



NEXCOM International Co., Ltd.

# Intelligent Platform & Services Business Unit

## Digital Signage Platform

### NDiS B336R

#### User Manual

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# PREFACE

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## Acknowledgements

NDiS B336R 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 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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NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

### System Level

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

### Board Level

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

## Warnings

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

## Cautions

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

## Safety Information

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

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

## Installation Recommendations

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

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

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

Using your fingers can disconnect most of the connections. It is recommended that you do not use 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](http://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 B336R package that you received is complete. Your package should have all the items listed in the following table.

Item	Name	Qty
1	Power adapter	1
2	Driver DVD	1



Power Adapter

## Ordering Information

The following below provides ordering information for NDiS B336R.

- **Barebone**

**NDiS B336R (P/N: 10W00B33600X0)**

Intel® Atom™ E3950 Quad core Slim and Fanless system

- **Optional**

**VESA Mount Kit**

- 1x VESA Mount Bracket
- 10x Screws

**Wall Mount Kit**

- 2x Wall Mount Bracket
- 4x Screws



VESA Mount Kit



Wall Mount Kit

# CHAPTER 1: PRODUCT INTRODUCTION

## NDiS B336R

### Overview



Powered by new generation Intel® Atom™ E3950 Processor, NDiS B336R series digital signage player can handle very rich multimedia contents. With Intel® processor low power consumption feature, the 6th generation Intel® Core™ processors deliver significant improvements up to two and a half times the performance in graphics offering stunning visuals for compelling 4K content creation and media playback. NDiS B336R series supports display output by HDMI and DP ports and is ideal as entry level digital signage player, NDiS B336R features slim/fanless design with wide temperature durability further extending to semi-outdoor usage like QSR drive-through kiosks, box office displays, information stands, bus stops, or digital transit information signs. It is also ideal as a digital signage player delivering enhanced performance and new immersive experiences for advertising, hospitality and brand promotion applications.

### Key Features

- 6th generation Intel® Atom™ E3950 Processor
- Triple HDMI output (4K2K resolution support)
- Compact and slim design (H: 21.5mm)
- Wide Temperature Support
- Supports W-Fi, GPS, and 3G module
- Fanless design

## Hardware Specifications

### CPU Support

- Intel® Atom™ E3950 2.0GHz Quad core SoC Processor

### Graphics

- Intel® HD Graphics 500 series

### Main Memory

- 2x 204-pin SO-DIMM socket, Supports DDR3L 1600MHz non-ECC, unbuffered memory up to 8GB

### I/O Interface-Front

- 1x 19V DC in
- 1x DB9 for RS-232
- 1x RJ45 with LEDs 10/100/1000Mbps Ethernet
- 2x USB 3.0
- 1x DisplayPort
- 2x HDMI Port
- 1x HDD LED
- 1x Power Switch

### I/O Interface-Rear

- 2x Antenna hole for Wi-Fi or TV tuner
- 3x USB 3.0
- 1x Audio-out
- 1x Mic-in

### Storage

- 1x 2.5" HDD/SSD

### Dimensions

- 259 x 147 x 21 mm, w/o mounting bracket

### Construction

- Top cover made by aluminum for main heat exchange

### Power Supply

- 1x External 65W AC/DC adapter
- Input: 100~240VAC
- Output: +19V

### Expansion

- 1x Mini-PCIe slot (full size)
- 1x NGFF (M.2) 2230 for optional WLAN
- 1x SIM slot

### Environment

- Operating temperature: -10°C~60°C
- Storage temperature: -25°C to 80°C
- Humidity: 10 to 90% (non-condensing)

### Certifications

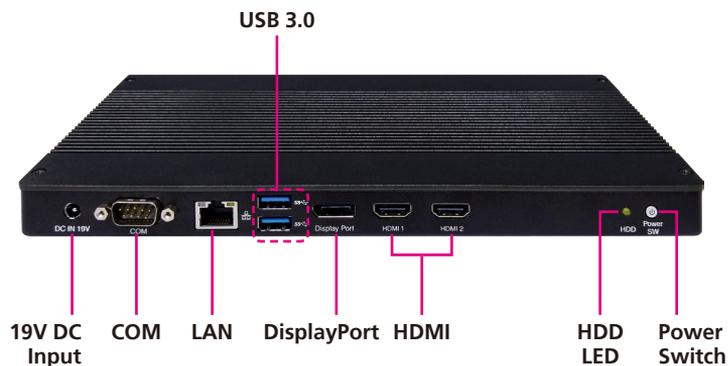
- CE approval
- FCC Class A

### Operating System

- Windows 10/Linux

# Knowing Your NDiS B336R

## Front Panel



### 19V DC Input

Used to plug a DC power cord.

### COM Port

The COM port supports RS232 compatible serial devices.

### LAN Port

Used to connect the system to a local area network.

### USB 3.0 Ports

Used to connect USB 3.0/2.0/1.1 devices.

### DisplayPort

Used to connect a DisplayPort monitor.

