



**NEXCOM International Co., Ltd.**

# **Intelligent Platform & Services Business Unit**

## **Digital Signage Platform**

### **NDiS B327**

#### User Manual

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# PREFACE

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## Acknowledgements

NDiS B327 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 B327 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	50311F0111X00	Flat Head Screw Long Fei:F3x5ISO+Nylok Black	F3x5 Black Nylok	6
2	50311F0122X00	I Head Screw Long Fei:I 2*6ISO	M2x6mm Black Nylok	2
3	5061700886X00	HDD Bracket-L for NDiS B328 Series VER:A NACTEK	94x8x10mm SECC T=1.0mm	1
4	5061700987X00	HDD Bracket-R for NDiS B327 VER:A NACTEK	95x7.5x5mm SECC T=1.0mm	1
5	5040420019X00	Mini-Card Bracket for NDiS M323 VER:A CHYUAN-JYH	29x30x2.1mm t=1.0mm SPCC+NI	1
6	50311F0295X00	Flat Head Screw Long Fei:F2x4 Nylok NIGP	F2x4 NIGP Nylok	2
7	7400065022X00	Power Adapter for NDiS B327 FSP:FSP065-RBBN3	65W 19V/3.42A	1
8	602DCD1589X00	NDiS B327 Manual Driver DVD VER:1.0	JCL	1

## Ordering Information

The following below provides ordering information for NDiS B327.

### **NDiS B327 (P/N: 10W00B32701X4)**

Fanless Embedded Computer Powered by Intel® Celeron® N3060 SoC Processor

# CHAPTER 1: PRODUCT INTRODUCTION

## NDiS B327

### Overview



### Key Features

- Intel® Celeron® N3060 dual core SoC processor
- HDMI (4K resolution) and VGA independent displays
- Two DDR3L SO-DIMM memory, up to 8G
- Support 6 x USB (4 x USB 3.0, 2 x USB 2.0)
- Dual storage devices support include M.2 and 2.5" SATA
- Mini PCIe slot for optional WLAN module usage
- Compact chassis for limited space
- Fanless design without noise

## Hardware Specifications

### CPU Support

- Intel® Celeron® SoC processor N3060 dual core 1.6GHz up to 2.28GHz

### Graphics

- Integrated Intel® HD 400 Graphics

### Main Memory

- 2 x 204-pin SO-DIMM sockets, support DDR3L 1600 MHz non-ECC, un-buffered memory up to 8G (single socket max. 4GB)

### I/O Interface-Front

- 2 x USB 2.0
- 2 x USB 3.0
- 1 x DB9 for RS232 (cable)
- 1 x Storage active LED
- 1 x Power switch with LED

### I/O Interface-Rear

- 1 x DC-in jack, 2.5/5.5mm (19V DC)
- 1 x VGA (1920 x 1200 resolution)
- 1 x HDMI (4K resolution)
- 2 x Antenna holes
- 2 x USB 3.0
- 1 x RJ45 with LEDs for Gigabit LAN
- 1 x Line-out
- 1 x Mic-in

### Storage Device

- 1 x 2.5" SATA SSD bay
- 1 x M.2 2242 SSD, SATA signal

### Expansion

- 1 x mini-PCIe full size connector, USB+PCIe signal, supports Wi-Fi
- 1 x M.2 B key 2242 slot, SATA support

### Dimensions

- 190mm (W) x 149mm (D) x 25mm (H)

### Power Supply

- DC power input +19V

### Environment

- Operating temperature: @ 100% CPU loading and component thermal profile from 0°C~40°C
- Storage temperature: -20°C~80°C
- Humidity: 95% (non-condensing)

