NEXCOM

NEXCOM International Co., Ltd.

Multi-Media Solutions
Digital Signage Platform
NDiS M535
User Manual

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PREFACE

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Acknowledgements

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Regulatory Compliance Statements

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

Declaration of Conformity

FCC

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

CE

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

RoHS Compliance

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.

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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.

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 M535 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	(H)Flat Head Screw Long Fei: F3 x 4iso	For SPC-150 M3 x 4mm (Nylok) Black	2
2	50311F0295X00	Flat Head Screw Long Fei: F2 x 4 NYLOK NIGP	F2 x 4 NIGP Nylok	2
3	5040420019X00	Mini-card Bracket for NDIS M323 VER: A CHYUAN-JYH	29 x 30 x 2.1mm t= 1.0mm SPCC+NI	1
4	5060600171X00	(H)2.5 HDD Mylar E-LIN	96.2 x 70 x 0.1mm	1
5	6013300521X00	NDiS M533 Cable kit EPE VER: A Sentenel	230 x 200 x 15mm	1
6	6013300709X00	EPE for NDiS M335 VER: A Sentenel	227 x 200 x 75mm	1
7	602DCD1117X00	NDiS M535 DVD Driver Manual VER:1.0	JCL	1

Ordering Information

The following below provides ordering information for NDiS M535.

NDiS M535 (P/N: 10W00M53500X0)
6th generation Intel® Core™ i5-6440EQ BGA type processor OPS,
Intel® QM170 chipset

NDiS M535-6820EQ (P/N: 10W00M53501X0)
6th generation Intel® Core™ i7-6820EQ BGA type processor OPS,
Intel® QM170 chipset

CHAPTER 1: PRODUCT INTRODUCTION

Overview

NDiS M535 is an OPS-compliant media player powered by 6th generation Intel® Core™ processors. Following open pluggable standard, NDiS M535 can perfectly fit into a myriad of OPS-panels and is compact in size. Yet, NDiS M535 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 M535 leverages the future generation Intel® Core™ processors to deliver outstanding graphics with support for 3 independent 4K2K video outputs. The superb but power-efficient NDiS M535 can therefore maximize visual impacts for digital signage applications.

Key Features

- 6th generation Intel® Core™ Processor

- Integrated Intel® HD 530 graphics

- Support 3 independent 4K2K video outputs

- Dual DDR4 SO-DIMM support

- WWAN/WLAN/TV Tuner support

- DirectX® 12 support

Physical Features

Front Panel

Antenna

LAN

Antenna

HDD Slot

HDD LED

ANT

ANT

Power sw

HDMI

Power
Button

HDMI

mDP

USB 3.0

Reset
Button

Mic In

Line Out

Mic-in

Line-out

Rear Panel

JAE TX25 80Pin
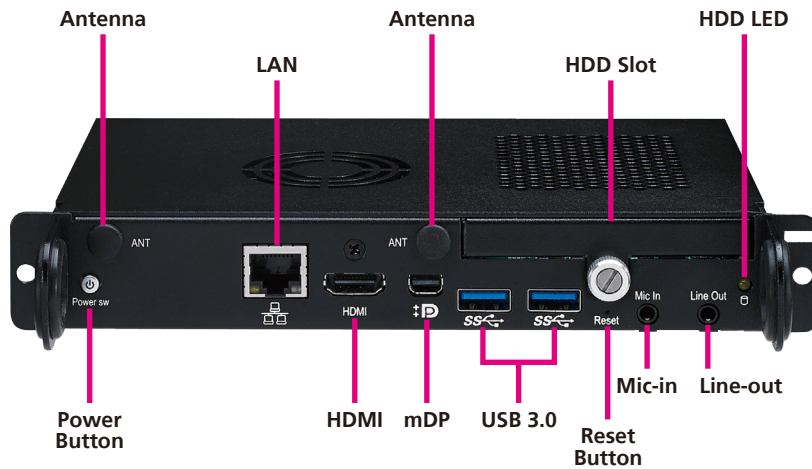
Hardware Specifications

CPU Support

- 6th generation Intel® Core™ i5-6440EQ 2.7GHz BGA type processor
- 6th generation Intel® Core™ i7-6820EQ 2.8GHz BGA type processor

Chipset

- Intel® QM170 PCH

Graphics

- Integrated Intel® HD 530 graphics

Main Memory

- 2x 260pin SO-DIMM sockets, support DDR4 1866/2133 MHz non-ECC, un-buffered memory up to 32G (Single socket max. 16GB)

I/O Interface-Front

- 1x Power button with LED
- 1x Reset button
- 1x RJ45 with LEDs for Gigabit LAN
- 1x HDMI 2.0 (A type), 1x Mini DP
- 2x USB 3.0
- 1x 2.5" HDD/SSD slot
- 1x HDD Active LED
- 2x Antenna hole
- 1x Mic-in phone jack
- 1x Line-out phone jack

I/O Interface-Rear

- 1x TMDS (HDMI)
- 1x USB 3.0
- 2x USB 2.0
- 1x UART (TX/RX)

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

Storage Device

- 1x SATA 2.5" HDD/SSD

Expansion

- 1x Mini-PCIe for optional WLAN/TV tuner module
- 1x Micro 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/FCC Class A

Operating System

- Windows 7 (32-bit/64-bit) / Windows 8.1 (64-bit)/ Windows 10 (64-bit)

