



NEXCOM International Co., Ltd.

Multi-Media Solutions
Digital Signage Platform
NDiS M533
User Manual

Contents

Preface

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

Chapter 1: Product Introduction

Overview	1
Key Features	1
Physical Features	2
Front Panel	2
Rear Panel	2
Hardware Specifications	3
Mechanical Dimensions	4

Chapter 2: Jumpers and Connectors

Before You Begin	5
Precautions	5
Locations of the Jumpers and Connectors for NDiB M533	6
NDiB M533	6
Jumper Settings	7
Jumpers	8
RTC Control Connector	8
Connector Pin Definitions	9
External I/O Interfaces	9
USB Connector	9
LAN Port	9
RJ45 RS232 Connector	10
USB 3.0 Ports	10
HDMI	11
JAE-TX25	12
Internal Connectors	13
RTC Battery Connector	13
Debug Port	13
SATA Connector (7-pin and 15-pin)	14
SIM Card Slot	14
Mini-PCIe Connector	15

Chapter 3: System Setup

Removing the Chassis Cover	16
Installing a SO-DIMM (DIMM1)	17



Installing a SO-DIMM (DIMM2) 19
Installing a 2.5" HDD Storage 24
Installing a Wireless LAN Module 26
Installing a 3G Module..... 31

Chapter 4: BIOS Setup

About BIOS Setup 35
When to Configure the BIOS..... 35
Default Configuration 36
Entering Setup 36
Legends 36
BIOS Setup Utility..... 38
 Main 38
 Advanced 39
 Boot 49
 Security 49
 Save & Exit 50

Appendix A: Watchdog Timer.....51

Preface

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Disclaimer

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Acknowledgements

NDiS M533 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 2011/65/EU, to be your trusted green partner and to protect our environment.

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

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

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

How to recognize NEXCOM RoHS Products?

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

All new product models launched after January 2013 will be RoHS compliant. They will use the usual NEXCOM naming convention.

Warranty and RMA

NEXCOM Warranty Period

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

Repair Service Charges for Out-of-Warranty Products

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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 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 BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

Technical Support and Assistance

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

Warning!

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

Conventions Used in this Manual



Warning:

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



Caution:

Information to avoid damaging components or losing data.



Note:

Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NDiS M533 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Description	Qty
1	50311F0112X00	Flat Head Screw Long FEI:F3x4iso	For SPC-150 M3x4mm (NYLOK) Black	2
2	50311F0295X00	Flat Head Screw Long FEI:F2x4 NYLOK NIGP	F2x4 NIGP NYLOK	2
3	5044440090X00	Thermal Pad APUS:3A2015001001500	15x10x1.5mm XR-PE	1
4	5060200081X00	Thermal Pad APUS:PSX PXF-098-060-08	25x15x0.2mm	1
5	5060900226X00	Mini PCIe Bracket CHYUAN-JYH	29x30x2.1mm SPCC t=1.0mm NI	1
6	6012200049X00	ASG110 PE BAG 24x38cm	240x380x0.08mm	1
7	6012200052X00	PE Zipper Bag #8	170x240mm, w/China RoHS Symbol	1
8	6012200053X00	PE Zipper Bag #3	100x70mm, w/China RoHS Symbol	1
9	6023309081X00	Cable EDI:232091081804-RS	COM Port. DB9 Female to RJ45 8P8C L:1800mm	1
10	602DCD0777X00	NDiS M533 DVD Driver Manual VER:1.0	JCL	1

Ordering Information

The following provides ordering information for NDiS M533.

NDiS M533 (P/N: 10W00M53300X0)

4th generation Intel® Core™ i5-4400E BGA type processor OPS, Intel® QM87 chipset

Chapter 1: Product Introduction

Overview



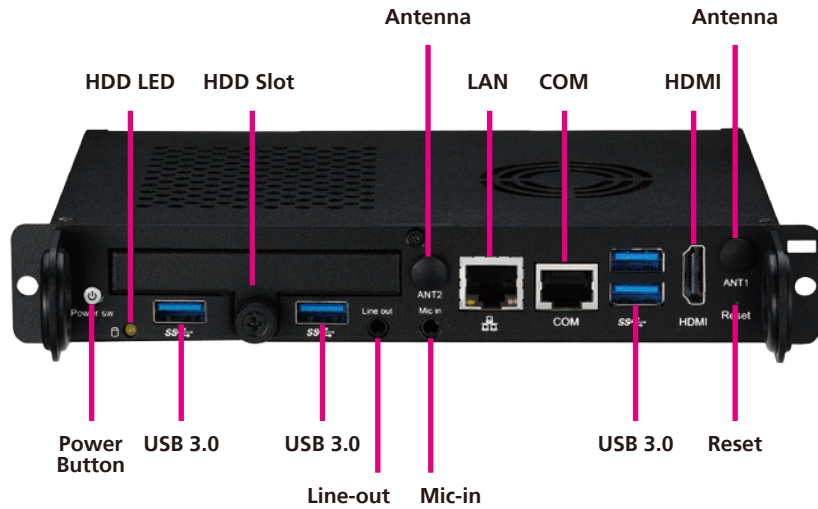
NDiS M533 is an OPS-compliant media player powered by 4th generation Intel® Core™ processors. Following open pluggable standard, NDiS M533 can perfectly fit into a myriad of OPS-panels and is compact in size. Yet, NDiS M533 has high scalability, allowing for easy storage capacity expansion through pluggable 2.5" storage unit and effortless functional extension through Mini Card expansion modules. Changing system memory is also made simple. In addition, NDiS M533 leverages the 4th generation Intel® Core™ processors to deliver outstanding graphics whilst limiting the power usage. The superb but power-efficient NDiS M533 can therefore maximize visual impacts for digital signage applications.

Key Features

- 4th generation Intel® Core™ i5-4400E processor family
- Intel® HD Graphics with DirectX 11.1 support
- Dual DDR3L SO-DIMM support
- WWAN/ WLAN/ TV Tuner support
- Support for Intel® AMT9.0

Physical Features

Front Panel



Rear Panel



Hardware Specifications

CPU Support

- 4th generation Intel® Core™ i5-4400E BGA type processor

Chipset

- Intel® QM87

Graphics

- Intel® integrated HD 4600

Main Memory

- 2x 204 pin SO-DIMM socket, support DDR3L 1600 MHz with un-buffered and non-ECC SDRAM up to 16GB

I/O Interface-Front

- 1x Power button
- 1x Reset button
- 1x HDD LED
- 4x USB3.0
- 1x HDMI
- 1x Mic-in / Line-out
- 1x 2.5" HDD slot
- 1x RJ45 with LEDs for Gigabit LAN
- 1x RJ45 for RS-232
- 2x Antenna hole

I/O Interface-Rear

- 1x TMDS
- 1x DisplayPort
- 1x UART

- 1x Audio out L/R
- 2x USB 2.0
- 1x USB 3.0
- DC input +12V~+19V
- Control signals (PWR_STATUS, PS_ON#, PB_DET, CEC, SYS_FAN)

Storage Device

- 1x 2.5" SATA storage bay for HDD/ SSD

Expansion

- 1x mini-PCIe for optional WLAN/ TV tuner module
- 1x SIM slot

Dimensions

- 200mm (W) x 119mm (D) x 30mm (H) (7.8" x 4.7" x 1.1")

Power Supply

- DC power input +12V~19V

Environment

- Operating temperature: ambient with air flow from 0°C to 45°C
- Storage temperature: -20°C to 80°C
- Humidity: 10 to 90% (non-condensing)

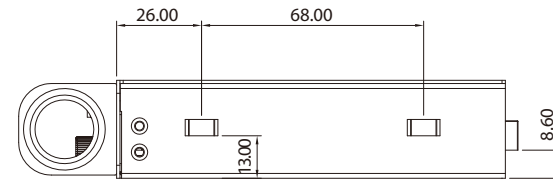
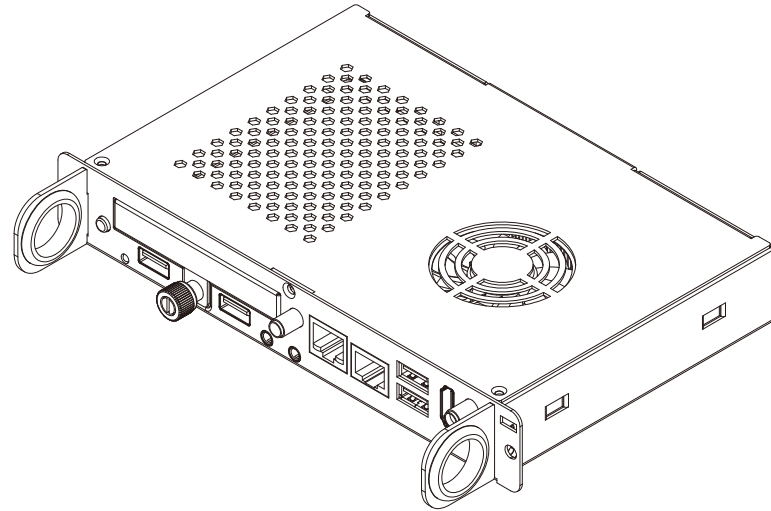
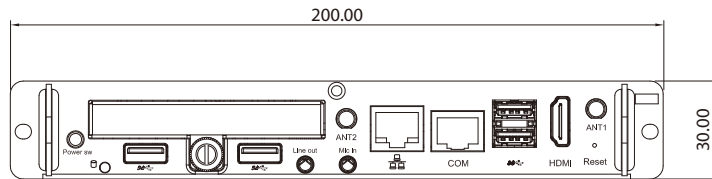
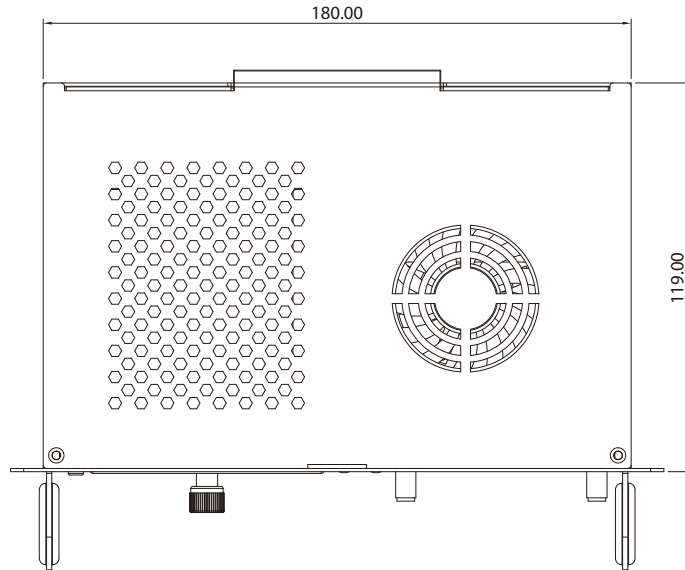
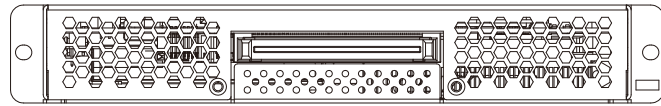
Certification

