



NEXCOM International Co., Ltd.

Intelligent Digital Security
Intelligent Surveillance Solution
NViS 2280
User Manual

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Preface

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Acknowledgements

NViS 2280 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

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

Declaration of Conformity

FCC

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

CE

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

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update



NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2002/95/EU, to be your trusted green partner and to protect our environment.

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

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force in to implement the

introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

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

How to recognize NEXCOM RoHS Products?

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

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

Warranty and RMA

NEXCOM Warranty Period

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

NEXCOM Return Merchandise Authorization (RMA)

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

and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as “Out of Warranty.”

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

Repair Service Charges for Out-of-Warranty Products

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

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

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

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

Warnings

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

Cautions

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

Safety Information

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

- Read all instructions carefully.
 - Do not place the unit on an unstable surface, cart, or stand.
 - Follow all warnings and cautions in this manual.
 - When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
 - The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
 - The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

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

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

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

Using your fingers can disconnect most of the connections. It is

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

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.

- e. The equipment has been dropped and damaged.
- f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

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

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

Technical Support and Assistance

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

- A complete description of the problem
- The exact wordings of the error messages

Warning!

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

Conventions Used in this Manual



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



Caution: Information to avoid damaging components or losing data.



Note: Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NViS 2280 package that you received is complete. Your package should have all the items listed in the following table.

Item	Description	Quantity
1	NViS 2280 system unit	1
2	TERMINAL BLOCKS 2P Connector	1
3	TERMINAL BLOCKS 3P Connector	1
4	Screws	
	- Flat Head	8
	- I Head	3
5	CD containing hardware drivers	1
6	Power Cord	1

Ordering Information

The following information below provides ordering information for NVIS 2280.

NVIS 2280P4 (P/N: 10C0228000X0) RoHS Compliant

PoE Ready, Mobile NVR with Intel® Atom™ D2550 processor

Optional Accessories

- Anti-vibration kit (P/N: 88C00228000X0)
- 9~36V power ignition module (NISKIG120)
(P/N: 10JKIG12000X0)
- VMD 1000-B 7-inch WVGA LCD with touch screen vehicle display
(P/N: 10VD0100000X0)

Chapter 1: Product Introduction

Overview



Key Features

- Built-in Intel® Atom™ D2550 Dual Core™ 1.8GHz Processor
- Internal wireless communication (3.5G/WLAN/BT/GPS)
- Dual local display by VGA+HDMI
- 9~36V DC wide range power input
- 4 -Port Gigabit PoE
- Dual Intel® 82583V Gigabit Ethernet
- Support 1x isolated RS-232 Port
- Dual 2.5" hot-swappable HDD trays
- Optional power ignition
- Optional In-Vehicle Display

Hardware Specifications

Main Board

- On-board Intel® Atom™ D2550 processor Dual Core 1.8GHz

Main Memory

- 2x DDR3 1066MHz SO-DIMM socket, up to 4G

Platform Control Hub

- Intel® ICH10R

I/O Interface-Front

- Power on/ off switch
- HDD access/power/LAN status LEDs
- 2x USB2.0 ports
- 1x SIM card holder
- 1x Speaker-out and 1x Mic-in
- 4-port Gigabit PoE (IEEE802.3af-16.8W per port)

I/O Interface-Rear

- 2x Intel® 82583V GbE ports
- 2x USB2.0 ports
- 1x DB15 VGA port
- 1x HDMI
- 1x RS232/422/485 with isolated 3kV (COM1)

- 1x RS232 (COM2)
- 1x eSATA
- Reserved for 5 optional antenna holes for GPS/Wi- Fi/WWAN
- Built-in G-sensor 3-ASIX digital accelerometer (ADXL345)
- 12V (2A) output for CCTV power source
- 8x GPIO (4x IN, 4x OUT)
- 1x Power Ignition
- 1x Extended in-Vehicle Display for VMD1000

Communication

- WWAN: through Mini-PCIe for optional 3G/3.5G/GPRS/GSM module
- WLAN: through Mini-PCIe for optional Wi-Fi module
- PAN: through internal COM for optional BT module
- GPS: through internal COM for GPS module
- PoE: for IP camera module

Storage

- 2x 2.5" HDD driver bay with hot-swappable
- 1x SATA DOM for OS (Optional)

Power Requirements

- On-board DC to DC power support from 9V to 36V DC
- Optional power adapter

Dimensions

- 235mm(W) x 268mm(D) x 101mm(H)

Environment

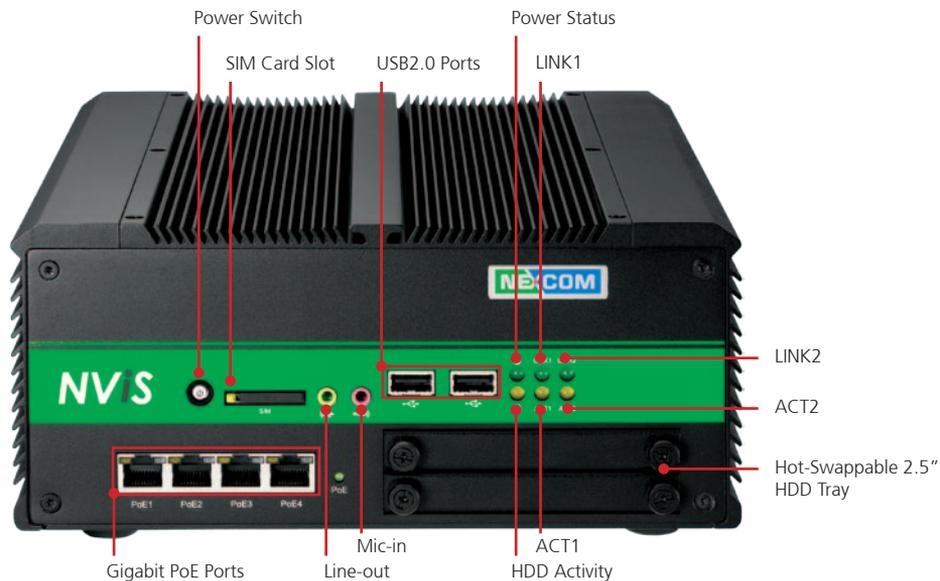
- Operating temperature:
- Ambient with air flow: -20°C to 60°C
- Storage temperature: -40°C to 80°C
- Relative humidity: 10% to 90% (non-condensing)
- Vibration: STD-810F-514.5 C3- Composite wheeled vehicle (SSD with vibration kit)

Certifications

- CE approval
- FCC Class A
- e13 mark

Knowing Your NViS 2280

Front Panel



Power Switch

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

SIM Card Slot

Used to insert a SIM card.

Line-out

Line-out jack to connect speakers or headphones.

Mic-in

Mic-in jack to connect microphones.

USB2.0 Ports

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

Gigabit PoE Ports

Four Gigabit PoE ports to connect the system to Powered Device (PD) compliant devices, such as IP cameras.

Hot-Swappable 2.5" HDD Tray

Two 2.5" hot-swappable hard drive trays to install hard drives on.

Power Status

Indicates the system's power status.

HDD Activity

Indicates the hard drives' activity.

LINK 1

Indicates the link status of LAN1 located on the rear panel.

LINK 2

Indicates the link status of LAN2 located on the rear panel.

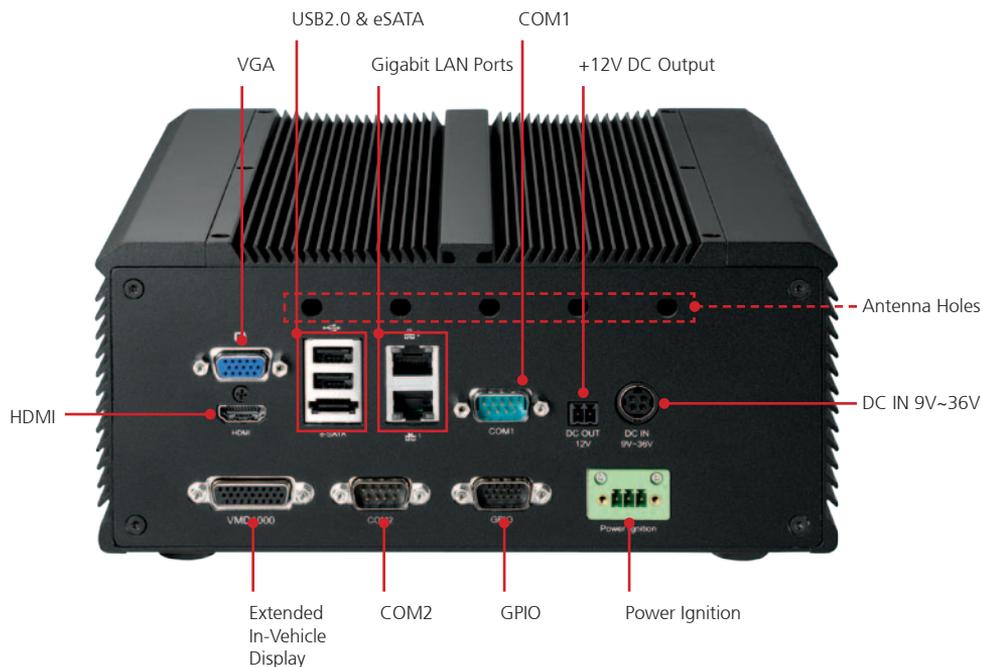
ACT1

Indicates the network activity of LAN1 connection located on the rear panel.

ACT2

Indicates the network activity of LAN2 connection located on the rear panel.

Front Rear



VGA

Used to connect an analog VGA monitor.

HDMI

Used to connect a high-definition display.

USB2.0 Ports

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

eSATA

Used to connect eSATA devices.

Gigabit LAN Ports

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

COM1 RS232/422/485

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

+12V DC Output

Provides 12V of DC power to devices such as IP cameras or in-vehicle displays.

DC In 9V~36V

Used to plug a DC power cord.

Extended In-Vehicle Display

Used to connect to VMD1000 Vehicle Mount Display.

COM2 RS232

Used to connect RS232 compatible devices.

GPIO

The GPIO connector supports 4 digital input and 4 digital output.

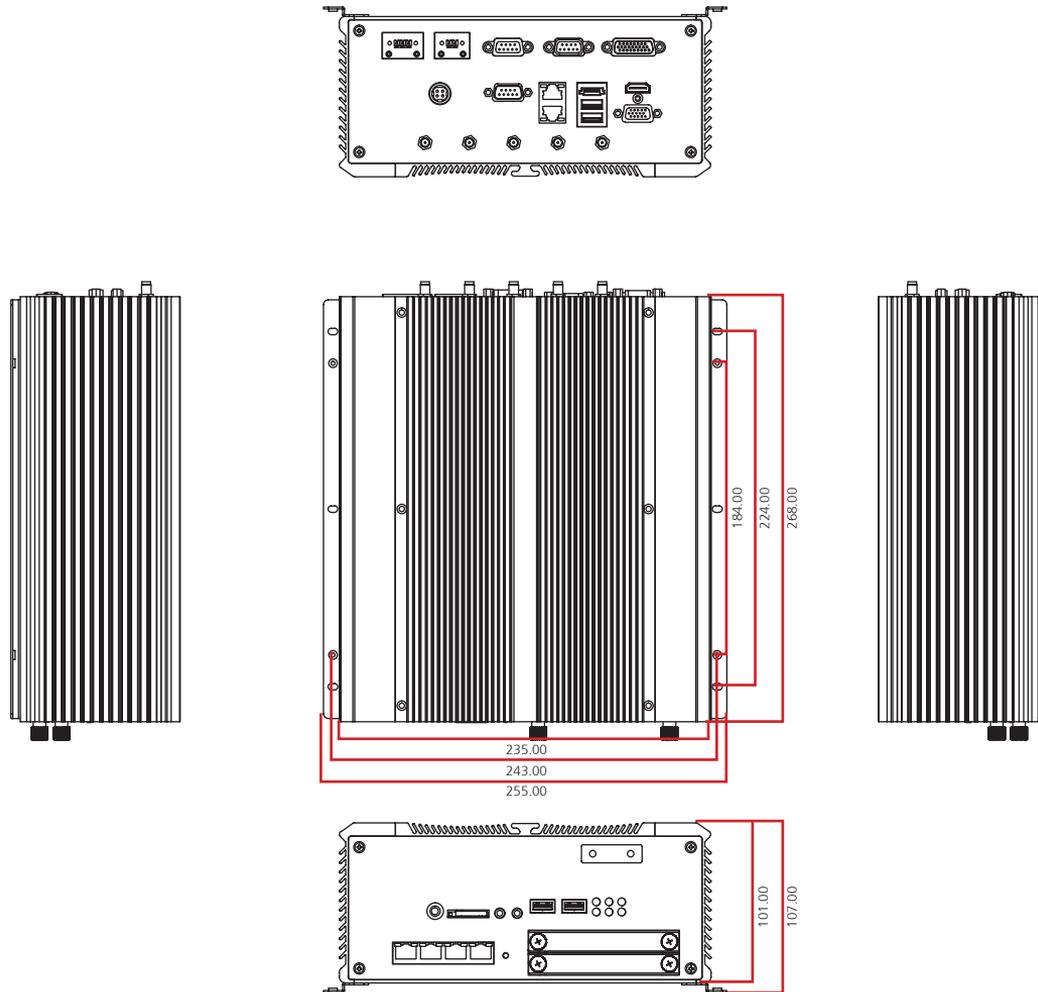
Power Ignition

Used to connect to power ignition module (NISKIG120).