Mechanical Dimensions

180.00

118.00

152.90

30.00

200.00
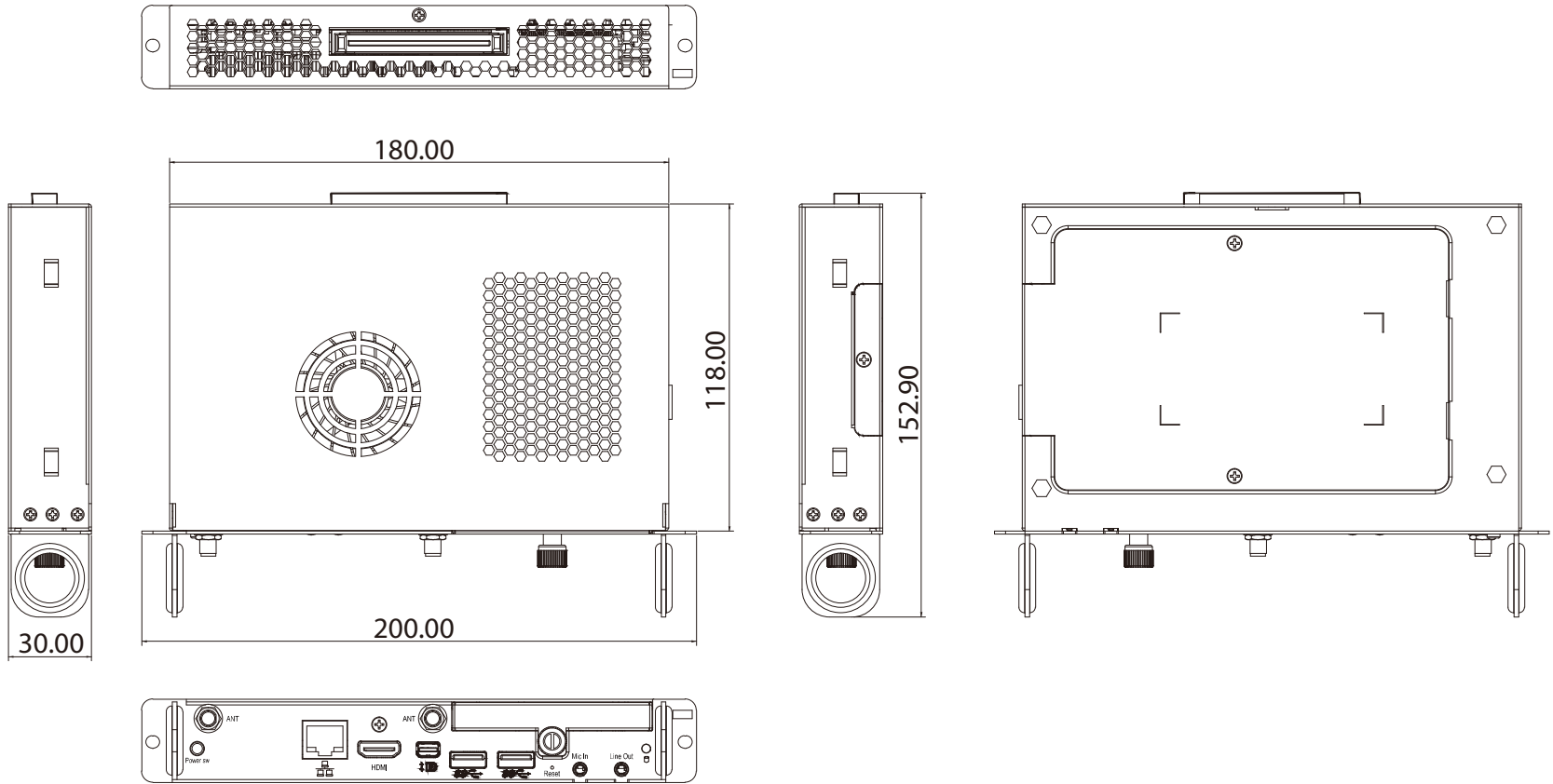
Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NDiS M535 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 M535

NDiB M535

The figure below is the top and bottom view of the NDiB M535 mainboard which is the mainboard used in NDiS M535. It shows the locations of the jumpers and connectors.

Top View
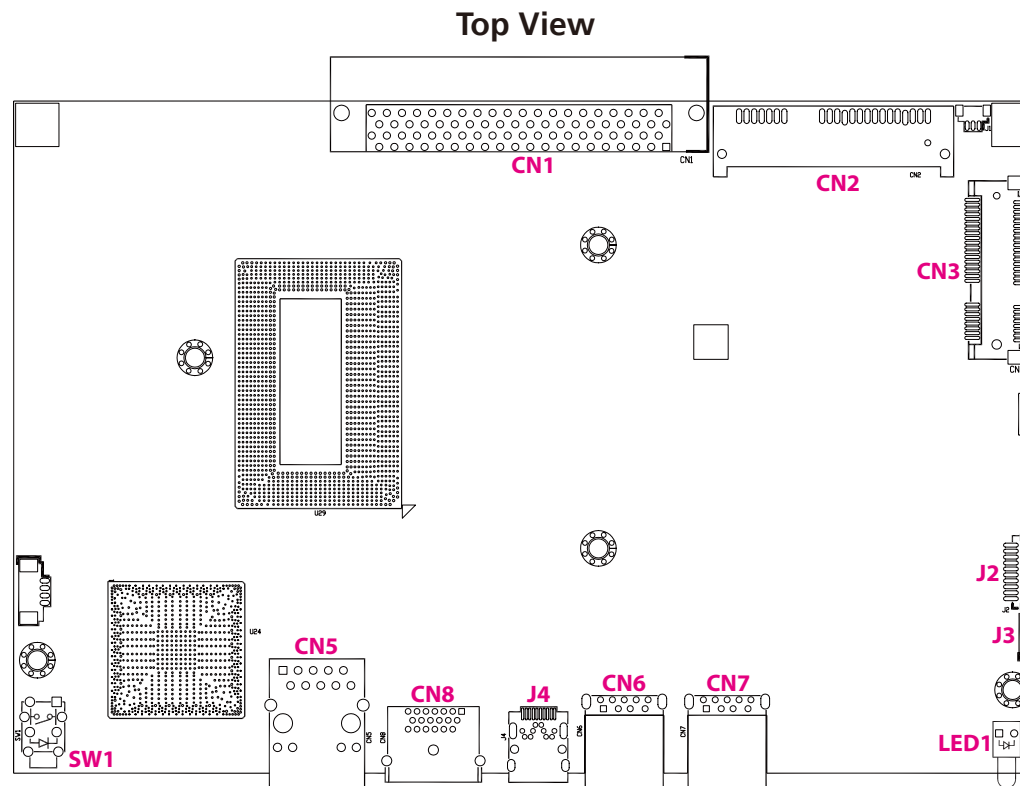
Bottom View
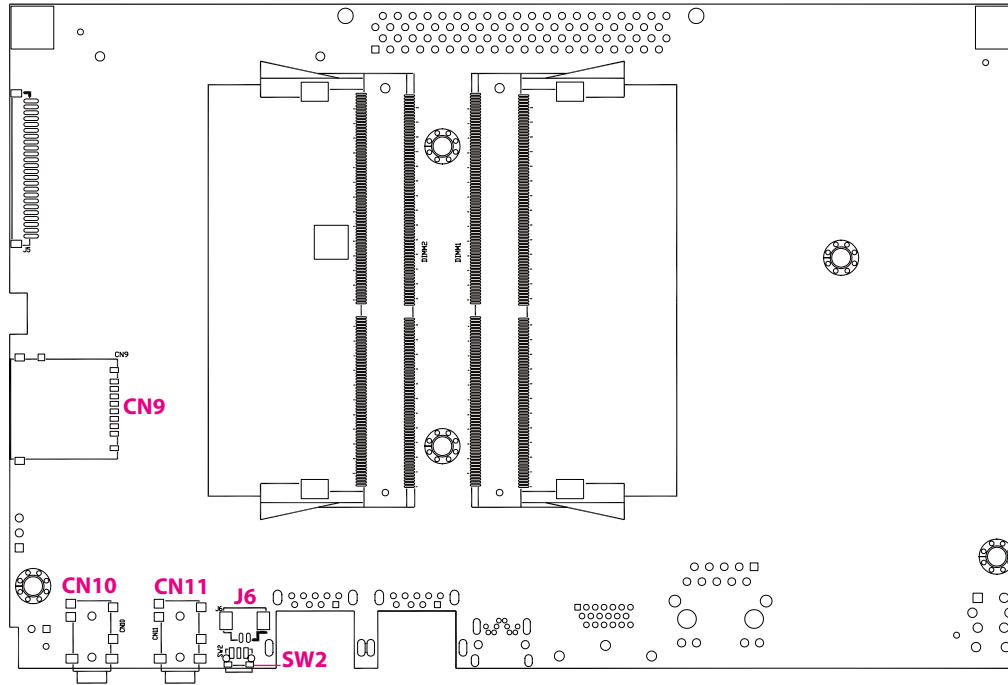
Jumper Settings