### Certifications

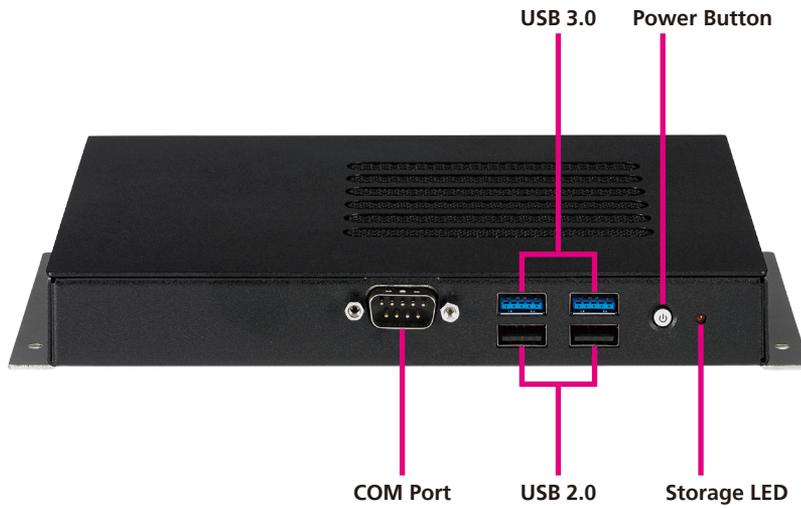
- CE approval
- FCC Class A

### Operating System

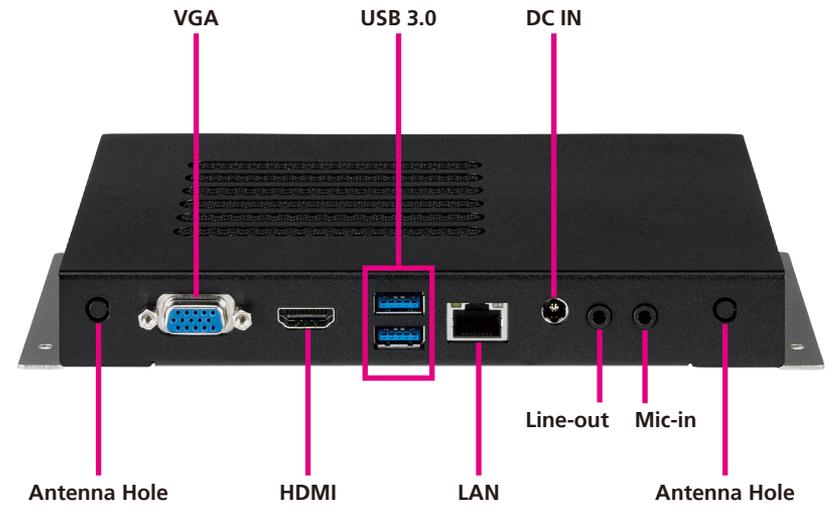
- Windows 7/Windows 10

# Physical Features

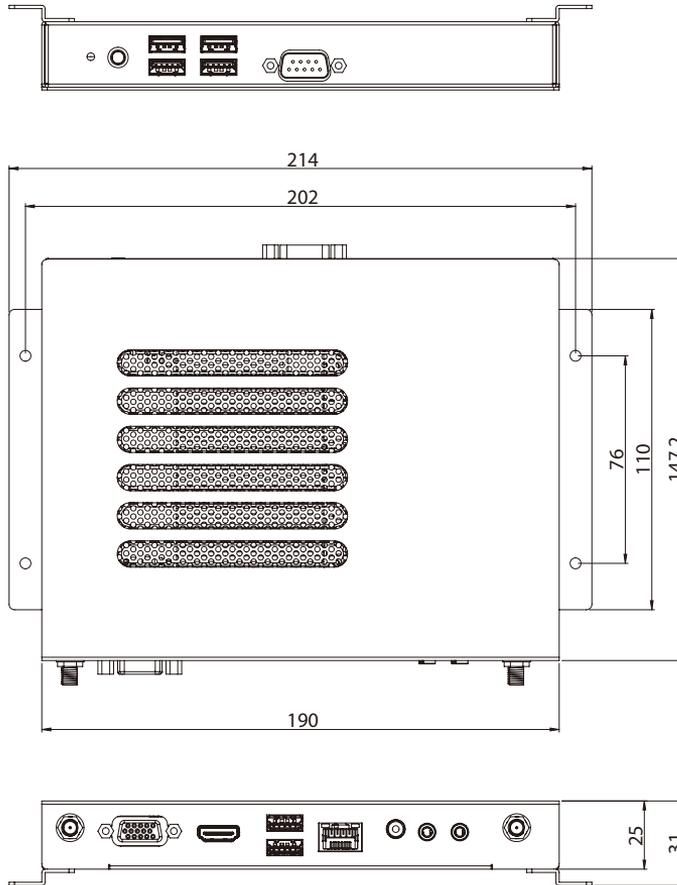
## Front Panel



## Rear Panel



## Mechanical Dimensions



## CHAPTER 2: JUMPERS AND CONNECTORS

This chapter lists the locations of the jumpers and connectors for NDiS B327.

### Before You Begin

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

### Precautions

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

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

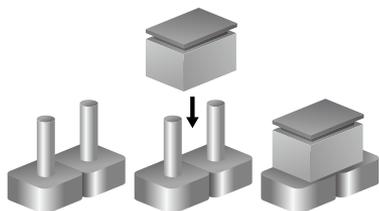
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal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

## Jumper Settings

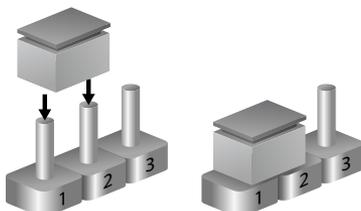
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