- CE approval
- FCC Class A

Operating System

- Windows 7 / Windows 8 / WES7 / WES8 / Linux

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NDiS M533 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.

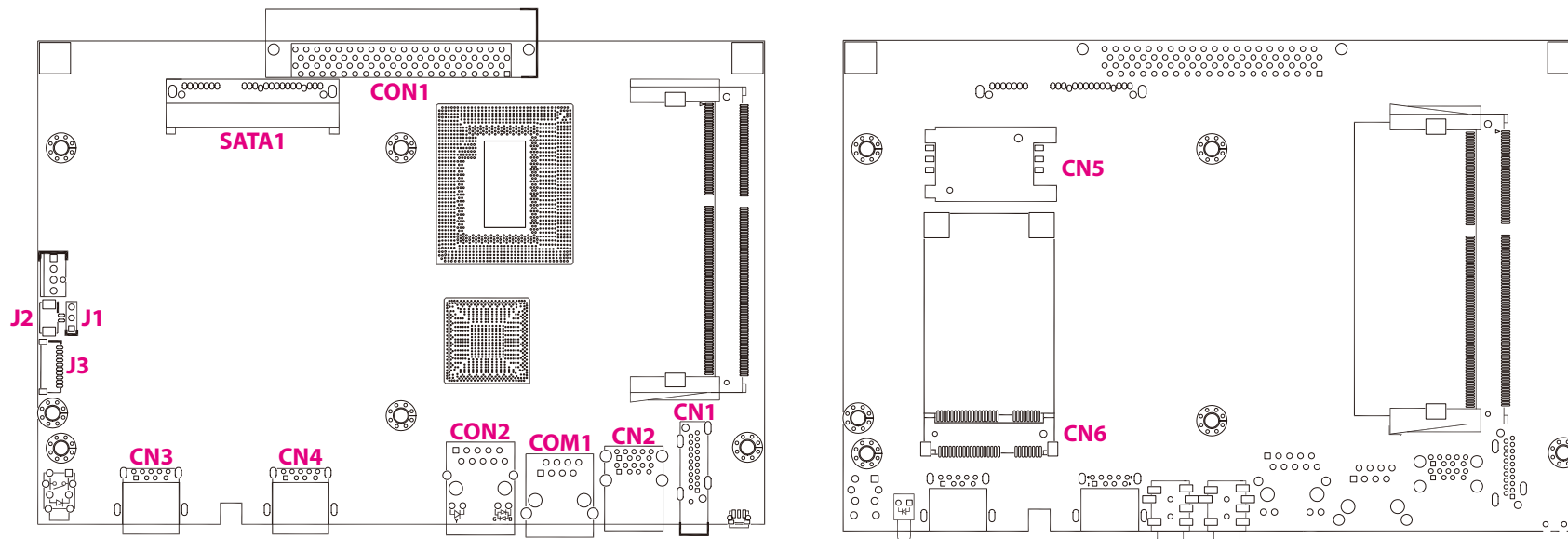
Follow the guidelines below to avoid damage to your computer or yourself:

- 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.

Locations of the Jumpers and Connectors for NDiB M533

NDiB M533

The figure below is the top and bottom view of the NDiB M533, which is the mainboard used in the NDiS M533. It shows the locations of the jumpers and connectors.

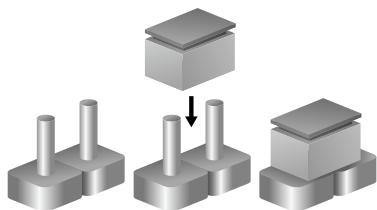


Jumper Settings

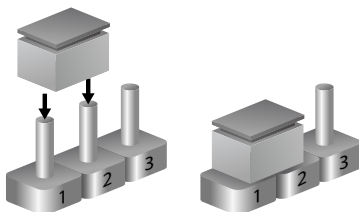
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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



Jumpers

RTC Control Connector

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

Connector location: J1



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

1-2 On: default

Pin	Definition
1	RTC_RST#_PU
2	RTC_RST#
3	CLR_CMOS

Connector Pin Definitions

External I/O Interfaces

USB Connector

Connector type: USB 3.0 port

Connector location: CN3 and CN4

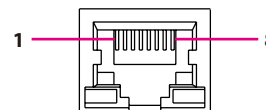


Pin	Definition	Pin	Definition
1	VBUS	2	D-
3	D+	4	GND
5	SSRX-	6	SSRX+
7	GND	8	SSTX-
9	SSTX+		

LAN Port

Connector type: RJ45 port with LEDs

Connector location: CON2

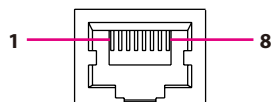


Pin	Definition	Pin	Definition
1	TCT	2	MID3-
3	MID3+	4	MID2-
5	MID2+	6	MID1-
7	MID1+	8	MID0-
9	MID0+	10	GND
11	LED+	12	LAN_ACTLED#_C
13	LAN1_LED2P	14	LAN1_LED3P

RJ45 RS232 Connector

Connector type: RJ45 port (RS232 only)

Connector location: COM1

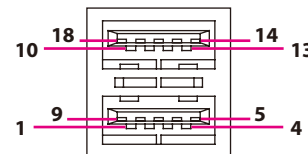


LAN1A		LAN1B	
Pin	Definition	Pin	Definition
A1	RTS	B1	RTS
A3	TXD	B3	TXD
A4	GND	B4	GND
A6	RXD	B6	RXD
A8	CTS	B8	CTS

USB 3.0 Ports

Connector type: Dual USB 3.0 ports

Connector location: CN2

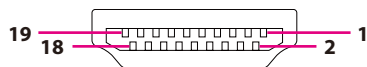


Pin	Definition	Pin	Definition
1	VBUS1	2	D1-
3	D1+	4	GND
5	STDA_SSRX1-	6	STDA_SSRX1+
7	GND	8	STDA_SST1-
9	STDA_SST1+	10	VBUS2
11	D2-	12	D2+
13	GND	14	STDA_SSRX2-
15	STDA_SSRX2+	16	GND
17	STDA_SSTX2-	18	STDA_SSTX2+

HDMI

Connector type: HDMI port

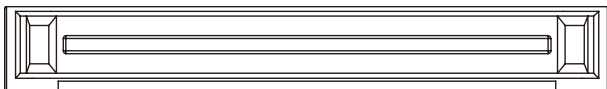
Connector location: CN1



Pin	Definition	Pin	Definition
1	TMDS DATA2+	2	GND
3	TMDS DATA2-	4	TMDS DATA1+
5	GND	6	TMDS DATA1-
7	TMDS DATA0+	8	GND
9	TMDS DATA0-	10	TMDS CLOCK+
11	GND	12	TMDS CLOCK-
13	CEC	14	NC
15	SCL	16	SDA
17	DDC	18	+5V
19	HOT PLUG DETECT		

JAE-TX25

Connector location: CON1



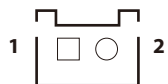
Pin	Definition	Pin	Definition
1	DDP_3N	18	TMDS_CLK+
2	DDP_3P	19	GND
3	GND	20	TMDS0-
4	DDP_2N	21	TMDS0+
5	DDP_2P	22	GND
6	GND	23	TMDS1-
7	DDP_1N	24	TMDS1+
8	DDP_1P	25	GND
9	GND	26	TMDS2-
10	DDP_0N	27	TMDS2+
11	DDP_0P	28	GND
12	GND	29	DVI_DDC_DATA
13	DDP_AUXN	30	DVI_DDC_CLK
14	DDP_AUXP	31	DVI_HPD
15	DDP_HPD	32	GND
16	GND	33	+12V~+19V
17	TMDS_CLK-	34	+12V~+19V