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)
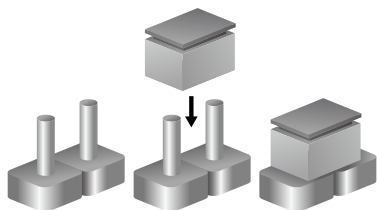
Three-Pin Jumpers: Pins 1 and 2 are Short
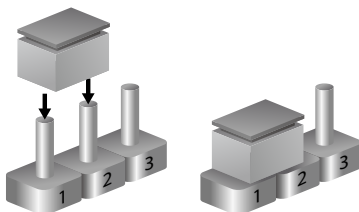
Jumpers

RTC Control Connector

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: J3

1 | □ ○ ○ | 3

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

1-2 On: default

Pin	Definition
1	RTC_RST#_PU
2	RTC_RST#
3	CLR_CMOS

Connector Pin Definitions

External I/O Interfaces
Power Button

Connector location: SW1

LAN Port

Connector type: RJ45 port with LEDs
Connector location: CN5

Pin	Definition	Pin	Definition
1	GND	2	PBT_PU
3	PBT_PU	4	GND
A1	PWRLED_N	C1	PWRLED_P
MH1	NC	MH2	NC
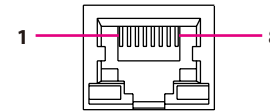
Pin	Definition	Pin	Definition
1	TCT	2	MID3-
3	MID3+	4	MID2-
5	MID2+	6	MID1-
7	MID1+	8	MID0-
9	MID0+	10	GND
11	LED+	12	LAN_ACTLED#_C
13	LAN1_LED2P	14	LAN1_LED3P

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HDMI Port

Connector type: HDMI port
Connector location: CN8
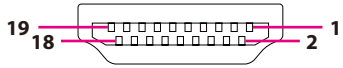
Pin	Definition	Pin	Definition
1	TMDS DATA2+	2	GND
3	TMDS DATA2-	4	TMDS DATA1+
5	GND	6	TMDS DATA1-
7	TMDS DATA0+	8	GND
9	TMDS DATA0-	10	TMDS CLOCK+
11	GND	12	TMDS CLOCK-
13	CEC	14	NC
15	SCL	16	SDA
17	DDC	18	+5V
19	HOT PLUG DETECT		

Mini DisplayPort

Connector type: Mini DisplayPort
Connector location: J4
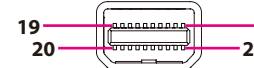
Pin	Definition	Pin	Definition
1	GND	2	HPD
3	LANE0_P	4	CONFIG1
5	LANE0_N	6	CONFIG2
7	GND	8	GND
9	LANE1_P	10	LANE3_P
11	LANE1_P	12	LANE3_N
13	GND	14	GND
15	LANE2_P	16	AUXP
17	LANE2_N	18	AUXN
19	GND	20	PWR

USB 3.0 Ports

Connector type: USB 3.0 port, Type A
Connector location: CN6 and CN7

LED Connector

Connector location: LED1

HDD

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

Pin	Definition
A	POWER
C	HD_LEDN

Reset Button

Connector location: SW2

Mic-in Connector

Connector type: 3.5mm TRS
Connector location: CN11

Pin	Definition
1	GND
2	RST_BTN#
3	GND

Pin	Definition	Pin	Definition
1	GND	2	GND
3	MIC_IN_R	4	MIC_IN_L
5	JD		

Line-out Connector

Connector type: 3.5mm TRS
Connector location: CN10

Pin	Definition	Pin	Definition
1	GND	2	GND
3	LINE2_OUT_R_FB	4	LINE2_OUT_L_FB
5	JD		

JAE-TX25 Connector

Connector location: CN1
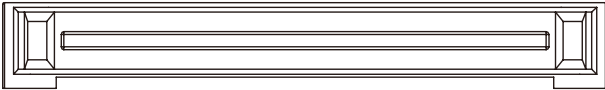
Pin	Definition	Pin	Definition
1	DDP_3N	18	TMDS_CLK+
2	DDP_3P	19	GND
3	GND	20	TMDS0-
4	DDP_2N	21	TMDS0+
5	DDP_2P	22	GND
6	GND	23	TMDS1-
7	DDP_1N	24	TMDS1+
8	DDP_1P	25	GND
9	GND	26	TMDS2-
10	DDP_0N	27	TMDS2+
11	DDP_0P	28	GND
12	GND	29	DVI_DDC_DATA
13	DDP_AUXN	30	DVI_DDC_CLK
14	DDP_AUXP	31	DVI_HPD
15	DDP_HPD	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_DN2
38	+12V~+19V	61	USB_DP2
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

SATA Connector (7-pin and 15-pin)