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

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

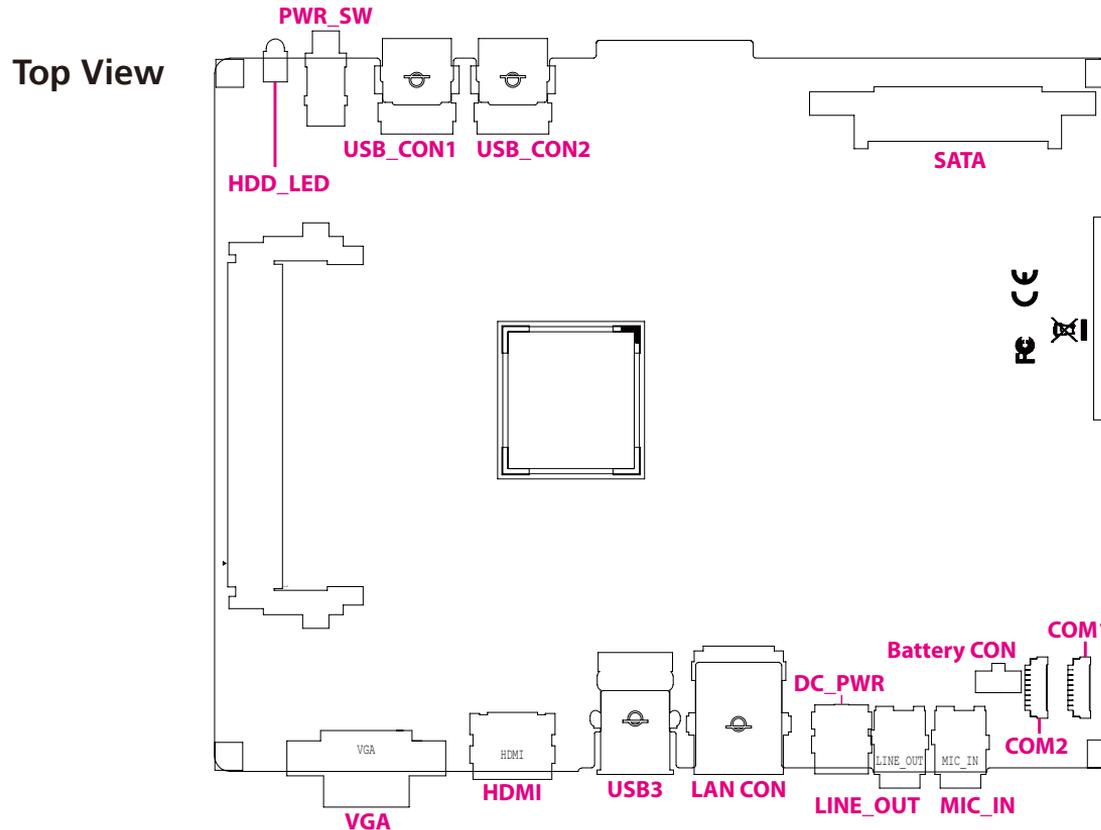


Three-Pin Jumpers: Pins 1 and 2 are Short

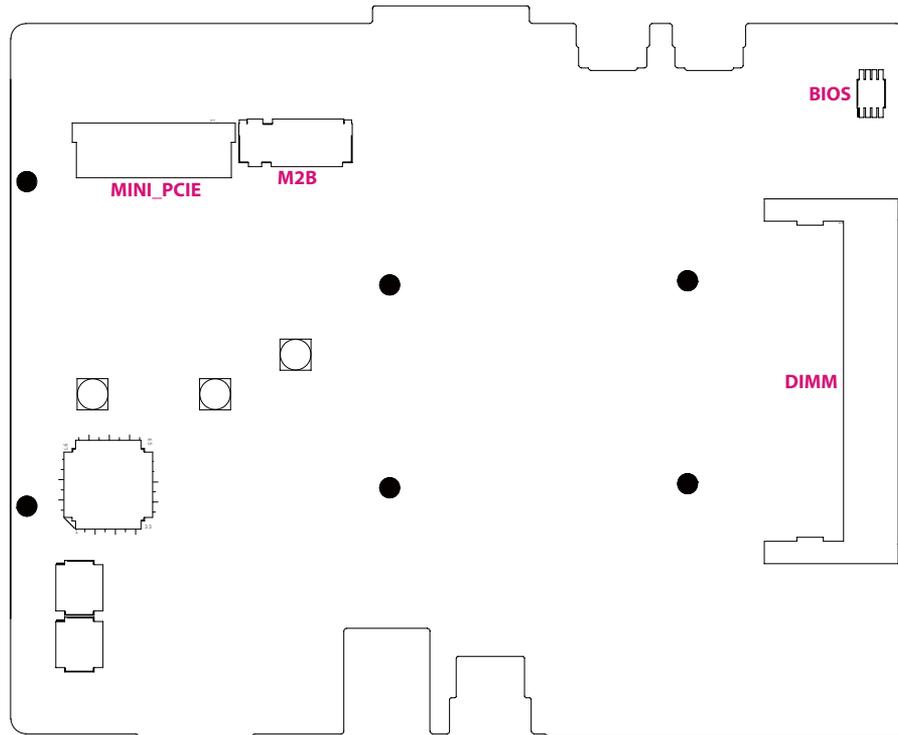


## Locations of the Jumpers and Connectors for NDiS B327

The figure below is the top and bottom view of the mainboard used in NDiS B327. It shows the locations of the jumpers and connectors.