Pin	Definition	Pin	Definition
35	+12V~+19V	58	StdA_SSTX+
36	+12V~+19V	59	GND
37	+12V~+19V	60	USB_PN2
38	+12V~+19V	61	USB_PP2
39	+12V~+19V	62	GND
40	+12V~+19V	63	USB_PN1
41	RSVD	64	USB_PP1
42	RSVD	65	GND
43	RSVD	66	USB_PN0
44	RSVD	67	USB_PP0
45	RSVD	68	GND
46	RSVD	69	AZ_LINEOUT_L
47	RSVD	70	AZ_LINEOUT_R
48	RSVD	71	CEC
49	RSVD	72	PB_DET
50	SYS_FAN	73	PS_ON#
51	UART_RXD	74	PWR_STATUS
52	UART_TXD	75	GND
53	GND	76	GND
54	StdA_SSRX-	77	GND
55	StdA_SSRX+	78	GND
56	GND	79	GND
57	StdA_SSTX-	80	GND

Internal Connectors

RTC Battery Connector

Connector type: 1x2 2-pin header JST, 1.25mm pitch
Connector location: J2



Pin	Definition
1	GND
2	VBAT

Debug Port

Connector type: 1x10 10-pin header JST, 1.0mm pitch
Connector location: J3

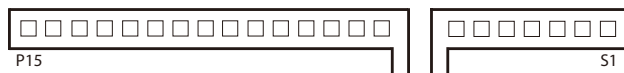


Pin	Definition	Pin	Definition
1	VCC3	2	VCC3
3	LPC_AD0	4	LPC_AD1
5	LPC_AD2	6	LPC_AD3
7	LPC_FRAME#	8	LPC_CLK0
9	SIO_RST#	10	GND

SATA Connector (7-pin and 15-pin)

Connector type: Standard Serial ATAII 7P and 15P

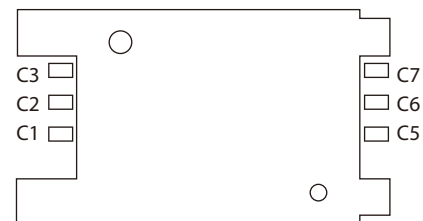
Connector location: SATA1



Pin	Definition	Pin	Definition
S1	GND	S2	SATA_TXPO_C
S3	SATA_TXNO_C	S4	GND
S5	SATA_RXNO_C	S6	SATA_RXNO_C
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	SATA_V12
P14	SATA_V12	P15	SATA_V12
MH1	GND	MH2	GND

SIM Card Slot

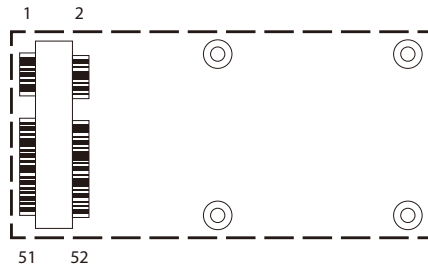
Connector location: CN5



Pin	Definition	Pin	Definition
C1	UIM_PWR2	C2	UIM_RST2
C3	UIM_CLK2	C5	GND
C6	NC	C7	UIM_DAT2

Mini-PCIe Connector

Connector location: CN6



Pin	Definition	Pin	Definition
1	PCIE_WAKE#	2	+3.3B_MINI
3	NC	4	GND
5	NC	6	D15VS
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	MC_PCIE_CLK_N	12	UIM_CLK
13	MC_PCIE_CLK_P	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	MINICARD1_DIS#
21	GND	22	WLAN_RESET#
23	mPCIE_RX_N	24	+3.3B_MINI
25	mPCIE_RX_P	26	GND

Pin	Definition	Pin	Definition
27	GND	28	D15VS
29	GND	30	SMB_CLK
31	mPCIE_TX_N	32	SMB_DATA
33	mPCIE_TX_P	34	GND
35	GND	36	USB_IN
37	GND	38	USB_IP
39	+3.3B_MINI	40	GND
41	+3.3B_MINI	42	NC
43	GND	44	LED_WLAN#
45	NC	46	NC
47	NC	48	D15VS
49	NC	50	GND
51	PRE-DEC	52	+3.3B_MINI

Chapter 3: System Setup

Removing the Chassis Cover



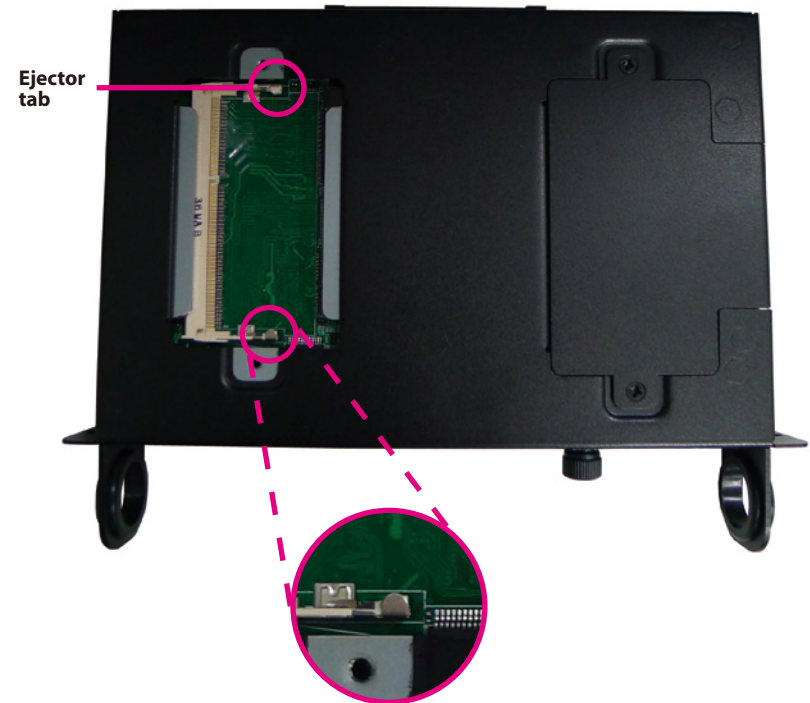
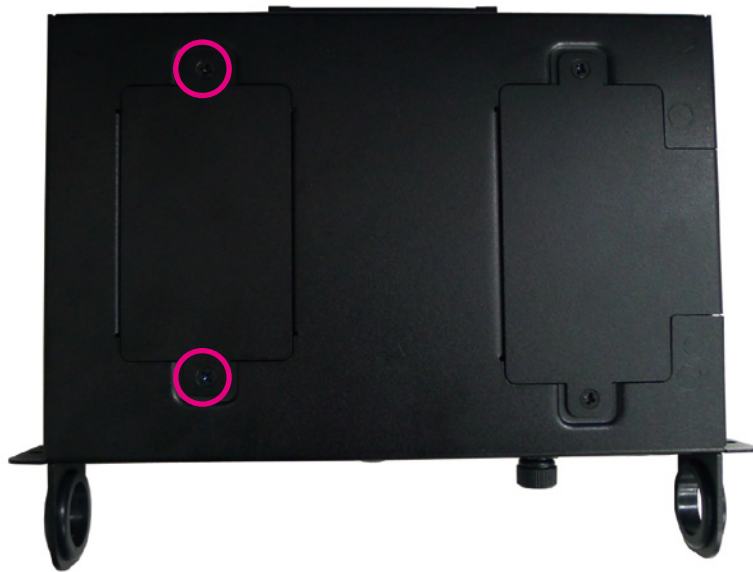
Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

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

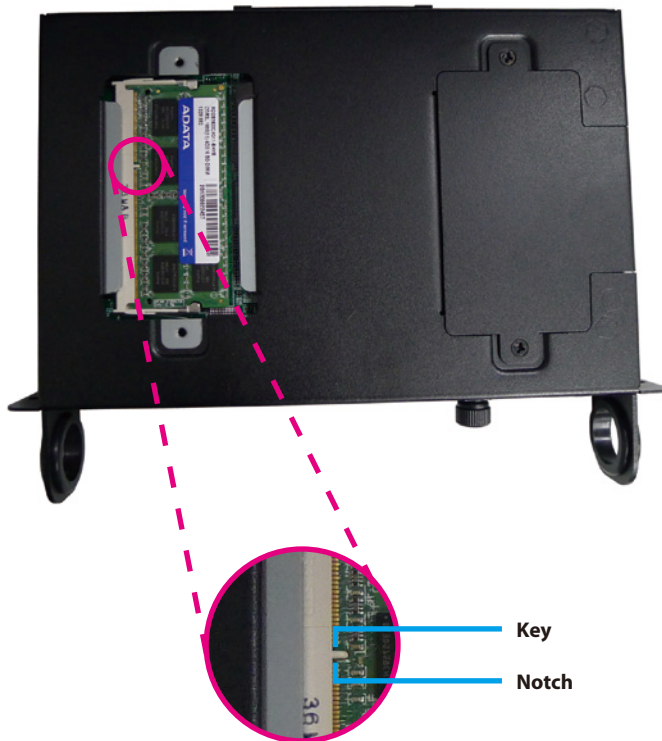


Installing a SO-DIMM (DIMM1)

1. Loosen the screws on the bottom cover of the chassis, then lift up the cover and remove it from the chassis.
2. Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.