Antenna Holes

Empty antenna holes reserved for WWAN/WLAN/GPS external antennas.

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NVIS 2280 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:

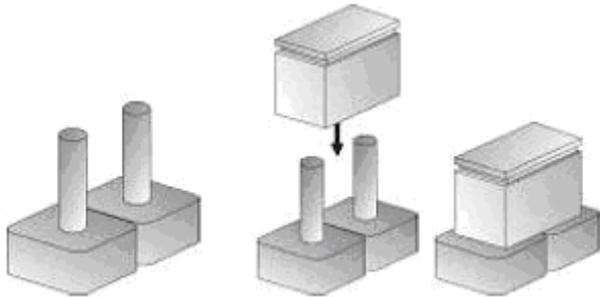
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal 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

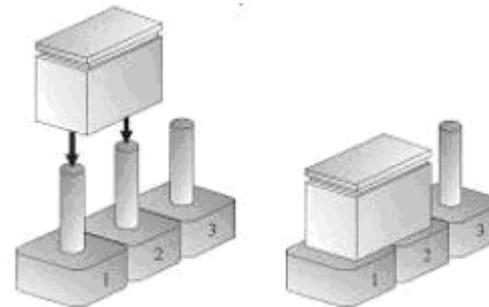
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

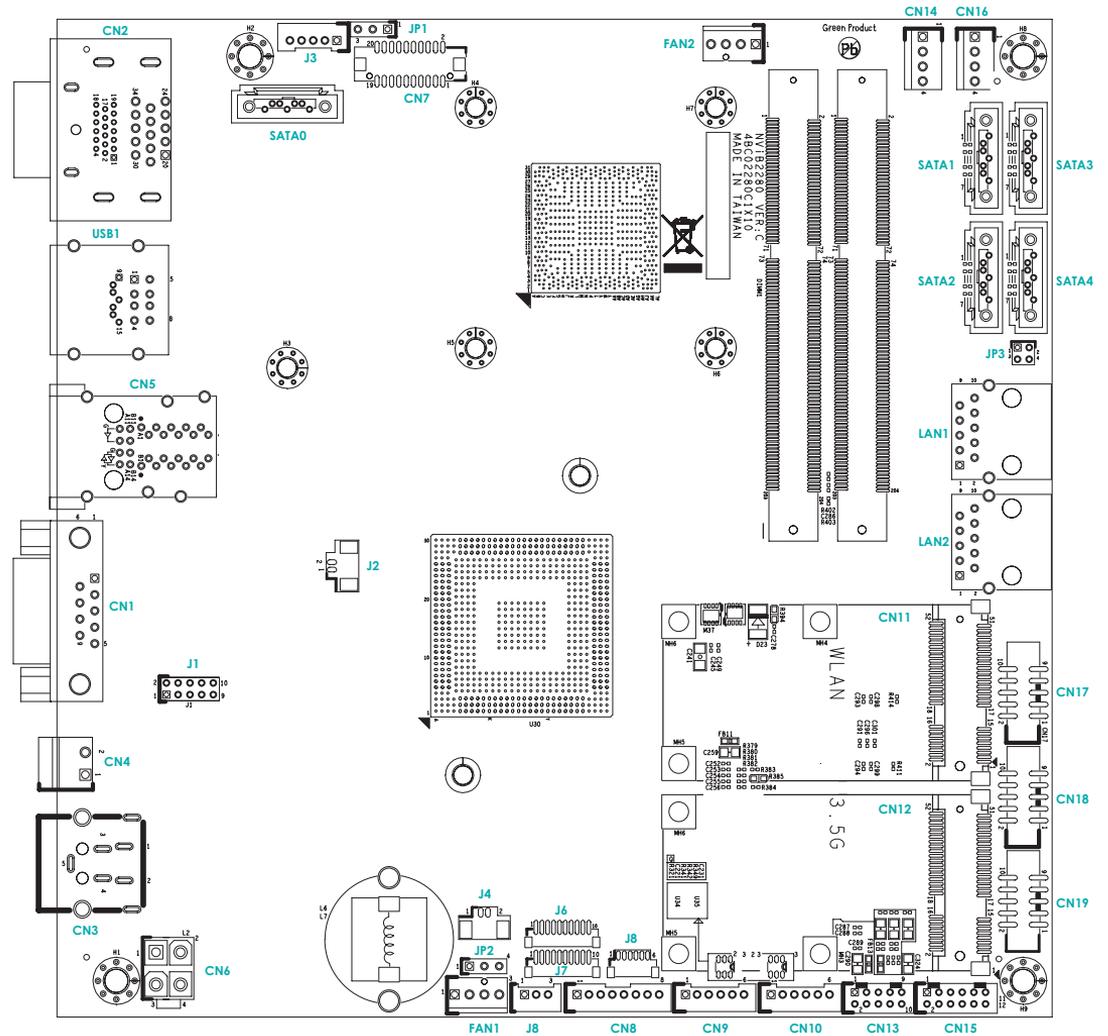


Three-Pin Jumpers: Pins 1 and 2 Are Short



Locations of the Jumpers and Connectors

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



Jumpers

CMOS Clear Select

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

Connector location: JP2



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

1-2 On: default

Pin	Definition
1	NC
2	I_RTCRST#
3	GND

LVDS Power Select

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

Connector location: JP1



Pin	Definition
1	VCC3
2	VCC_SEL
3	VCC5

2-3 On: default

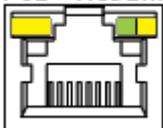
Connector Pin Definitions

External I/O Interfaces – Front Panel

PoE Ports (PoE1 – PoE4)

Connector type: RJ45 port with LEDs

PoE Act/Link



Act/Link	Status
Steady green	1000Mbps connection detected
Flashing green	Transmitting at 1000Mbps
Steady yellow	10/100Mbps connection detected
Flashing yellow	Transmitting at 10/100Mbps
Off	No connection

PoE	Status
Steady yellow	Powered Device (PD) compliant device detected.
Off	No PD compliant device detected

Pin	Definition
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

Line-out Jack

Connector type: 3.5mm TRS



Pin	Definition
1	GND
2	SPK_Out_R
3	NC
4	NC
5	SPK_Out_L

Mic-in Jack

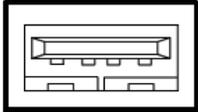
Connector type: 3.5mm TRS



Pin	Definition
1	AU_GND
2	MIC_OUT-L
3	AU_GND
4	MIC_JD1
5	MIC_OUT-R

USB Ports (USB1 – USB2)

Connector type: USB port



Pin	Definition
1	VCC5
2	DATA_N
3	DATA_P
4	GND

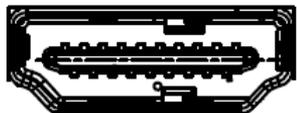
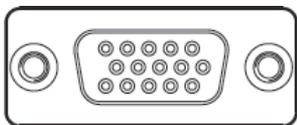
External I/O Interfaces – Rear Panel

VGA and HDMI Ports

Connector type: DB-15 port, 15-pin D-Sub (VGA)

HDMI port

Connector location: CN2A (VGA) and CN2B (HDMI)



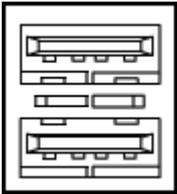
Pin	Definition	Pin	Definition
1	HDMI_DATA2_P	2	GND
3	HDMI_DATA2_N	4	HDMI_DATA1_P
5	GND	6	HDMI_DATA1_N
7	HDMI_DATA0_P	8	GND
9	HDMI_DATA0_N	10	HDMI_CLK_P
11	GND	12	HDMI_CLK_N
13	NC	14	NC
15	HDMI_CTRL_CLK	16	HDMI_CTRL_DATA
17	GND	18	HDMI_VCC5
19	HDMI_HPD_R	20	RED_VGA

21	GREEN_VGA	22	BLUE_VGA
23	NC	24	GND
25	GND	26	GND
27	GND	28	VCC5
29	GND	30	NC
31	DDCDATA_VGA	32	HSYNC_VGA
33	VSYNC_VGA	34	DDCCCLK_VGA
MH1	REAR_MTH_GND	MH2	REAR_MTH_GND
MH3	REAR_MTH_GND	MH4	REAR_MTH_GND
MH5	REAR_MTH_GND	MH6	REAR_MTH_GND

USB Ports

Connector type: Dual USB port

Connector location: USB1A



Pin	Definition	Pin	Definition
1	P5V_USB_P45	2	USB_4N_L
3	USB_4P_L	4	GND
5	P5V_USB_P45	6	USB_5N_L
7	USB_5P_L	8	GND
MH1	REAR_MTH_GND	MH2	GND
MH3	GND	MH4	GND

eSATA Port

Connector type: eSATA port

Connector location: USB1B

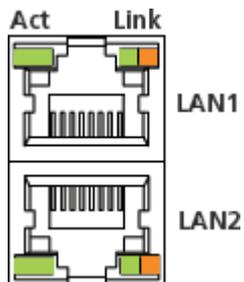


Pin	Definition	Pin	Definition
9	GND	10	SATA_RXP5
11	SATA_RXN5	12	GND
13	SATA_TXN5	14	SATA_TXP5
15	GND		

LAN Ports

Connector type: RJ45 with LEDs

Connector location: CN5A (LAN1) and CNA5B (LAN2)



Act	Status
Flashing green	Data activity
Off	No activity

Link	Status
Steady green	1000Mbps connection detected
Steady orange	100Mbps connection detected
Off (with network cable plugged)	10Mbps connection detected
Off (No network cable plugged)	No link

LAN1

Pin	Definition	Pin	Definition
A1	LAN1_MDI0P	A2	LAN1_MDI0N
A3	LAN1_MDI1P	A4	LAN1_MDI1N
A5	LAN1_MDI2P	A6	LAN1_MDI2N
A7	LAN1_MDI3P	A8	LAN1_MDI3N
A9	LAN1_1V9	A10	GND
A11	LAN1_ACT#	A12	3VSB
A13	L1_LED0	A14	L1_LED2
MH1	REAR_MTH_GND	MH2	REAR_MTH_GND
MH3	REAR_MTH_GND		

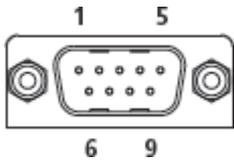
LAN2

Pin	Definition	Pin	Definition
A1	LAN2_MDI0P	A2	LAN2_MDI0N
A3	LAN2_MDI1P	A4	LAN2_MDI1N
A5	LAN2_MDI2P	A6	LAN2_MDI2N
A7	LAN2_MDI3P	A8	LAN2_MDI3N
A9	LAN2_1V9	A10	GND
A11	LAN2_ACT#	A12	3VSB
A13	L2_LED0	A14	L2_LED2
MH1	REAR_MTH_GND	MH2	REAR_MTH_GND
MH3	REAR_MTH_GND		

COM1 Serial Port

Connector type: DB-9 port

Connector location: CN1



Pin	Definition	Pin	Definition
1	SP1_DCD	2	SP1_RXD
3	SP1_TXD	4	SP1_DTR
5	GND	6	SP1_DSR
7	SP1_RTS	8	SP1_CTS
9	SP1_RI		

+12V DC Output

Connector type: 2-pin switch

Connector location: CN4



Pin	Definition
1	+V
2	-V

DC In 9V~36V

Connector type: 4-pin DC Jack

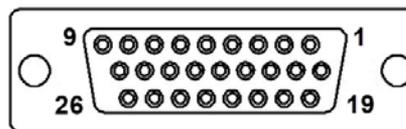
Connector location: CN3



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

Extended In-Vehicle Display

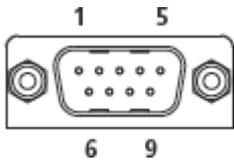
Connector type: DB-26



Pin	Definition	Pin	Definition
1	Panel_EN	2	Panel_control
3	VDD	4	VDD
5	LCDD09(OUT3)	6	LCDD01(OUT0)
7	LCDD08(OUT3#)	8	LCDD00(OUT0#)
9	LCDD_GND	10	LCDD_GND
11	LCDD07(CLK)	12	LCDD03(OUT1)
13	LCDD06(CLK#)	14	LCDD02(OUT1#)
15	LVDS_GND	16	LCDD_GND
17	LCDD05(OUT2)	18	Power on push button
19	LCDD04(OUT2#)	20	Panel_backlight
21	LCDD_GND	22	Panel-Gnd
23	USB_0#	24	Contact_DET#
25	USB_0	26	USB_VCC