### HDMI

Used to connect an HDMI interface monitor.

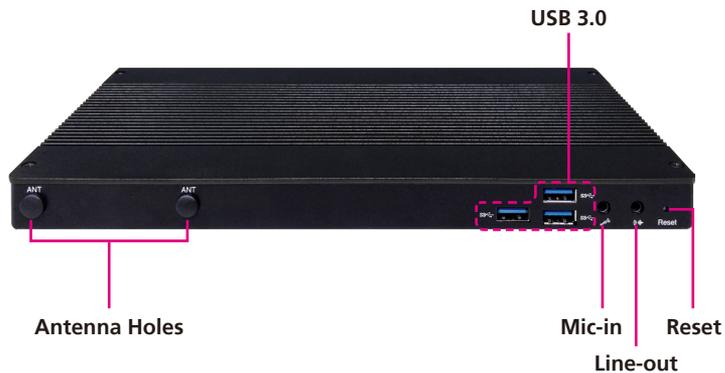
### HDD LED

Displays the HDD activity of the system.

### Power Switch

Power switch to power on/off the system and display power status.

## Rear Panel



### Antenna Holes for Optional Wi-Fi

The external antenna mounting holes are used to mount and connect optional Wi-Fi antennas.

### USB 3.0 Ports

Used to connect USB 3.0/2.0/1.1 devices.

### Mic-in

Used to connect an external microphone.

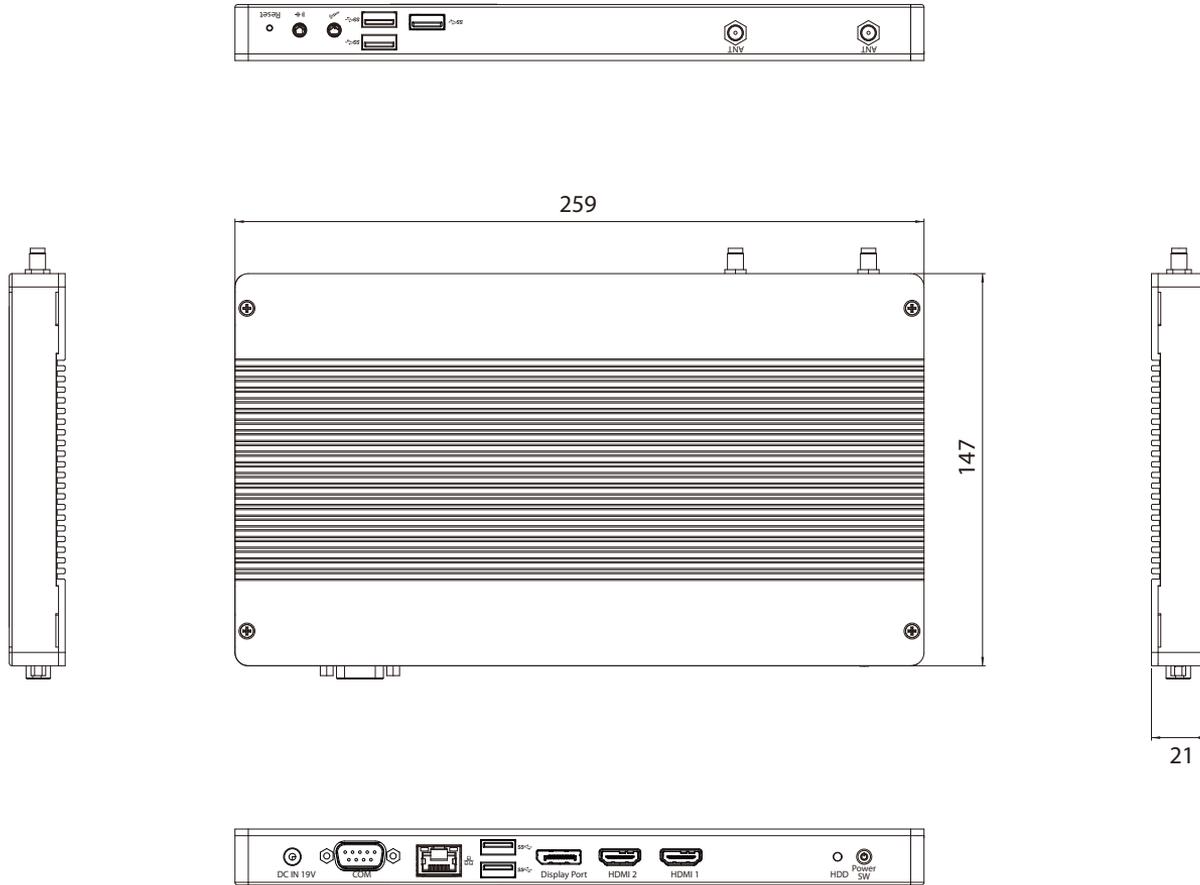
### Line-out

Used to connect a headphone or a speaker.

### Reset

Press this button to restart the system.