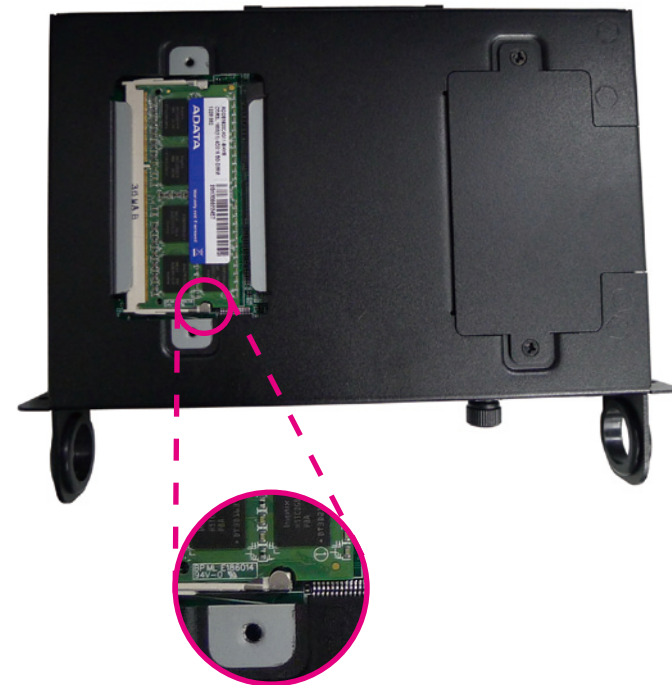


3. Note how the module is keyed to the socket. Grasping the module by its edges, align the module with the socket so that the “notch” on the module is aligned with the “key” on the socket. The key ensures the module can be plugged into the socket in only one direction.



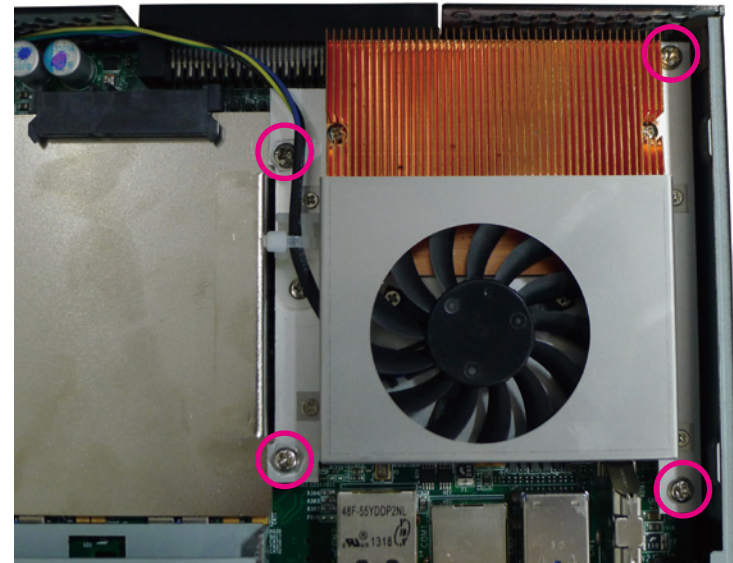
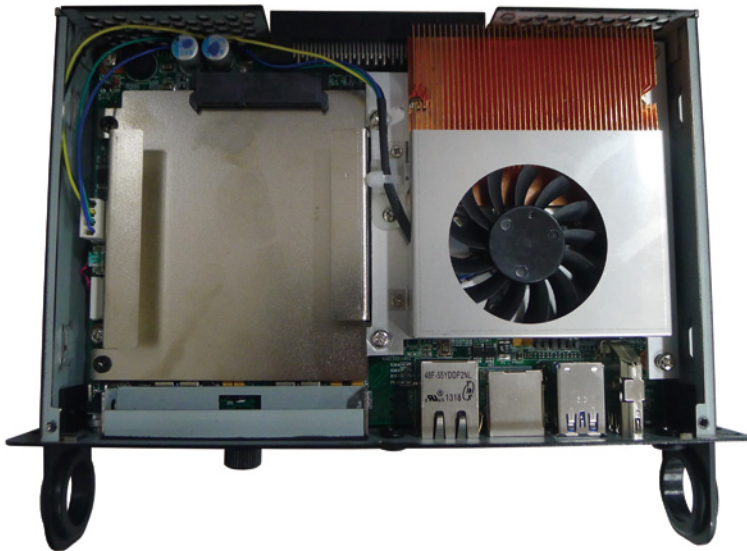
4. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips down into the socket. The contact fingers on the edge of the module will almost completely disappear inside the socket.

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



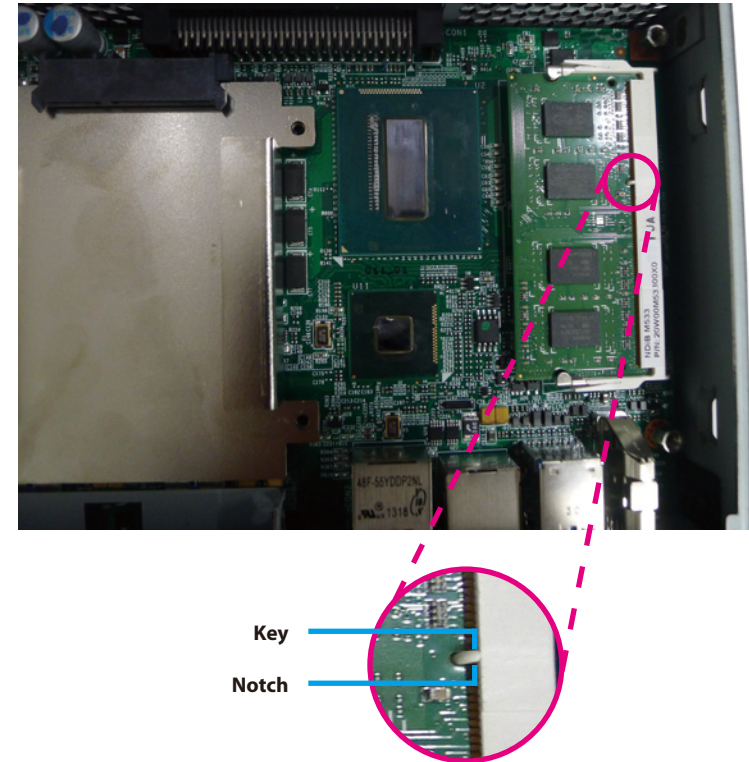
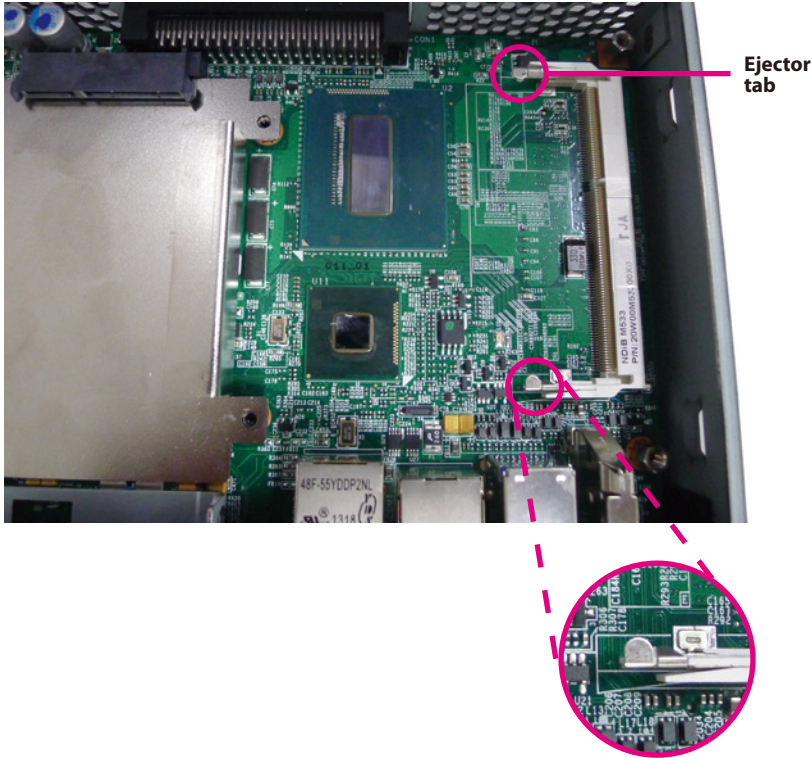
Installing a SO-DIMM (DIMM2)

1. Remove the chassis cover.
2. Loosen the four screws on the heat sink and remove it to access the DIMM socket beneath.



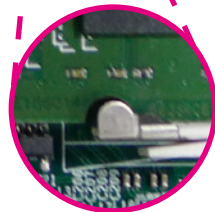
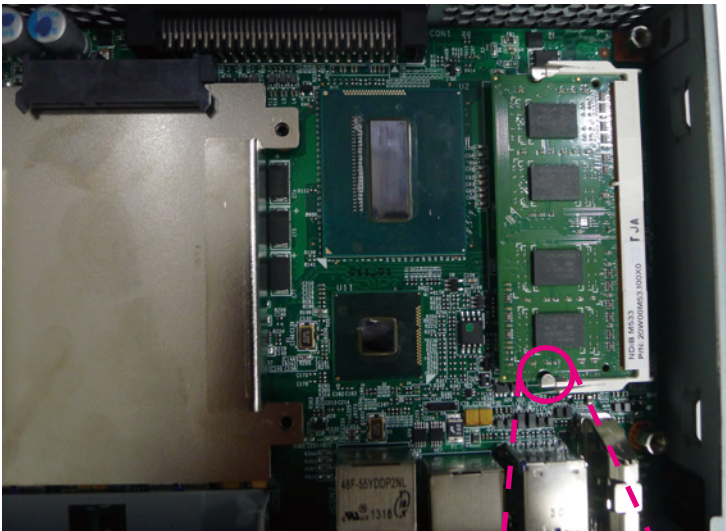
3. Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.

4. 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.