Connector type: Standard Serial ATA 7P and 15P
Connector location: CN2

RTC Battery Connector

Connector type: 1x2 2-pin header JST, 1.25mm pitch
Connector location: J6
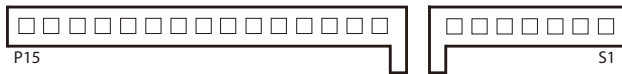
Pin	Definition	Pin	Definition
S1	GND	S2	SATA_TXPO_C
S3	SATA_TXNO_C	S4	GND
S5	SATA_RXNO_C	S6	SATA_RXNO_C
S7	GND	P1	NC
P2	NC	P3	NC
P4	GND	P5	GND
P6	GND	P7	VCC5
P8	VCC5	P9	VCC5
P10	GND	P11	NC
P12	GND	P13	SATA_V12
P14	SATA_V12	P15	SATA_V12
MH1	GND	MH2	GND
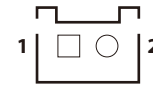
Pin	Definition	Pin	Definition
1	GND	2	VBAT1
MH1	GND	MH2	GND

Port 80 Connector

Connector type: 1x10 10-pin header JST, 1.0mm pitch
Connector location: J2

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

SIM Card Reader

Connector location: CN9
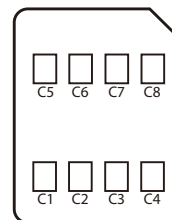
Pin	Definition	Pin	Definition
C1	UIM_PWR	C2	UIM_RST
C3	UIM_CLK	C4	UIM_DAT
C5	GND		

Mini-PCIe Connector

Connector location: CN3
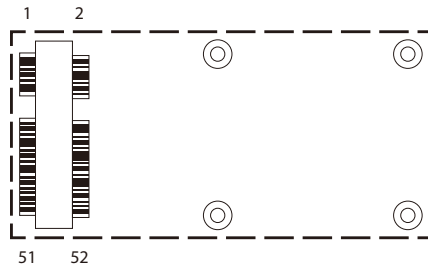
Pin	Definition	Pin	Definition
1	PCIE_WAKE#	2	+3.3B_MINI
3	NC	4	GND
5	NC	6	D15VS
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	MC_PCIE_CLK_N	12	UIM_CLK
13	MC_PCIE_CLK_P	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	MINICARD1_DIS#
21	GND	22	WLAN_RESET#
23	mPCIE_RX_N	24	+3.3B_MINI
25	mPCIE_RX_P	26	GND

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	NC	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

CAUTION! 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 back and sides are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.

Screws on the sides

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

Screw on the back

Installing a SO-DIMM Memory Module

1. At the bottom of the system, loosen the screws on the bottom cover and on the side, then remove the cover from the chassis.

Screw

DIMM1   **DIMM2**

20
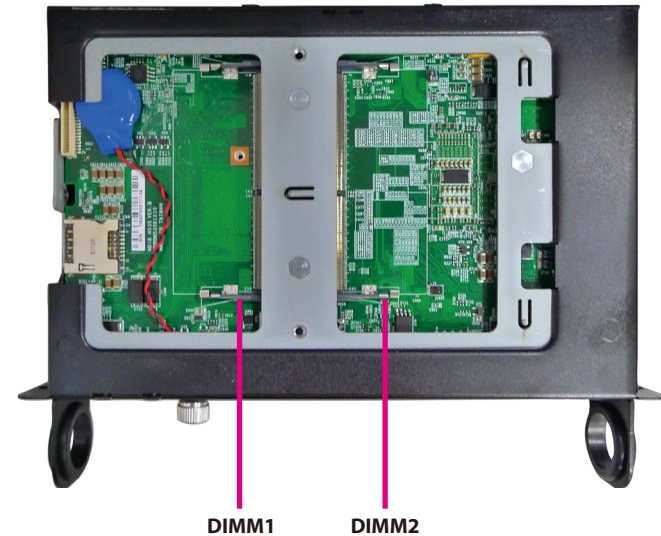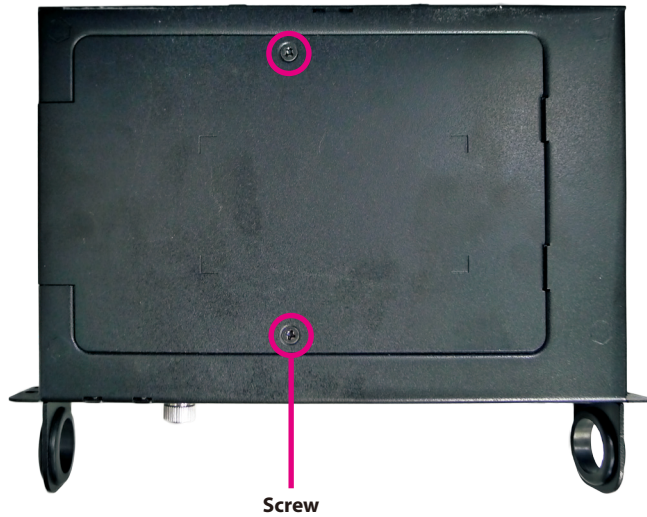
2. Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.

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.

3. Insert the module into the socket at an approximately 30 degree 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.