# Mechanical Dimensions



# CHAPTER 2: JUMPERS AND CONNECTORS

This chapter lists the locations of the jumpers and connectors for NDiS B336R.

## Before You Begin

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

## Precautions

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

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

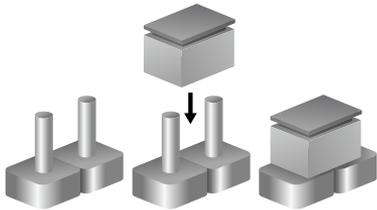
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

## Jumper Settings

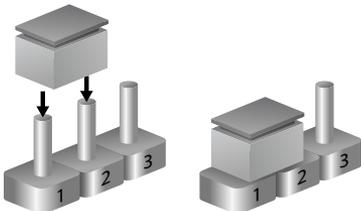
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

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

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

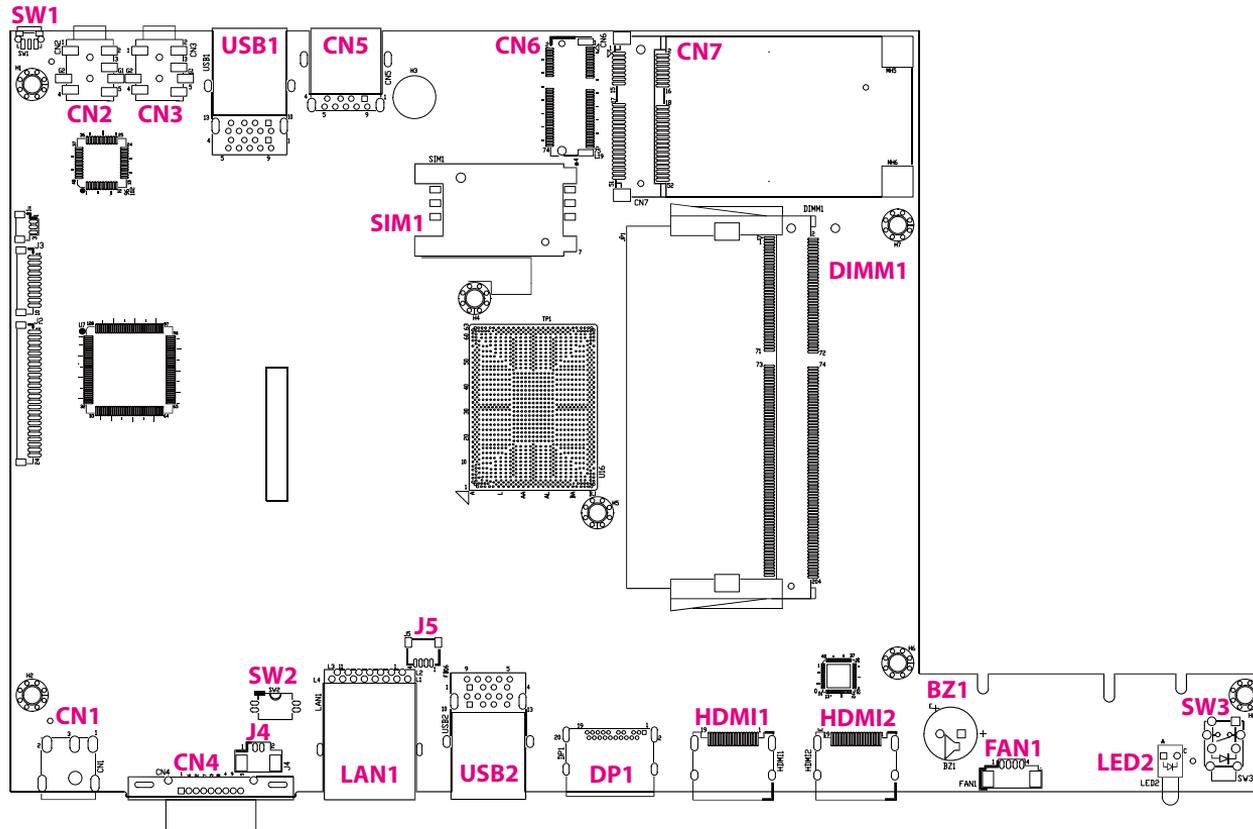


Three-Pin Jumpers: Pins 1 and 2 are Short

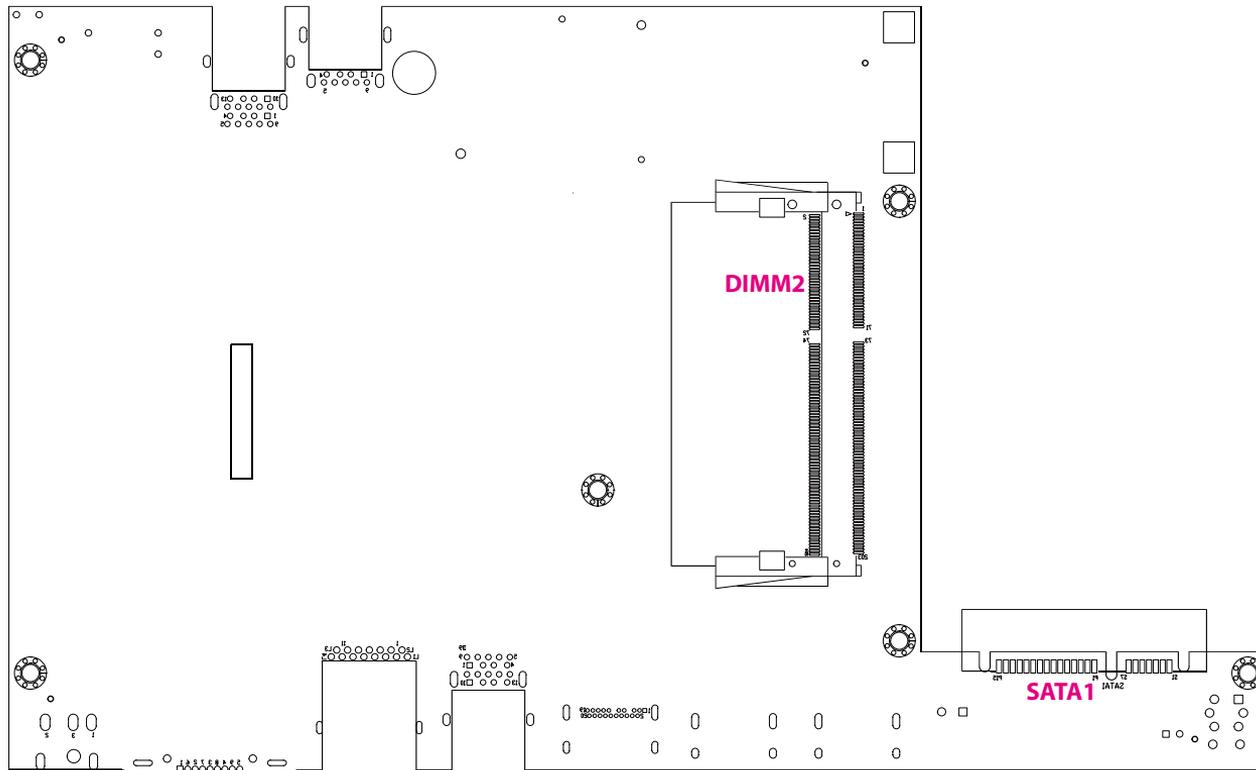


# Location of the Jumpers and Connectors

## Top View



## Bottom View



## Connector/Button Table

Connector	Name
SW1	Rest Button
CN2	Microphone Input Connector
CN3	Audio Line-out Connector
USB1	Dual USB 3.0 Connector
CN5	Single USB 3.0 Connector
SIM1	SIM Card Slot
CN6	NGFF M.2 Slot (2230)
CN7	Mini-PCIe Slot (Full)
