NEXCOM International Co., Ltd.

Multi-Media Solutions

Digital Signage Platform

NDiS 127

User Manual

NEXCOM International Co., Ltd.
Published May 2012

www.nexcom.com

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PREFACE

Copyright

Disclaimer

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Acknowledgements

Regulatory Compliance Statements

This section describes how to keep the system CE compliant.

Declaration of Conformity

CE

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

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

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

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

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

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

How to recognize NEXCOM RoHS Products?

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

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

Warranty and RMA

NEXCOM Warranty Period

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

NEXCOM Return Merchandise Authorization (RMA)

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

Repair Service Charges for Out-of-Warranty Products

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

System Level

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

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

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

Cautions

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

Safety Information

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

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

Installation Recommendations

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

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

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

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

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. Do not leave this equipment in either an unconditioned environment or in a above 40°C storage temperature as this may damage the equipment.
8. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
10. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. If one of the following situations arises, get the equipment checked by service personnel:

    a. The power cord or plug is damaged.

    b. Liquid has penetrated into the equipment.

    c. The equipment has been exposed to moisture.

    d. The equipment does not work well, or you cannot get it to work according to the user's manual.

    e. The equipment has been dropped and damaged.

    f. The equipment has obvious signs of breakage.
16. Do not place heavy objects on the equipment.
17. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
18. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
19. The computer is provided with CD drives that comply with the appropriate safety standards including IEC 60825.

Technical Support and Assistance

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

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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Fax: +81-3-5419-7832
http://www.nexcom-jp.com

Package Contents

Before continuing, verify that the NDiS 127 package that you received is complete. Your NDiS 127 package should have all the items listed in the following table.

Item	P/N	Name	Specification	Qty
1	602DCD0431X00	NDiS127 CD DRIVER MANUAL VER:1.0	JCL	1
2	6012200053X00	PE ZIPPER BAG #3	100x70mm,W/China RoHS SYMBOL	1
3	6012200052X00	PE ZIPPER BAG #8	170x240mm,W/China RoHS SYMBOL	1
4	601111A156X00	CARTON FOR NDiS126 YI GIA	316x212x120mm(INSIDE) B FLUTE	1
5	6013300311X00	EPE FOR NDiS126 SENTENEL	316x212x74mm	2
6	6012200049X00	ASG110 PE BAG 24x38cm	240x380x0.08mm	1
7	6014600665X00	(N)Input Rating Label For NDiS127 JAYRAY	120x40mm HTLSMI50	1
8	5044440031X00	RUBBER FOOT KANG YANG:RF20-5-4P	19.8x18x5.0mm	4
9	7400050001X00	POWER ADAPTER L.T.E.:LTE50E-S2-208	50W 12V/4.17A	1

Ordering Information

The following provides ordering information for NDiS 127.

- **NDiS 127 (P/N: 10W00012700X0)**
  AMD G-series Dual Core processor T56N 1.65GHz
  AMD Radeon™ HD6320 GPU in processor
  AMD A55E Controller Hub

Chapter 1: Product Introduction

Overview

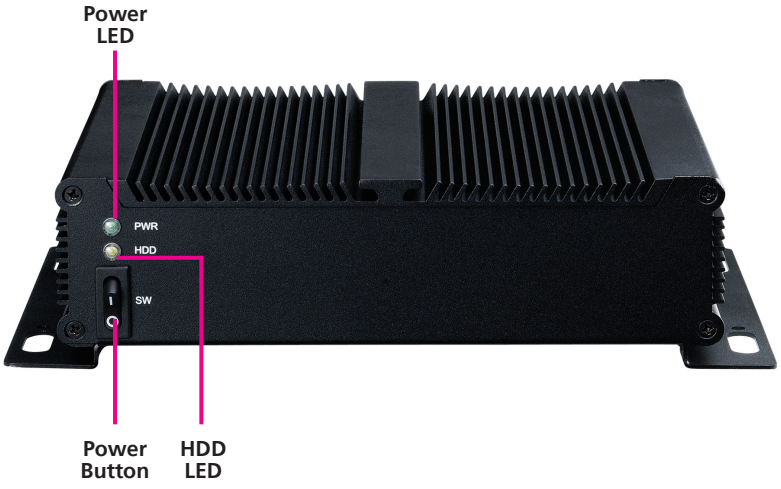
- Powered by AMD G-series T56N Dual Core Accelerated Processing Unit, NDiS 127 can play rich multimedia contents but consumes little power.
- Integratedwith AMD Radeon™ HD6320 Graphic Processing Unit in APU, NDiS 127 supports 1080P video playback and DirectX 11 to demonstrate high impactcontents through dual displays.
- NDiS 127 is housed in a maintenance-free fanless chassis with compact size. NDiS 127 is designed to fulfill small form factors, low cost, high reliability and low power requirement in digital signage application.

Key Features

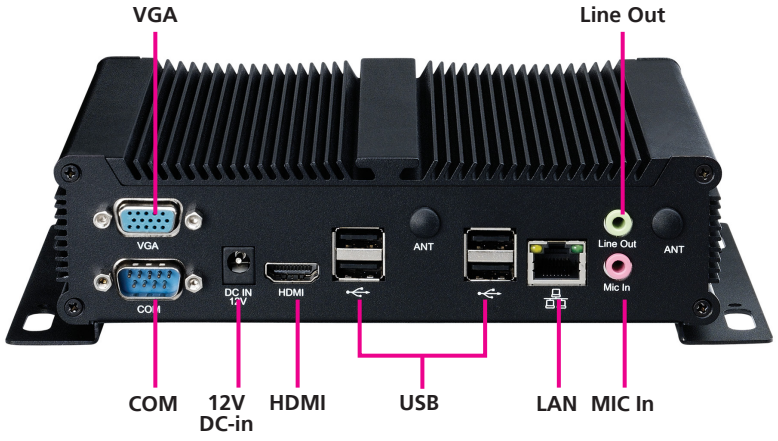
- AMD G-series T56N 1.65GHz Dual Core APU
- Integrated AMD Radeon™ HD6320 GPU
- Fanless and compact design
- Low power consumption
- 1 x Mini-PCIe slot for TV tuner/ WLAN support
- 1 x Mini-PCIe slot for mSATA support
- 4 x USB ports
- DirectX 11 support

Physical Features

Front panel



Rear panel



System Specifications

CPU Support

- AMD G-series Dual Core processor T56N 1.65GHz onboard

Chipset

- AMD A55E Controller Hub

Graphics

- AMD Radeon™ HD6320 GPU in processor

Main Memory

- 1 x 200pin SO-DIMM socket, support DDR3 800/ 1066/ 1333MHz SDRAM with un-buffered and Non-ECC memory module up to 4GB

I/O Interface-Front

- ATX power on switch
- 1 x HDD status LED (yellow)
- 1 x power status LED (green)

I/O Interface-Rear

- +12V DC-in
- 1 x DB9 for RS-232
- 4 x USB
- 1 x RJ45 Gigabit LAN connector with LED
- 1 x Line-out/ 1x Mic-in
- 1 x HDMI
- 1 x DB15 VGA
- 2 x antenna hole for Wi-Fi or TV tuner module

Storage

- 1 x SATA 2.5" HDD

Dimensions

- 185mm (W) x 147mm (D) x 48.4mm (H) (7.1"x 5.7"x 1.9") w/o wall mount bracket

Power Supply

- 1 x External 50W AC/ DC power adapter
- Input: 100~240VAC
- Output: +12VDC

Expansion

- 1 x Full Mini-PCIe for mSATA storage
- 1 x Half Mini-PCIe for WiFi / 3G / TV Tuner

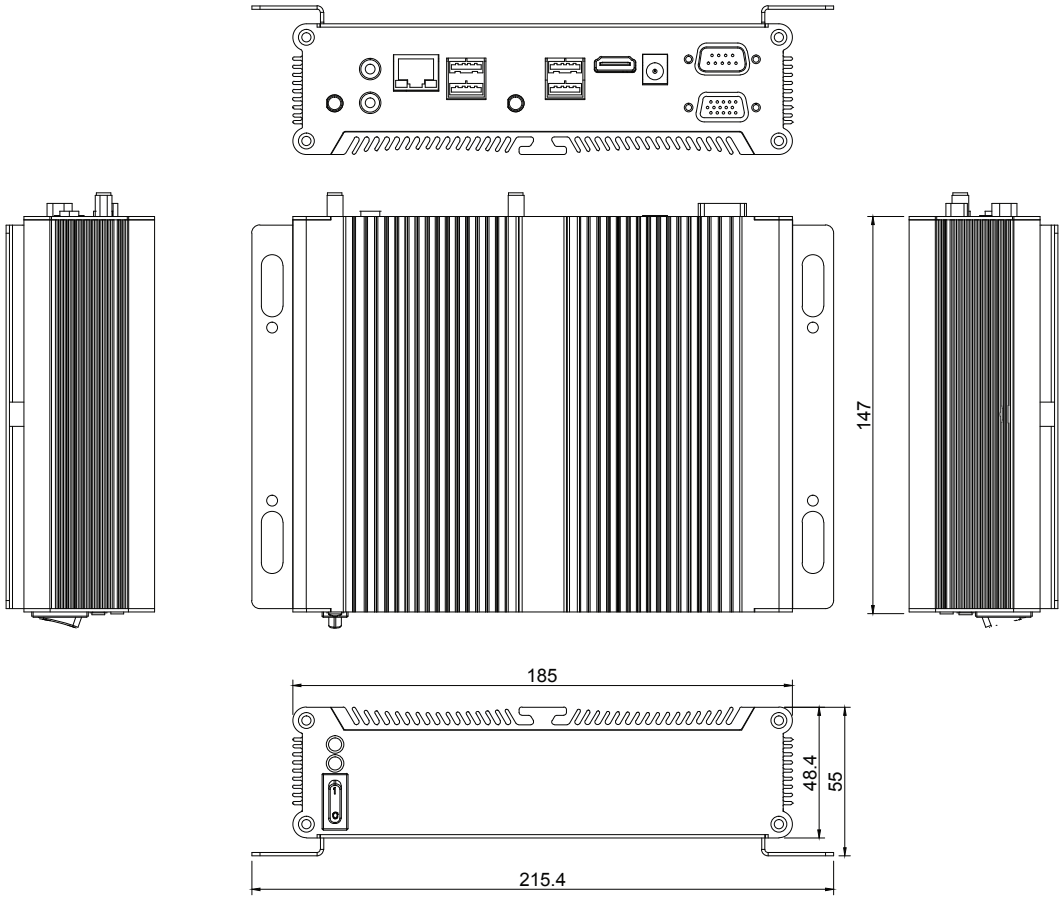
Environment

- Operating Temperature: 0°C to +40°C
- Storage Temperature: -20°C to +80°C
- Humidity: 10 to 90% (Non-condensing)

Certification

- CE approval
- FCC Class A

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers on the motherboard. Note that the following procedures are generic for all NDiS 127 series.