COM2 Serial Port

Connector type: DB-9 port

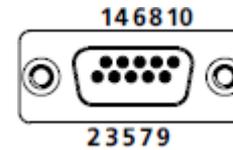


Pin	Definition	Pin	Definition
1	SP2_DCD	2	SP2_RXD
3	SP2_TXD	4	SP2_DTR
5	GND	6	SP2_DSR
7	SP2_RTS	8	SP2_CTS
9	SP2_RI		

GPIO Connector

(4 digital input and 4 digital output)

Connector type: DB-10 port



Pin	Definition	Pin	Definition
1	VCC5	2	GND
3	SIO_GPO24	4	SIO_GPI20
5	SIO_GPO25	6	SIO_GPI21
7	SIO_GPO26	8	SIO_GPI22
9	SIO_GPO27	10	SIO_GPI23

Power Ignition

Connector type: 3-pin switch

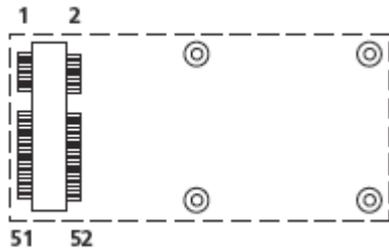


Pin	Definition	Pin	Definition
1	PWRBTN#	2	GND
3	SLP_S3#		

Internal Connectors

Mini-PCIe Slot 1 (3.5G)

Connector location: CN12

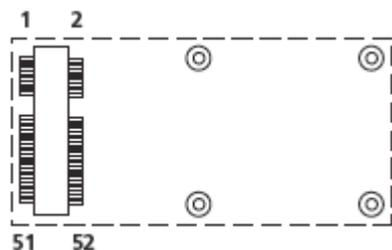


Pin	Definition	Pin	Definition
1	I_WAKE#	2	+3VSB_MINI1
3	NC	4	GND
5	NC	6	1V5
7	MINICARD1CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DAT
11	CLK_PCIE4_N	12	UIM_CLK
13	CLK_PCIE4_P	14	UIM_RST
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD1DIS#
21	GND	22	PLTRST#_A
23	PE_RX4_N	24	+3VSB_MINI1
25	PE_RX4_P	26	GND

27	GND	28	1V5
29	GND	30	SMB_CLK
31	PE_TX4_N	32	SMB_DATA
33	PE_TX4_P	34	GND
35	GND	36	USB_ON_L
37	GND	38	USB_OP_L
39	+3VSB_MINI1	40	GND
41	+3VSB_MINI1	42	NC
43	GND	44	LED_WLANA_N
45	NC	46	NC
47	NC	48	1V5
49	NC	50	GND
51	NC	52	+3VSB_MINI1

Mini-PCIe Slot 2 (WLAN)

Connector location: CN11



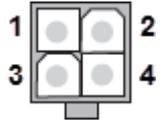
Pin	Definition	Pin	Definition
1	I_WAKE#	2	+3VSB_MINI2
3	NC	4	GND
5	NC	6	1V5
7	MINICARD2CLKREQ#	8	NC
9	GND	10	NC
11	CLK_PCIE5_N	12	NC
13	CLK_PCIE5_P	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD2DIS#
21	GND	22	I_SLOTPLTRST#
23	PE_RX5_N	24	+3VSB_MINI2
25	PE_RX5_P	26	GND

27	GND	28	1V5
29	GND	30	SMB_CLK
31	PE_TX5_N	32	SMB_DATA
33	PE_TX5_P	34	GND
35	GND	36	USB_1N_L
37	GND	38	USB_1P_L
39	+3VSB_MINI2	40	GND
41	+3VSB_MINI2	42	NC
43	GND	44	LED_2WLANA_N
45	NC	46	NC
47	NC	48	1V5
49	NC	50	GND
51	NC	52	+3VSB_MINI2

ATX Power Output Connector

Connector type: 2x2 Aux power connector

Connector location: CN6



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

SIM Card and Audio Connector

Connector type: 1x12 12-pin header, 2.0mm pitch

Connector location: CN15



Pin	Definition	Pin	Definition
01	LOUT_JD	02	FRONT_OUT_L
03	MIC_1_L	04	FRONT_OUT_R
05	MIC_1_R	06	MIC_1_L
07	SLP_S3#	08	GND
09	UIM_CLK	10	UIM_RST
11	UIM_PWR	12	UIM_DAT

Battery Connector

Connector type: 1x2 JST, 2-pin header, 1.25mm pitch

Connector location: J4

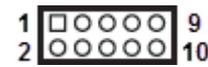


Pin	Definition	Pin	Definition
1	GND	2	BAT_C

Power/HDD/LAN LEDs and Power Button Connectors

Connector type: 2x5 10-pin header, 2.0mm pitch

Connector location: CN13



Pin	Definition	Pin	Definition
01	VCC3_A	02	VCC3_S
03	FRONT_PWRLED#	04	FRONT_HDDLED#
05	LAN2_LINK#	06	LAN1_LINK#
07	LED2_ACTLED	08	LED1_ACTLED
09	GND	10	PWRBTN#

USB2/3 JST Connector

Connector type: 1x8 8-pin header, 2.0mm pitch

Connector location: CN8



Pin	Definition	Pin	Definition
1	VCC5	2	USB_2N
3	USB_2P	4	GND
5	VCC5	6	USB_3N
7	USB_3P	8	GND

Bluetooth Connector

Connector type: 1x10 10-pin header, 1.0mm pitch

Connector location: J6



Pin	Definition	Pin	Definition
1	GND	2	NC
3	BT3.3V	4	NC
5	BT_AUDIO_EN	6	NC
7	NC	8	USB_6N_L
9	USB_6P_L	10	GND

GPS Connector

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

Connector location: J8

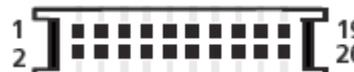


Pin	Definition	Pin	Definition
1	VCC3_A	2	GPS_LED#
3	TXD_C5	4	RXD_C5
5	GND	6	VCC3_S

LVDS Connector

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

Connector location: CN7

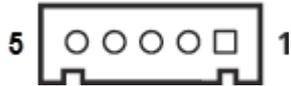


Pin	Definition	Pin	Definition
1	M_LVDSDDCLK	2	M_LVDSDDCDATA
3	VCC_LCD	4	LVDS_CH_TX0_P
5	LVDS_CH_TX3_P	6	LVDS_CH_TX0_N
7	LVDS_CH_TX3_N	8	VCC_LCD
9	GND	10	LVDS_CH_TX1_P
11	LVDS_CH_CLK_P	12	LVDS_CH_TX1_N
13	LVDS_CH_CLK_N	14	GND
15	GND	16	V_INV(+12V)
17	LVDS_CH_TX2_P	18	V_INV (+12V)
19	LVDS_CH_TX2_N	20	GND
MH1	GND	MH2	GND

LVDS Backlight Connector

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

Connector location: J3

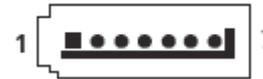


Pin	Definition	Pin	Definition
1	BKLTEN	2	GND
3	BKLTCTL	4	GND
5	+12V		

SATA0 Connector

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

Connector location: SATA2



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP0_C
3	SATA_TXN0_C	4	GND
5	SATA_RXN0_C	6	SATA_RXP0_C
7	GND		

SATA1 Connector

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

Connector location: SATA3

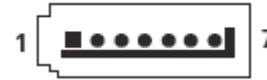


Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP1_C
3	SATA_TXN1_C	4	GND
5	SATA_RXN1_C	6	SATA_RXP1_C
7	GND		

SATA2 Connector

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

Connector location: SATA4



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP2_C
3	SATA_TXN2_C	4	GND
5	SATA_RXN2_C	6	SATA_RXP2_C
7	GND		

SATA3 Connector

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

Connector location: SATA5

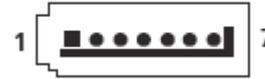


Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP3_C
3	SATA_TXN3_C	4	GND
5	SATA_RXN3_C	6	SATA_RXP3_C
7	GND		

SATA4 Connector

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

Connector location: SATA1



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP4_C
3	SATA_TXN4_C	4	GND
5	SATA_RXN4_C	6	SATA_RXP4_C
7	GND		

SATA Power Connectors

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

Connector location: CN16 and CN14



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

SATA DOM Power Connector

Connector type: 1x2 2-pin Wafer, 1.25mm pitch

Connector location: J2



Pin	Definition	Pin	Definition
1	VCC5	2	GND

USB8/9 JST Connector

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

Connector location: CN10



Pin	Definition	Pin	Definition
1	P5V_USB_P89	2	USBCON_8N
3	USBCON_8P	4	USBCON_9N
5	USBCON_9P	6	GND

USB10/11 JST Connector

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

Connector location: CN9

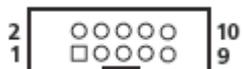


Pin	Definition	Pin	Definition
1	P5V_USB_P1011	2	USBCON_10N
3	USBCON_10P	4	USBCON_11N
5	USBCON_11P	6	GND

COM2 Connector

Connector type: 2x5 10-pin boxed header, 2.0mm-M-180

Connector location: CN17

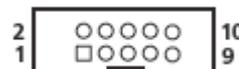


Pin	Definition	Pin	Definition
1	SP2_DCD	2	SP2_RXD
3	SP2_TXD	4	SP2_DTR
5	GND	6	SP2_DSR
7	SP2_RTS	8	SP2_CTS
9	SP2_RI		

COM3 Connector

Connector type: 2x5 10-pin boxed header, 2.0mm-M-180

Connector location: CN18

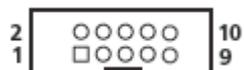


Pin	Definition	Pin	Definition
1	SP3_DCD	2	SP3_RXD
3	SP3_TXD	4	SP3_DTR
5	GND	6	SP3_DSR
7	SP3_RTS	8	SP3_CTS
9	SP3_RI		

COM4 Connector

Connector type: 2x5 10-pin boxed header, 2.0mm-M-180

Connector location: CN19

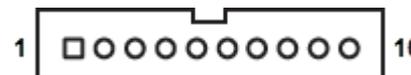


Pin	Definition	Pin	Definition
1	SP4_DCD	2	SP4_RXD
3	SP4_TXD	4	SP4_DTR
5	GND	6	SP4_DSR
7	SP4_RTS	8	SP4_CTS
9	SP4_RI		

Port 80 Debug Connector

Connector type: 1x10 JST, 10-pin header, 1.0mm pitch

Connector location: J7

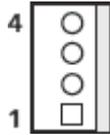


Pin	Definition	Pin	Definition
1	GND	2	I_SLOTPLTRST#
3	G_DBG33MHZ	4	I_LFRAME#
5	I_LAD3	6	I_LAD2
7	I_LAD1	8	I_LAD0
9	3VSB	10	3VSB

CPU Fan Connector

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

Connector location: FAN1

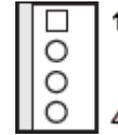


Pin	Definition	Pin	Definition
1	GND	2	+12V
3	CPUFANIN_R	4	CPUFANOUT_R

System Fan Connector

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

Connector location: FAN2

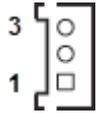


Pin	Definition	Pin	Definition
1	GND	2	+12V
3	CPUFANIN2_R	4	CPUFANOUT2_R

Power Ignition Connector

Connector type: 1x3 JST, 3-pin header, 2.0mm pitch

Connector location: J5



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

Chapter 3: System Setup

Installing a SATA Hard Drive

1. Loosen the 2 hand screws that secure the drive bay to the chassis.

2. Gently slide the drive bay to remove it from chassis the slot.



3. Place the SATA hard drive onto the drive bay. Align the mounting holes that are on the SATA drive with the mounting holes on the drive bay.



4. Tighten the hard drive with 4 screws, make sure the SATA connector is facing towards the end of the drive bay.



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. Place the unit on a stable surface with its top side facing up, loosen and remove the six mounting screws on the top cover. Store the screws in a safe place for later use.