DIMM1	DDR3L SO-DIMM Slot
DIMM2	DDR3L SO-DIMM Slot

Connector	Name
SW3	Power Button
SATA1	SATA HDD Connector
HDMI2	HDMI 2 Connector
HDMI1	HDMI 1 Connector
DP1	DisplayPort Connector
USB2	Dual USB 3.0 Connector
LAN1	RJ45 GbE LAN Connector
SW2	CMOS Clear Switch
CN4	COM Port Connector
CN1	DC 19V Power-in Connector

## Header/Wafer Table

Connector	Name
LED2	Power LED
FAN1	CPU FAN Wafer
BZ1	Buzzer
J5	USB 2.0 Pin Header
J4	RTC Battery Wafer

## CHAPTER 3: SYSTEM SETUP

### Installing a SATA HDD



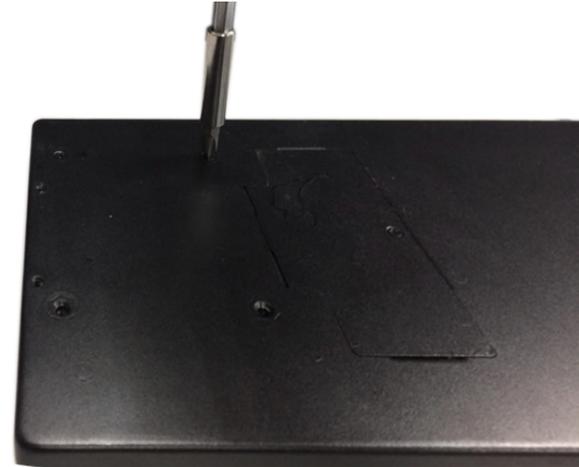
Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. Remove the mounting screws around the chassis cover and then remove the cover.



2. Place the SATA drive in the chassis and connect the SATA data connector.

3. Then use screws to secure the drive from the bottom of the chassis.



## Installing a SO-DIMM Memory Module

1. 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 into the socket. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.
2. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive “click” sound, indicating the module is correctly locked into position.