Before You Begin

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

Precautions

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

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

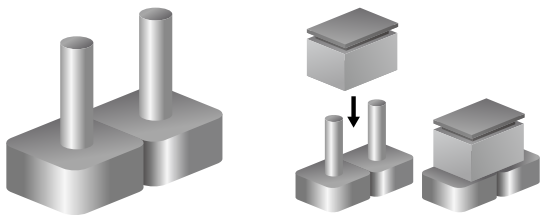
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

Jumper Settings

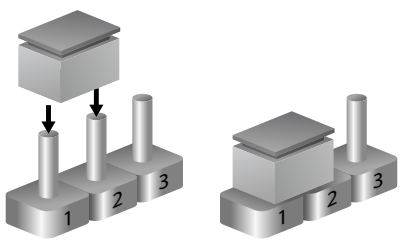
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is **short**. If you remove the jumper cap, or place the jumper cap on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

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

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



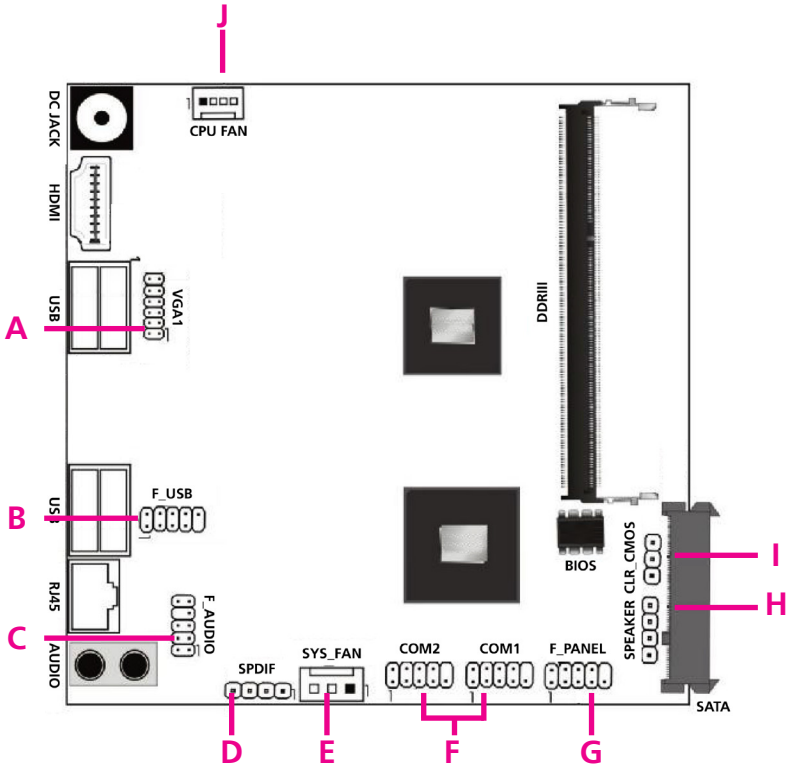
Three-Pin Jumpers: Pins 1 and 2 Are Short



Locations of the Jumpers and Connectors

NDiB 127

The figure on the right is the NDiB 127 motherboard which is the motherboard used in the NDiS 127 system. It shows the locations of the jumpers and connectors.



A	VGA
B	F_USB
C	F_AUDIO1
D	SPDIF
E	SYS_FAN
F	COM1 / COM2
G	F_PANEL
H	SPEAKER
I	CLR_CMOS
J	CPU_FAN

External Connectors Pin Definitions

This section provides descriptions, illustrations and pin definitions of the external connectors.

Connector Specification

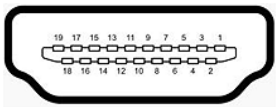
12V System Power Connector

JP1

Warming Notice:
This DC Jack is support 12V only, the inside diameter is 2mm, before you use, please well know about it in advance. And if you use others like 19V, it will damage the boards.

HDMI Type A Connector

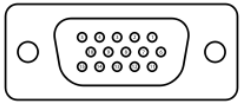
HDMI



Pin	Definition	Pin	Definition
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2–	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1–
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0–	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock–
13	CEC	14	NC
15	SCL	16	SDA
17	DDC/CEC/HEC Ground	18	Power (VCC5)
19	Hot Plug Detect		

VGA Connector

VGA



Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	Gnd	6	Gnd
7	Gnd	8	Gnd
9	VCC (VCC5)	10	Gnd
11	NC	12	DDC Data
13	HSYNC	14	VSYNC
15	DDC Clock		

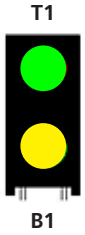
LAN connector

J2

Pin	Definition	Pin	Definition
1	TCT	2	MDI3-
3	MDI3+	4	MDI2-
5	MDI2+	6	MDI1-
7	MDI1+	8	MDI0-
9	MDI0+	10	TCTG
11	V3_3M	12	LED_ACT#
13	LED_1000#	14	LED_100#

LED HDD/PWR

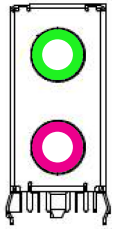
LED



LED No.	Function Description
T1	Power LED (Green)
B1	HDD LED (Yellow)

Audio Jack

Audio



Connector	Function Description
Green	Line Out
Pink	Mic-IN

USB Port

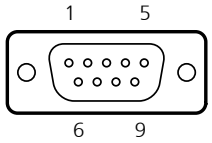
USB1 / USB2

Pin	Definition	Pin	Definition
1	VCC (VCC5)	2	DATA1-
3	DATA1+	4	GND
5	VCC (VCC5)	6	DATA-
7	DATA+	8	GND

RS232 Port

COM

Standard DB9 Connector



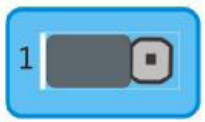
Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

Internal Connectors Pin Definitions

This section provides descriptions, illustrations and pin definitions of the internal connectors.

Clear CMOS Selection

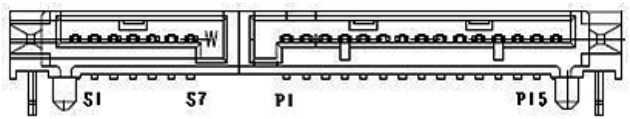
CLR_CMOS



Jumper	Status
1-2	Normal Operation (default)
2-3	Clear CMOS

Serial-ATA

SATA1



Pin	Definition	Pin	Definition
S1	GND	S2	TX+
S3	TX-	S4	GND
S5	RX-	S6	RX+
S7	GND		
P1	NC	P2	NC
P3	NC	P4	GND
P5	GND	P6	GND
P7	VCC5	P8	VCC5
P9	VCC5	P10	GND
P11	NC	P12	GND
P13	NC	P14	NC
P15	NC		

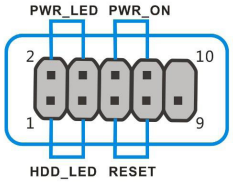
Front Panel Audio Pin Header

F_Audio

Pin	Definition	Pin	Definition
1	MIC IN_L	2	AGND
3	MIC2_R	4	NC
5	OUT2_R	6	MIC_JD
7	J_SEN	8	/
9	OUT_L	10	OUT_JD

Front Panel LED / Switch Pin Header

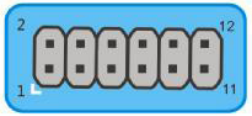
F_Panel



Pin	Definition	Pin	Definition
1	HDD_LED+	2	PWR_LED+
3	HDD_LED-	4	PWR_LED-
5	RESET	6	PWR_ON
7	RESET	8	PWR_ON
9	/	10	/

VGA Pin Header

VGA1



Pin	Definition	Pin	Definition
1	VGA_ERD	2	DDC_DATA
3	GND	4	H-SYNC
5	VGA_GREEN	6	V-SYNC
7	GND	8	DDC_CLK
9	VGA_BLUE	10	5V
11	GND	12	GND

Warming Notice:
Please well know about it, VGA cable have 1 Pin with Red colour, It is Pin 1. VGA cable Pin1 must connect to motherboard Pin1, if you connector wrong, it will damage or burn the VGA Cable.

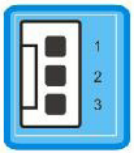
Speaker Pin Header

Speaker

Pin	Definition	Explanation
1	5V	VCC
2	/	Empty
3	/	Empty
4	SPEAKER	Horn

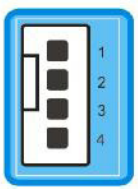
FAN Header

SYS_FAN



Pin	Definition
1	GND
2	+12V
3	SIO_SYSFAN_SIO_TACH

CPU_FAN



Pin	Definition
1	GND
2	+12V
3	SIO_CPUFAN_SIO_PWM
4	FAN Control

USB Port Header

F_USB

Pin	Definition	Pin	Definition
1	VGA_ERD	2	DDC_DATA
3	GND	4	H-SYNC
5	VGA_GREEN	6	V-SYNC
7	GND	8	DDC_CLK
9	VGA_BLUE	10	5V
11	GND	12	GND

COM Header

COM1 / COM2

Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

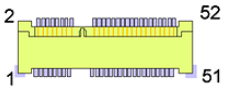
SPDIF Header

SPDIF

Pin	Definition
1	SPDIF_OUT
2-3	GND
4	SPDIF_IN

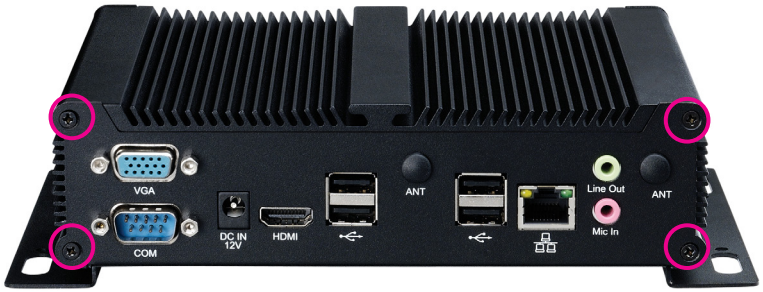
Mini-PCIe

CN1 / CN2



Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	WAKE#	2	+V3.3A_MIN	27	GND	28	+V1.5S_MIN
3	NC	4	GND	29	GND	30	SMB_CLK
5	NC	6	+V1.5S_MIN	31	PETn0	32	SMB_DATA
7	CLKREQ#	8	NC	33	PETp0	34	GND
9	GND	10	NC	35	GND	36	USB_D-
11	REFCLK-	12	NC	37	NC	38	USB_D+
13	REFCLK+	14	NC	39	+V3.3A_MIN	40	GND
15	GND	16	NC	41	+V3.3A_MIN	42	LED_WWAN#
17	NC	18	GND	43	NC	44	LED_WLAN#
19	NC	20	DISABLE#	45	NC	46	LED_WPAN#
21	GND	22	PERST#	47	NC	48	+V1.5S_MIN
23	PERn0	24	+V3.3A_MIN	49	NC	50	GND
25	PERp0	26	GND	51	NC	52	+V3.3A_MIN

