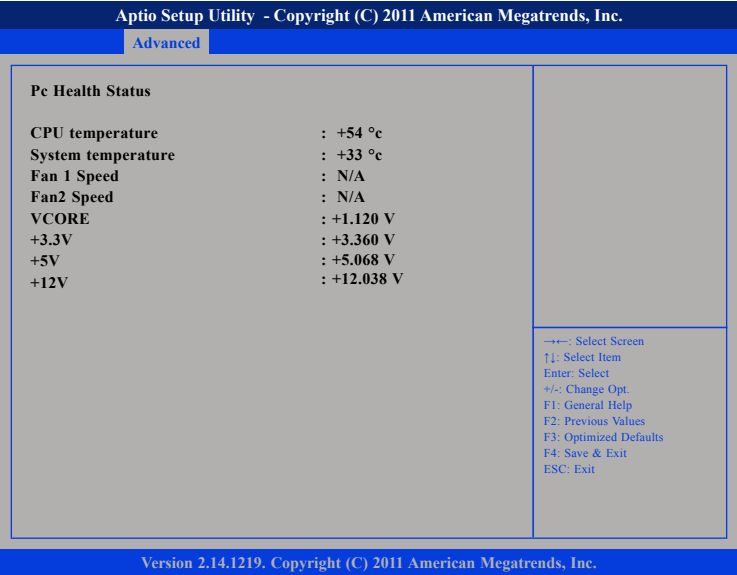


Smart Fan Mode

Selects the mode of the fan, the options are Full on Mode, Automatic Mode and Disable Mode.

Hardware Monitor

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



CPU temperature

Detects and displays the current CPU temperature.

System temperature

Detects and displays the current system temperature.

Fan1 and Fan2 Speed

Detects and displays the current fan1 and fan2 speed.

VCore

Detects and displays the Vcore CPU voltage.

+3.3V

Detects and displays 3.3V voltage.

+5V

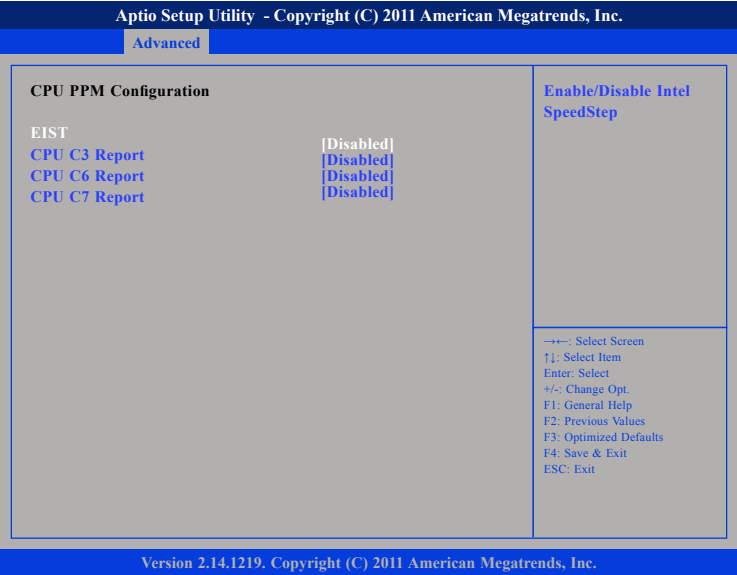
Detects and displays 5V voltage.

+12V

Detects and displays 12V voltage.

CPU PPM Configuration

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



EIST

Enables or disables Intel® SpeedStep.

CPU C3 Report

Enables or disables C3 report to the operating system.

CPU C6 Report

Enables or disables C6 report to the operating system.

CPU C7 Report

Enables or disables C7 report to the operating system.



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.



PCH-IO Configuration

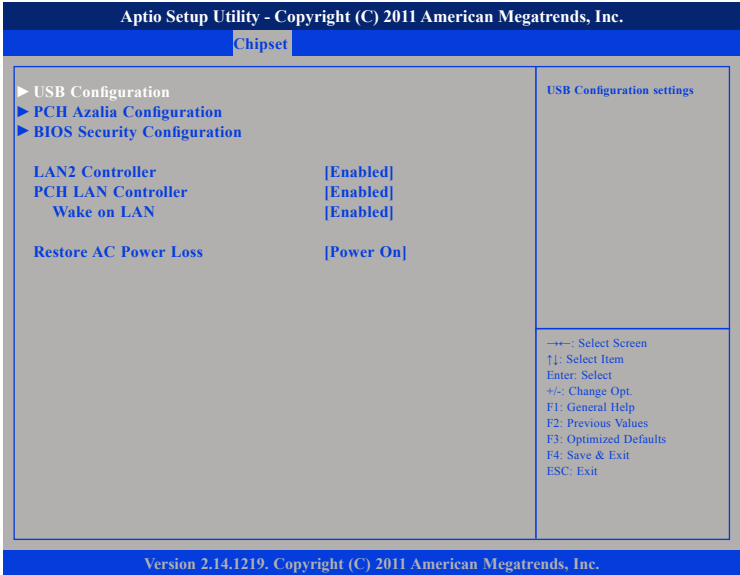
Enters the PCH-IO Configuration submenu.