Ejector tab

Key

Notch
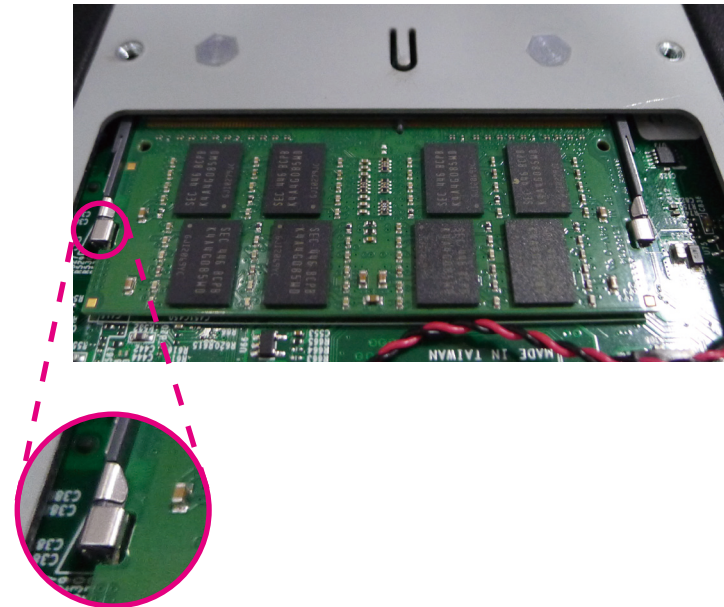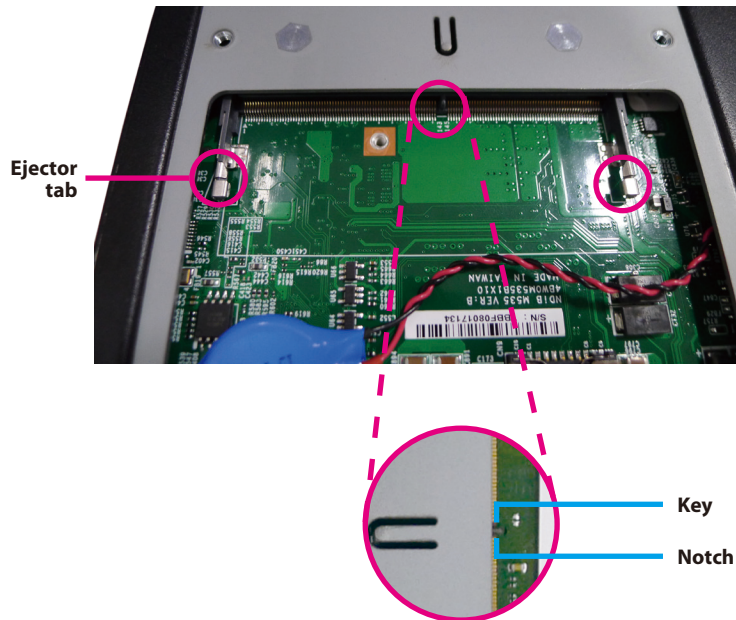
Installing a 2.5" SSD/HDD Storage

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

CAUTION! Before installing a 2.5" HDD, please make sure the top OPS cover is secured firmly with screws, otherwise the HDD connector on the mainboard may be damaged.

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

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.
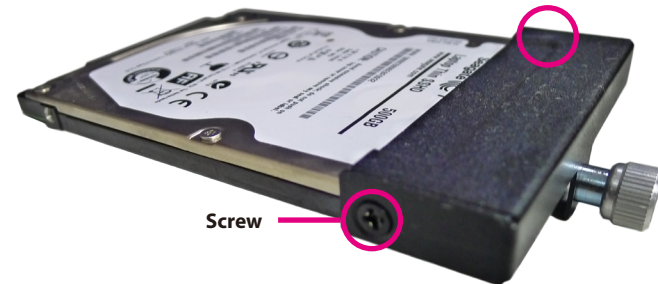
Screw

4. Stick the protective pad on the bottom of the HDD to prevent short circuiting with the chassis.
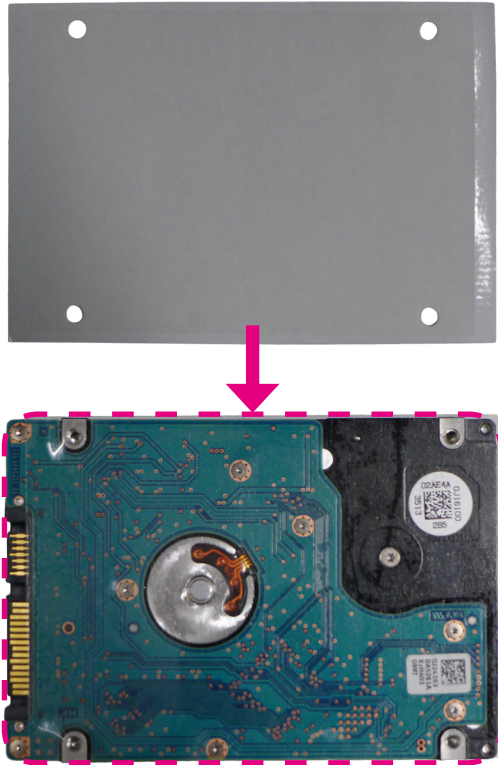
5. Place the HDD back into the slot, then tighten the screw to secure it.

Installing a Wireless LAN Module

1. With the chassis cover removed, locate the mini-PCIe slot on the mainboard.
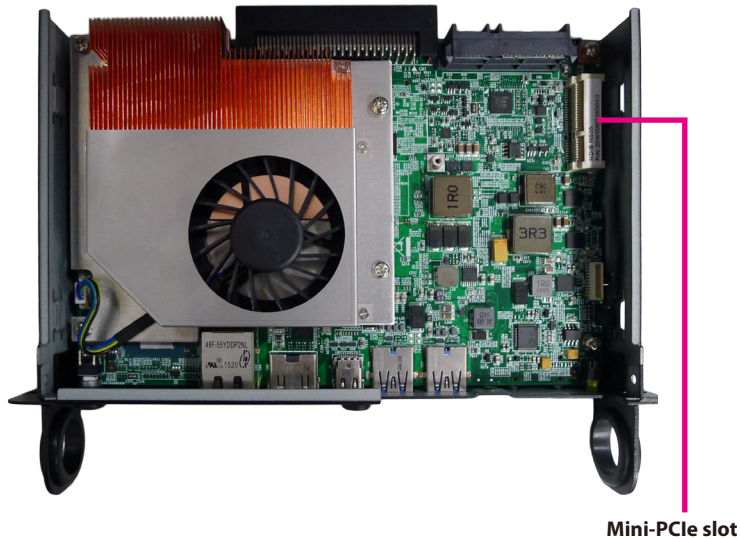
2. Insert the Wi-Fi module into the mini-PCI Express slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

Mini-PCIe slot
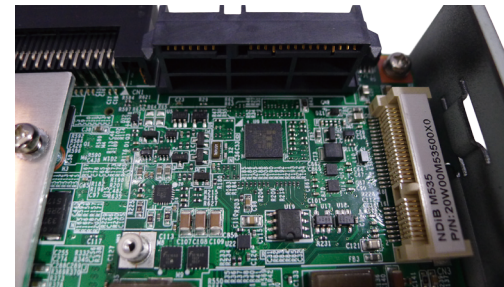
3. With the module fully inserted, tighten a screw into the mounting hole on the module to secure it.
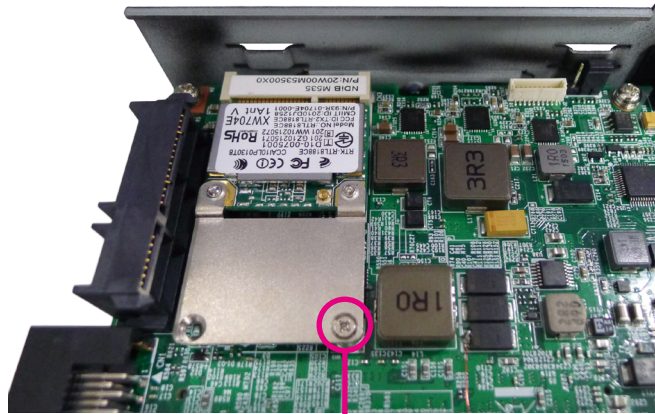
Screw