Memory module





If the system is operating in a wide temperature environment, the memory module needs to meet wide operating temperature specifications. Please apply a thermal pad on the memory module to solve the high temperature thermal issue. (Thermal pad for memory module is a standard accessory.)



3. Open the bottom cover for installing the 2nd SO-DIMM memory module.



4. Insert the module into the socket at an approximately 30 degrees angle and then push the module down until the clips on both sides of the socket lock into position.



## Installing a NGFF M.2 Wi-Fi Module (Optional)

1. The NGFF M.2 Wi-Fi module package includes the following items.



**NGFF M.2 Wi-Fi Module**



**Antennas**



**RF Cables**

2. Remove the top cover to locate the NGFF M.2 slot.



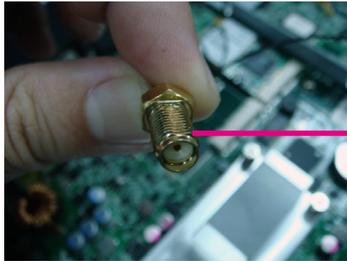
3. Insert the NGFF M.2 Wi-Fi module into the NGFF M.2 slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



4. Secure the module with mounting screws and attach one end of the RF cables onto the module.



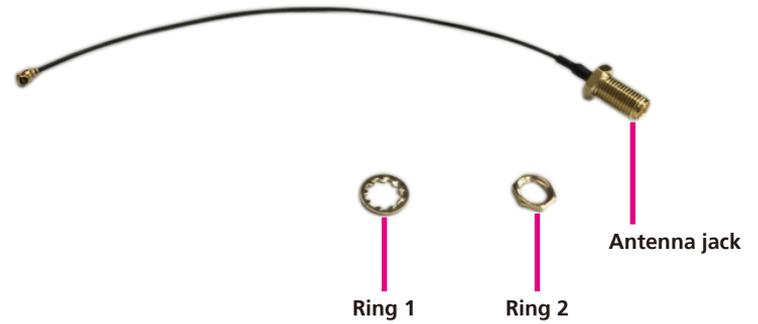
5. Insert the antenna jack end of the cable through the antenna hole.



Antenna jack  
end of the cable

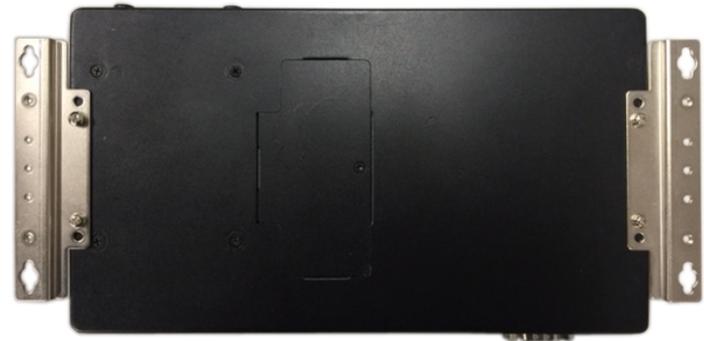
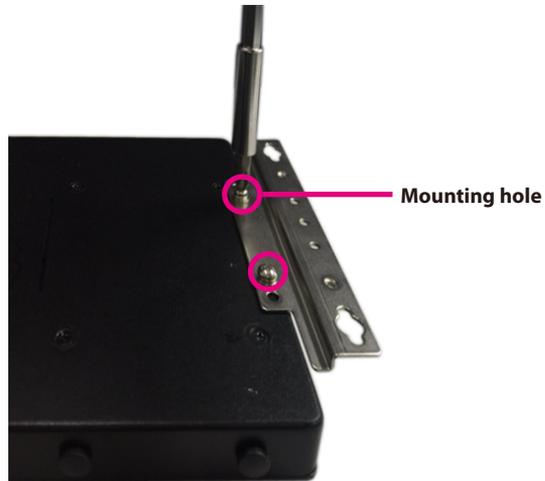


6. Insert the ring onto the antenna jack end of the cable.



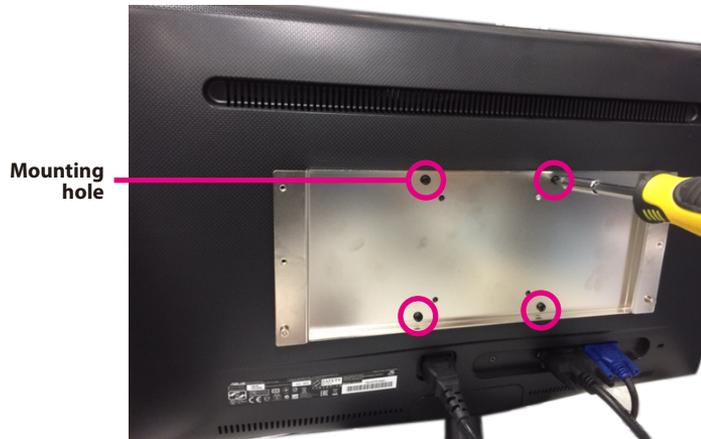
## Installing the Wall Mount Kit

1. Align the mounting holes on the wall mount brackets to the mounting holes on both sides of the system, then secure the brackets with screws.