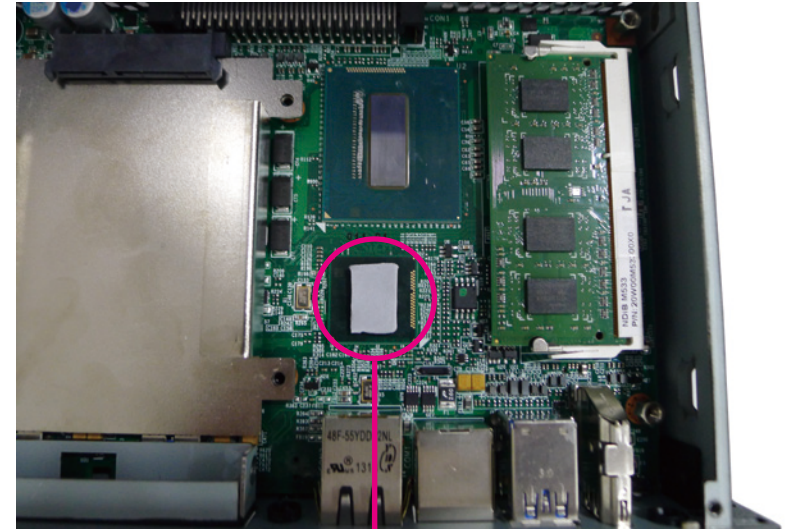


5. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips down into the socket. The contact fingers on the edge of the module will almost completely disappear inside the socket.

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

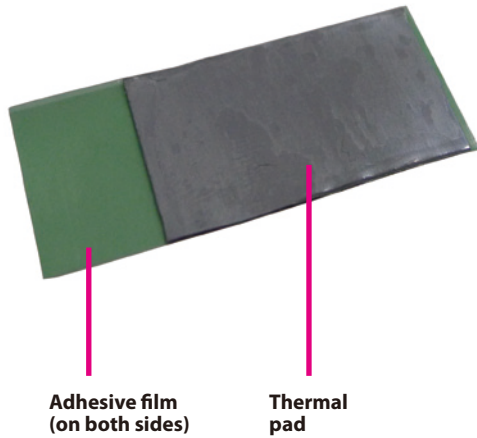


6. Please make sure a thermal pad is placed on the PCH.

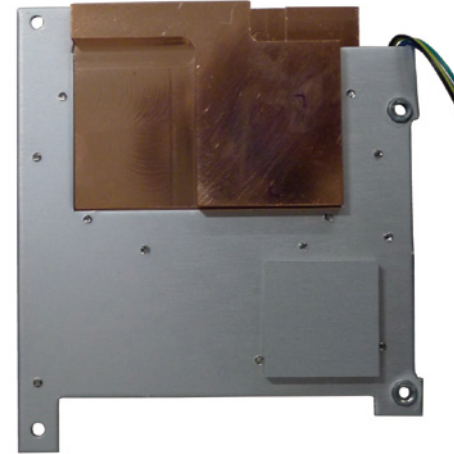


Thermal pad

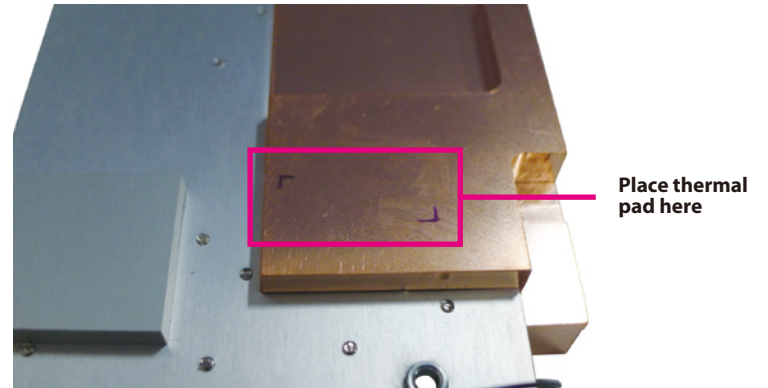
7. Before reinstalling the heat sink, place the included thermal pad on the bottom of the heat sink.



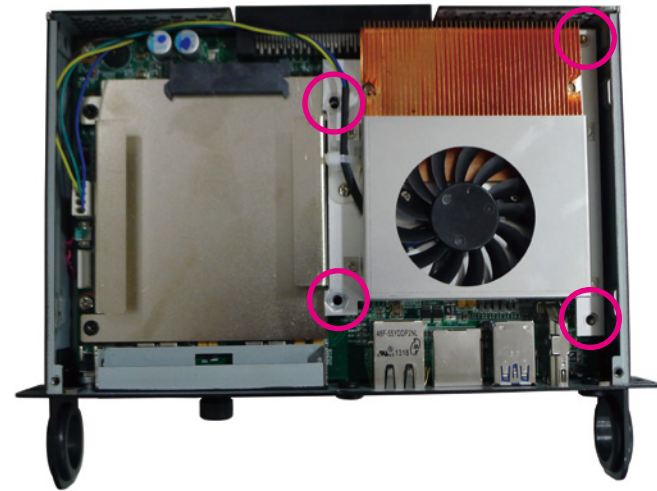
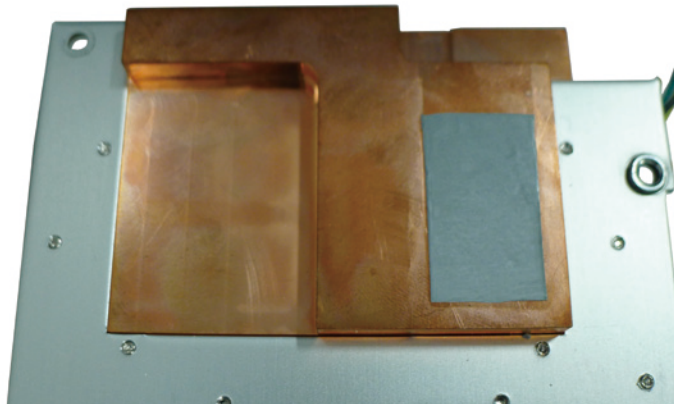
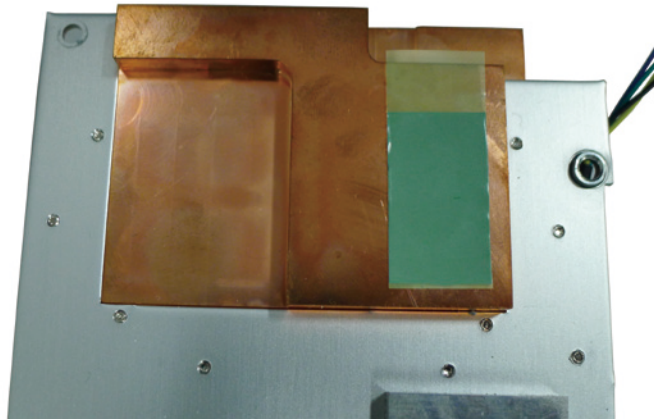
8. Place the thermal pad onto the heat sink as depicted in the image below.



Please install the thermal pad and make sure the adhesive films on both sides of the thermal pad are removed before placing it on the heat sink.



9. After the adhesive films are removed and the thermal pad is placed onto the heat sink, reinstall the heat sink and fasten four screws to secure the heat sink.



Installing a 2.5" HDD Storage

The system is equipped with a removable 2.5" HDD drive bay. To install a HDD, please follow the instructions below.



Please correctly follow the below instructions and noted items to avoid making unnecessary damages.

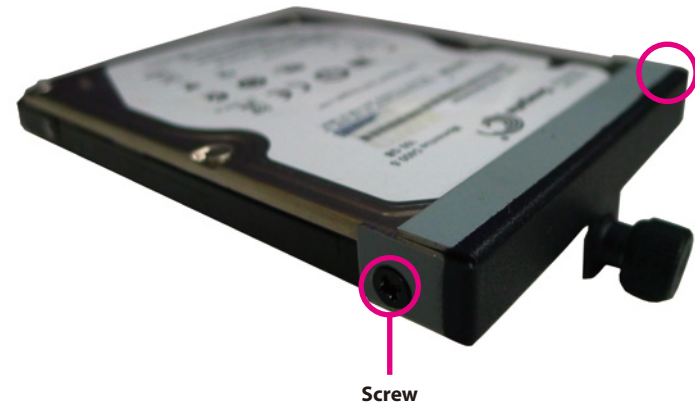
1. Remove the HDD cover located at the front panel by loosening the screw.



2. Gently take the cover out.



3. Align the mounting holes on the front of the HDD to the mounting holes on the cover, then tighten screws on both sides to secure it. Make sure the connector side of the HDD is facing outwards.