### Bottom View



## Jumpers

### AT/ATX Type Select

Connector type: 1x3 3-pin header

Connector location: CLRTC1



Pin	Settings
1-2 On	ATX Mode
2-3 On	AT Mode

1-2 On: default

Pin	Definition
1	PWR_BTN_SW#
2	FB_PWSIN#_R
3	AT_ATX_DET

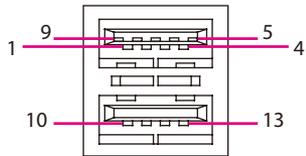
## Connector Pin Definitions

### External I/O Interfaces - Front Panel

#### USB 3.0 and USB 2.0 Ports

Connector type: USB 3.0 and USB 2.0 port, Type A

Connector location: USB\_CON1

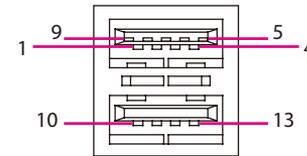


Pin	Definition	Pin	Definition
1	+5V_USB3_P01	2	S_USB2DN0
3	S_USB2DP0	4	GND
5	S_U3RXDN0	6	S_U3RXDP0
7	GND	8	S_U3TXDN0
9	S_U3TXDP0	10	+5V_USB3_P01
11	S_USB2DN1	12	S_USB2DP1
13	GND	14	GND
15	GND	16	GND
17	GND		

#### USB 3.0 and USB 2.0 Ports

Connector type: USB 3.0 and USB 2.0 port, Type A

Connector location: USB\_CON2



Pin	Definition	Pin	Definition
1	+5V_USB3_P23	2	S_USB2DN2
3	S_USB2DP2	4	GND
5	S_U3RXDN1	6	S_U3RXDP1
7	GND	8	S_U3TXDN1
9	S_U3TXDP1	10	GND
11	S_USB2DN3	12	S_USB2DP3
13	GND	14	GND
15	GND	16	GND
17	GND		

## Mic-in Connector

Connector type: 1 x 3.5mm TRS

Connector location: MIC\_IN



Pin	Definition	Pin	Definition
1	A_MIC1_L	2	A_MIC1_R
3	AGND	4	AGND
5	AGND	6	MIC1-JD
7	AGND	8	AGND
9	NC	10	NC

## Line-out Connector

Connector type: 1 x 3.5mm TRS

Connector location: LINE\_OUT

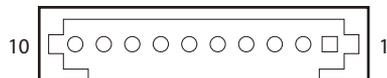


Pin	Definition	Pin	Definition
1	A_LOUT_L	2	A_LOUT_R
3	AGND	4	AGND
5	AGND	6	LINEOUT-JD
7	AGND	8	AGND
9	NC	10	NC

## Internal COM1 Connector

Connector type: 1x10 10-pin header

Connector location: COM1

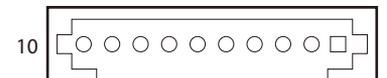


Pin	Definition	Pin	Definition
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

## Internal COM2 Connector

Connector type: 1x10 10-pin header

Connector location: COM2

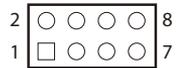


Pin	Definition	Pin	Definition
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND	6	DSR2
7	RTS2	8	CTS2
9	RI2		

## SPI Header

Connector type: 2x4 8-pin header

Connector location: SPI



Pin	Definition	Pin	Definition
1	+1.8V_SPI	2	SPI_CS0#_F
3	SPI_HOLD#	4	SPI_SO_F
5	SPI_CLK_F	6	SPI_D2_WP#
7	SPI_SI_F	8	GND

## CHAPTER 3: SYSTEM SETUP

### Removing the Chassis Cover



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

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



2. Loosen the screws on the VGA connector.



3. With the screws removed, push back the cover and remove it from the chassis.



## Installing a SATA Storage

1. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bay and then use the provided mounting screws to secure the drive in place.



2. Place the SATA drive in the chassis and connect the SATA data connector, then use screws to secure the drive in the chassis.