4. Attach the RF cables onto the Wi-Fi module and insert the antenna jack end of the cable through the antenna hole.
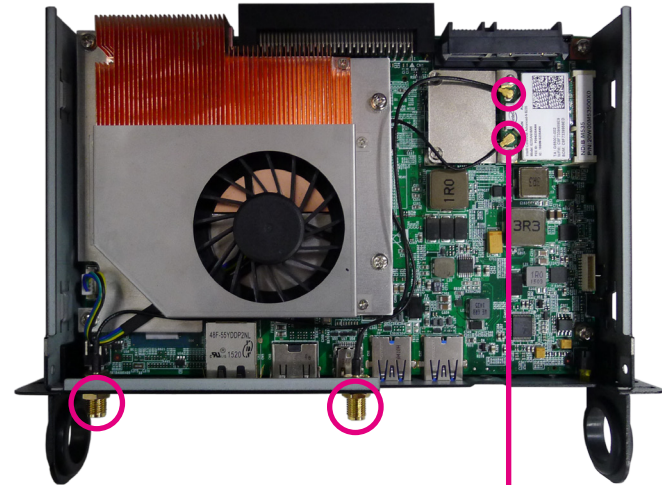
RF cable

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

Ring1

Ring2

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

Antenna
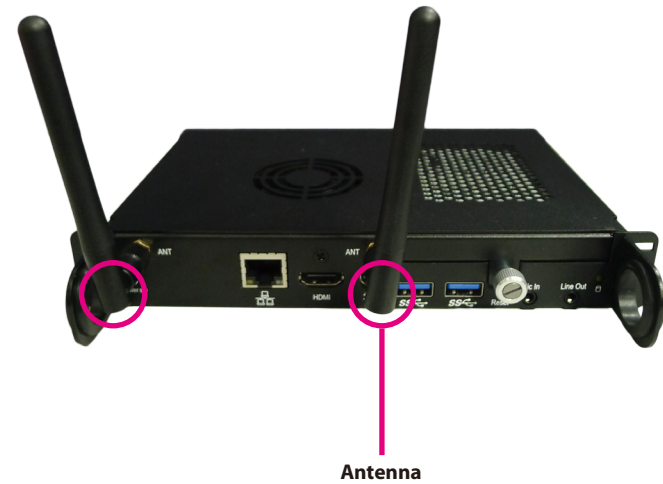
Installing a SIM Card

1. With the chassis bottom cover removed, locate the SIM card slot on the mainboard.

2. Insert the SIM card into the slot.
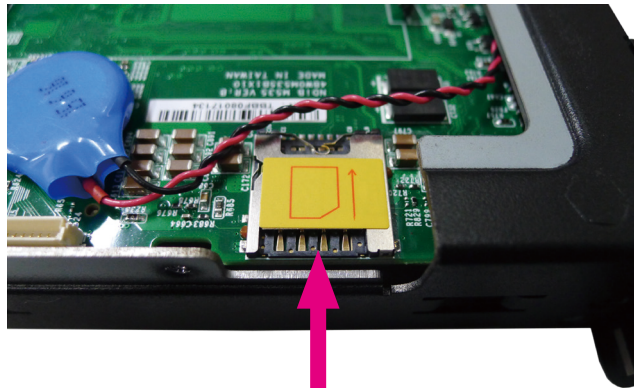
Please insert the SIM card in the correct direction

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NDiS M535. 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 items such as:
- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

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

When to Configure the BIOS

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

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

Default Configuration

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

Entering Setup

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

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

- If the error occurs after the display device is initialized, the screen will display the error message.

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

Press the Del 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.
Esc	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.
Tab	Selects a field.
F1	Displays General Help.
F2	Load previous values.
F3	Load optimized default values.
F4	Saves and exits the Setup program.
Enter	Press <Enter> to enter the highlighted 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 Enter⏎ .

BIOS Setup Utility

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

Main

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

System Date

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

System Time

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

```
Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
 Main      Advanced    Security     Boot     Save & Exit

 BIOS Information                                        Set the Time. Use Tab to switch
 BIOS Vendor               American Megatrends           between Time elements.
 Production Name           NDiS-M535
 BIOS Version              D535M029 x64
 Build Date and Time       03/02/2016 13:10:12

 Processor Information
 Brand String              Intel(R) Core(TM) i7-. . .
 Processor ID              506E3
 GT Info                   GT2

 Total Memory              4096 MB
 Memory Frequency          2133 MHz

 PCH Information                                         →←: Select Screen
 PCH SKU                   PCH-H Mobile QM170            ↑↓: Select Item
 Stepping                  31/D1                         Enter: Select
 ME FW Version             11.0.0.1191                   +/-: Change Opt.
 GOP Driver Version        [9.0.1040]                    F1: General Help
 EC Version                D535_R05                      F2: Previous Values
 PCB Version                                             F3: Optimized Defaults
                                                         F4: Save & Exit
 System Date               [Fri 03/18/2016]             ESC: Exit
 System Time               [08:42:14]



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```

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.

```
           Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
    Main      Advanced     Security     Boot     Save & Exit

  ► ACPI Settings                                  System ACPI Parameters.
  ► Module Management
  ► AMT Configuration
  ► IT8528 Super IO Configuration
  ► Hardware Monitor
  ► RTC Wake Settings
  ► CPU Configuration
  ► Graphics Configuration
  ► SATA Configuration
  ► USB Configuration



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


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```

ACPI Settings

This section is used to configure ACPI settings.

```
           Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
          Advanced

  ACPI Settings                                    Enables or Disables System
                                                   ability to Hibernate (OS/S4 Sleep
  Enable Hibernation          [Enabled]            State). This option may be not
  ACPI Sleep State            [S3 (Suspend to RAM)] effective with some OS.




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

           Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```

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).

Module Management

This section is used to configure onboard module settings.