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

Installing a Wireless LAN Module

1. Locate the Mini-PCI Express slot for WLAN on the motherboard.



Mini-PCI Slot for WLAN

Close-up view



Mini-PCIe Slot for LAN

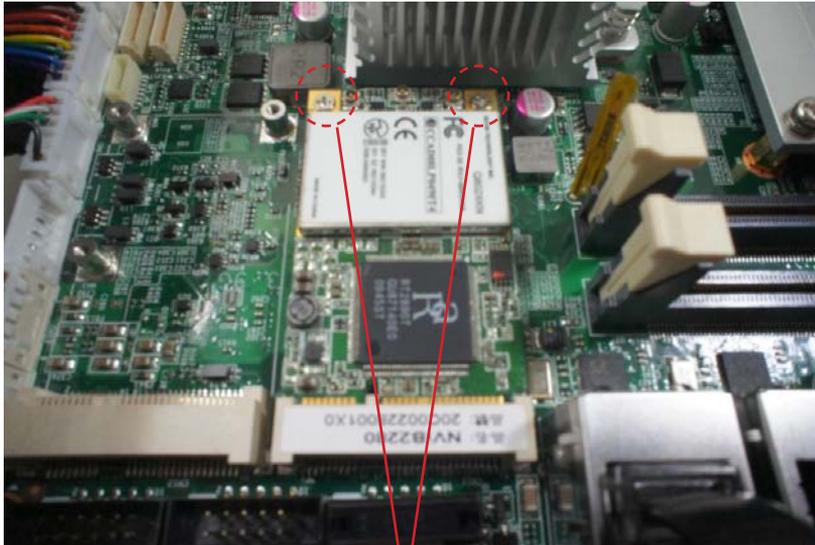
2. Insert the wireless LAN module into the Mini-PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



Wireless LAN Module

Mini-PCIe Slot for WLAN

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



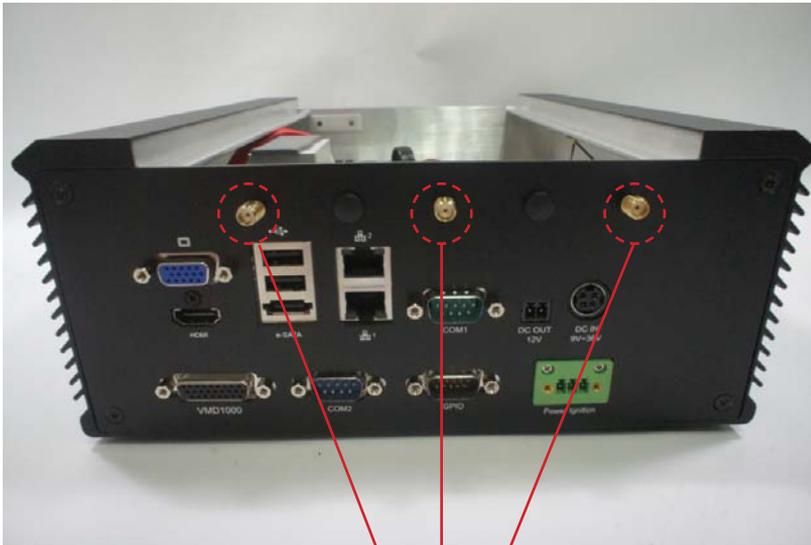
Mounting Screws

4. Remove the antenna hole covers located at the rear panel of the chassis.



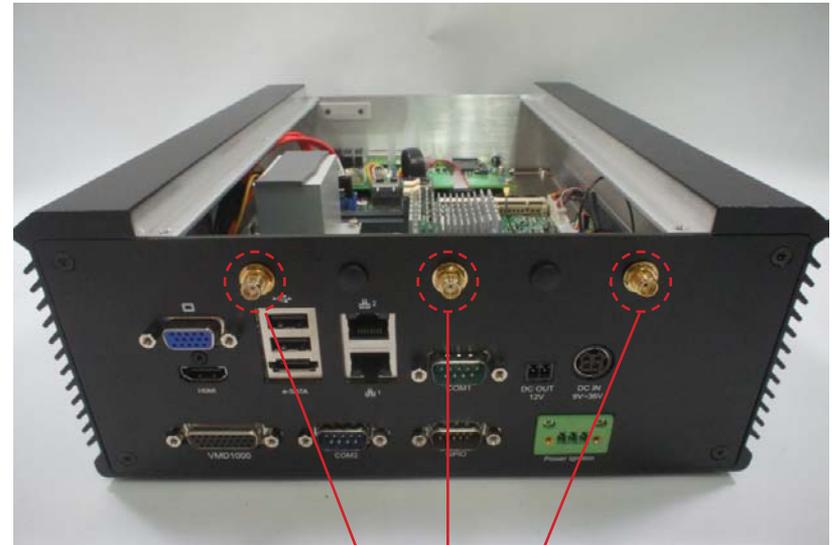
Antenna Hole Covers

5. Insert the antenna jacks into the antenna holes.



Antenna Jacks

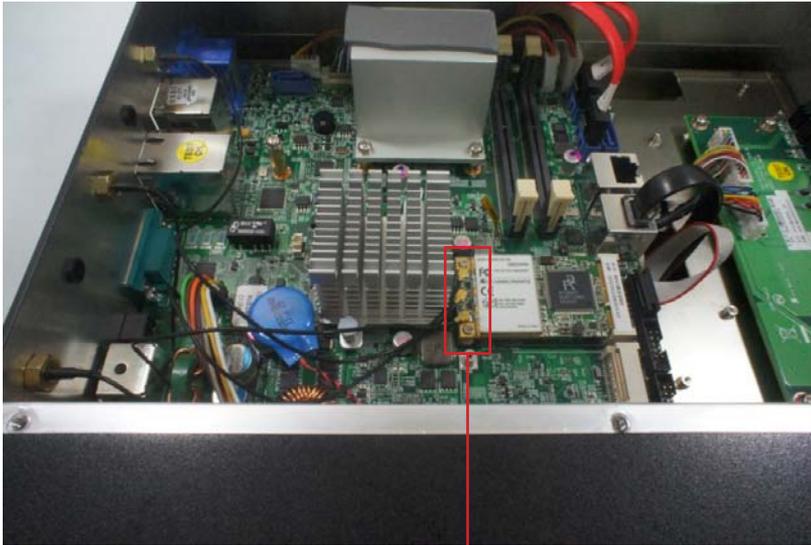
6. Insert the rings onto the antenna jacks.



Rings

7. Attach the RF cables of the antenna jacks onto the module.

8. Connect external antennas to the antenna jacks.



RF Cables



Installing a 3.5G Module

1. Locate the Mini-PCI Express slot for 3.5G on the motherboard.

Close-up view



Mini-PCI Slot for 3.5G



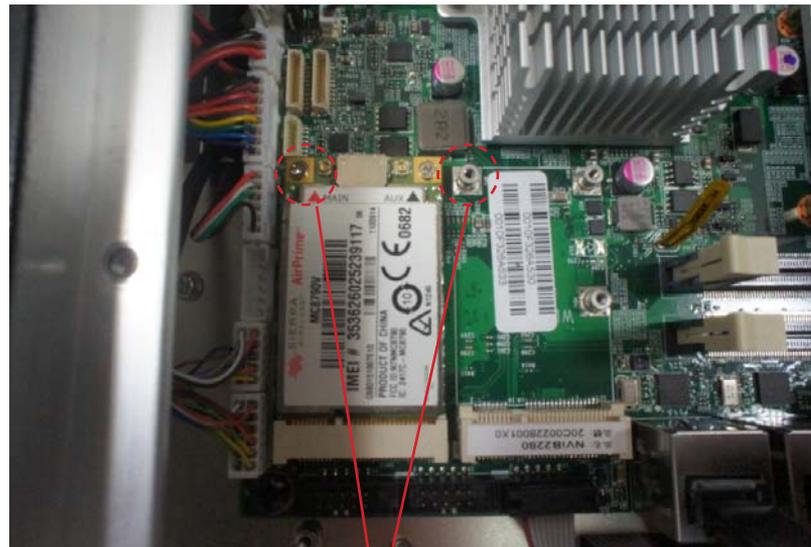
Mini-PCI Slot for 3.5G

3. Insert the 3.5G module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

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



3.5G Module
Mini-PCIe Slot for 3.5G



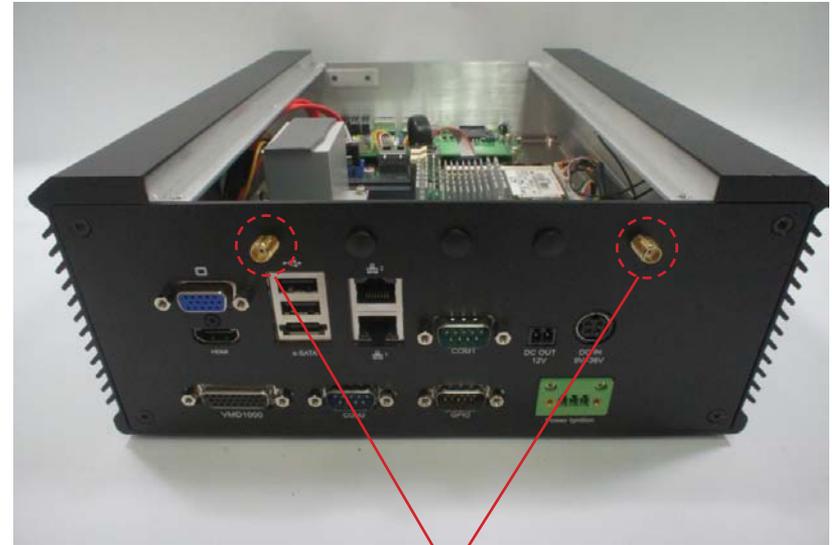
Mounting Screws

4. Remove the antenna hole covers located at the rear panel of the chassis.

5. Insert the antenna jacks into the antenna holes.

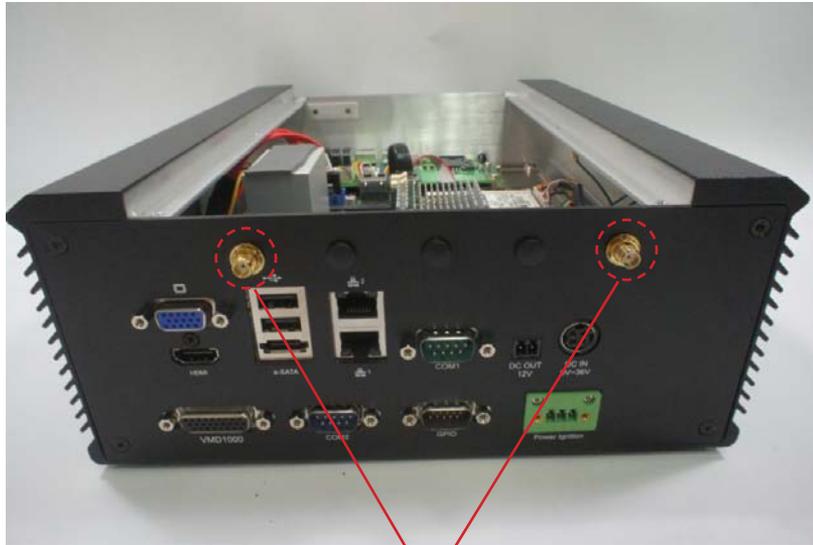


Antenna Hole Covers



Antenna Jacks

6. Insert the rings onto the antenna jacks.



Rings

7. Attach the RF cables of the antenna jacks onto the module.



RF Cables

8. Connect external antennas to the antenna jacks.



Installing the SATA DOM

1. Locate the SATA connector on the motherboard and remove the screw as marked.



Screw

SATA Connector

2. Install the SATA DOM and connect the SATA power cable to the SATA DOM connector on the motherboard.

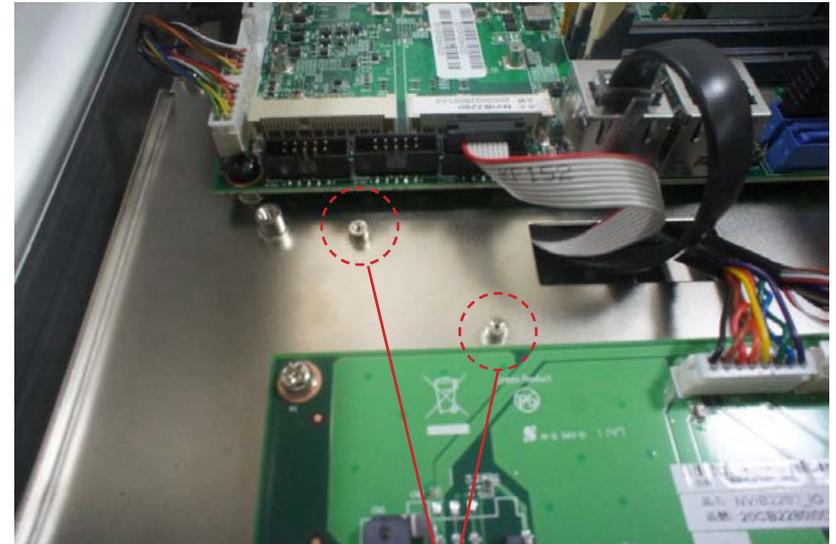


3. Tighten the screw back on the top of the copper post.

Installing a GPS Module

1. Locate the GPS Module's mounting holes on the chassis.

Close-up view



Mounting Holes

2. Place and align the mounting holes on the GPS module with the mounting holes on the chassis.



3. Tighten screws on the mounting holes to secure the module, and connect the GPS module connector to the J8 (GPS connector) connector on the motherboard.