## Installing SO-DIMM Memory Modules

1. There are two SO-DIMM sockets in NDiS B327. One is on the top side and the another is on the bottom.

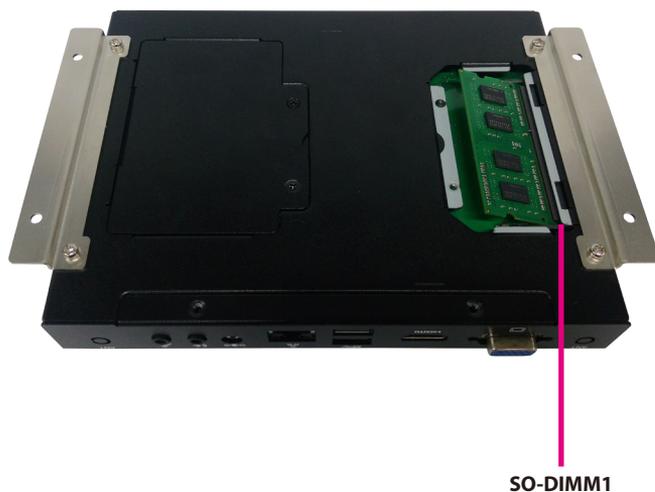
With the chassis cover removed, install a memory module in the SO-DIMM socket. Insert the module into the socket at an approximately 30 degree angle. Push the module down until the clips on both sides of the socket lock into position. The gold-plated connector on the edge of the module will almost completely 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.



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

With the bottom cover removed, install a memory module in the SO-DIMM socket. Insert the module into the socket at an approximately 30 degree angle. Push the module down until the clips on both sides of the socket lock into position. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.

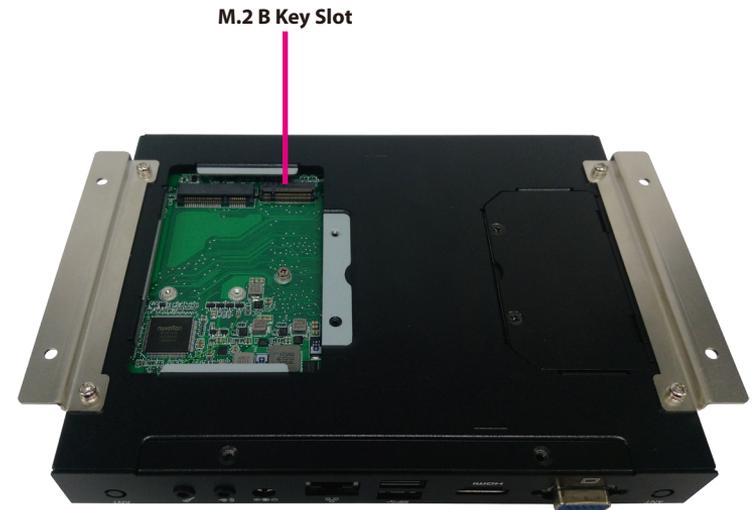
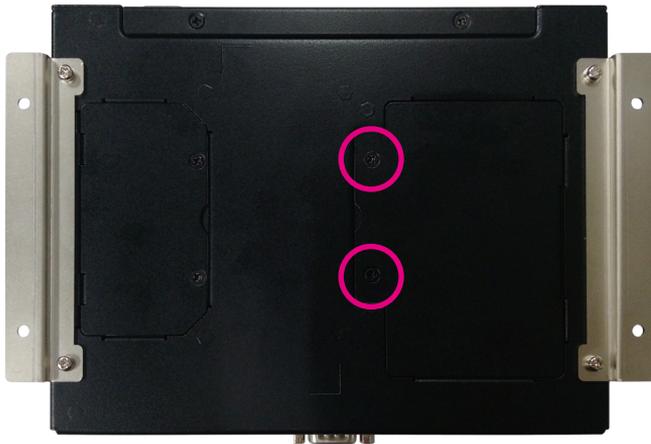


## Installing an M.2 SSD Storage Module



The system is equipped with an M.2 B Key connector. To install an M.2 SSD module, please follow the instructions below.

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



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



3. With the module fully inserted, tighten a screw into the mounting hole on the module to secure it.



Screw

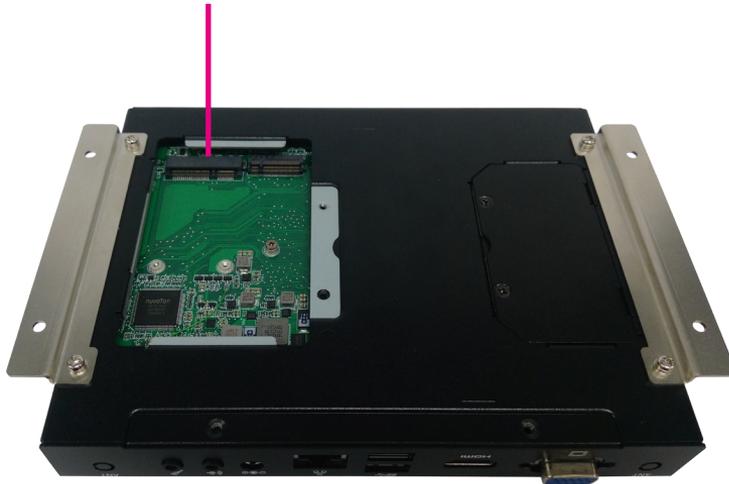
## Installing a Wireless LAN Module



The system is equipped with a mini-PCle slot for wireless LAN module. To install the module, please follow the instructions below.