```
              Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
                Advanced

  Onboard Module Setting                                   Enables or disables boot for
                                                           Mini Card.
  Mini Card                         [Enabled]
  Restore on AC Power Loss          [S3 (Suspend to RAM)]
  USB Wake Up                       [Enabled]




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


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```

Mini Card
Enables or disables boot for mini card.

Restore on AC Power Loss
Select AC power state when power is re-applied after a power failure.

USB Wake Up
Enables or disables wake up from USB devices.

AMT Configuration

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

```
              Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
                Advanced

  Intel AMT                         [Enabled]              Enable/Disable Intel (R) Active
  Un-Configure ME                   [Disabled]             Management Technology BIOS
                                                           Extension.
                                                           Note : iAMT H/W is always
                                                           enabled.
                                                           This option just controls the
                                                           BIOS extension execution.
                                                           If enabled, this requires
                                                           additional firmware in the SPI
                                                           device


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


              Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```

Intel® AMT
Enables or disables Intel® Active Management Technology.

Un-Configure ME
Enables or disables un-configure ME without password. Enabled will clear all ME settings.

IT8528 Super IO Configuration

This section is used to configure serial port 2.

```
            Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
    Advanced

   IT8528 Super IO Configuration                          Set Parameters of Serial Port
                                                          2 (COMB)
  ▶ Serial Port 2 Configuration




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

            Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```
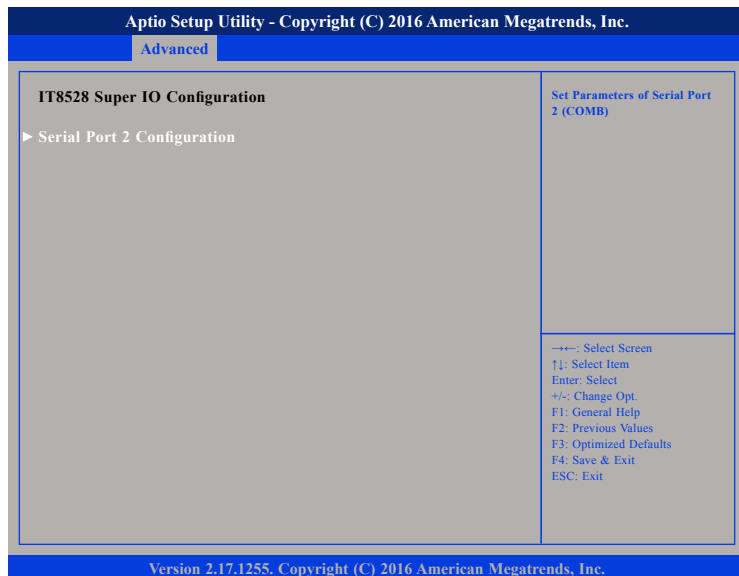
Serial Port 2 Configuration

Enters the sub-menu of serial port 2 configuration.

Serial Port 2 Configuration

```
            Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
    Advanced

   Serial Port 2 Configuration                            Enable or Disable Serial Port
                                                          (COM)
   Serial Port                    [Enabled]
   Device Settings                IO=2F8h; IRQ=3;




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

            Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```
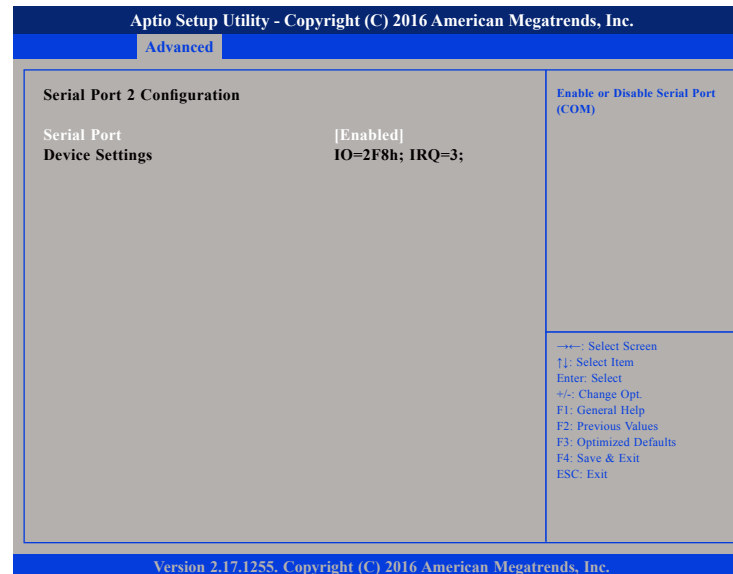
Serial Port

Enables or disables the serial port.

Device Settings

Displays the IO address and IRQ of serial port 2.

Hardware Monitor

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

```
          Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
              Advanced

 Hardware Monitor                                          FAN Mode Setting

 FAN Mode                    [Smart FAN]
 FAN Level                   [Disabled ( 0%)]
 System FAN Mode             [System FAN Disabled]

 CPU Temperature(DTS)        : +41 °c
 System Temperature          : +35 °c
 VCORE                       : +1.008 V
 VCC5                        : +5.083 V
 VCC3                        : +3.304 V
 FAN Speed                   : 2264 RPM

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

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```

FAN Mode
Configures the fan mode. The options are Disabled (0%), Smart Fan, Programmable Fan and FAN Full On.

System FAN Speed
Enables or disables fan speed control of the system.

CPU Temperature(DTS)
Detects and displays the current CPU temperature.

System Temperature
Detects and displays the internal temperature of the system.

VCORE to VCC3
Detects and displays the output voltages.

FAN Speed
Detects and displays the current fan speed.