Chapter 3: System Setup

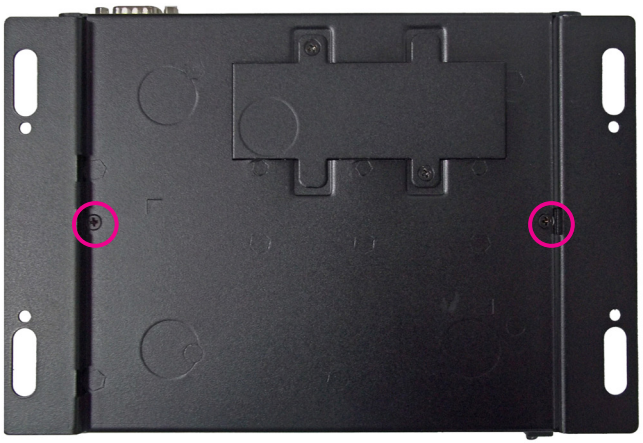


Removing the Chassis Cover

CAUTION!

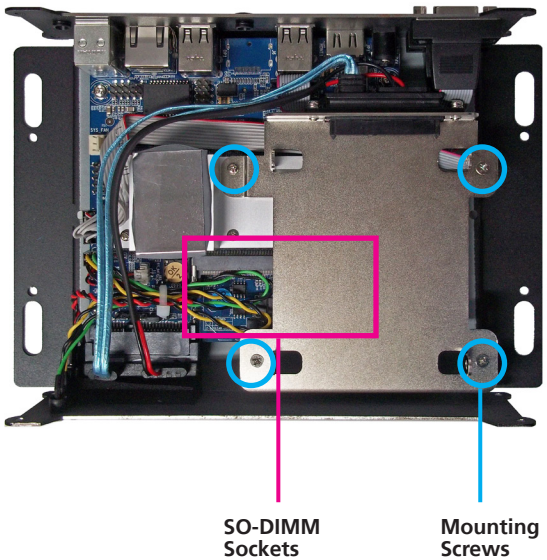
Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power source to prevent electric shock or system damage.

1. The screws on the bottom of cover are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.

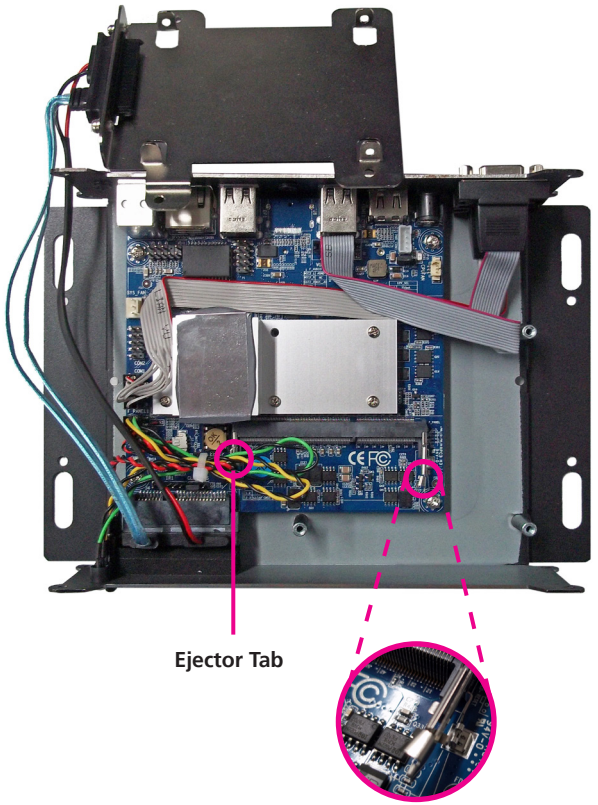


Installing a SO-DIMM

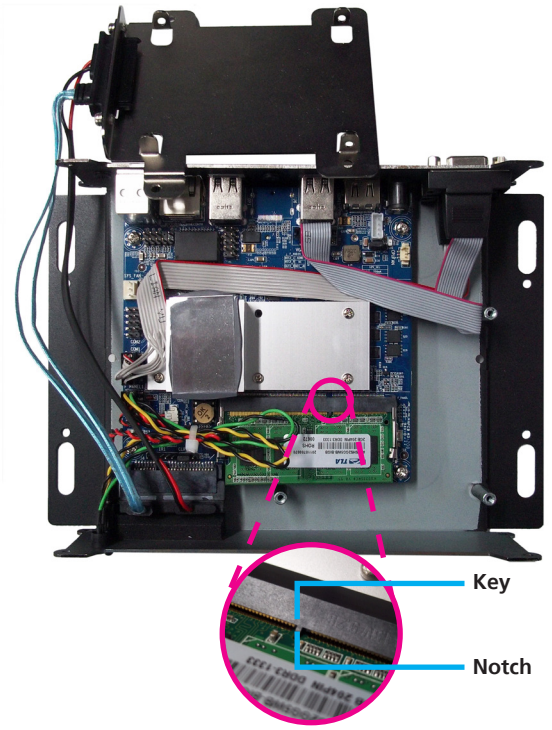
1. Loosen the mounting screws and remove the HDD bracket. Locate for the SO-DIMM socket on the board.



2. Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.

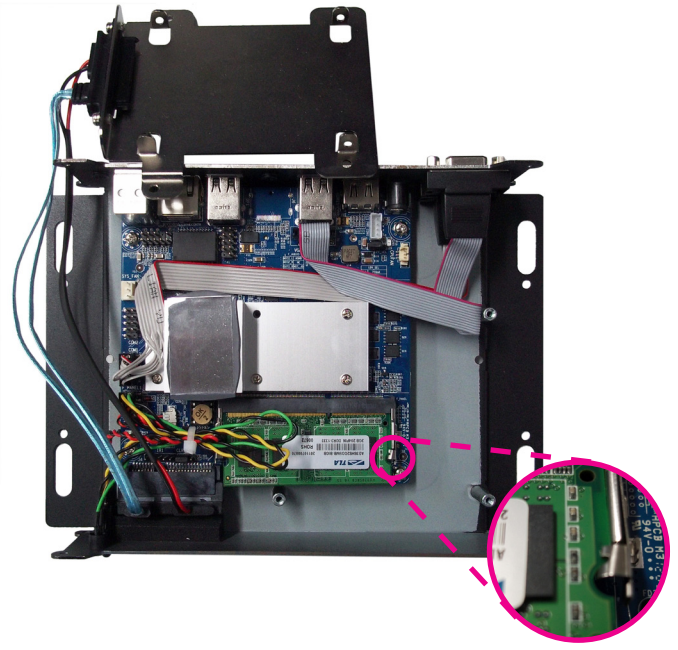


3. Note how the module is keyed to the socket. Grasping the module by its edges, align the module with the socket so that the "notch" on the module is aligned with the "key" on the socket. The key ensures the module can be plugged into the socket in only one direction.

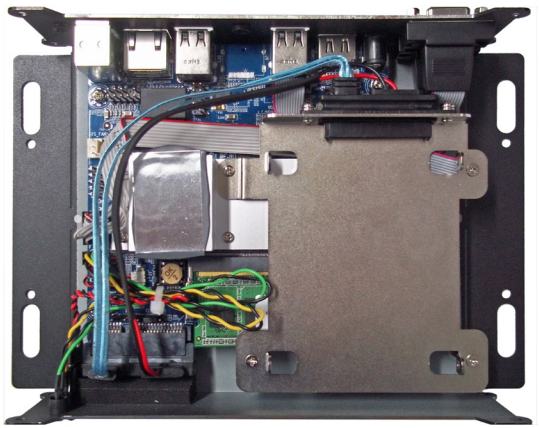


4. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips down into the socket. The contact fingers on the edge of the module will almost completely disappear inside the socket.

   The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

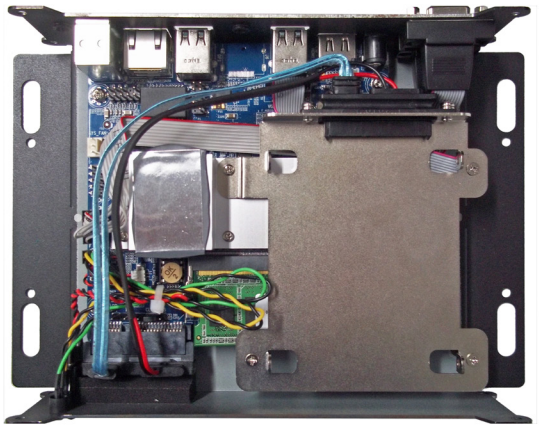


5. Align the mounting holes of the HDD bracket with the mounting studs on the board then use the provided mounting screws to secure the HDD bracket in place.

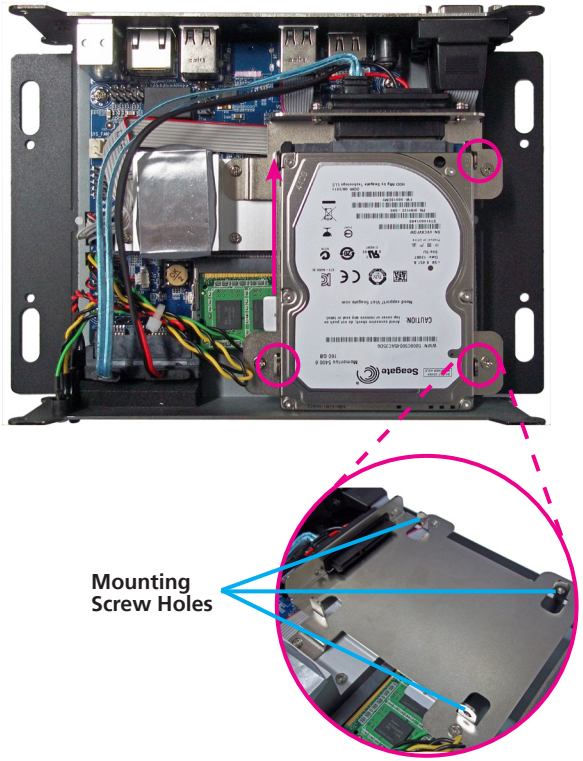


Installing a SATA Hard Drive

1. The drive bracket included in the chassis is used to hold a SATA hard drive. Disassembly HDD bracket from system to install SATA Hard Drive.