4. Remove an antenna hole cover located at the rear panel of the chassis.



Antenna Hole Covers

5. Insert an antenna jack into the antenna hole.



Antenna Jack

6. Connect an external antenna to the antenna jack.

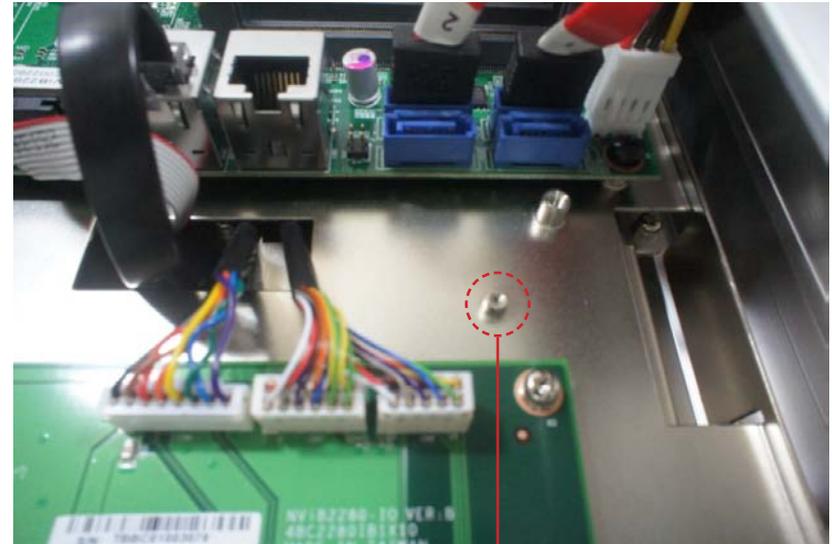


Installing a Bluetooth Module

1. Locate the Bluetooth module's mounting hole on the chassis.



Close-up View



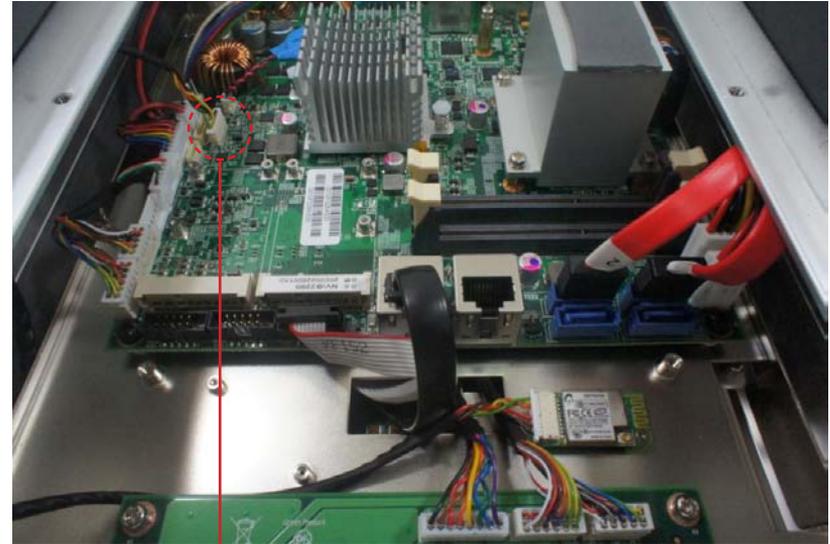
Mounting Hole

2. Place and align the mounting hole on the Bluetooth module with the mounting hole on the chassis.



3. Tighten a screw on the mounting hole to secure the module.

4. Connect the Bluetooth module connector to the J6 (Bluetooth connector) connector on the motherboard.



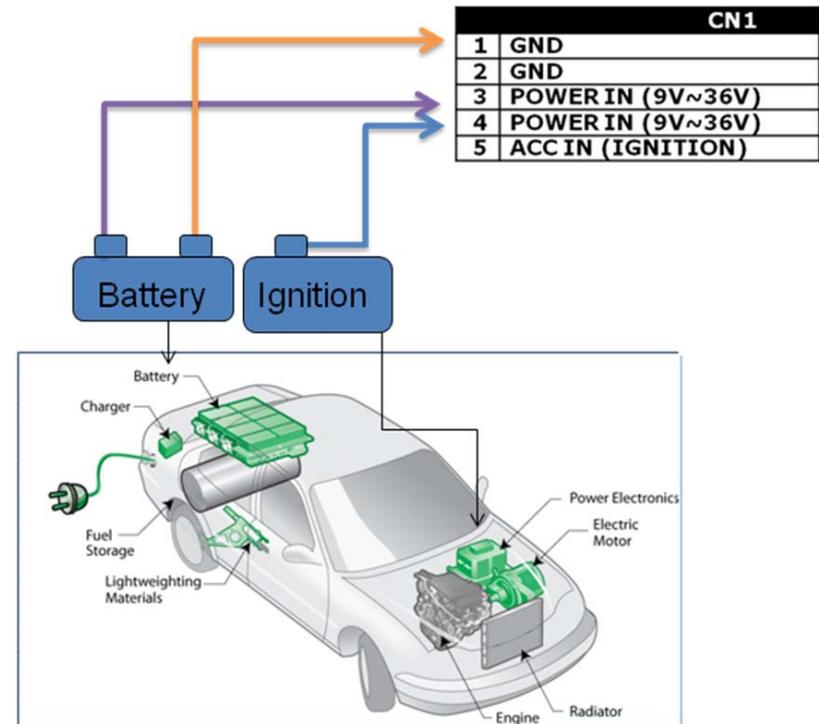
J6

Connecting to the Power Ignition Module (NISKIG120)

Introduction

The NISKIG120 is an external power ignition module that provides stable power to NVIS 2280. Using this module will ensure that the device is well shielded against premature failure at boot/ shutdown phase. The following instructions will guide you on how to connect the NISKIG120 to the vehicle's battery/ignition and NVIS 2280.

1. Connect the vehicle battery and ignition to the module's power input socket, refer to the pin/wiring definition table below:



Close-up view of the power input:



5

1



Recommended wire gauge range: minimum of 10 AWG or above, maximum length of 3 meters.

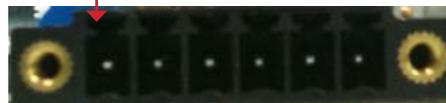
2. Connect the module's DC output to NVIS 2280's DC input, refer to the pin/wiring definition table below:



CON1	
1	Main Power Out
2	Main Power Out
3	GND
4	GND
5	LVDS GND
6	LVDS POWER OUT (+12V/1A)



Close-up view of the DC output:



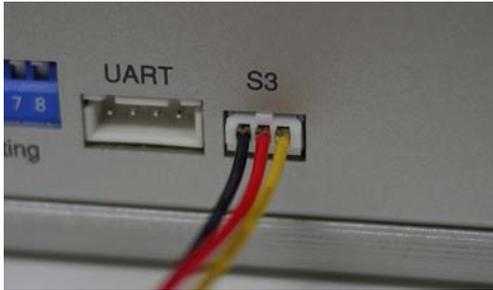
6

1



Recommended wire gauge range: minimum of 16 AWG or above, maximum length of 3 meters.

3. Connect the S3 control port to the Power Ignition port, refer to the pin/wiring definition table below:



J2 : System port	
1	GND
2	Power ON Button (Output)
3	SLP_S3 IN (Input)



Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NViS 2280. 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 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 key to enter Setup:

Legends

Key	Function
Right and Left arrows	Moves the highlight left or right to select a menu.
Up and Down arrows	Moves the highlight up or down between submenus or fields.
<Esc>	Exits the BIOS Setup Utility.
+ (plus key)	Scrolls forward through the values or options of the highlighted field.
- (minus key)	Scrolls backward through the values or options of the highlighted field.
Tab	Selects a field.
<F1>	Displays General Help.
<F2>	Load previous values
<F3>	Load optimized default values.
<F4>	Saves and exits the Setup program.
<Enter>	Press <Enter> to enter the highlighted submenu

Scroll Bar

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

Submenu

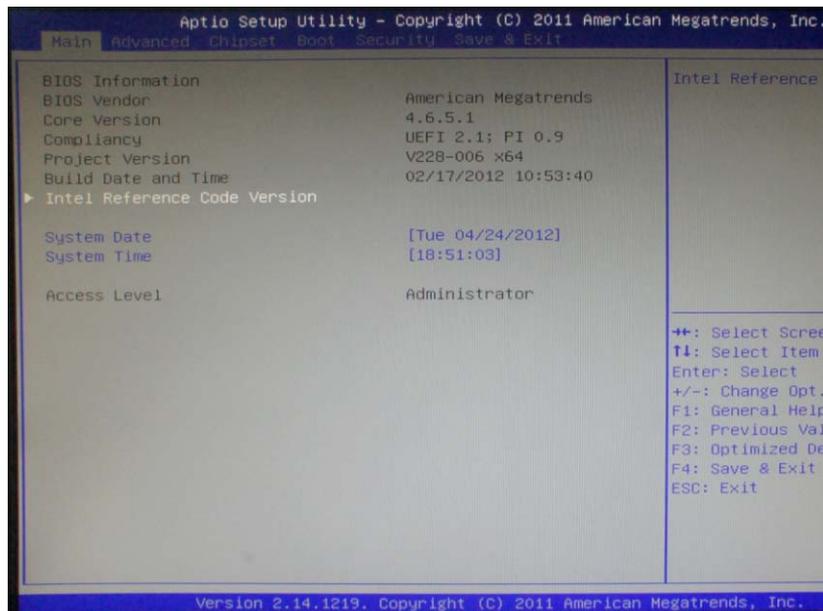
When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

BIOS Setup Utility

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

Main

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



Intel RC Version

Displays the Intel Reference Code version.

System Date

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

System Time

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

Access Level

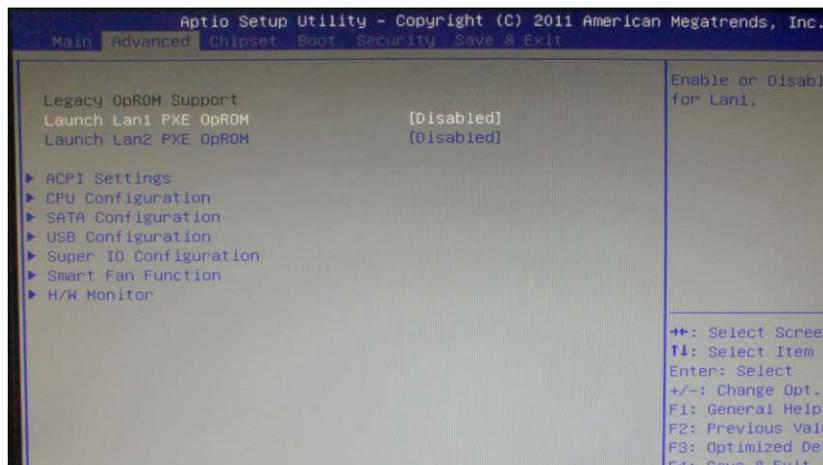
Displays the access level of the current user in the BIOS.

Advanced

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



Setting incorrect field values may cause the system to malfunction.

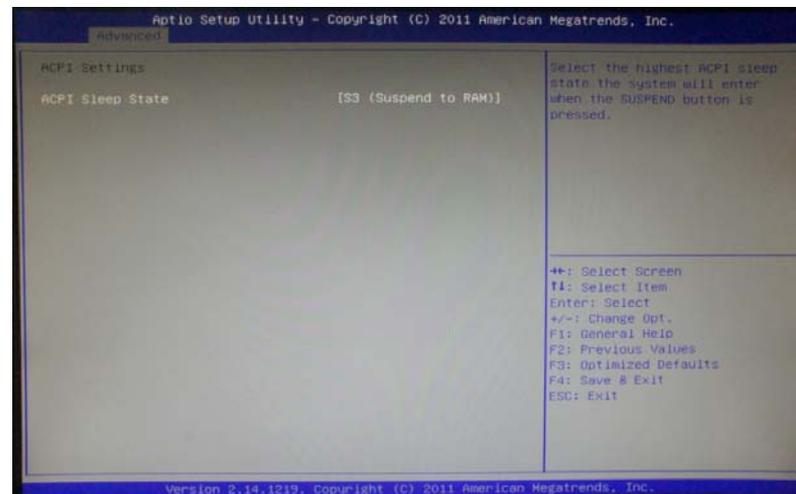


Launch LAN1/2 PXE OpROM

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

ACPI Settings

This section is used to configure ACPI.