## Installing the VESA Mount Kit

1. Align the mounting holes on the VESA mount kit to the VESA mounting holes on the back of the monitor, then secure the VESA mount kit with screws.
2. Secure the system to the VESA mount bracket with screws.



# CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NDiS B336R. 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 website at [www.nexcom.com.tw](http://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 <Del> 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-menu or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-menu

## Scroll Bar

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

## Submenu

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

## BIOS Setup Utility

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

### Main

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

### System Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 2005 to 2099.

### System Time

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

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.				
Main	Advanced	Security	Boot	Save & Exit
<b>BIOS Information</b> BIOS Vendor: American Megatrends Production Name: NDiS-B336R BIOS Version: D336-001 x64 Build Date and Time: 10/17/2016 09:12:58 EC Version: D335_R03 PCB Version: C		Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 2005-2099 Months: 1-12 Days: dependent on month		
<b>Platform firmware Information</b> BXT SOC: B1 MRC Version: 0.56 TXE FW: 3.0.1.1107 GOP: 10.0.1035				
<b>Memory Information</b> Total Memory: 8192 MB Memory Speed: 1600 MHz		←→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
System Date: [Tue 01/03/2012] System Time: [13:55:19]				
Version 2.18.1263. Copyright (C) 2016 American Megatrends, Inc.				

## 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.

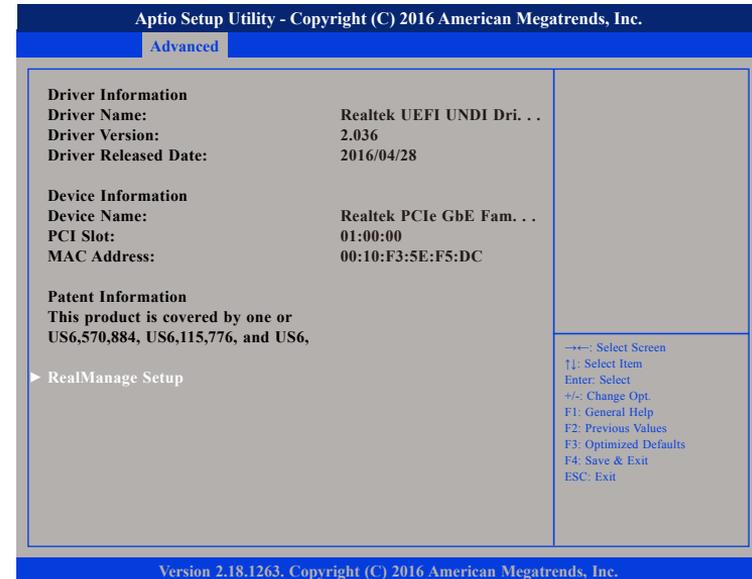


Setting incorrect field values may cause the system to malfunction.



## Realtek PCIe GbE Family Controller

This section is used to retrieve Ethernet controller driver information and configure parameters.



## RealManage Setup

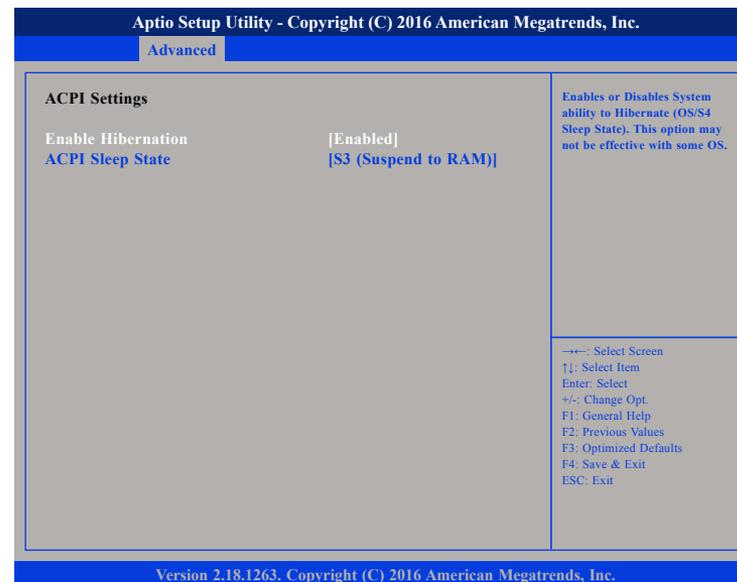


### RealManage Setup

Configures DASH (Desktop and Mobile Architecture for System Hardware) setting. DASH is a web services-based standard that can support both in-band and out-of-band management. The username and password can be configured here.

## 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.

## IT8528 Super IO Configuration

This section is used to configure serial port 2 of the super IO.