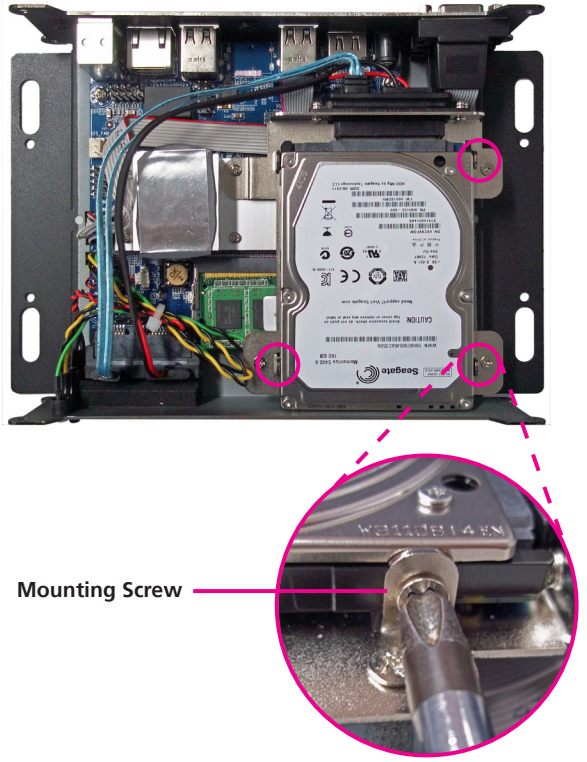


2. Place and slide the SATA hard drive onto the drive bracket. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bracket.



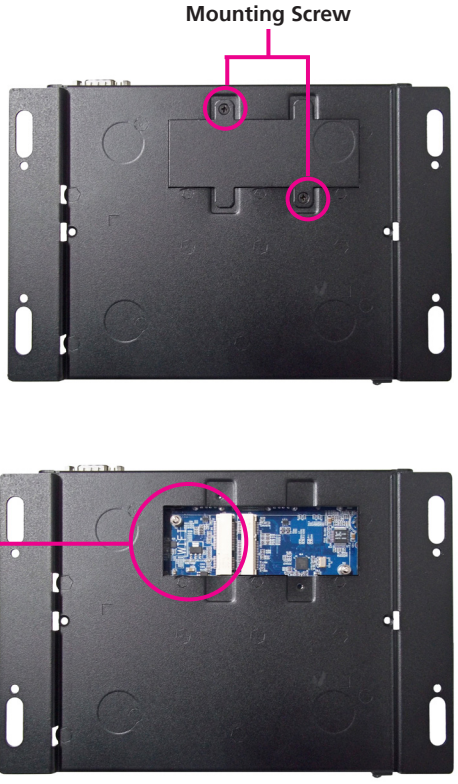
3. Locate for the SATA connector and the SATA power connector on the SATA drive.

4. Use the provided screws to secure the SATA drive in place.

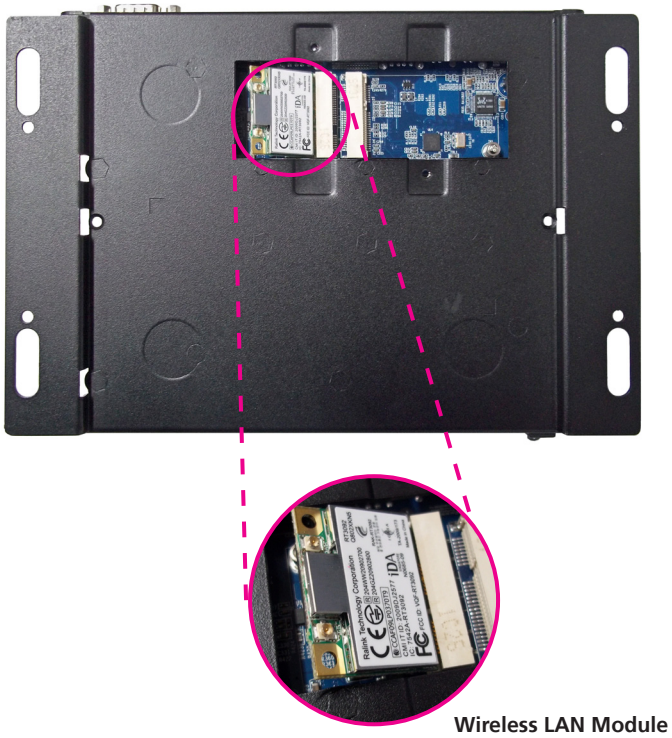


Installing a Wireless LAN Module

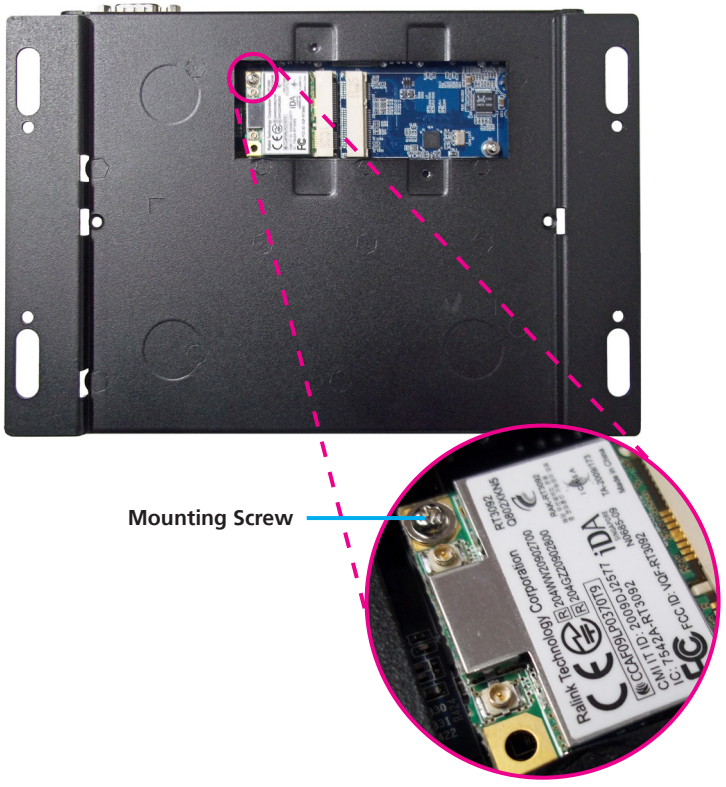
1. Remove bottom cover and locate for the Half Mini PCI Express slot on the board.



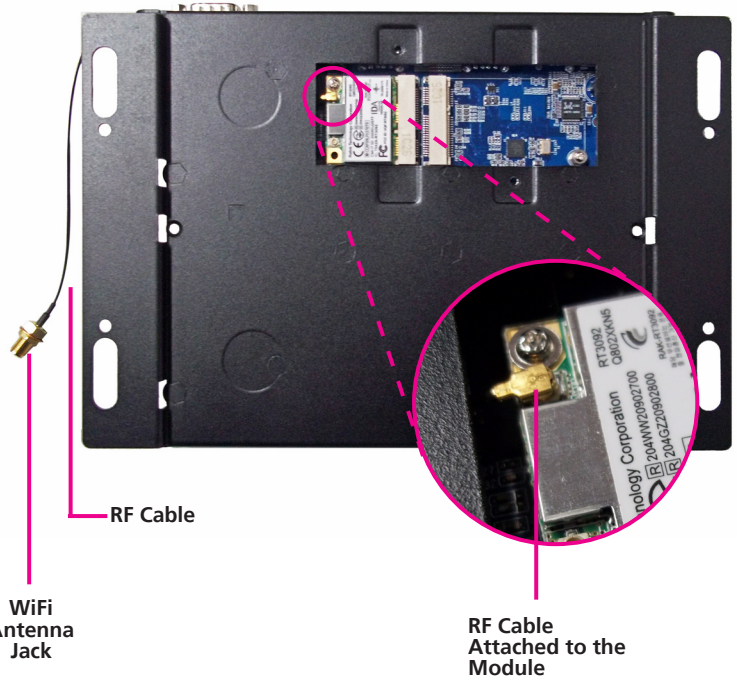
2. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



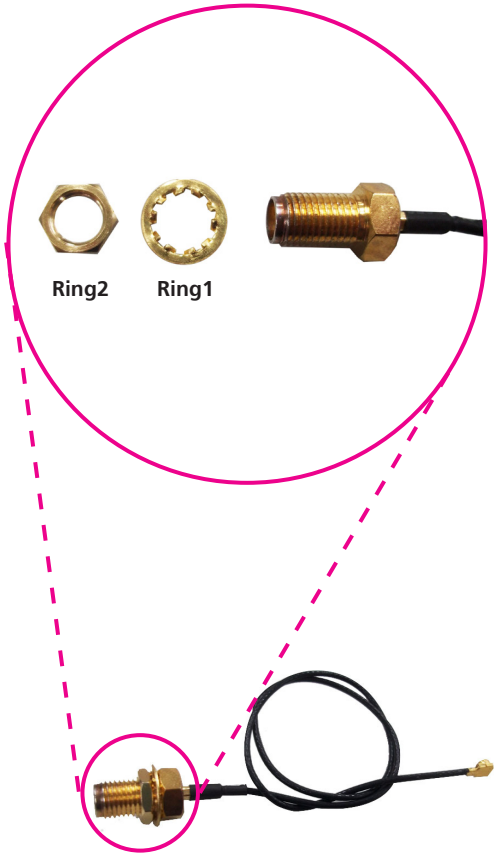
3. Push the module down then secure it with mounting screws.