1. With the bottom cover removed, locate the mini-PCle slot on the mainboard.

Mini-PCle Slot



2. Insert the Wi-Fi module into the slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Tighten a screw into the mounting hole on the module to secure it.



3. Attach the RF cables onto the Wi-Fi module and insert the antenna jack end of the cables through the antenna holes.



RF Cable

4. Insert the 2 rings (ring 1 then ring 2) into the Wi-Fi antenna jacks. Please remove the two antenna hole covers on the front panel before installing the antenna jacks.



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



# CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for NDiS B327. 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-menus or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-menu

## Scroll Bar

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

## Submenu

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

## BIOS Setup Utility

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

### Main

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



Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.				
Main	Advanced	Security	Boot	Save & Exit
<b>BIOS Information</b>				Set the Date. Use Tab to switch between Date elements.
BIOS Vendor	American Megatrends			
Project Version	D327-005 x64			
Build Date and Time	10/26/2018 09:51:34			
<b>CPU Configuration</b>				
Intel(R) Celeron(R) CPU N3060 @ 1.60GHz				
CPU Signature	406C4			
Microcode Patch	410			
<b>Memory Information</b>				
Total Memory	8192 MB (LPDDR3)			
<b>GOP Information</b>				
Intel(R) GOP Driver	[N/A]			←→: Select Screen
<b>TXE Information</b>				[↑]: Select Item
TXE FW Version	02.00.05.3117			Enter: Select
<b>System Date</b>		[Sat 12/22/2018]		+/-: Change Opt.
<b>System Time</b>		[10:39:53]		F1: General Help
				F2: Previous Values
				F3: Optimized Defaults
				F4: Save & Exit
				ESC: Exit
Version 2.18.1264. Copyright (C) 2018 American Megatrends, Inc.				

### System Date

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

### System Time

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

## Advanced

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



Setting incorrect field values may cause the system to malfunction.



### Restore AC Power Loss(SIO)

Configures the power state when power is re-applied after a power failure.

## Trusted Computing

This section is used to configure Trusted Platform Module (TPM) settings.



### Security Device Support

Enables or disables BIOS support for security device. O.S will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

## 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 operating systems.

### 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).

## NCT6793D Super IO Configuration

This section is used to configure the serial ports.



### Super IO Chip

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

## Serial Port 1 Configuration



### Serial Port

Enables or disables the serial COM port.

### Device Settings

Displays the IO address and IRQ of the serial COM port.

## Serial Port 2 Configuration



### Serial Port

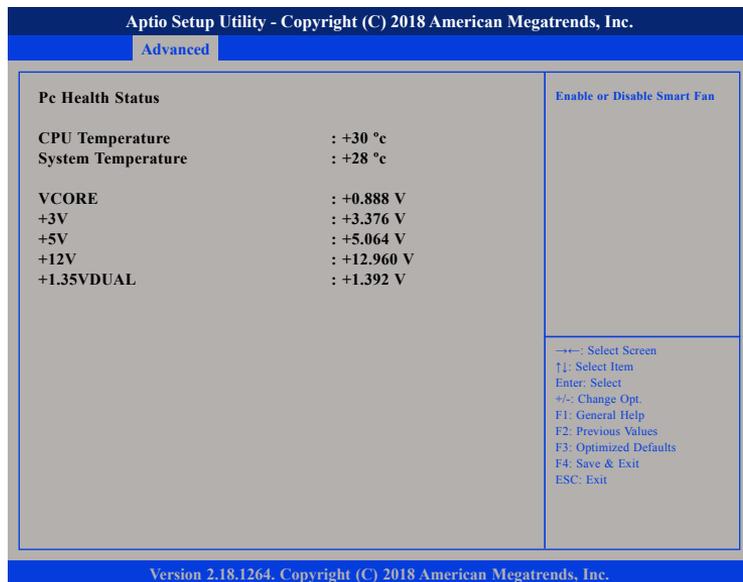
Enables or disables the serial COM port.

### Device Settings

Displays the IO address and IRQ of the serial COM port.

## Hardware Monitor

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



### CPU Temperature

Detects and displays the current CPU temperature.

