NEXCOM International Co., Ltd.

Multi-Media Solutions
Digital Signage Platform
NDiS B324
User Manual

NEXCOM International Co., Ltd.
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Preface

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Acknowledgements

NDiS B324 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

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

Declaration of Conformity

FCC

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

CE

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

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2011/65/EU, to be your trusted green partner and to protect our environment.

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

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

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

How to recognize NEXCOM RoHS Products?

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

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

Warranty and RMA

NEXCOM Warranty Period

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

NEXCOM Return Merchandise Authorization (RMA)

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

Repair Service Charges for Out-of-Warranty Products

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

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System Level

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

Board Level

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

Warnings

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

Cautions

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

Safety Information

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

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

Installation Recommendations

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

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

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

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

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Technical Support and Assistance

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

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

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

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

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NDiS B324 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	7400065011X00	Power Adapter DELTA: ADP-65JH DB		1
2	5044440031X00	Rubber Foot KANG YANG: RF20-5-4P	19.8x18x5.0mm	4
3	5040420037X00	NDiS B324 Wall Mount Right Bracket VER: A PANADVANCE	146x24x6mm SPCC NI Plating	1
4	5040420038X00	NDiS B324 Wall Mount Left Bracket VER: A PANADVANCE	146x24x6mm SPCC NI Plating	1
5	5061700061X00	HDD Right Bracket For NDiS B324 VER: A PANADVANCE	94x7x10mm SPCC NI Plating	1
6	5061700062X00	HDD Left Bracket For NDiS B324 VER: A PANADVANCE	94x8x10mm SPCC NI Plating	1
7	50311F0102X00	Round Head Screw Long FEI: P6#32Tx 1/4/SW7*0.8	W/Spring+Flat Washer P6#32Tx 1/4/SW7x0.8 NI	4
8	50311F0122X00	I Head Screw Long FEI: I 2*6ISO	M2x6mm Black Nylok	4
9	602DCD0820X00	NDiS B324 DVD Driver Manual VER: 1.0		1

Ordering Information

The following below provides ordering information for NDiS B324.

NDiS B324 (P/N: 10W00B32400X0)

- Intel® Celeron® J1800 2.41GHz fanless system

Chapter 1: Product Introduction

Overview

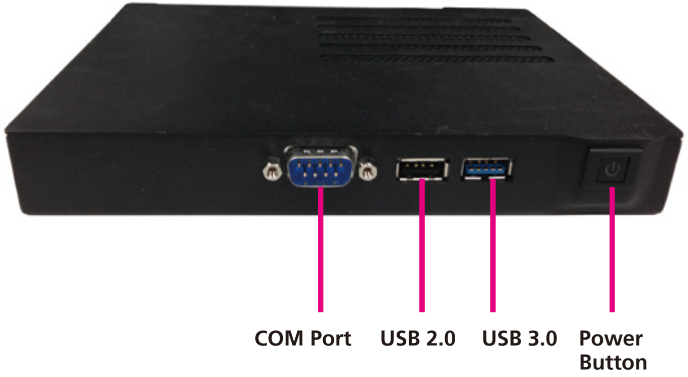
Powered by Intel® Celeron® processor J1800, NDiS B324 can handle very rich multimedia contents. With Intel® Celeron® processor low power consumption feature, NDiS B324 supports display output by HDMI and VGA ports. NDiS B324 is ideal as entry level digital signage player for advertising, hospitality and brand promotion application.

Key Features

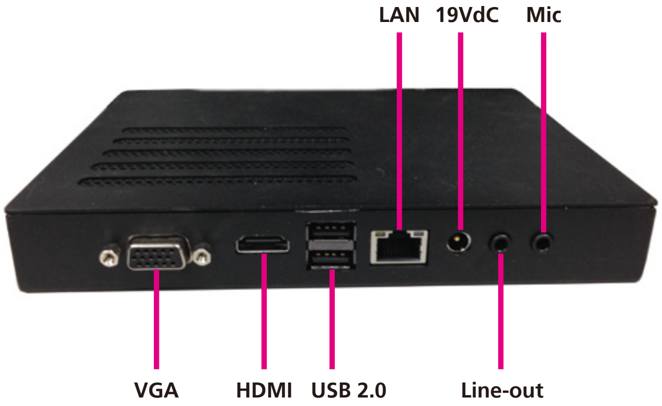
- Intel® Celeron® processor J1800
- HDMI and VGA independent displays
- USB 3.0 support
- WLAN support
- Compact and fanless design

Physical Features

Front Panel



Rear Panel



Hardware Specifications

CPU Support

- Intel® Celeron® J1800 2.41GHz onboard

Chipset

- Intel® BayTrail-D

Graphics

- Intel® HD Graphics

Main Memory

- 1x 204-pin SO-DIMM socket, supports DDR3L 1333MHz non-ECC, un-buffered memory up to 4G

I/O Interface-Front

- 1x USB 2.0
- 1x USB 3.0
- 1x COM port

I/O Interface-Rear

- 19V DC Power in
- 1x VGA
- 1x HDMI
- 2x USB 2.0
- 1x RJ45 with LEDs for 10/100/1000Mbps Ethernet
- 1x Audio-out
- 1x Mic-in

Storage

- 1x 2.5" SATA HDD Bay

Dimensions

- 180 x 150 x 25mm

Power Supply

- 1x External 65W AC/DC power adapter

Expansion

- 1x Mini-PCIe slot (Half-size)

Environment

- Operating temperature: 0°C to 40°C
- Storage temperature: -20°C to 80°C
- Humidity: 10 to 90% (non-condensing)