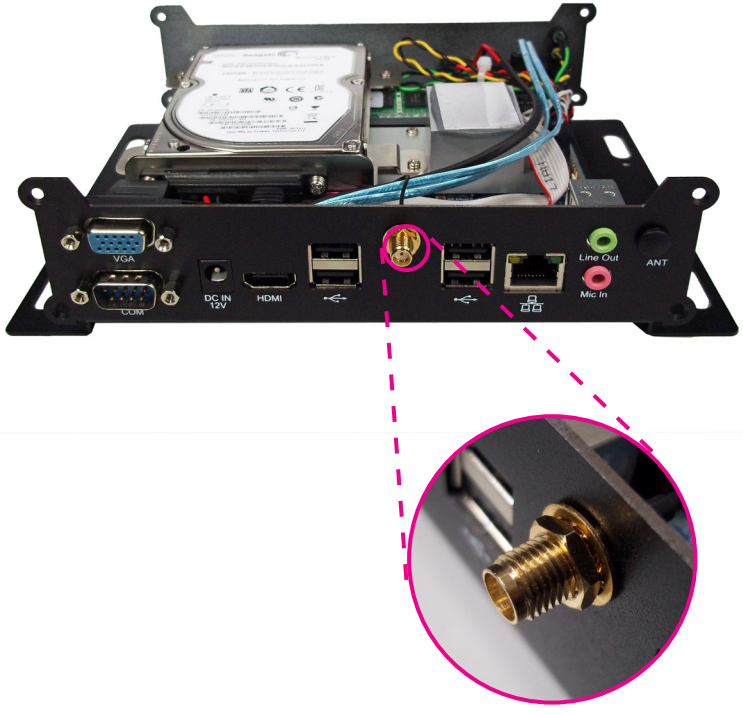
4. Attach one end of the RF cable onto the WiFi module.



5. Insert the 2 rings (ring 1 then ring 2) into the WiFi antenna jack.



6. Now mount the WiFi antenna jack to the WiFi antenna hole located at the rear panel of the chassis then tighten the rings.

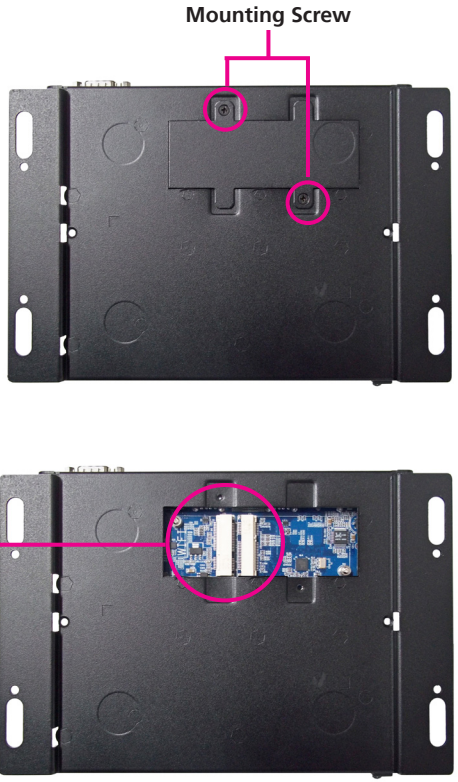


7. Align the screw holes of the cover with the screw holes on the bottom plate then use the provided mounting screws to secure the cover in place.

8. Now connect an external antenna to the WiFi antenna jack.

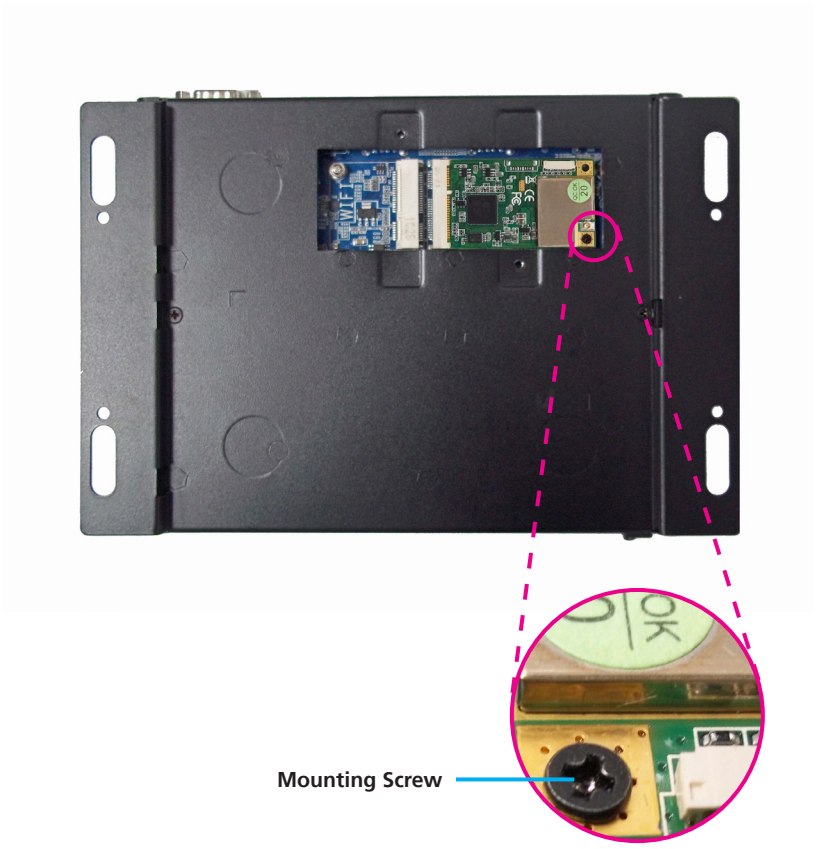
Installing a TV Tuner Module

1. Remove bottom cover and locate for the Mini PCI Express slot on the board.

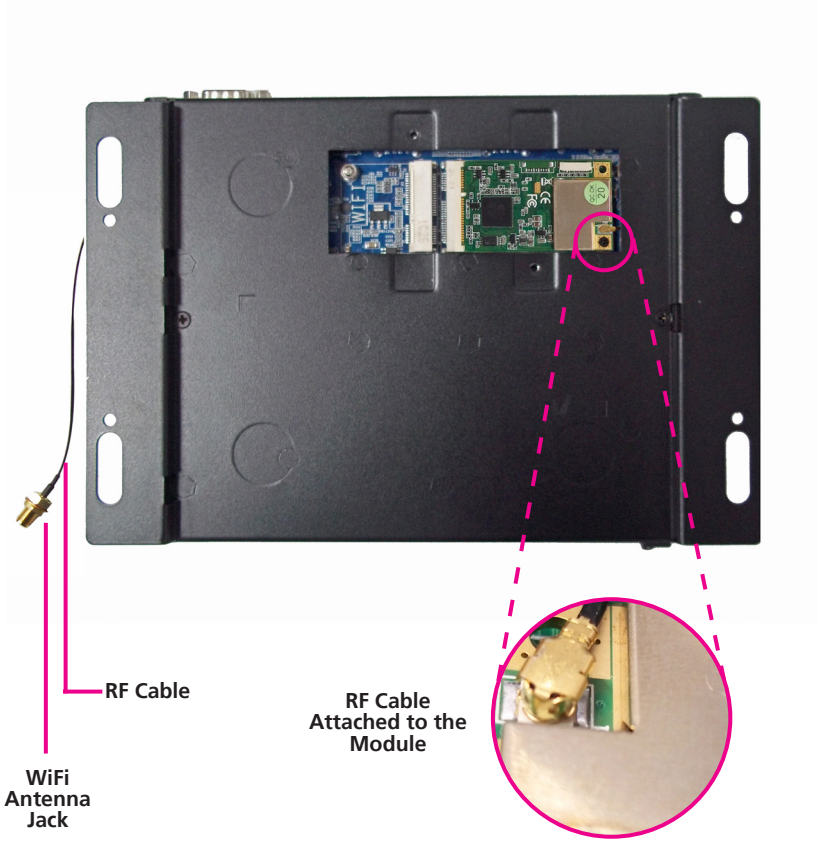


2. Insert the TV Tuner module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

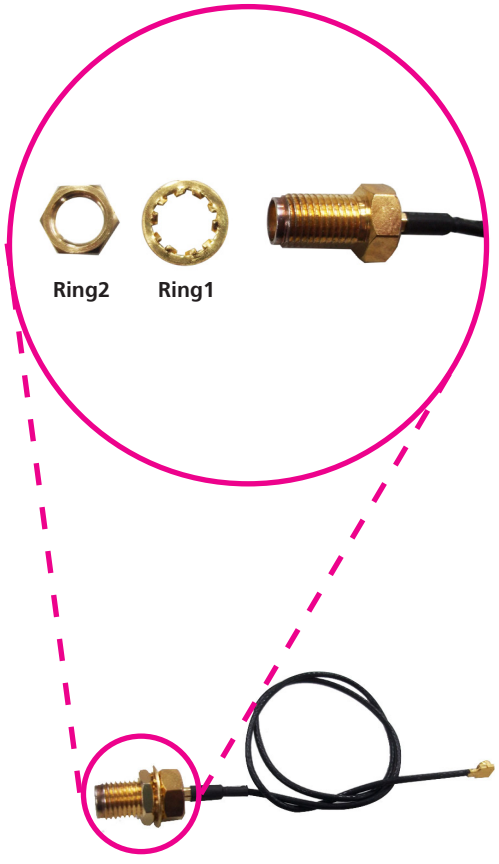
3. Push the module down then secure it with mounting screws.



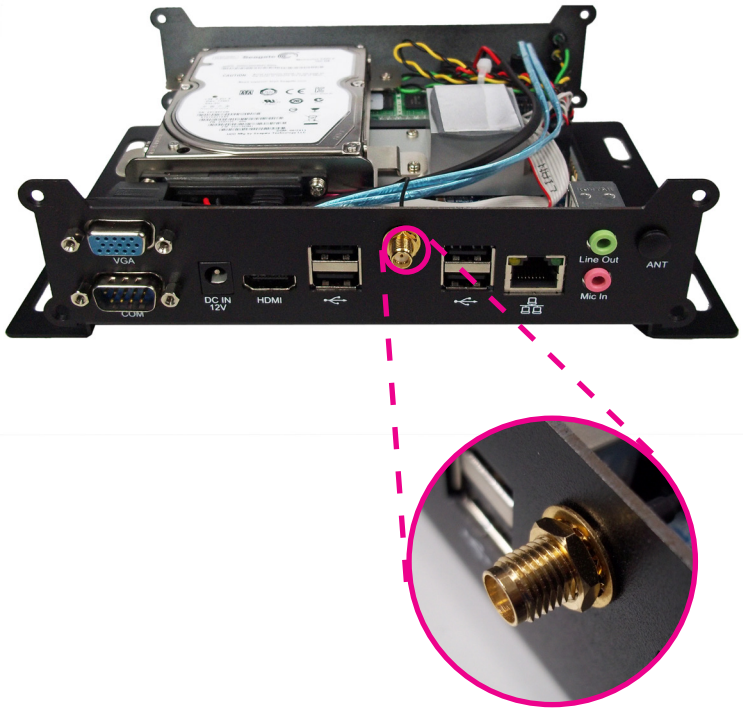
4. Attach one end of the RF cable onto the TV Tuner module.