### Super IO Chip

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

## Serial Port 2 Configuration

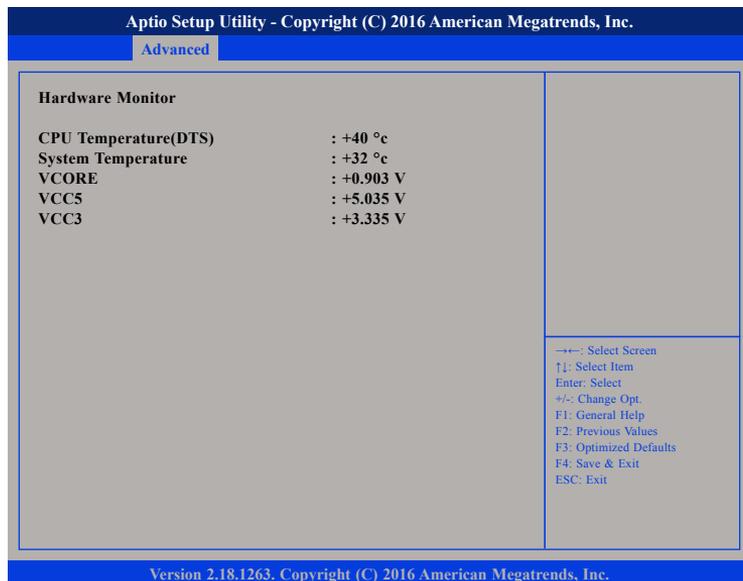


### Serial Port

Enables or disables the serial port.

## Hardware Monitor

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



### CPU Temperature(DTS)

Detects and displays the current CPU temperature.

### System Temperature

Detects and displays the current system temperature.

### VCORE to VCC3

Detects and displays the output voltages.

## Module Management

This section is used to configure onboard module settings.



### Realtek LAN Card DASH Function

Enables or disables Realtek LAN card DASH function.

### State After G3

Configures which state to use when power is re-applied after a power failure (G3 state).

### Wake on LAN

Enables or disables Wake on LAN function.

## Serial Port Console Redirection

This section displays the serial port number used for console redirection.



## CPU Configuration

This section is used to configure the CPU.



### Intel® Virtualization Technology

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

### VT-d

Enables or disables CPU VT-d function.

## Socket 0 CPU Information

This section displays the information of the CPU installed in Socket 0.

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Advanced

Socket 0 CPU Information	
Intel(R) Atom(TM) Processor E3950 @	1.60GHz
CPU Signature	506C9
Microcode Patch	1C
Max CPU Speed	1600 MHz
Min CPU Speed	800 MHz
Processor Cores	4
Intel HT Technology	Not Supported
Intel VT-x Technology	Supported
L1 Data Cache	24 kB x 4
L1 Code Cache	32 kB x 4
L2 Cache	1024 kB x 2

←→: 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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## CPU Power Management

This section is used to configure CPU power management settings.

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Advanced

CPU Power Management Configuration		Enable/Disable Intel SpeedStep
EIST	[Enabled]	
Turbo Mode	[Enabled]	
C-States	[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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### EIST

Enables or disables Intel® SpeedStep.

### Turbo Mode

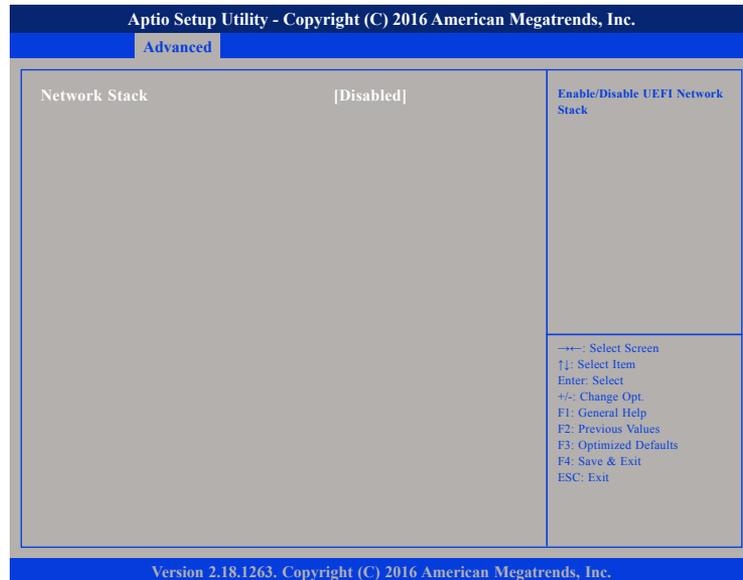
Enables or disables turbo mode.

### C-States

Enables or disables CPU C-States support for power saving.

## Network Stack Configuration

This section is used to configure the network stack settings.



### Network Stack

Enables or disables UEFI network stack.

## 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.

### 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.

## SATA Configuration

This section is used to configure the SATA drives.



### Chipset SATA

Enables or disables the SATA controller. The SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).