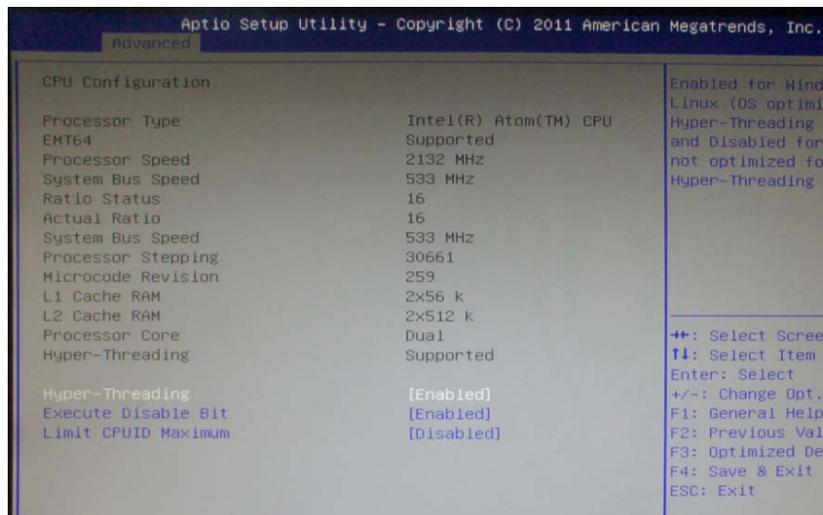


ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the suspend button is pressed.

CPU Configuration

This section is used to configure the CPU.



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.

Hyper-threading

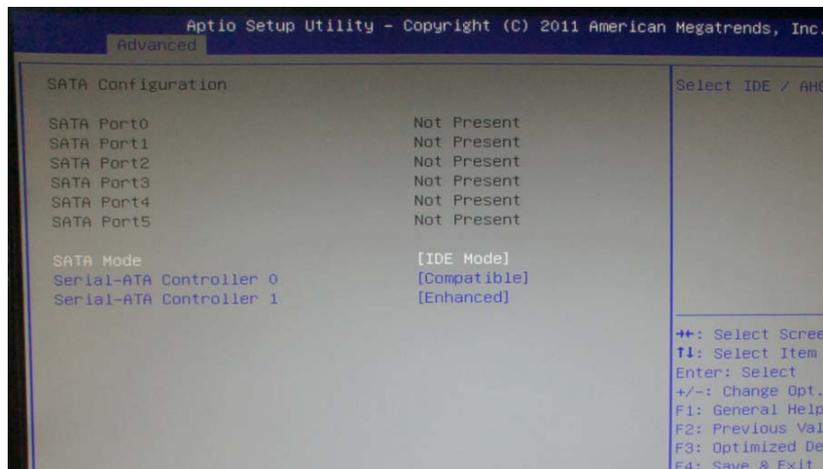
Disable or Enable hyper-threading technology.

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).

SATA Configuration

This section is used to configure the SATA drives.



Serial-ATA Controller 0/1

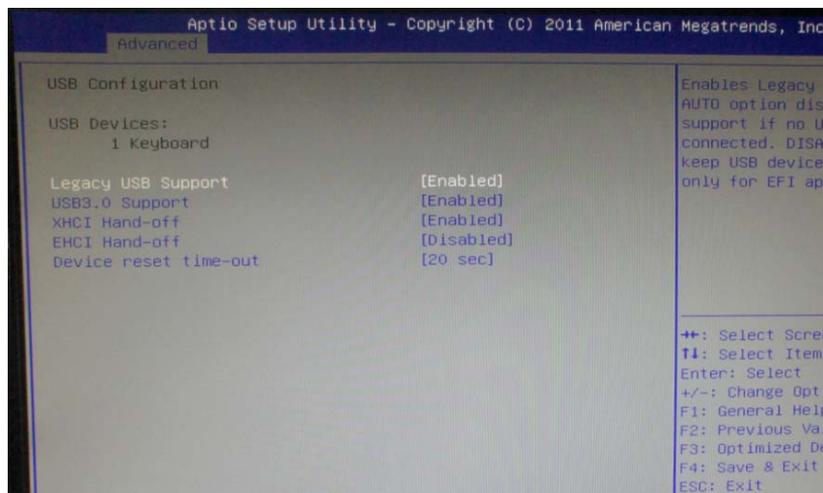
Set the Serial-ATA controller 0 and 1 to Compatible or Enhanced mode.

SATA Mode

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

USB Configuration

This section is used to configure the USB.



USB Configuration

Displays the detected USB devices.

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 USB3.0 support.

XHCI Hand-Off

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

EHCI Hand-Off

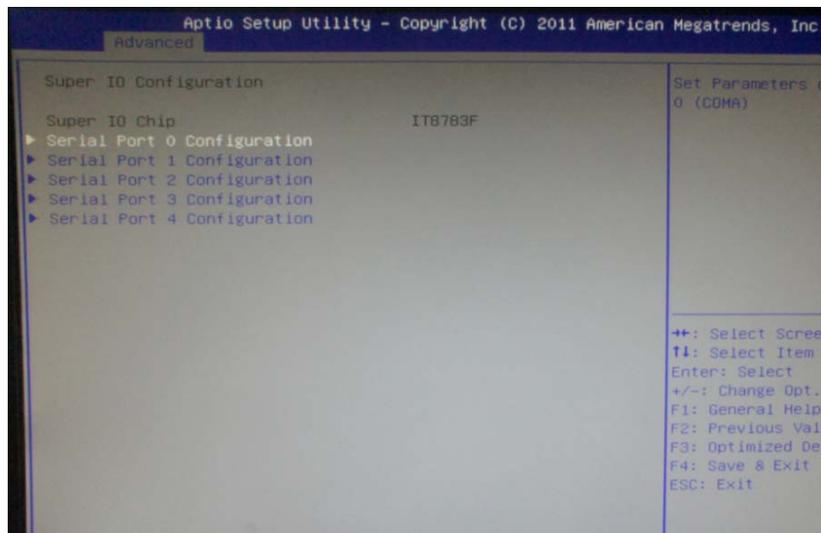
This is a workaround for OSs that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

Device Reset Timeout

Selects the USB mass storage device's start unit command timeout.

Super IO Configuration

This section is used to configure the serial ports.

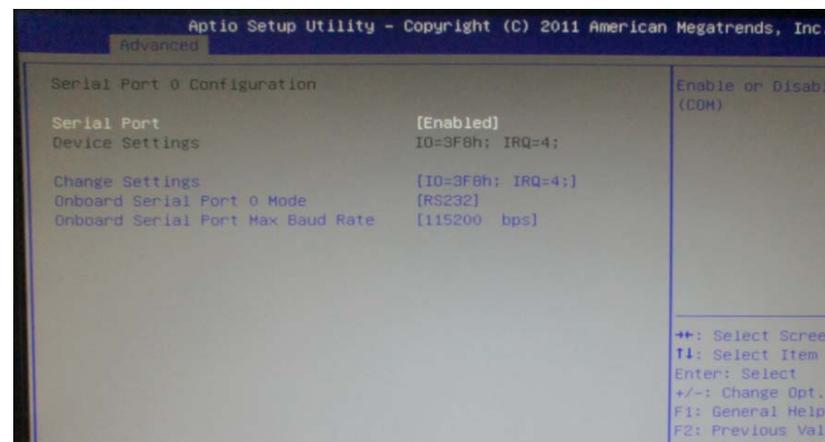


Super IO Chip

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

Serial Port 0 Configuration

This section is used to configure serial port 0.



Serial Port

Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

Onboard Serial Port 0 Mode

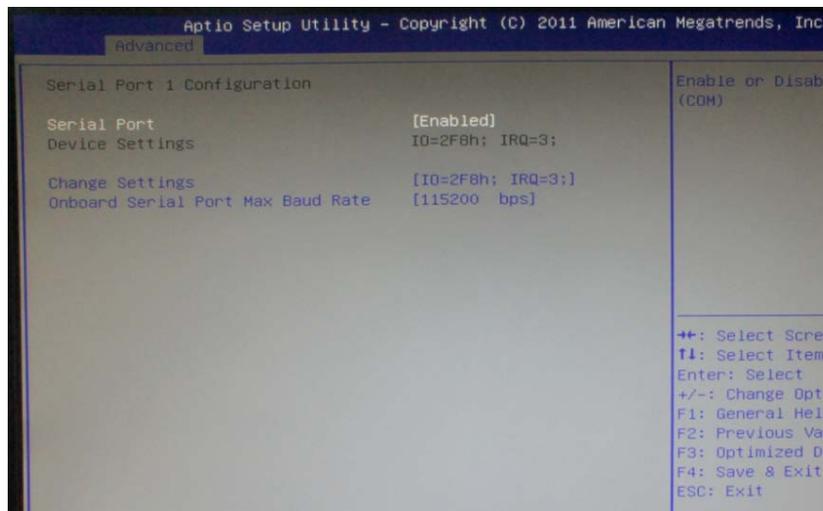
Select this to change the serial port mode to RS232, RS422 or RS485.

Onboard Serial Port Max Baud Rate

Select this to change the max baud rate of the serial port.

Serial Port 1 Configuration

This section is used to configure serial port 1.



Serial Port

Enables or disables the serial port.

Change Settings

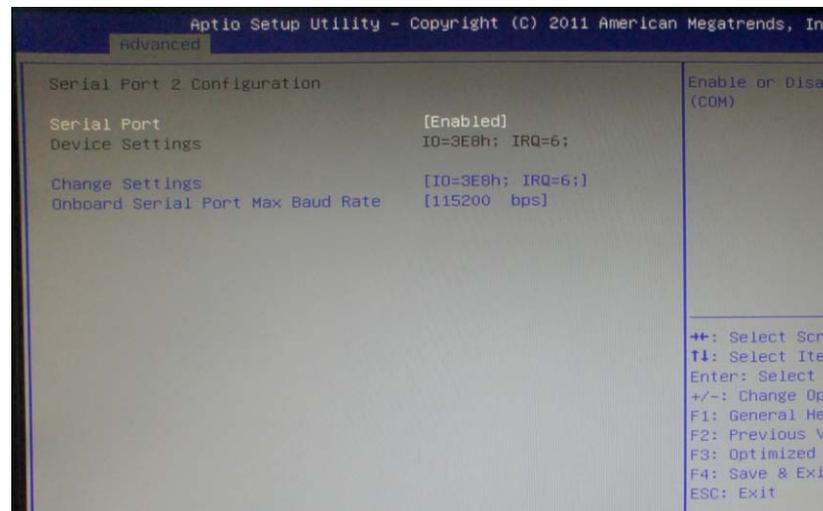
Selects an optimal setting for the Super IO device.

Onboard Serial Port Max Baud Rate

Select this to change the max baud rate of the serial port.

Serial Port 2 Configuration

This section is used to configure serial port 2.



Serial Port

Enables or disables the serial port.

Change Settings

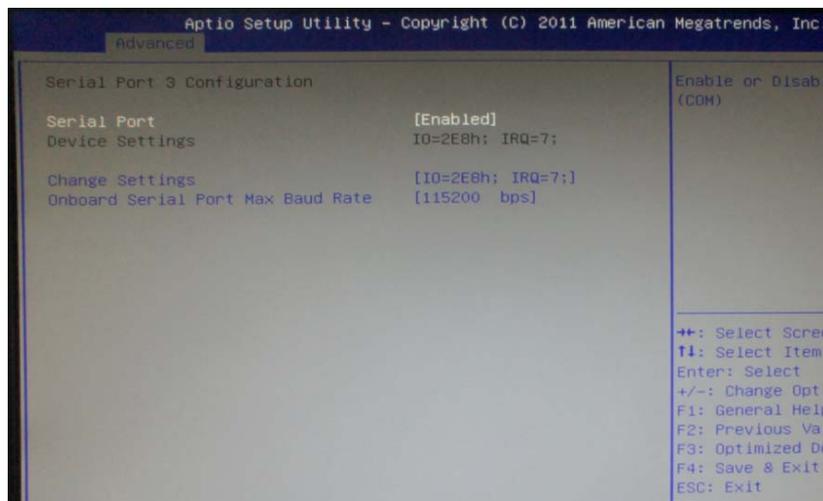
Selects an optimal setting for the Super IO device.

Onboard Serial Port Max Baud Rate

Select this to change the max baud rate of the serial port.

Serial Port 3 Configuration

This section is used to configure serial port 3.



Serial Port

Enables or disables the serial port.