RTC Wake Settings

This section is used to configure RTC Wake settings.

```
              Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
        Advanced

  Wake system from S5                        [Disabled]



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


        Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.
```
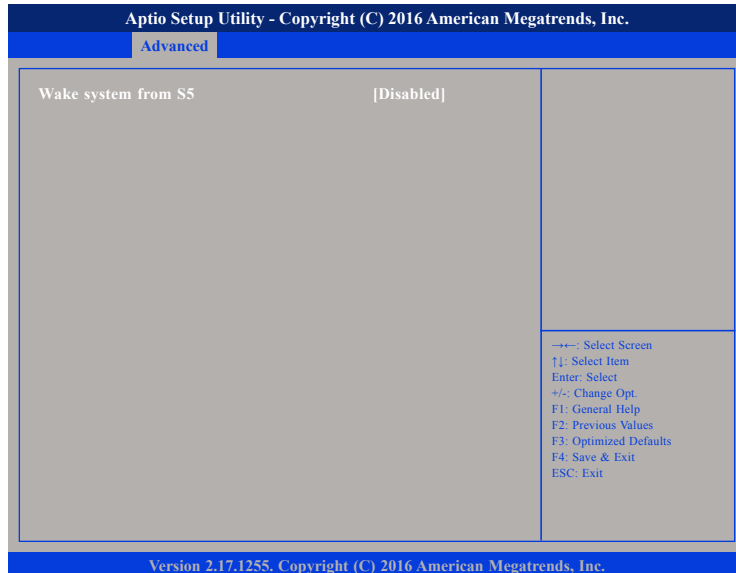
Wake System from S5

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

Graphics Configuration

Configures the graphics chip settings.

```
              Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
        Advanced

  Graphics Configuration                                      Select the Video Device which
                                                              will be activated during POST.
  Primary IGFX Boot Display          [HDMI(Internal)]         This has no effect if external
  Secondary IGFX Boot Display        [Disabled]               graphics present. Secondary boot
                                                              display selection will appear
                                                              based on your selection.
                                                              VGA modes will be supported
                                                              only on primary display



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


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```

Primary IGFX Boot Display

Selects 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

Selects the secondary display device.

CPU Configuration

This section is used to configure the CPU.

```
           Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
              Advanced

      CPU Configuration                                     Enabled for Windows XP and
                                                            Linux (OS optimized for
      Intel(R) Core(TM) i7-6820EQ CPU @ 2.80GHz             Hyper-Threading Technology)
      CPU Signature              506E3                       and Disabled for other OS (OS
      Microcode Patch            74                          not optimized for
      Processor Cores            4                           Hyper-Threading Technology).
      Hyper Threading Technology Supported                  When Disabled only one thread
      Intel VT-x Technology      Supported                  per enabled core is enabled.
      Intel SMX Technology       Supported
      64-bit                     Supported
      EIST Technology            Supported

      L1 Data Cache              32 kB x 4
      L1 Code Cache              32 kB x 4                  →←: Select Screen
      L2 Cache                   256 kB x 4                 ↑↓: Select Item
      L3 Cache                   8 MB                       Enter: Select
      L4 Cache                   Not Present                +/-: Change Opt.
                                                            F1: General Help
      Hyper-threading            [Enabled]                 F2: Previous Values
      Intel Virtualization Technology [Enabled]            F3: Optimized Defaults
      CPU AES                    [Enabled]                  F4: Save & Exit
      Intel(R) SpeedStep(tm)     [Enabled]                 ESC: Exit
        Turbo Mode               [Enabled]


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```

Hyper Threading
Enables or disables hyper-threading technology.

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

CPU AES
Enables or disables Advanced Encryption Standard instruction set.

Intel® SpeedStep™
Enables or disables Intel SpeedStep.

Turbo Mode
Enables or disables turbo mode.

SATA Configuration

This section is used to configure the SATA drives.

```
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            Advanced

   SATA Controller(s)              [Enabled]          Enables or disables SATA device.
   SATA Mode Selection             [AHCI]
   SATA Test Mode                  [Disabled]

   Serial ATA Port 2               Empty
     Software Preserve             Unknown
     Port 2                        [Enabled]
     Hot Plug                      [Disabled]




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



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```

SATA Controller(s)
Enables or disables the SATA controller.

SATA Test Mode
Enables or disables SATA test mode.

Port 2
Enables or disables Serial ATA port 2.

Hot Plug
Enables or disables hot plugging feature on Serial ATA port 2.

USB Configuration

This section is used to configure the USB.

```
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            Advanced

   USB Configuration                                  Enables Legacy USB support.
                                                      AUTO option disables legacy
   USB Devices:                                       support if no USB devices are
           1 Keyboard, 1 Mouse                        connected. DISABLE option will
                                                      keep USB devices available
   Legacy USB Support              [Enabled]          only for EFI applications.
   XHCI Hand-off                   [Disabled]




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



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```

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.

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.

Security

```
                Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
    Main      Advanced      Security      Boot      Save & Exit

    Password Description                                    Set Administrator Password

    If ONLY the Administrator's password is set,
    then this only limits access to Setup and is
    only asked for when entering Setup.
    If ONLY the User's password is set, then this
    is a power on password and must be entered to
    boot or enter Setup. In Setup the User will
    have Administrator rights.
    The password length must be
    in the following range:
    Minimum length              3
    Maximum length              20
                                                           →←: Select Screen
                                                           ↑↓: Select Item
                                                           Enter: Select
    Administrator Password                                 +/-: Change Opt.
    User Password                                          F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit


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```

Administrator Password
Select this to reconfigure the administrator's password.

User Password
Select this to reconfigure the user's password.

Boot

```
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    Main      Advanced      Security      Boot      Save & Exit

    Boot Configuration                                     Select the keyboard NumLock
    Bootup NumLock State        [On]                       state
    Boot Mode                   [UEFI Mode]
    Launch PXE OpROM            [Disabled]

    Boot Option Priorities



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


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```

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.

Boot Mode
Configures the boot mode as Legacy BIOS or UEFI BIOS Mode.

Launch PXE OpROM
Enables or disables the boot option for legacy network devices.

Save & Exit

```
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    Main      Advanced     Security      Boot     Save & Exit

   Save Options                                   Exit system setup after saving
   Save Changes and Exit                          the changes.
   Discard Changes and Exit

   Restore Defaults




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


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```

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

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

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

Use the GPF4 as the watchdog output for connecting to system reset. The watchdog settings can be configured using the BRAM interface with 1 control bit and 1 watchdog timer value. The timer supports values ranging from 3 to 255 seconds and 1 to 255 minutes. The BRAM addresses and corresponding functions for configuring through BIOS and applications are listed in the table below.

BRAM: Block 1
Index: 0x0A30
Data: 0x0A31

Name	Data Length	Offset Address	Range
WDT_CONTROL	1	0x68	Bit 7: WDT enable 0: Disable WDT 1: Enable WDT Bit 0: WDT timeout value unit 0: Second 1: Minute Default: 0x00
WDT_TIMEOUT	1	0x69	Second: 3~255 seconds Minute: 1~255 minutes Default: 3