5. Insert the 2 rings (ring 1 then ring 2) into the TV Tuner antenna jack.



6. Now mount the TV Tuner antenna jack to the TV Tuner antenna hole located at the rear panel of the chassis then tighten the rings.



7. Align the screw holes of the cover with the screw holes on the bottom plate then use the provided mounting screws to secure the cover in place.

8. Now connect an external antenna to the TV Tuner antenna jack.

Installing Wallmount Brackets

The wallmount brackets provide a convenient and economical way of mounting the system on the wall.

Mount the system on the wall by fastening screws through the brackets mounting holes.

Fasten screws to mount the system to the wall

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for NDiS 127. 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 ofbeeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

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

```
TO ENTER SETUP BEFORE BOOT

PRESS <CTRL-ALT-ESC>

Press the <Del> key to enter Setup:
```

Legends

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

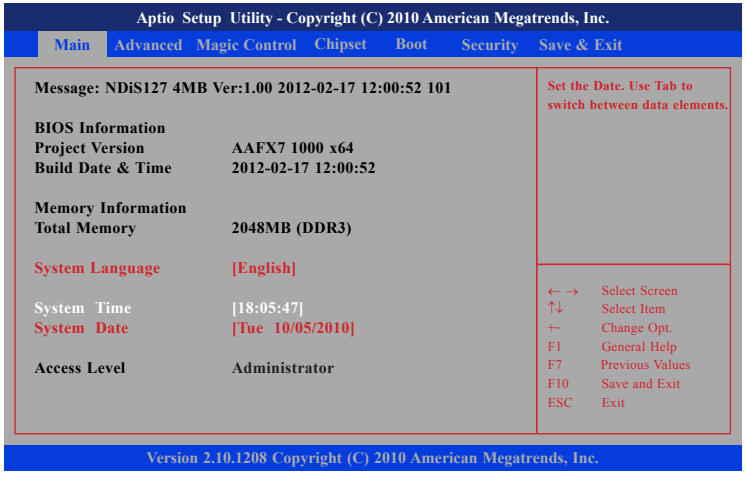
When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

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

Main

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



System Memory

This section displays general system memory size. The BIOS automatically detects the information in this section.

System Language

This section is used to choose the system default languages.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

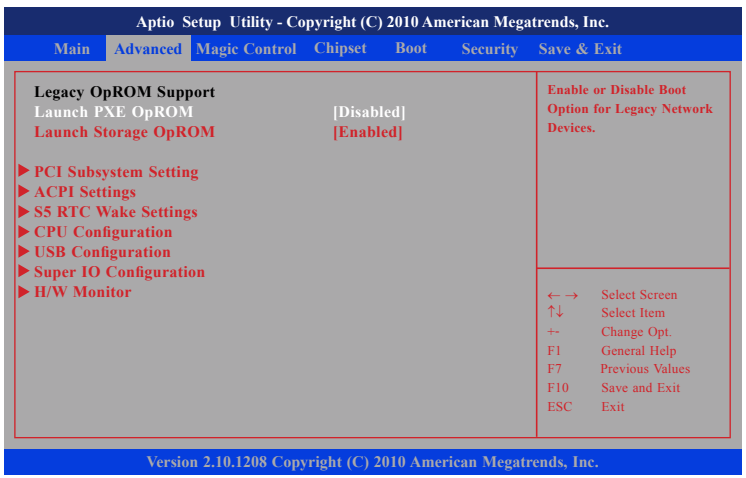
System Date

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

Advanced

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

Setting incorrect field values may cause the system to malfunction.



Launch PXE OpROM

This section is used to enable or disable boot option for legacy network devices.

Launch Storage OpROM

This section is used to enable or disable boot option for legacy storage devices.

PCI Sub System Setting

This section is used to configure PCI, PCI-X and PCI Express settings.

ACPI Settings

Enables or disables the System ACPI parameters.

S5 RTC Wake Settings

This section is used to Enables or disables system to wake from S5 state using RTC alarm.

CPU Configuration

This section is used to view detailed CPU specifications and configure the CPU.

USB Configuration

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

Super IO Configuration

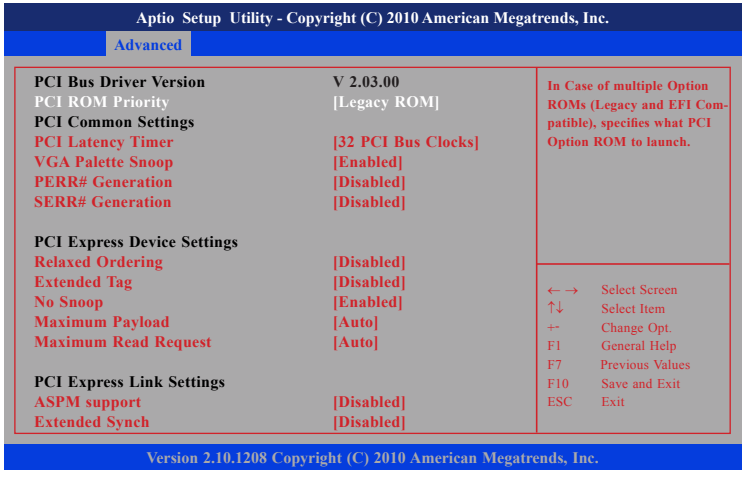
This section is used to configure the I/O functions supported by the on-board Super I/O chip.

H/W Monitor

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

PCI Subsystem Setting

This section is used to configure PCI, PCI-X and PCI Express settings.



PCI ROM Priority

In Case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.

PCI Common Settings

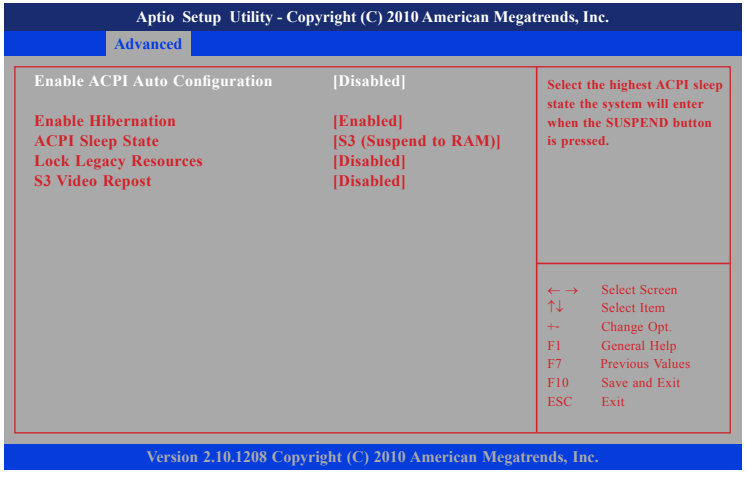
- **PCI Latency Timer**
  Value to be programmed into PCI latency Timer Register.
- **VGA Palette Snoop**
  This section is used to enable or disable VGA Palette Registers Snooping.
- **PERR# Generation**
  This section is used to enable or disable PCI Device to generate PERR#
- **SERR# Generation**
  This section is used to enable or disable PCI Device to generate SERR#

PCI Express Device Setting

- **Relaxed Ordering**
  This section is used to enable or disable PCI Express Device relaxed ordering
- **Extended Tag**
  If ENABLED allows device to use 8-bit Tag field as a requester.
- **No Snoop**
  This section is used to enable or disable PCI Express No Snoop option.
- **Maximum Payload**
  This section is used to set maximum payload of PCI Express Device or allow system BIOS to select the value.
- **Maximum Read Request**
  Set maximum read request size of PCI Express Device or allow system BIOS to select the value.
- **ASPM Support**
  Set the ASPM level: Force L0 - FOrce all links to L0 State ; Auto - BIOS auto configure ; DISABLE - Disables ASPM.
- **Extended Synch**
  Allows generation of extend synchronization patterns.

ACPI Settings

Enables or disables the System ACPI parameters.



Enable ACPI Auto Configuration

Select the highest ACPI sleep state the system will enter when the SUS-PEND button is pressed.

Enable Hibernation

This section is used to enable or disable system ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the SUS-PEND button is pressed.

Lock Legacy Resources

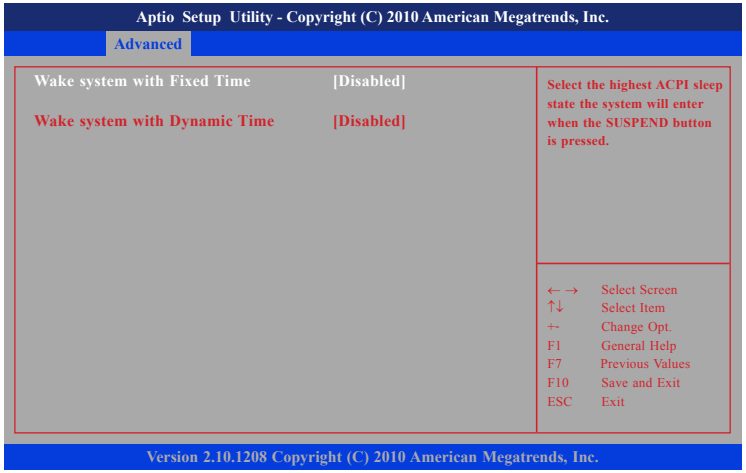
This section is used to enable or disable lock of legacy resources.

S3 Video Repost

Enable or Disable S3 Video Repost.

S5 RTC Wake Settings

This section is used to Enables or disables system to wake from S5 state using RTC alarm.



Wake system with Fixed Time

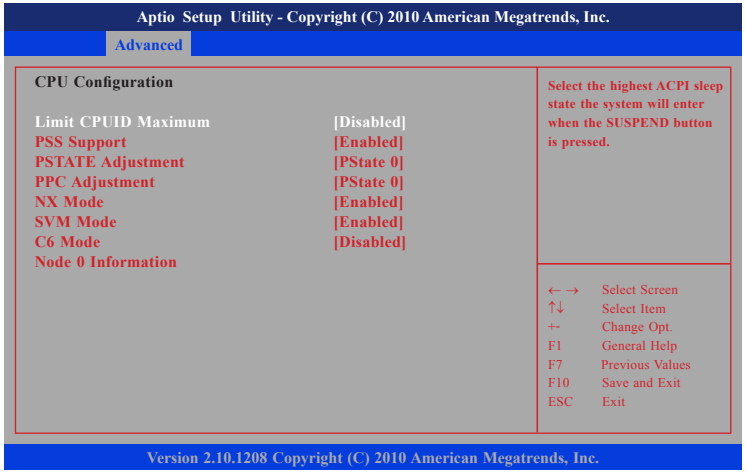
This section is used to enable or disable system wake on alarm event. When enabled, system will wake on the HR:MIN:SEC specified .