Change Settings

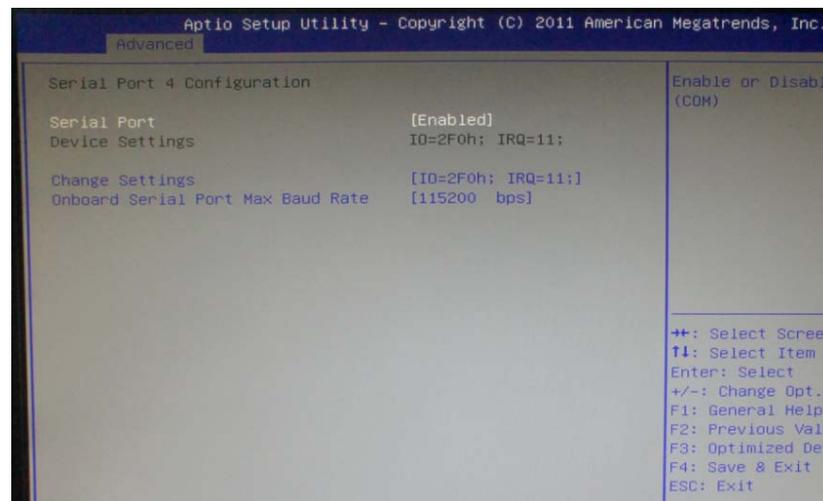
Selects an optimal setting for the Super IO device.

Onboard Serial Port Max Baud Rate

Select this to change the max baud rate of the serial port.

Serial Port 4 Configuration

This section is used to configure serial port 4.



Serial Port

Enables or disables the serial port.

Change Settings

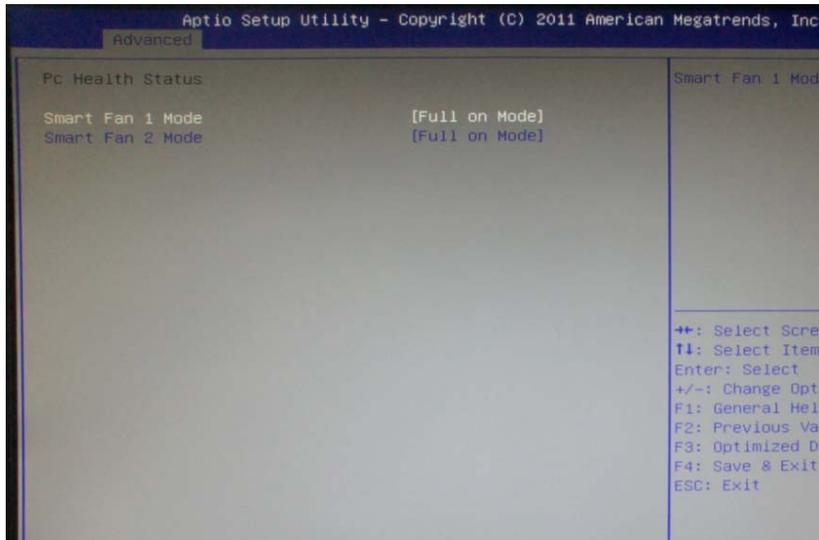
Selects an optimal setting for the Super IO device.

Onboard Serial Port Max Baud Rate

Select this to change the max baud rate of the serial port.

Smart Fan Function

This section is used to configure the fans in the system.

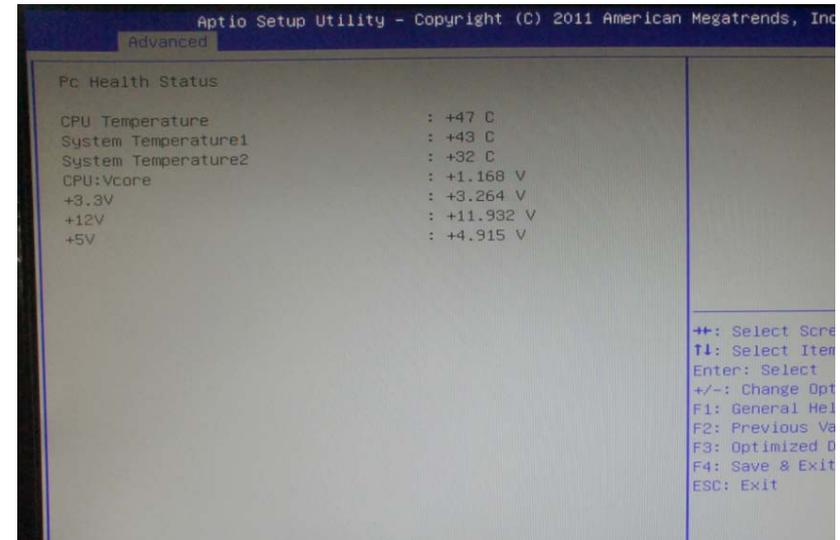


Smart Fan 1/2 Mode

Configure the fans to Full on Mode, Automatic Mode or Manual Mode.

H/W 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 Temperature1/2

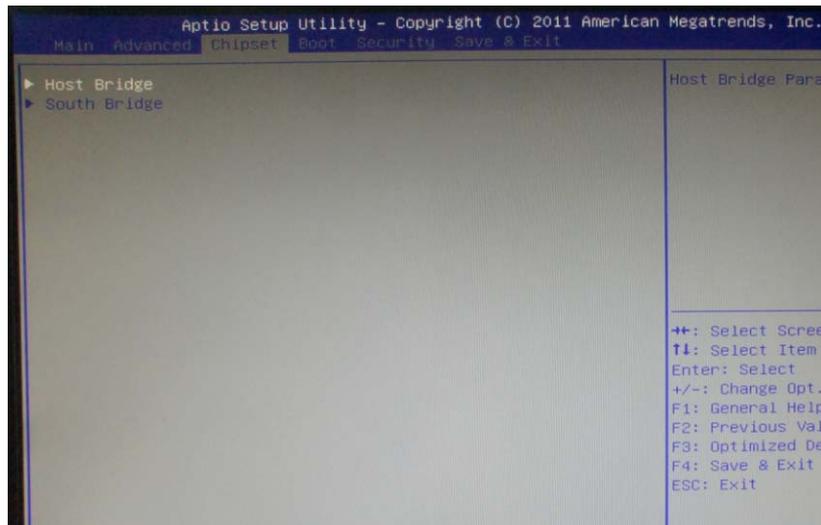
Detects and displays the current system temperature.

CPU: Vcore

Detects and displays the output voltages.

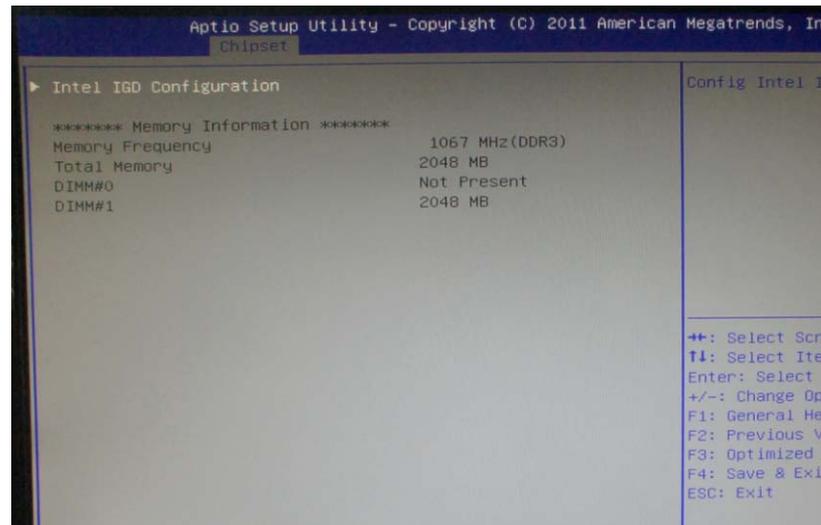
Chipset

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.



Host Bridge

This section is used to configure the host bridge features.



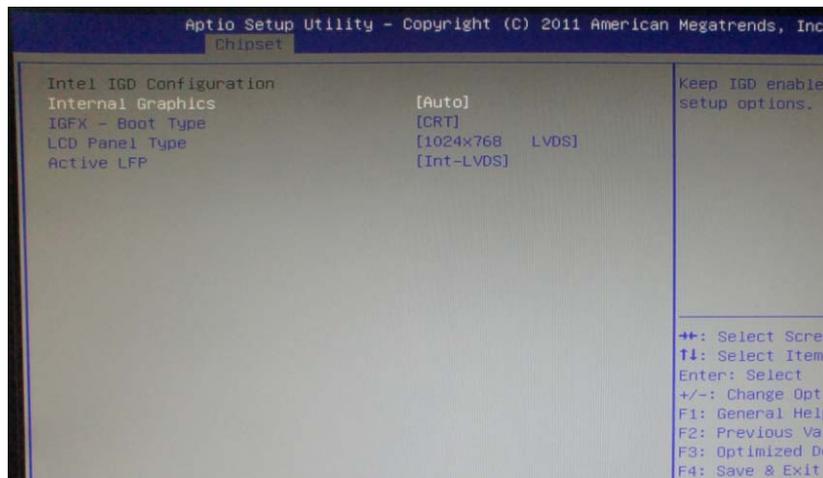
Intel® IGD Configuration

Configures the options for Intel IGD function.

Memory Information

Detects and displays information on the memory installed in the system.

Intel® IGD Configuration



Internal Graphics

Sets the internal graphics to Auto mode, or manually enable or disable it.

IGFX – Boot Type

Select the video device which will be activated during POST.

LCD Panel Type

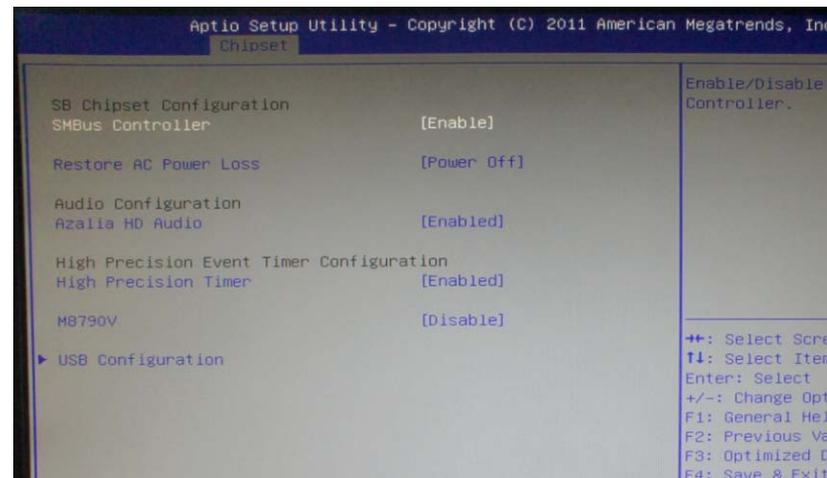
Select the LCD panel used by the internal graphics device.

Active LFP

Select the Active LFP configuration.

South Bridge

This section is used to configure the south bridge features.



SMBus Controller

Enables or disables the SMBus controller.

Azalia HD Audio

Enables or disables the Azalia HD audio.

High Precision Timer

Enables or disables the high precision event timer.

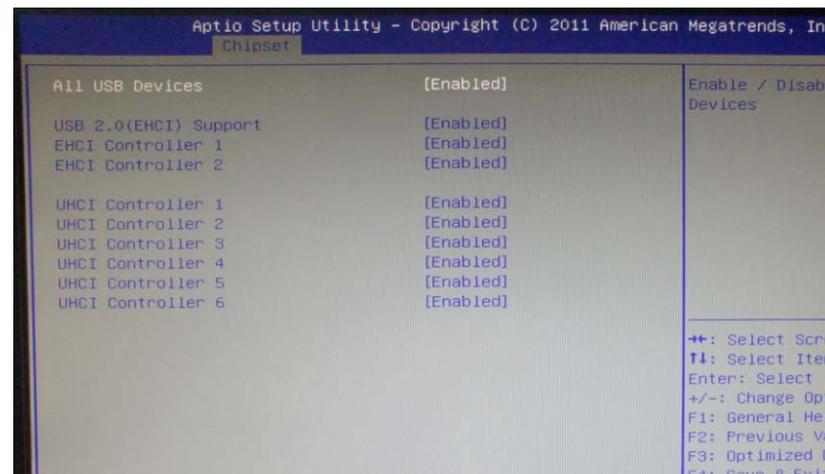
M8790V

Enables or disables M8790V.

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.

USB Configuration



All USB Devices

Enables or disables all USB devices.

USB 2.0(EHCI) Support

Enables or disables USB 2.0(EHCI) support.