### System Temperature

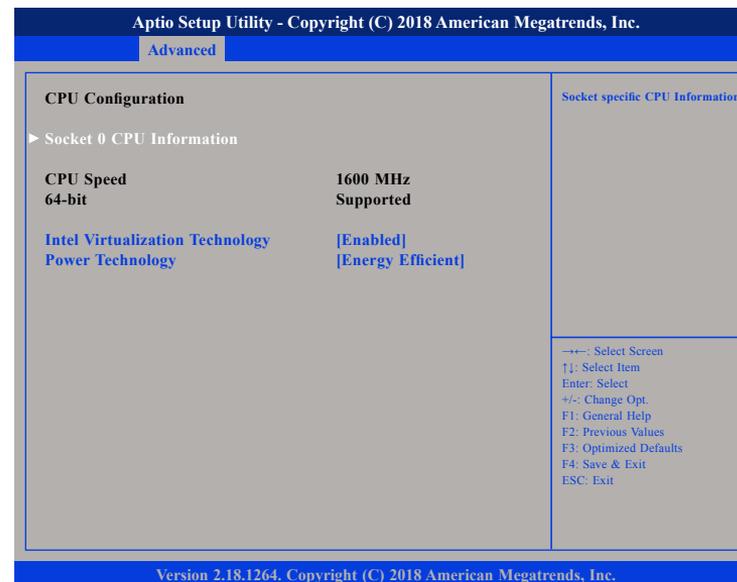
Detects and displays the current system temperature.

### VCORE to 1.35VDUAL

Detects and displays the output voltages.

## CPU Configuration

This section is used to view CPU status and configure CPU parameters.



### Intel® Virtualization Technology

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

### Power Technology

Enables or disables the power management features.

## PPM Configuration

This section is used to configure the Processor Power Management (PPM) configuration.



### EIST

Enables or disables Intel® SpeedStep.

### CPU C state Report

Enables or disables CPU C-State report to OS.

## SATA Configuration

This section is used to configure the SATA device option settings.



### SATA Controller

Enables or disables the SATA controller.

### SATA Mode Selection

Configures the SATA as AHCI mode.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

### Port 0 and Port 1

Enables or disables SATA port 0 and port 1.

## Network Stack Configuration

This section is used to configure the network stack settings.

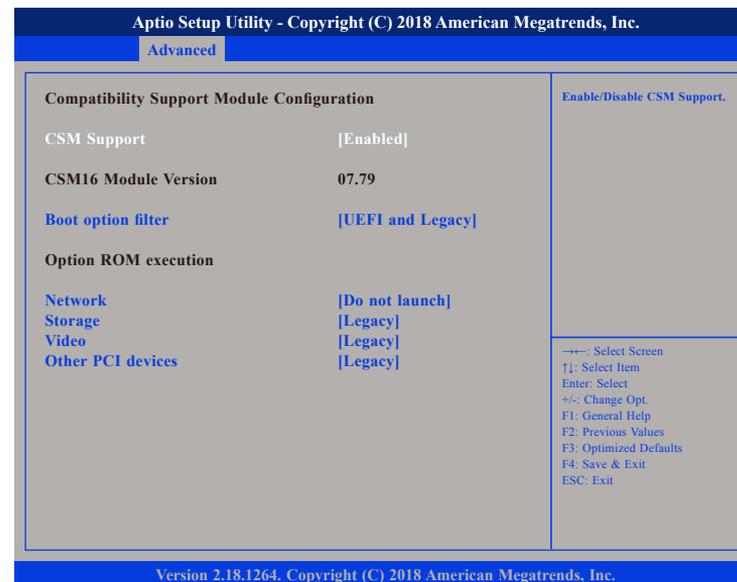


### Network Stack

Enables or disables UEFI network stack.

## CSM Configuration

This section is used to configure the compatibility support module features.



### CSM Support

Enables or disables Compatibility Support Module (CSM).

### Boot Option Filter

This option filters which devices the system can boot to.

### Network

Enables or disables the boot option for legacy network devices.

## Storage

Controls the execution of UEFI and legacy storage OpROM.

## Video

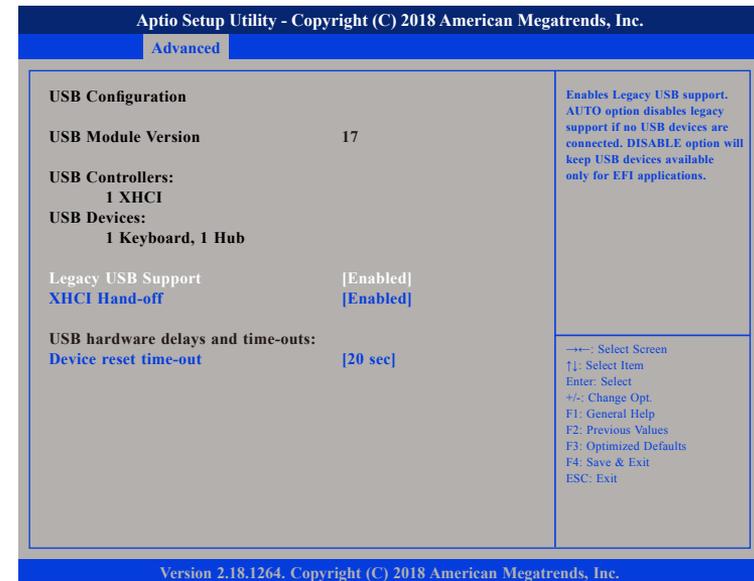
Controls the execution of UEFI and legacy video OpROM.