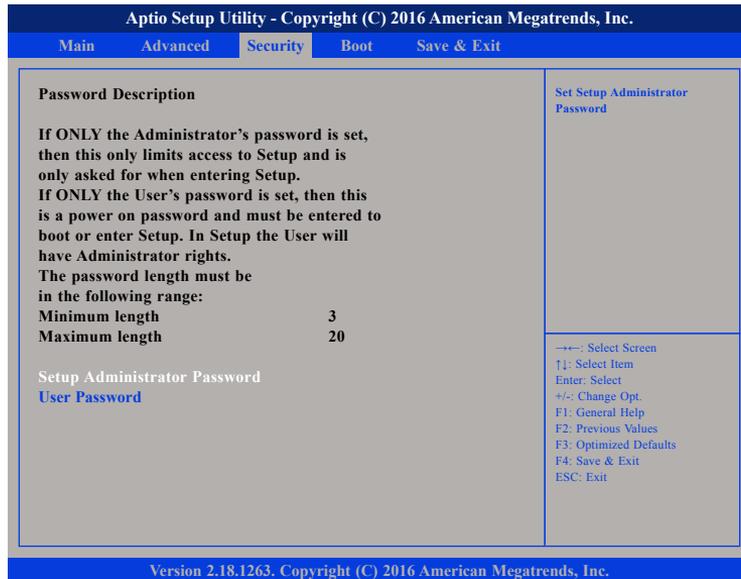
### SATA Test Mode

Enables or disables SATA test mode.

### Port State

Enables or disables the SATA port.

## Security



### Setup Administrator Password

Select this to reconfigure the administrator's password.

### User Password

Select this to reconfigure the user's password.

## Boot



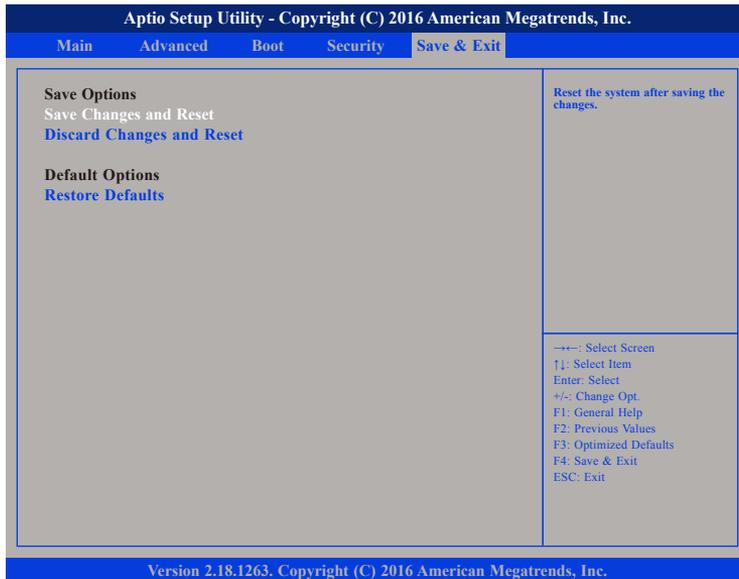
### Bootup NumLock State

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 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.

## Save & Exit



### Save Changes and Reset

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

### 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.

### 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

NDiS B336R features a watchdog timer that resets the CPU or generates an interrupt if the processor stops operating for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

## Watchdog Timer Control Register

WDT_CONTROL BYTE	0x68	// 0x68
Bit 7: WDT enable	0: Disable WDT, 1: Enable WDT	
Bit 2: WDT CLR	0: non, 1: Reload watchdog counter value	
Bit 1: WDT output	0: WDT via EC reset, 1: WDT via KBRST	
Bit 0: WDT timeout value unit	0: Second, 1: Minute	
Default: 0x00		

# APPENDIX B: DASH FUNCTION

## Enabling DASH Function

1. In BIOS menu, go to **Advanced -> Module Management** and set the **Realtek LAN Card DASH Function** option to **Enabled**.
2. Go to **Advanced -> Module Management** and set the **Serial Port Console Redirection** option to **Enabled**.



NDiS B336R supports remote management (DASH).

## Main Features

Remote system status monitor

- Device power status monitor

Remote power control

- Power on
- Power off
- Power reset

USB redirection

- Share local drive

Remote BIOS management

- Update BIOS
- Monitoring and Control

Discovery

- Scan DAHS supported computer

Role-base authentication

- Modify role
- Del role
- Assign privileges

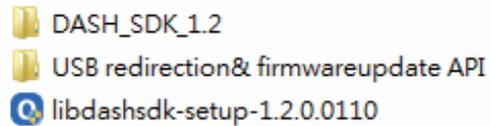
Account management

- Add account
- Del account
- Assign role
- Modify password

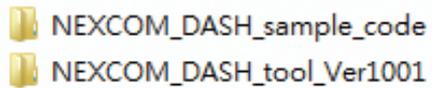
Serial over LAN (text console redirection)

The software is provided in the driver CD.

1. Standard DASH\_SDK, Ver. 1.2.



2. NEXCOM sample code and tool.



3. Realtek management console tool (free).