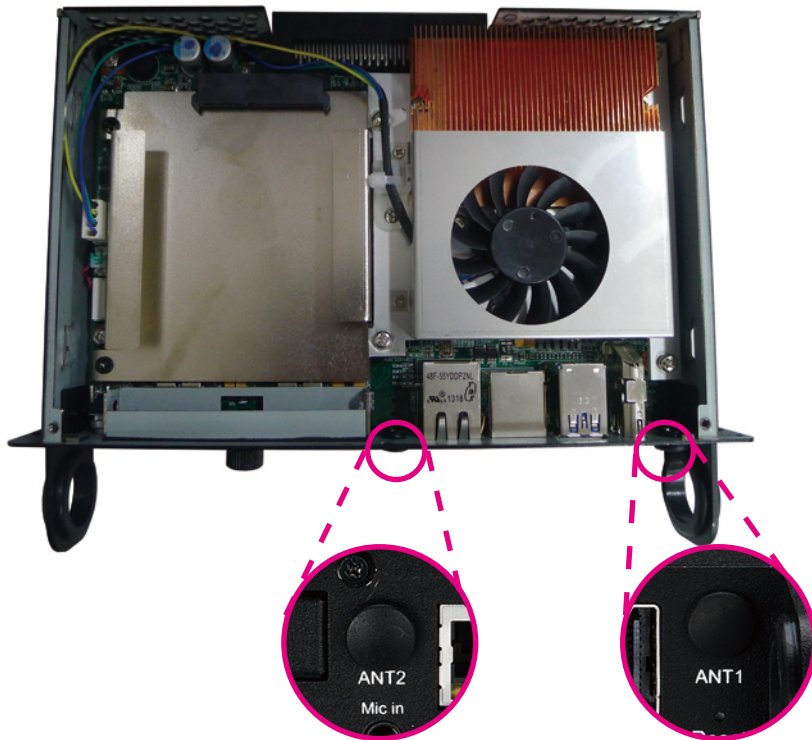


4. Put the HDD back into the slot gently, then tighten the screw to secure it.



Installing a Wireless LAN Module

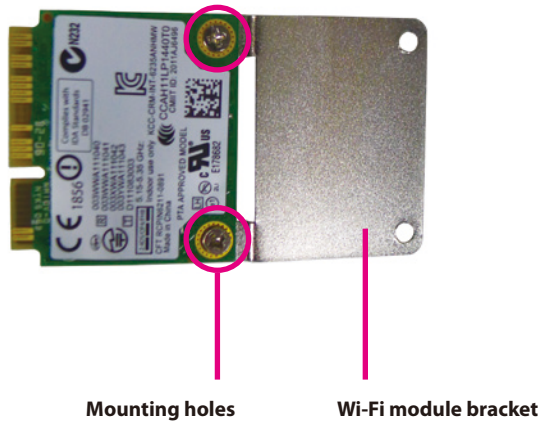
1. Remove the chassis cover and the antenna hole covers.



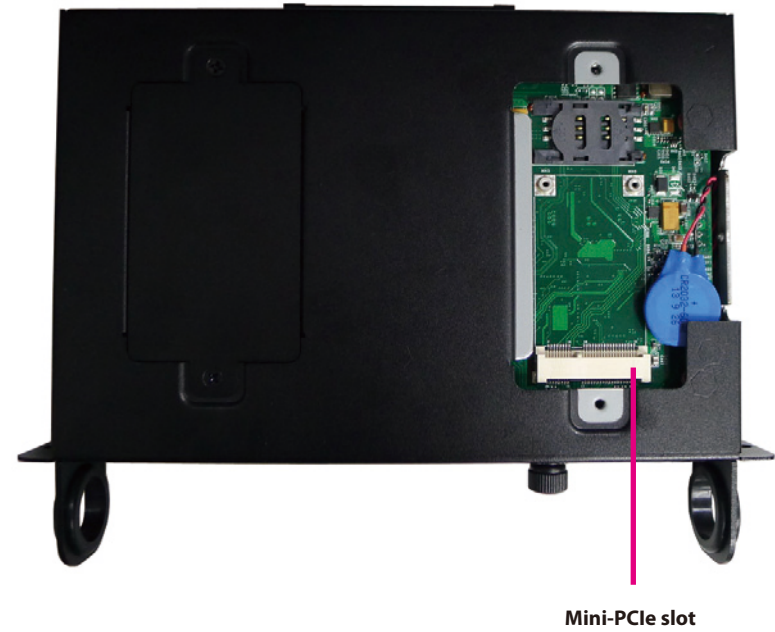
2. On the bottom and side of the chassis, loosen the screws on the mini-PCIe cover, then lift up the cover and remove it from the chassis.



- Align the mounting holes on the Wi-Fi mini card module to the mounting holes on the Wi-Fi module bracket. Then tighten screws onto the mounting holes to secure the bracket.

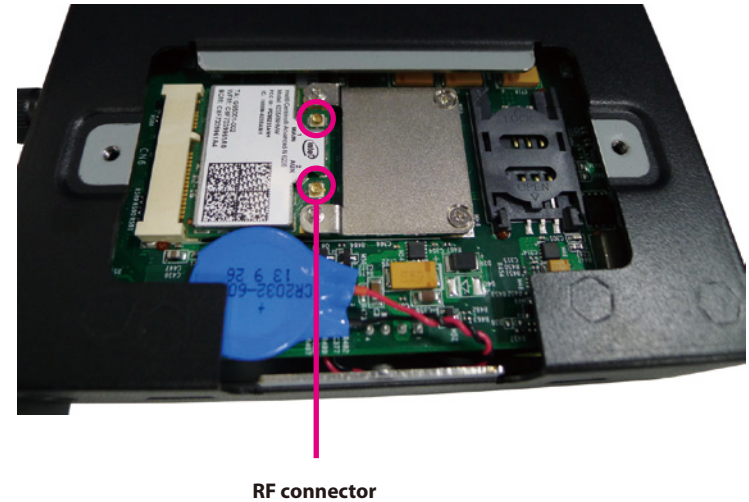
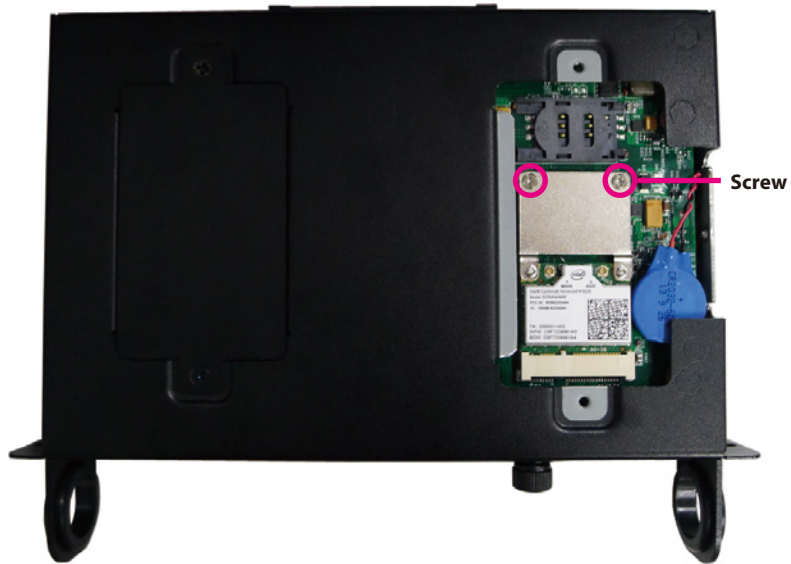


- Locate the mini-PCIe slot and insert the Wi-Fi module into the slot.



5. Align the mounting holes on the module to the mounting holes on the board, and tighten screws to secure it.

6. Locate the RF connector on the Wi-Fi module and attach one end of the RF cables onto the Wi-Fi module.



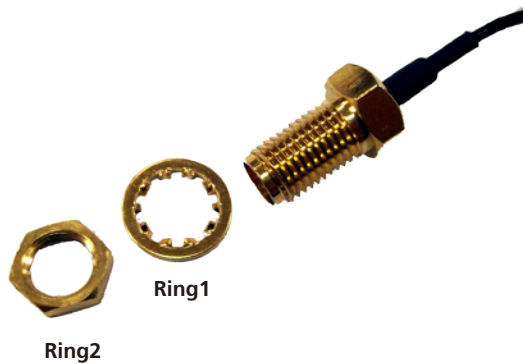
7. Wire the RF cables behind the mainboard.



9. Mount the Wi-Fi antenna jacks to the Wi-Fi antenna holes located at the front panel of the chassis, then tighten the rings.



8. Insert the 2 rings (ring 1 then ring 2) into the Wi-Fi antenna jacks.



10. Connect the external antennas to the Wi-Fi antenna jacks.

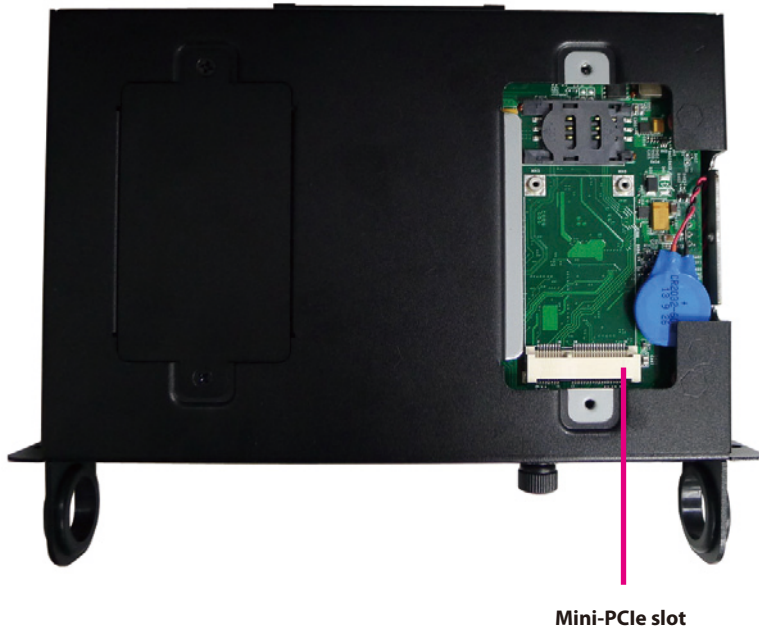


Installing a 3G Module

1. On the bottom and side of the chassis, loosen the screws on the mini-PCIe cover, then lift up the cover and remove it from the chassis.