Wake system with Dynamic Time

This section is used to enable or disable system wake on alarm event. When enabled, system will wake on thecurrent time + Increase minute(s).

CPU Configuration

This section is used to view detailed CPU specifications and configure the CPU.



Limit CPUID Maximum

Disabled for Windows XP.

Wake system with Dynamic Time

This section is used to enable or disable the generation of ACPI_PPC, _PPS and _PCT objects.

PSTATE Adjustment

This section is used to adjust startup P-state level.

PPC Adjustment

This section is used to adjust _PPC object.

NX Mode

This section is used to enable or disable the NO-execute page protection Function.

SVM Mode

This section is used to enable or disable the CPU virtualization function.

C6 Mode

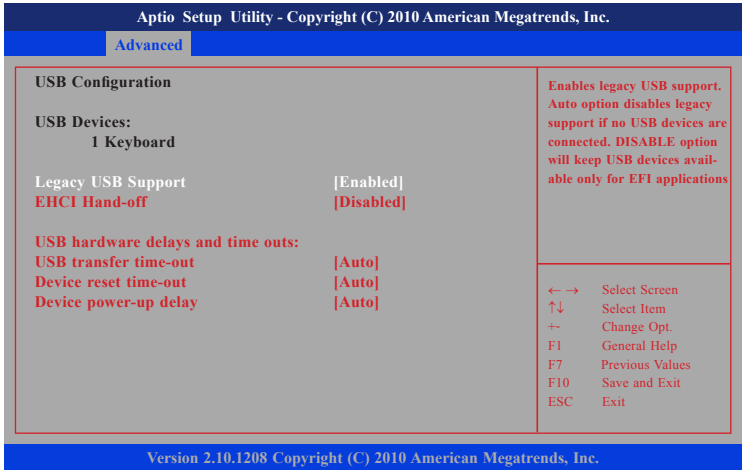
This section is used to enable or disable the C6.

Node 0 Information

View memory information related to node 0.

USB Configuration

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



Legacy USB Support

Enables legacy USB support. Auto option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications

EHCI Hand-off

This section is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

USB transfer time-out

The time-out value for control, Bulk, and Interrupt transfers.

Device reset time-out

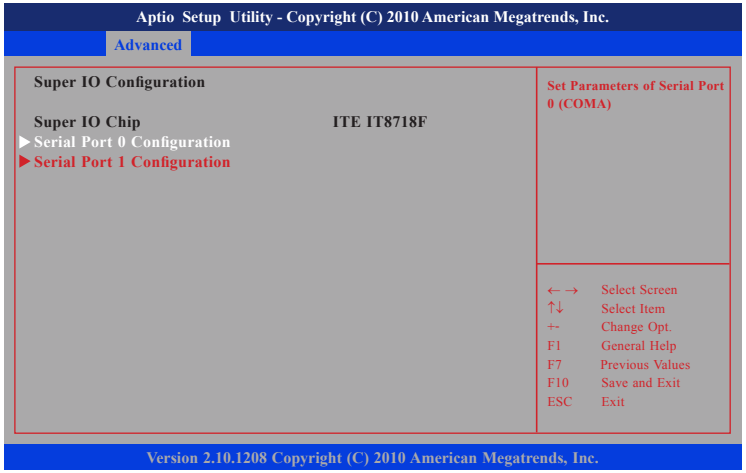
USB mass storage device start unit command time-out.

Device power-up delay

Maximum time the device will take before it properly reports it self to the Host Controller. 'Auto' uses default value; for a Root port it is 100 ms, for a Hub port the delay is taken form Hub descriptor.

Super IO Configuration

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

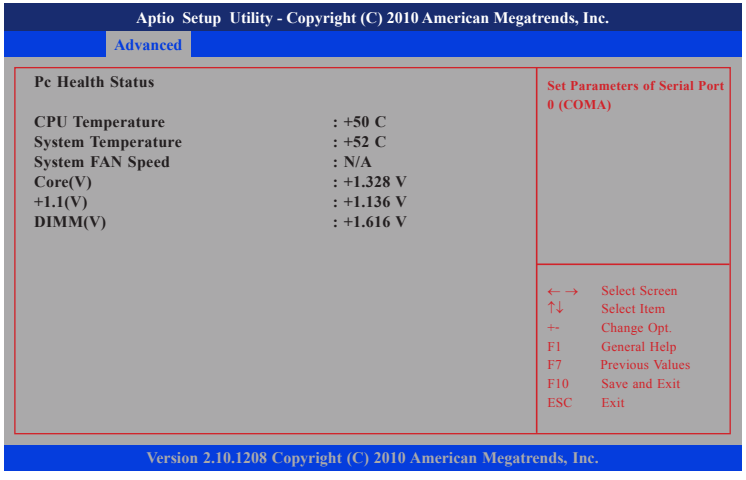


Serial Port 0 / 1 Configuration

Selects the IO/IRQ setting of the I/O devices.

PC Health Status

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



CPU Temperature

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

System Temperature

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

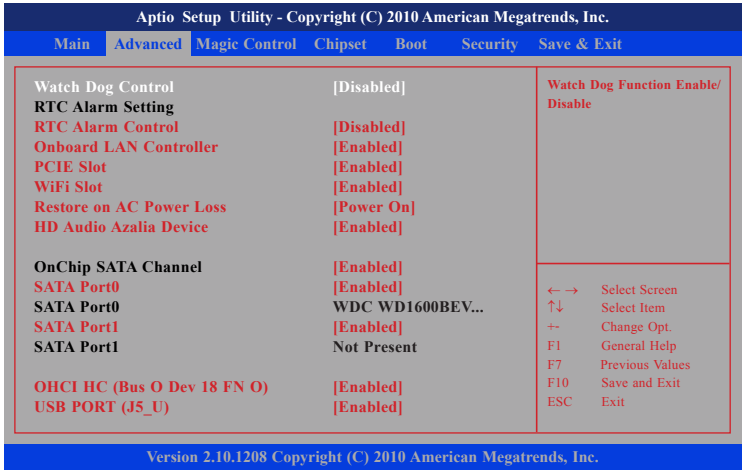
System Fan Speed

Detects and displays the system Fan Speed.

Core(V) / +1.1(V) / DIMM(V) Voltage

The system voltage is monitored.

Magic Control



Watch Dog Control
This section is used to enable or disable the Watch Dog Function.

RTC Alarm Control
This function is for setting the Date, Hour, Minute, and Second for your computer to boot up. During Disabled, you cannot use this function. During Enabled, Choose the Date, Hour, Minute, and Second.

Onboard LAN Controller
This section is used to enable or disable the Watch Dog Function.

PCIE Slot
This section is used to enable or disable the PCIE Slot Function.

WiFi Slot
This section is used to enable or disable the WiFi Slot Function.

Restore on AC Power Loss

Power Off
When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

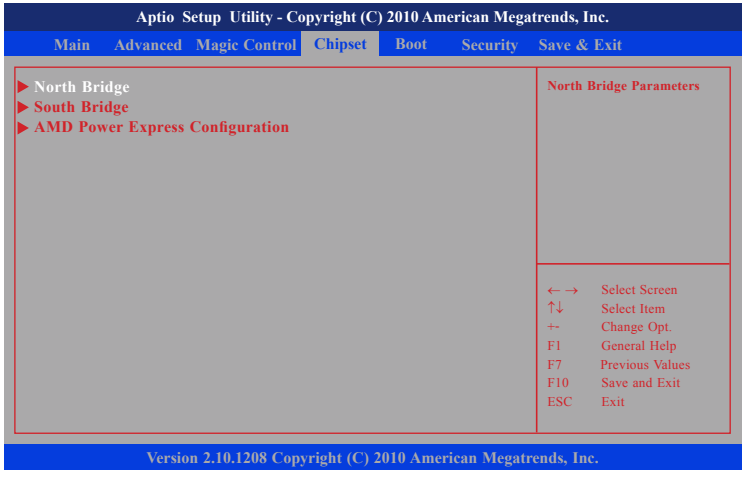
Power On
When power returns after an AC power failure, the system will automatically power-on.

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

HD Audio Azalia Device
Enable or disable the HD Audio Azalia Device function.

SATA Port
Enable or disable the SATA Port function.

Chipset



North Bridge

The North Bridge configuration menu configures the North Bridge parameters.

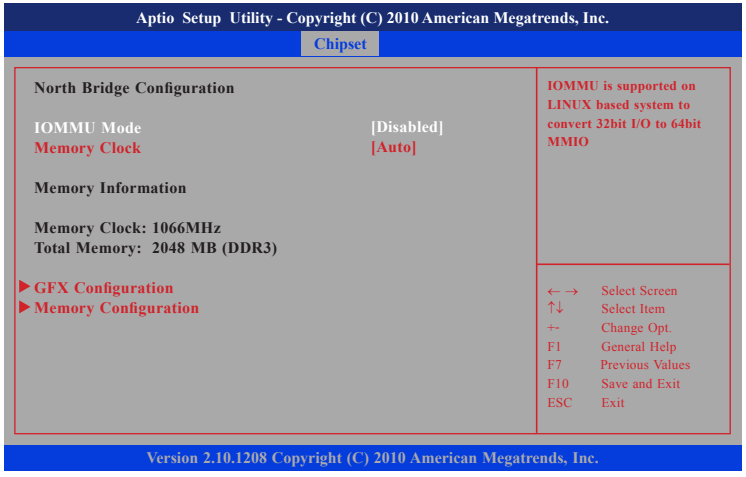
South Bridge

The South Bridge configuration menu configures the South Bridge parameters.

AMD Power Express Configuration

The AMD Power Express configuration menu configures the AMD Power Express configuration parameters.

North Bridge Configuration



IOMMU Mode

IOMMU is supported on LINUX based system to convert 32bit I/O to 64bit MMIO.

Memory Clock

This Option Allows User to select different memory clock. Default value is 400MHz.

GFX Configuration

The GFX configuration menu configures the GFX parameters.