EHCI Controller 1/2

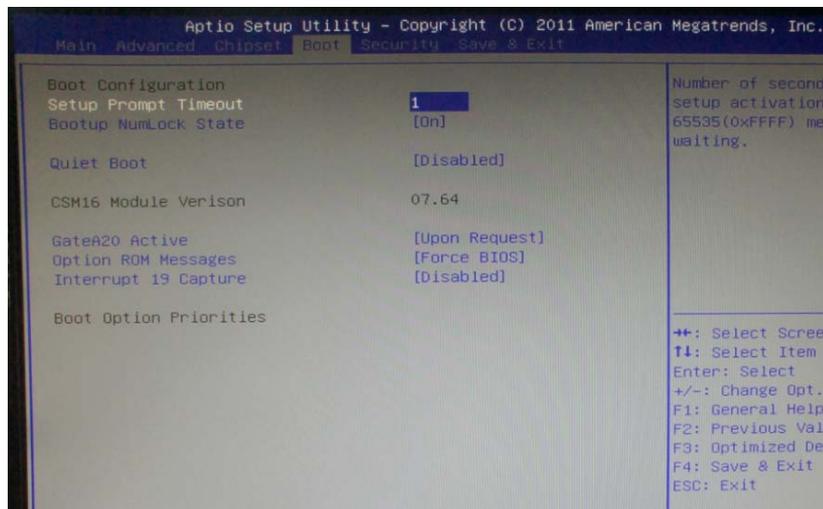
Enables or disables EHCI controllers 1 to 2.

UHCI Controller 1/6

Enables or disables UHCI controllers 1 to 6.

Boot

This section is used to configure the boot features.



Setup Prompt Timeout

Selects the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

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.

Quiet Boot

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

Gate A20 Active

- Upon Request GA20 can be disabled using BIOS services
- Always Does not allow disabling GA20. This option is useful when an RT code is executed above 1M.

Option ROM Messages

Selects the display mode for Option ROM. The options are Force BIOS and Keep Current.

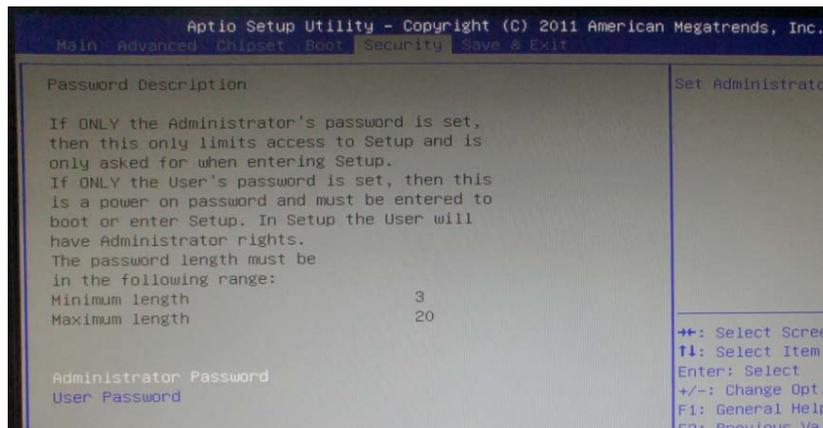
Interrupt 19 Capture

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

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.

Security



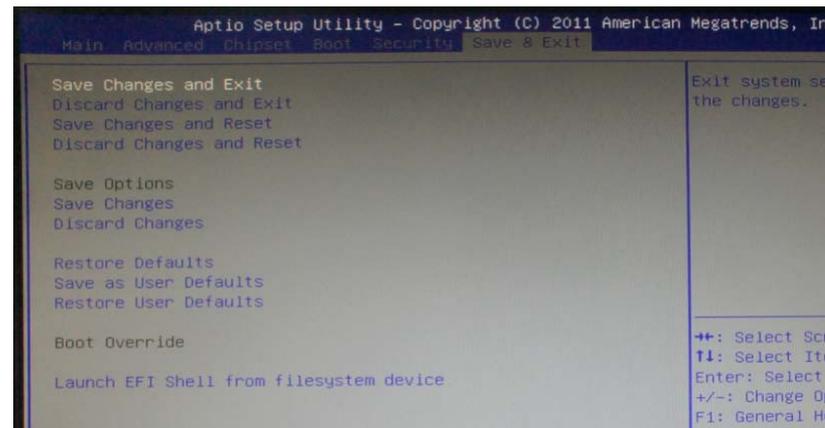
Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Save & Exit



Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Exit

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

Save Changes and Reset

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

Discard Changes and Reset

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

Save Changes

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

Discard Changes

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

Restore Defaults

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

Save as User Defaults

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

Restore User Defaults

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

Boot Override

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

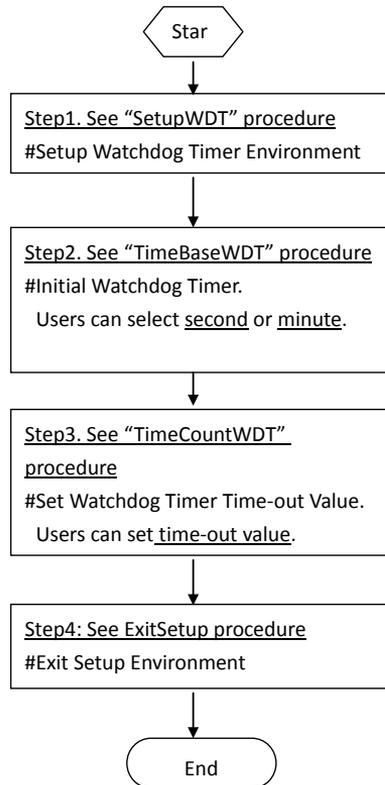
Launch EFI Shell from filesystem device

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

Appendix A: Watchdog Timer

WDT Programming Guide

NViS 2280 Watch Dog Function Configuration Sequence Description:



```

=====
SetupWDT      PROC
              mov    dx, 2eh
              mov    al, 087h
              out    dx, al
              nop
              nop
              out    dx, al

              mov    al, 07h
              out    2eh, al
              mov    al, 08h ;Select logical device for Watch Dog.
              out    2fh, al
              ret
SetupWDT      ENDP
=====

TimeBaseWDT   PROC
              mov    al, 0F5h
              out    2eh, al
              mov    al, 02h ;Set WDT reset upon KBRST#
              or     al, 00h ;Here!! set 00h for second, set 08h for minute
  
```

```
        out    2fh, al
        ret
TimeBaseWDT  ENDP
```

```
=====
TimeCountWDT PROC
        mov    al, 0F6h ;WDT Time-out register.
        out    2eh, al
        mov    al, 03h ;Here!! Set count 3.
        out    2fh, al
        ret
TimeCountWDT ENDP
```

```
=====
ExitSetup    PROC
        mov    dx, 2eh
        mov    al, 0AAh
        out    dx, al
ExitSetup    ENDP
=====
```

Appendix B: GPI/O Programming Guide

NVIs 2280 GPIO

Pin	Description	Pin	Description
1	+5V	2	GND
3	GPO54	4	GPI50
5	GPO55	6	GPI51
7	GPO56	8	GPI52
9	GPO57	10	GPI53

IO base address : 800h

Bit0 : GPI50

Bit1 : GPI51

Bit2 : GPI52

Bit3 : GPI53

Bit4 : GPO54

Bit5 : GPO55

Bit6 : GPO56

Bit7 : GPO57

1. Select GPIO group5 by set I/O port 800h to 5h
2. Read/Write GPIO data by I/O port 802h

Appendix C: Voltage Low Shut-down Setting (NISKIG120)



Voltage Low Shut-down Setting (12V DC Input)

SW1	DIP Switch 1	DIP Switch 2	Start-Up	Shut-Down	Note
00	0=OFF	0=OFF	11.5V	10.5V	Default
01	0=OFF	1=ON	12V	11V	
10	1=ON	0=OFF	12.5V	11V	
11	1=ON	1=ON	12.5V	11.5V	

Voltage Low Shut-down Setting (24V DC Input)

SW1	DIP Switch 1	DIP Switch 2	Start-Up	Shut-Down	Note
00	0=OFF	0=OFF	23V	21V	Default
01	0=OFF	1=ON	24V	22V	
10	1=ON	0=OFF	25V	22V	
11	1=ON	1=ON	25V	23V	

Appendix D: DC Input & Output Setting (NISKIG120)



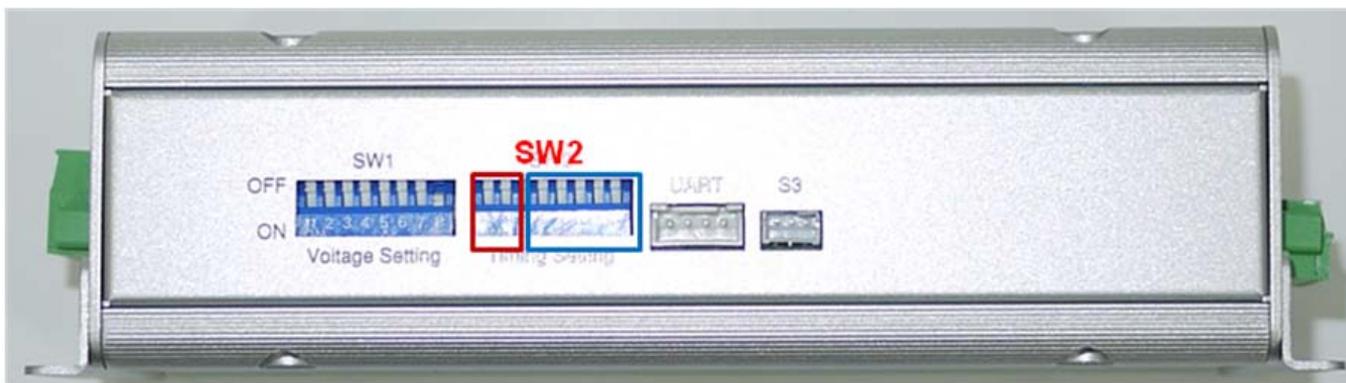
DC Input Setting

SW1	DIP Switch 3	DIP Switch 4	Function Setting	Note
00	0=OFF	0=OFF	12V DC input	Default
01	0=OFF	1=ON	24V DC input	
10	1=ON	0=OFF	Reserved only	
11	1=ON	1=ON	9~36V Power module without Ignition function	

DC Output Setting

SW1	DIP Switch 7	DIP Switch 8	Function Setting	Note
00	0=OFF	0=OFF	Disable	Default
01	0=OFF	1=ON	24V Output	
10	1=ON	0=OFF	19V Output	
11	1=ON	1=ON	12V Output	

Appendix E: Power On/Off Delay Timer Setting (NISKIG120)



Delay Timer Setting

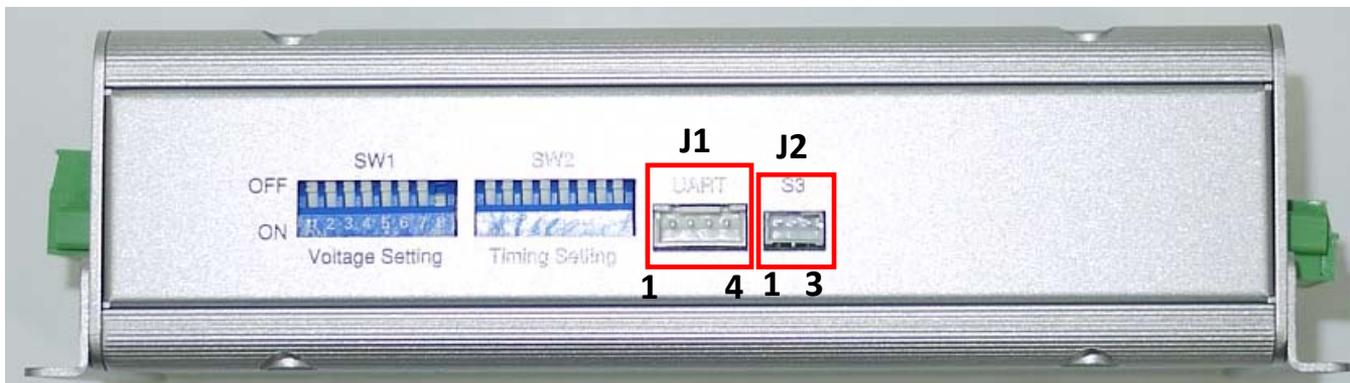
Power On Delay Timer			
SW2	DIP Switch 1	Function Setting	Note
0	0=OFF	Disable (default 3 seconds)	Default
1	1=ON	Enable (DIP Switch 3,4,5)	

Power Off Delay Timer			
SW2	DIP Switch 2	Function Setting	Note
0	0=OFF	Disable (default 0 second)	Default
1	1=ON	Enable (DIP Switch 6,7,8)	

DIP Switch 3, 4, 5 POWER ON Delay Timer Select	
000	10sec
100	30sec
010	1min
110	5min
001	10min
101	15min
011	30min
111	1hour

DIP Switch 6, 7, 8 POWER OFF Delay Timer Select	
000	20sec
100	1min
010	5min
110	10min
001	30min
101	1hour
011	6hour
111	18hour

Appendix F: MCU Programming (NISKIG120)



J1 : MCU programming port (RS232 signal)	
1	GND
2	COM TX (Output)
3	COM RX (Input)
4	N/A

J2 : System port	
1	GND
2	Power ON Button (Output)
3	SLP_S3 IN (Input)