2. Locate the mini-PCle slot and insert the 3G module into the slot.



3. Align the mounting holes on the module to the mounting holes on the board, and tighten screws to secure it.



4. Locate the RF connector on the 3G module and attach the RF cable onto the 3G module.

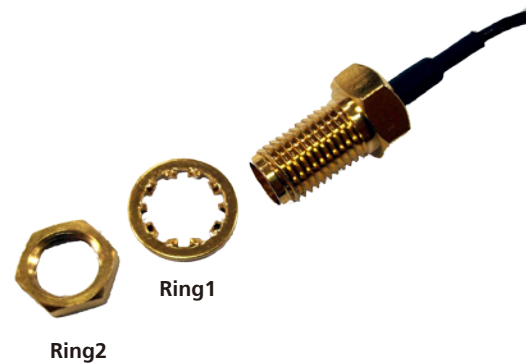


RF connector

5. Wire the RF cable behind the mainboard.



6. Insert the 2 rings (ring 1 then ring 2) into the 3G antenna jack.



7. Mount the 3G antenna jack to the antenna hole located at the front panel of the chassis, then tighten the rings.



8. Connect the external antenna to the antenna jack.



Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NDiS M533. 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.

Press the  key to enter Setup:


Legends

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


Scroll Bar

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

Submenu

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

BIOS Setup Utility

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

Main

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

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.				
Main	Advanced	Boot	Security	Save & Exit
BIOS Information		American Megatrends		Choose the system default language
BIOS Vendor	D533M008			
BIOS Version	10/14/2013 14:25:43			
Build Date and Time				
Memory Information		1600 Mhz		
Memory Frequency	4096 MB (DDR3)			
Total Memory	Not Present			
DIMM#0	4096 MB (DDR3)			
DIMM#1				
ME FW Version	9.0.13.1402			
ME Firmware SKU	5MB			
System Board Information		NDISM533		←→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Production Name				
System Language	[English]			
System Date	[Mon 01/12/2009]			
System Time	[06:43:33]			

Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

System Language

Selects the system default language.

System Date

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

System Time

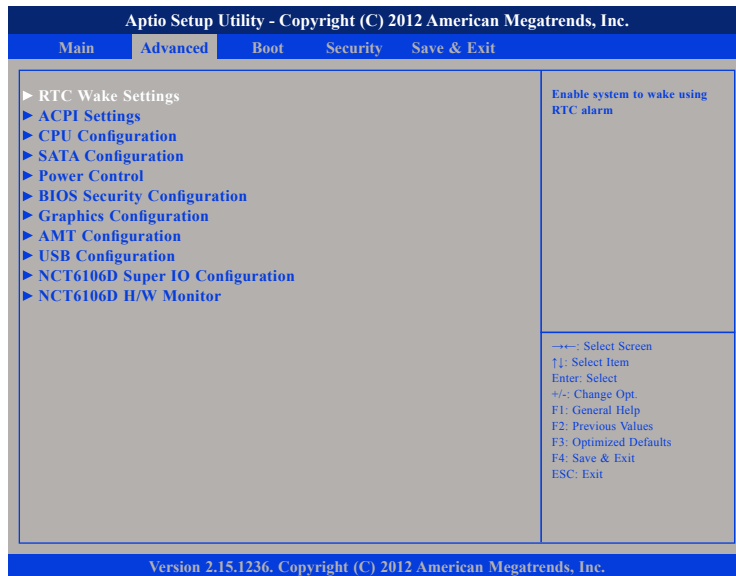
The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

Advanced

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

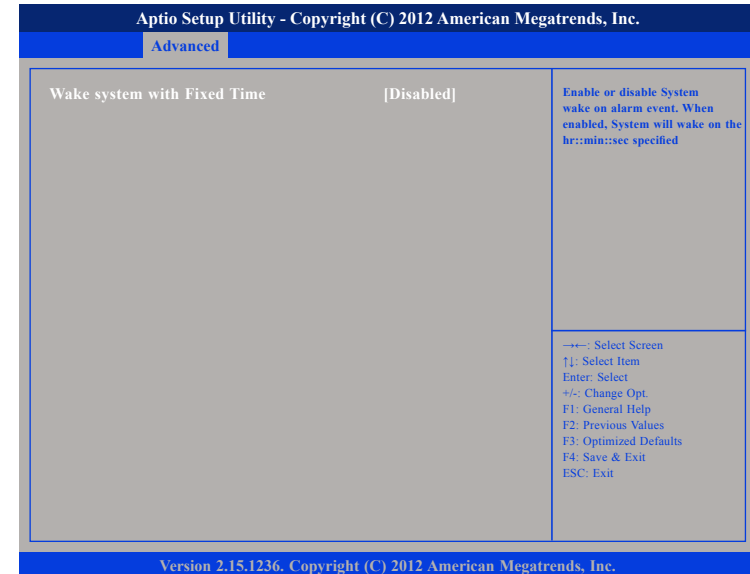


Setting incorrect field values may cause the system to malfunction.



RTC Wake Settings

This section is used to configure RTC Wake settings.



Wake System with Fixed Time

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

ACPI Settings

This section is used to configure ACPI Settings.



Enable Hibernation

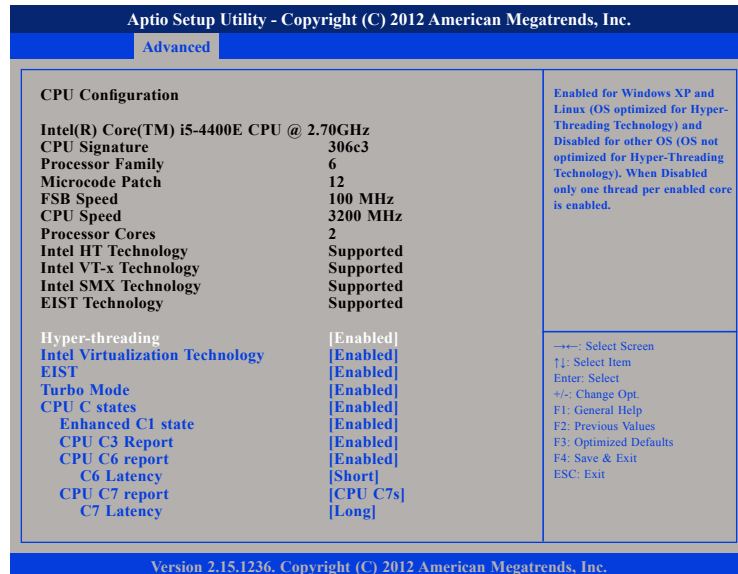
Enables or disables system ability to hibernate (OS/S4 Sleep State). This option may not be effective with some OS.

ACPI Sleep State

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

CPU Configuration

This section is used to configure the CPU.



Hyper-Threading

This field is used to enable or disable hyper-threading.

Intel® Virtualization Technology

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

EIST

Enables or disables Intel® SpeedStep.

Turbo Mode

Enables or disables turbo mode.

CPU C States

Enables or disables CPU C states.

Enhanced C1 State

Enables or disables enhanced C1 state.

CPU C3 Report

Enables or disables C3 report to the operating system.

CPU C6 Report

Enables or disables C6 report to the operating system.

C6 Latency

Configures short/long latency for C6.

CPU C7 Report

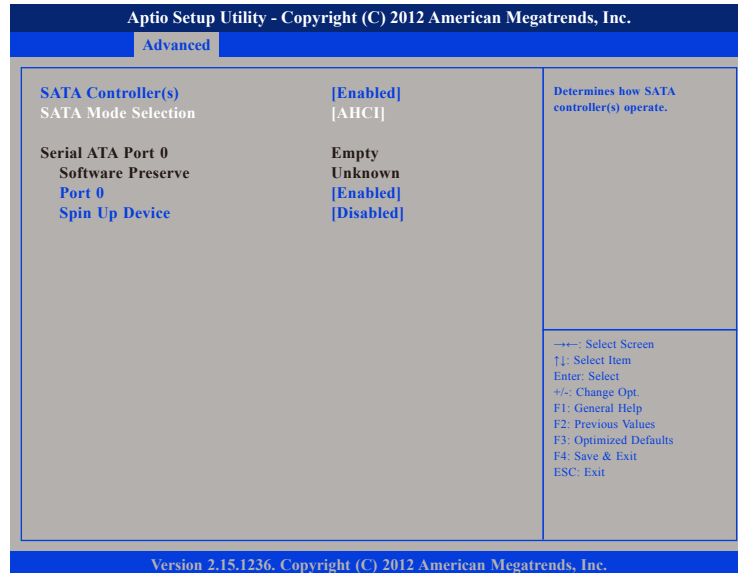
Enables or disables C7 report to the operating system.

C7 Latency

Configures short/long latency for C7.

SATA Configuration

This section is used to configure the SATA drives.



SATA Controller(s)

Enables or disables the SATA controller.

SATA Mode Selection

Configures the SATA as IDE or AHCI mode.

- IDE** This option configures the Serial ATA drives as Parallel ATA physical storage device.
- AHCI** This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

Port 0

Enables or disables Serial ATA port 0.

Spin Up Device

Enables or disables staggered spin up on device connected to Serial ATA port 0.

Power Control

This section is used to configure power state settings.



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.

BIOS Security Configuration

This section is used to configure the BIOS security settings.



BIOS Lock

Enables or disables BIOS lock enable (BLE) bit.

RTC RAM Lock

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

Graphics Configuration

This section is used to configure the graphics parameters.



Primary IGFX Boot Display

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

Secondary IGFX Boot Display

Select the secondary display device.

AMT Configuration

This section is used to configure Active Management Technology (AMT) options.



Intel® AMT

Enables or disables Intel® Active Management Technology.

BIOS Hotkey Pressed

Enables or disables BIOS hotkey press.

MEBx Selection Screen

Enables or disables MEBx selection screen.

Disable ME

Sets ME to Soft Temporary disabled.

USB Configuration

This section is used to configure the USB.



Legacy USB Support

- Enabled Enables Legacy USB.
- Auto Disables support for Legacy when no USB devices are connected.
- Disabled Keeps USB devices available only for EFI applications.