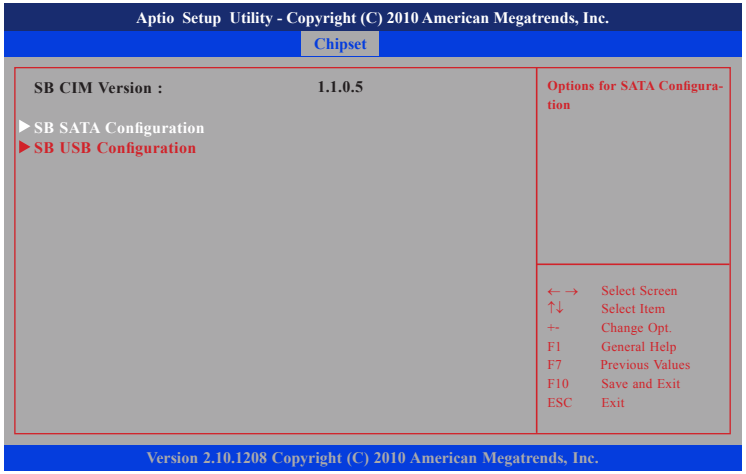
- **PSPP Policy**
  This Option Allows User to select different PCIe Speed Power Policy.

Memory Configuration

The Memory configuration menu configures the Memory parameters.

- **Integrated Graphics**
  This Option Allows User to enable Integrate Graphic controller.
- **Bank Interleaving**
  This Option Allows User to enable Bank Interleaving function.

South Bridge Configuration



SB SATA Configuration

This Option Allows User to select different SATA settings.

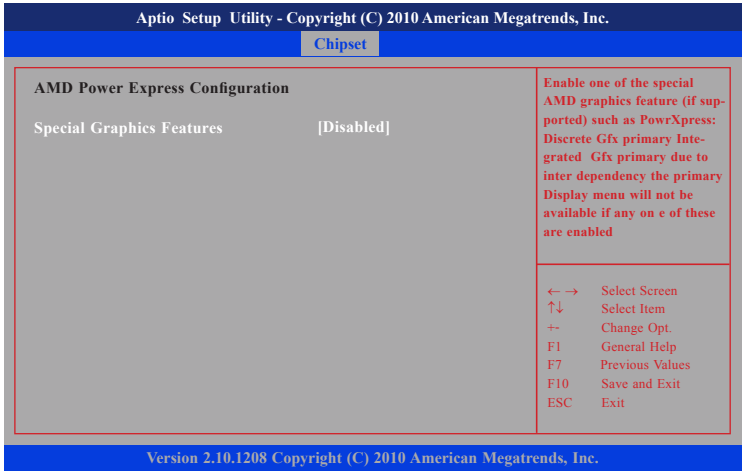
- **OnChip SATA Channel**
  This field is used to enable or disable the OnChip SATA channel.
- **OnChip SATA Type**
  This Option Allows User to setup OnChip SATA Type.
- **OnChip IDE Mode**
  This Option Allows User to setup OnChip IDE Mode.

SB USB Configuration

The USB configuration menu configures the USB Port parameters.

- **USB Device wakeup form S3 or S4**
  This Option Allows User to enable USB deivce wkeup from S3 or S4.

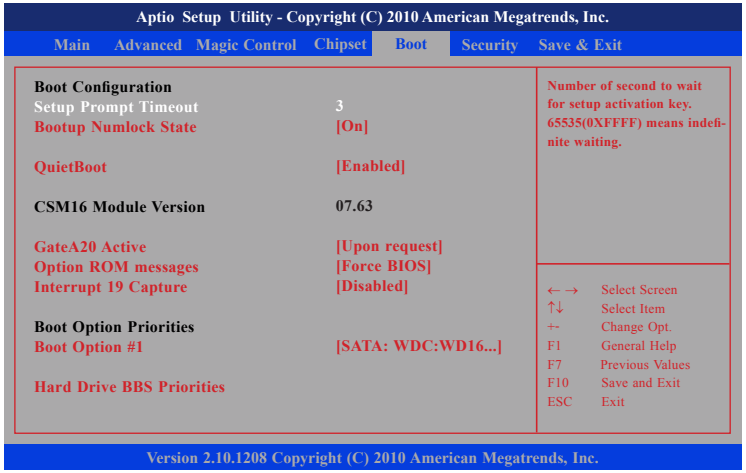
AMD Power Express Configuration



Special Graphics Features

This Option Allows User to enable one of the special AMD graphics feature (if supported) such as PowrXpress: Discrete Gfx primary Integrated Gfx primary due to inter dependency the primary Display menu will not be available if any on e of these are enabled.

Boot



Set Prompt Time out

Number of second to wait for setup activation key. 65535(0XFFFF) means 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

When enabled, the BIOS will display the OEM logo instead of POST message during POST.

GateA20 Active

This option is iseful when any RT code is executed above 1MB.
UPON REQUEST - GA20 can be disabled using BIOS services.
ALWAYS - Do not allow disabling GA20.

Option ROM messages

Set display mode for Option ROM.

Interrupt 19 Capture

When enabled, it will allows option ROMs to trap Int 19.

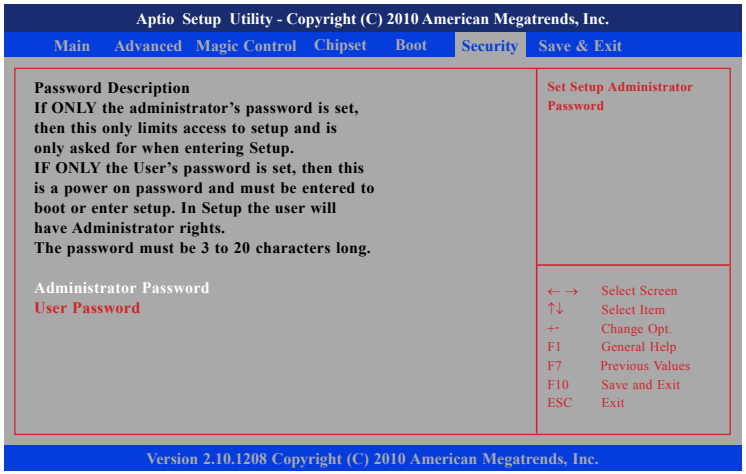
Boot Option #1

Use the boot options to select the available devices the system boots from.

Hard Drive BBS priorities

Use the Hard Disk Drive BBS priorities options to set the order of the legacy devices in this group.

Security



Change Supervisor Password

This field is used to set or change the supervisor password. To set a new password:

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

To change the password, repeat the same steps above.

To clear the password, select Change Supervisor Password then press <Enter>.

The Password Un-installed dialog box will appear.

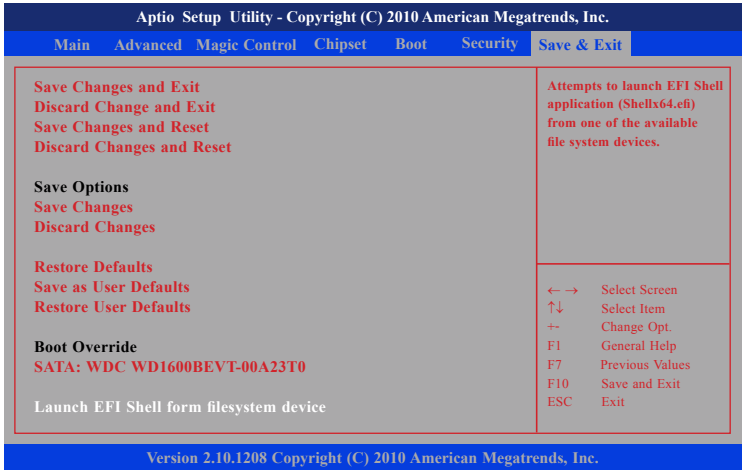
Change User Password

This field is used to set or change the user password. To set a new password:

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

To change the password, repeat the same steps above.

Exit



Save Changes and Exit

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

Discard Changes and Exit

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

Save Changes and Reset

Reset the system after saving changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

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

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

Restore / Load the default values from the BIOS ROM.

Launch EFI Shell from filesystem device

Attempts to launch EFI Shell application (Shellx64.efi)from one of the available file system devices.

Appendix A: Watchdog Timer

Introduction

NDiS 127 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. The watchdog timer provides the following functions for user programming:

- Timer can be set from 1 to 255 seconds or 1 to 255 minutes.
- Generates an interrupt or resets signal if the software fails to reset the
- Timer after time-out.

Before using Watch Dog Timer, it must enter Watch Dog Timer programming mode first (STARTPROG). After the operation of the Watch Dog Timer, it will need to exit the WDT (ENDPROG).

WDT program need to follow these steps:

1. Enter WDT programming mode
2. Set the mode of WDT ; Start the WDT ; ON / OFF WDT
3. Exit WDT programming mode

Example Programs

```
#define INDEXP 0x2e
#define DATAP 0x2f
//Super I/O Watchdog
#define STARTPROG {
outportb(INDEXP,0x87);
outportb(INDEXP,0x01);
outportb(INDEXP,0x55);
outportb(INDEXP,0x55);
}
 #define ENDPROG{outportb(INDEXP,0x07);
                                outportb(DATAP,0x02);
                                outportb(INDEXP,0x02);
                                outportb(DATAP,0x02);
}
#define SELEDEV(x) { outportb(INDEXP,7); outportb(DATAP,x); }
#define WRITEREG(reg,val) {
```

```
outportb(INDEXP,reg);
outportb(DATAP,val); }
//1.Initialize Watchdog device
short SIOWTD_Setup(short irq)
{
//Start programming Watchdog
STARTPROG
//Activate the Watchdog Device
SELEDEV(7) //Select Logical device7
WRITEREG(0x30,0x01)  //Activate the device
//end programming watchdog
ENDPROG
return 0;
}
//2.start Watchdog to count
short SIOWTD_Enable(short time,short unit)
/*unit=0:second,=1:minutes */
{
if(time<1 || time>255) return -1;
if(unit<0 || unit>1) return -1;
//start programming watchdog
STARTPROG
 SELEDEV(7) //logical device 7
 / /lect Watchdog Timer clock
switch(unit)
{
case 0:
//BIT7=1,secondes;BIT6=1 enable,BIT6=0 disable
WRITEREG(0x72,0xC0)
break;
case 1:
//BIT7=0,minutes BIT6=1 enable,BIT6=0 disable
                    WRITEREG(0x72,0x40)
break;
default:
break;
}
 WRITEREG(0x73,time) //t timeout value
//end programming watchdog
ENDPROG
return 0;
}
```