System Agent (SA) Configuration

System Agent (SA) parameters.

PCH-IO Configuration

This section is used to configure PCH-IO configuration.



LAN2 Controller

Enables or disables the onboard controller for LAN2.

PCH LAN Controller

Enables or disables onboard NIC.

Wake on LAN

Enables or disables integrated LAN to wake the system.

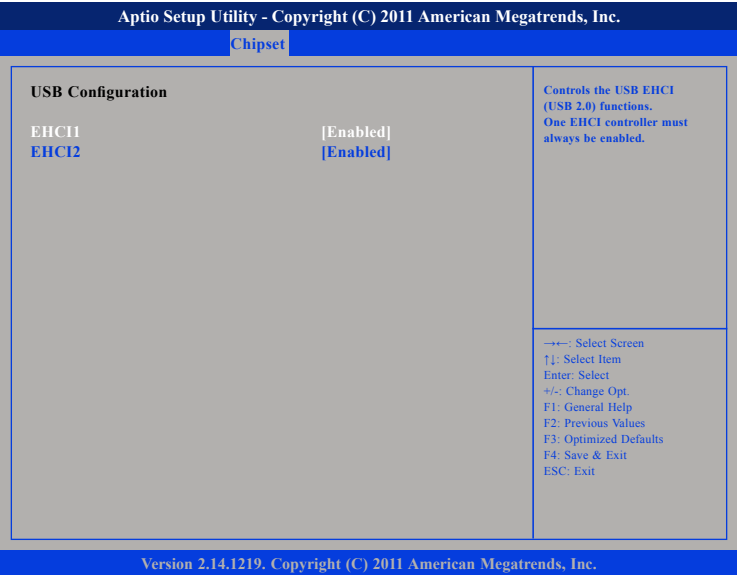
Restore AC Power Loss

Select AC power state when power is re-applied after a power failure.



USB Configuration

This section is used to configure USB devices.



EHCI
Control the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

PCH Azalia Configuration



Azalia
Control detection of the Azalia device.
Disabled Azalia will be unconditionally disabled.
Enabled Azalia will be unconditionally enabled.

BIOS Security Configuration



RTC RAM Lock

Enables or disables bytes 38h-3Fh in the upper and lower 128-bytes bank of RTC RAM lockdown.

System Agent (SA) Configuration

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



PCH-IO Configuration

Enters the PCH-IO Configuration submenu.

System Agent (SA) Configuration

System Agent (SA) parameters.

Graphics Configuration



Graphics Configuration

Configures the graphics settings.

NB PCIe Configuration

Configures the NB PCI Express settings.



Primary Display

Select which of IGFX/PEG/PCI graphics device should be primary display or select SG for switchable Gfx.

Internal Graphics

Keep IGD enabled based on the setup.

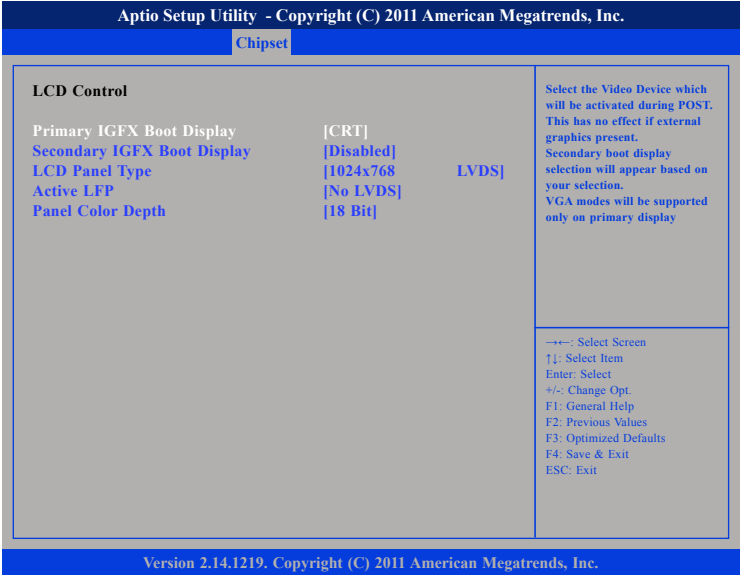
DVMT Total Gfx Mem

Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

LCD Control

Select DVM5.0 Total Graphic Memory size used by the Internal Graphics Device. (128M, 256M or MAX)

LCD Control



Primary IGFX Boot Display

Select the video device which will be activated during POST. Has no effect if external graphics is present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

Secondary IGFX Boot Display

Select the secondary display

LCD Panel Type

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup items.