USB 3.0 Support

Enables or disables the USB 3.0 controller.

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.

USB Mass Storage Driver Support

Enables or disables USB mass storage driver support.

NCT6106D Super IO Configuration

This section is used to configure serial ports 0 and 1.

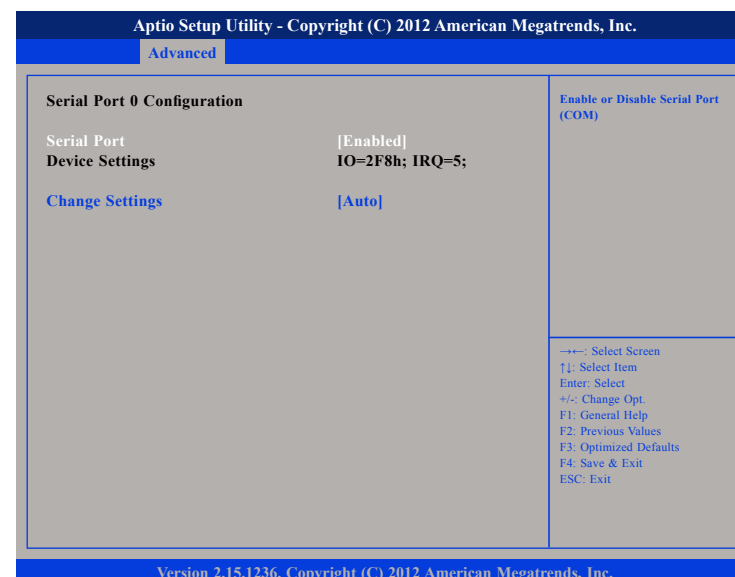


NCT6106D Super IO Chip

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

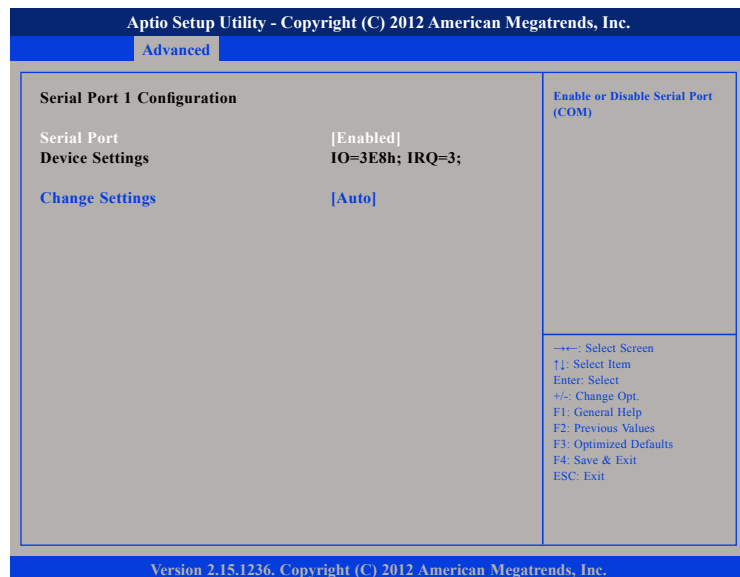
Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

Serial Port 1 Configuration

This section is used to configure serial port 1.



Serial Port

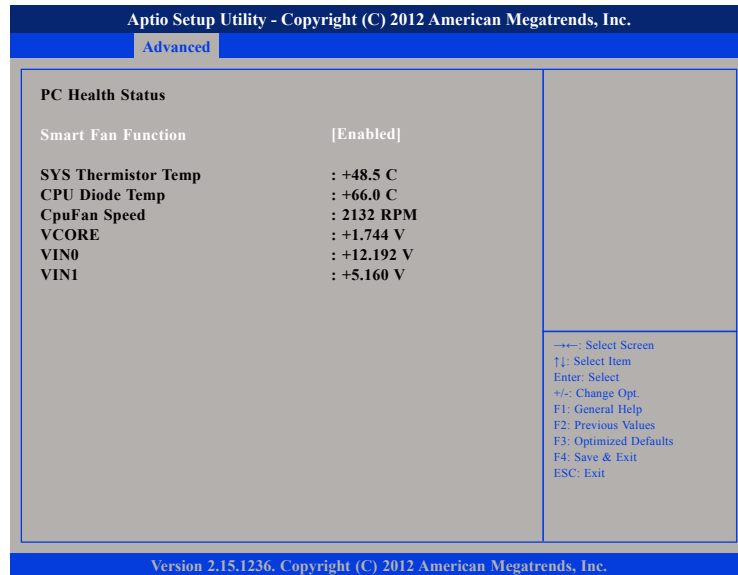
Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

H/W Monitor

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



Smart Fan Function

Enables or disables smart fan function.

SYS Thermistor Temp

Detects and displays the current system temperature.

CPU Diode Temp

Detects and displays the current CPU diode temperature.

CpuFan Speed

Detects and displays the current CPU fan speed.

VCORE

Detects and displays the Vcore CPU voltage.

VIN0

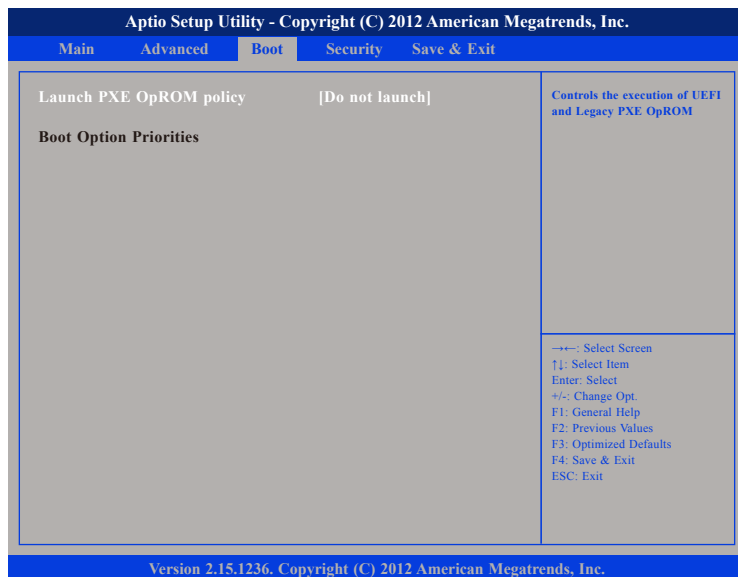
Detects and displays 12V voltage.

VIN1

Detects and displays 5V voltage.

Boot

This section is used to configure the boot features.



Launch PXE OpROM Policy

Controls the execution of UEFI and legacy PXE OpROM.

Boot Option Priorities

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

Security



Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Save & Exit



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.

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. You can also press <ESC> to exit without saving the changes.

Restore Defaults

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

Appendix A: Watchdog Timer

CR F0h. Watchdog Timer I(WDT1) and KBC P20 Control Mode Register

Location: Address F0h

Attribute: Read/Write

Power Well: VCC

Reset by: LRESET# or PWROK

Default: 00h

Size: 8 bits

Bit	Read/Write	Description
7-5	Reserved.	
4	R / W	Watchdog Timer I count mode is 1000 times faster. 0: Disable. 1: Enable. (If bit-3 is 0, the count mode is 1/1000 seconds mode.) (If bit-3 is 1, the count mode is 1/1000 minutes mode.)
3	R / W	Select Watchdog Timer I count mode. 0: Second Mode. 1: Minute Mode.
2	R / W	Enable the rising edge of a KBC reset (P20) to issue a time-out event. 0: Disable. 1: Enable.
1	R / W	Disable / Enable the Watchdog Timer I output low pulse to the KBRST# pin (PIN59) 0: Disable. 1: Enable.
0	Reversed	

CR F1h. Watchdog Timer I(WDT1) Counter Register

Location: Address F1h

Attribute: Read/Write

Power Well: VCC

Reset by: LRESET# or PWROK

Default: 04h

Size: 8 bits

Bit	Read/Write	Description
7-0	R / W	Watch Dog Timer I Time-out value. Writing a non-zero value to this register causes the counter to load the value into the Watch Dog Counter and start counting down. If CR F2h, bits 7 and 6 are set, any Mouse Interrupt or Keyboard Interrupt event causes the previously-loaded, non-zero value to be reloaded to the Watch Dog Counter and the count down resumes. Reading this register returns the current value in the Watch Dog Counter, not the Watch Dog Timer Time-out value. 00h: Time-out Disable 01h: Time-out occurs after 5.03×10^7 CLKIN cycle time, by analogy. $(5.03 \times 10^7 \times (1/48\text{MHz}) = 1.046\text{s})$

CR F2h. Watchdog Timer I(WDT1) Control & Status Register

Location: Address F2h

Attribute: Read/Write

Power Well: VCC

Reset by: LRESET# or PWROK

Default: 00h

Size: 8 bits

Bit	Read/Write	Description
7	R / W	Mouse interrupt reset enables watch-dog timer reload 0: Watchdog Timer I is not affected by mouse interrupt. 1: Watchdog Timer I is reset by mouse interrupt.
6	R / W	Keyboard interrupt reset enables watch-dog timer reload 0: Watchdog Timer I is not affected by keyboard interrupt. 1: Watchdog Timer I is reset by keyboard interrupt.
5	Write "1" Only	Trigger Watchdog Timer I event. This bit is self-clearing.
4	R / W Write "0" Clear	Watchdog Timer I status bit 0: Watchdog Timer I is running. 1: Watchdog Timer I issues time-out event.
3-0	R / W	These bits select the IRQ resource for the Watchdog Timer I