## Other PCI Devices

Determines OpROM execution policy for devices other than network, storage or video.

## USB Configuration

This section is used to configure USB parameters.



### 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.

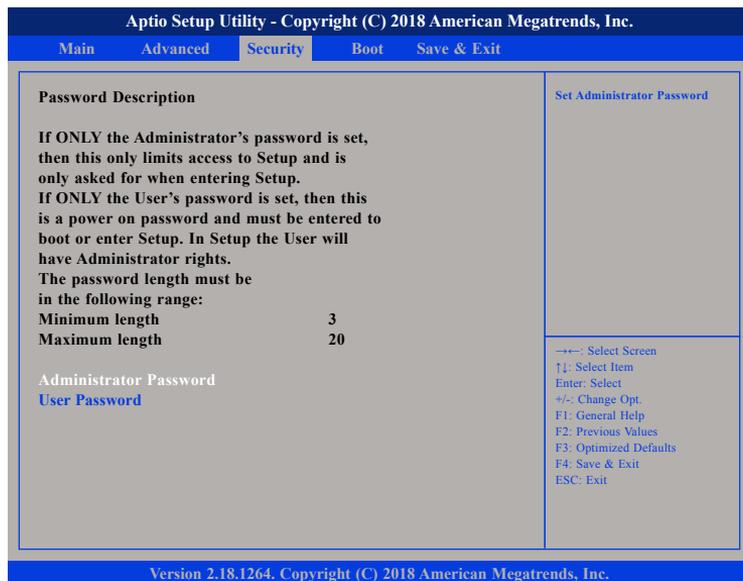
### XHCI Hand-off

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

### Device reset time-out

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

## Security



### 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.

### Quiet Boot

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

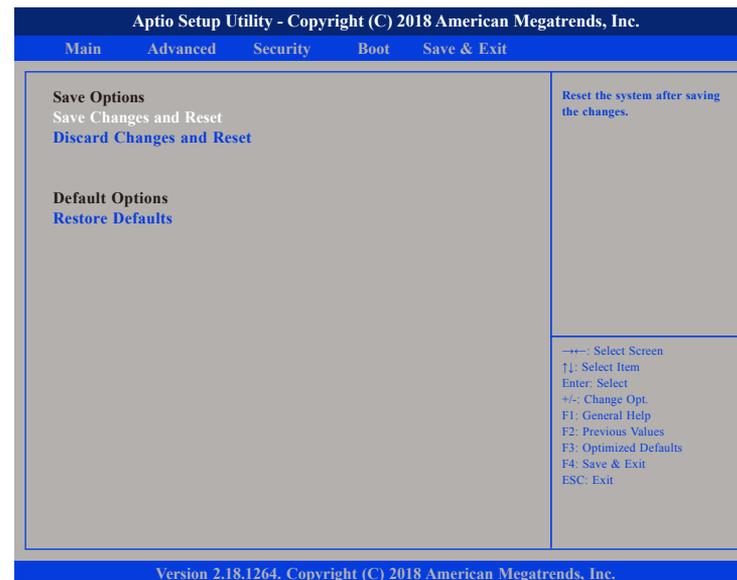
### Boot Option Priorities

This allows you to 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.

### Fast Boot

When enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.

## Save & Exit



### Save Changes and Reset

To save the changes and restart the system, 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 Reset

To exit the Setup utility without saving the changes and restart the system, 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 PROGRAMMING GUIDE

NDiS B327 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.

## NCT6793 Watchdog Programming Guide

```
#define SUPERIO_PORT  0x2E
#define WDT_SET       0xF8
#define WDT_VALUE     0xF9

void main(void)
{
    # Enter SuperIO Configuration
    outportb(SUPERIO_PORT, 0x87);
    outportb(SUPERIO_PORT, 0x87);

    # Set LDN
    outportb(SUPERIO_PORT, 0x07);
    outportb(SUPERIO_PORT+1 ,0x08);

    # Set WDT setting
    outportb(SUPERIO_PORT, WDT_SET);
    outportb(SUPERIO_PORT+1, 0x00);           # Use the second
                                             # Use the minute, change value to 0x08

    # Set WDT sec/min
    outportb(SUPERIO_PORT, WDT_VALUE);
    outportb(SUPERIO_PORT+1, 0x05);         # Set 5 seconds
}
```