Active LFP

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

Panel Color Depth

Select the LFP panel color depth.

NB PCIe Configuration



PEG0 – Gen X

Configure PEG0 B0:D1:F0 Gen1-Gen3

PEG1– Gen X

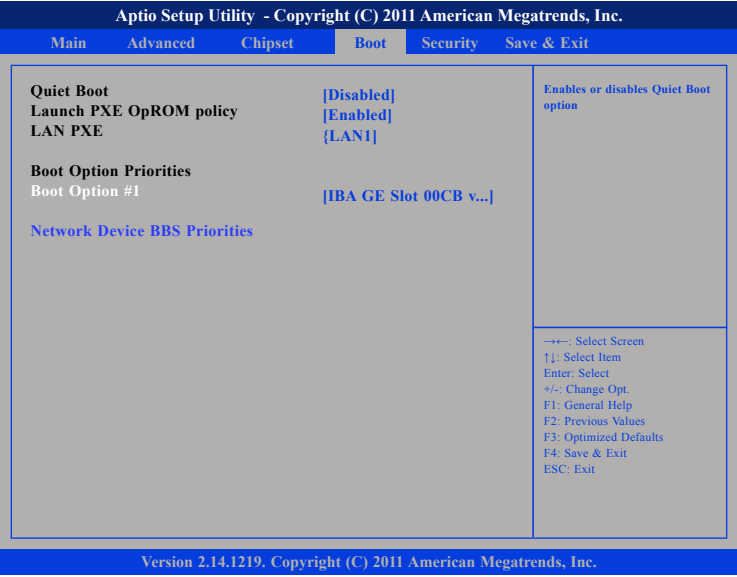
Configure PEG1 B0:D1:F1 Gen1-Gen3

Always Enable PEG

Enables or disables the PEG



Boot



Quiet Boot

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

Launch PXE OpROM Policy

Controls the execution of UEFI and legacy PXE OpROM.

Boot Option #1

Selects the boot sequence of the hard drives.

Security



Administrator Password

Sets the administrator password.

User Password

Sets the user password.

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

Discard Changes and Reset

To exit the Setup utility and reset 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.

Restore Defaults

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

APPENDIX A: GPIO PROGRAMMING GUIDE

GPIO (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPIO pins in the NISE3600C series. The pin definition is shown in the following table:

First Set A00h to 0x06

Pin No.	GPIO mode	PowerOn Default	Address	Pin No.	GPIO mode	Address
1	VCC	-	-	2	GND	-
3	GPO0	Low	A02h (Bit4)	4	GPIO	A02h (Bit0)
5	GPO1	Low	A02h (Bit5)	6	GPIO	A02h (Bit1)
7	GPO2	Low	A02h (Bit6)	8	GPIO	A02h (Bit2)
9	GPO3	Low	A02h (Bit7)	10	GPIO	A02h (Bit3)

DIO – GPIO Connector

First Set A00h to 0x00

Pin No.	GPIO mode	PowerOn Default	Address
LED1	GPO	High	A02h (Bit2)
LED2	GPO	High	A02h (Bit1)

GPIO_CON – GPO LED

The bit is Set/Clear indicated output High/Low

APPENDIX B: WATCHDOG PROGRAMMING GUIDE

NISE 3600C features a watchdog timer that resets the CPU or generates an interrupt if the processor stops operating for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

NISE3600C Watchdog Programming Guide

```
#define SUPERIO_PORT 0x2E
#define WDT_SET      0xF8
#define WDT_VALUE    0xF9

void main(void)
{
    # Enter SuperIO Configuration
    outportb(SUPERIO_PORT, 0x87);
    outportb(SUPERIO_PORT, 0x87);

    # Set LDN
    outportb(SUPERIO_PORT, 0x07);
    outportb(SUPERIO_PORT+1, 0x08);

    # Set WDT setting
    outportb(SUPERIO_PORT, WDT_SET);
    outportb(SUPERIO_PORT+1, 0x00);    # Use the second
                                       # Use the minute, change value to 0x08

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