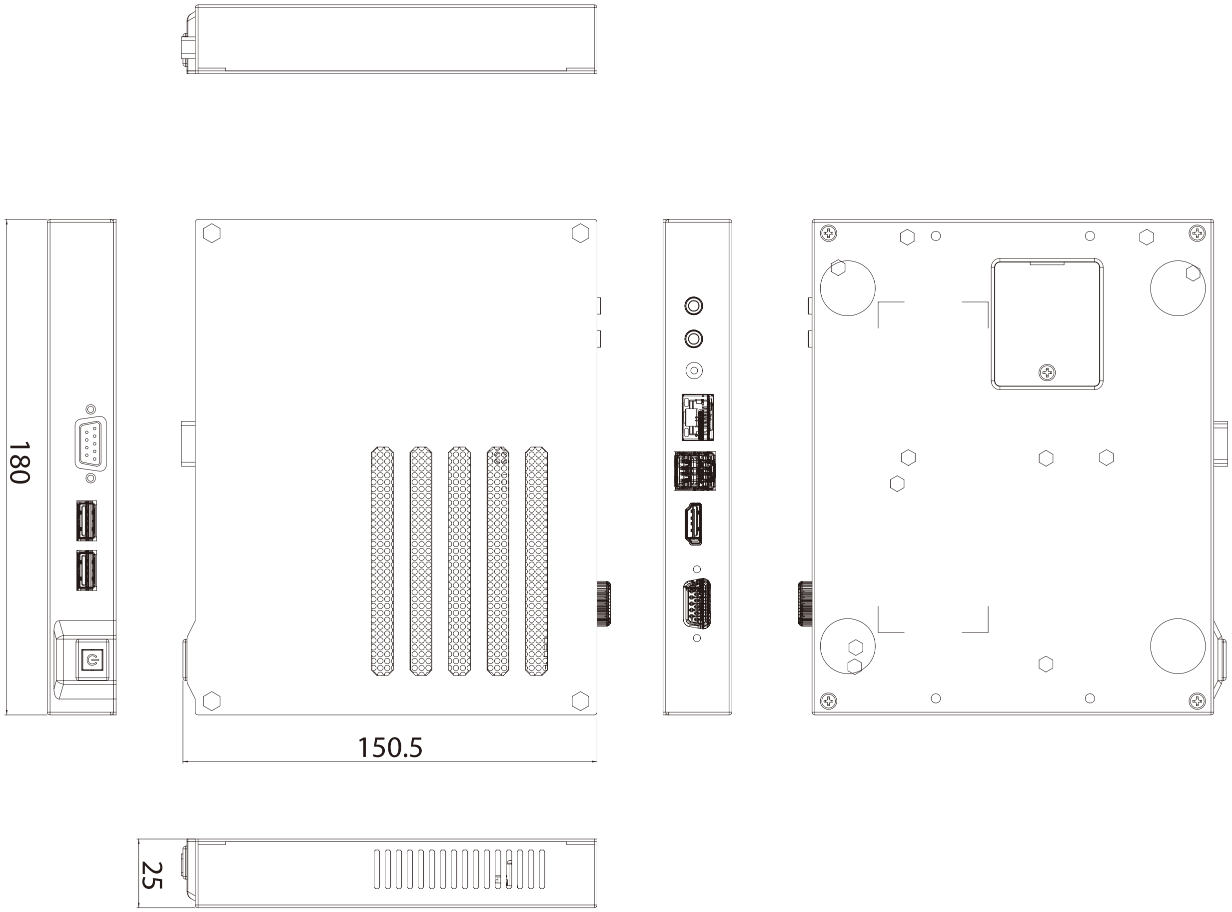
Certification

- CE approval
- FCC Class A

Operating System

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

Mechanical Dimensions



Chapter 2: Connector Pinout Assignments

This chapter describes the connector pinouts of the NDiS B324 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:

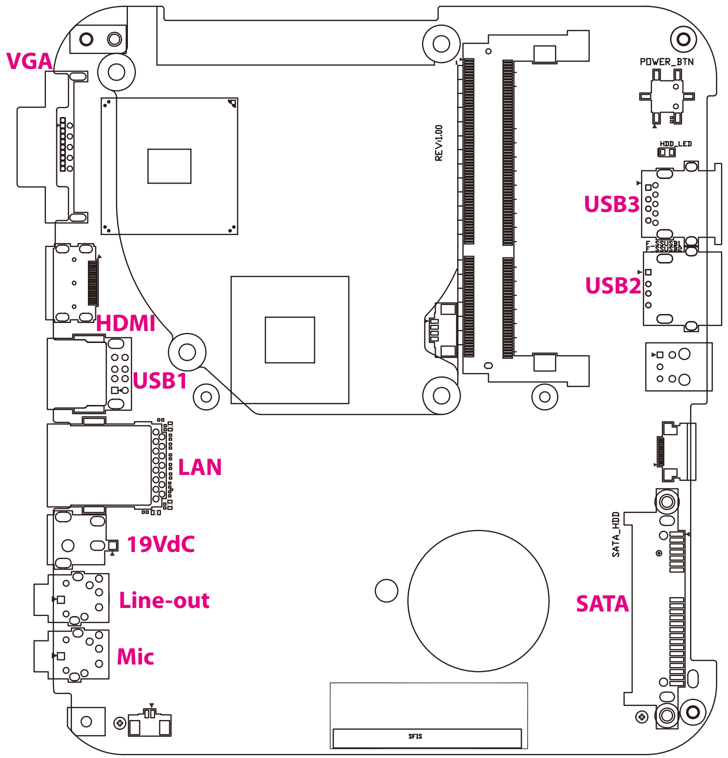
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal 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 Connectors for NDiB B324

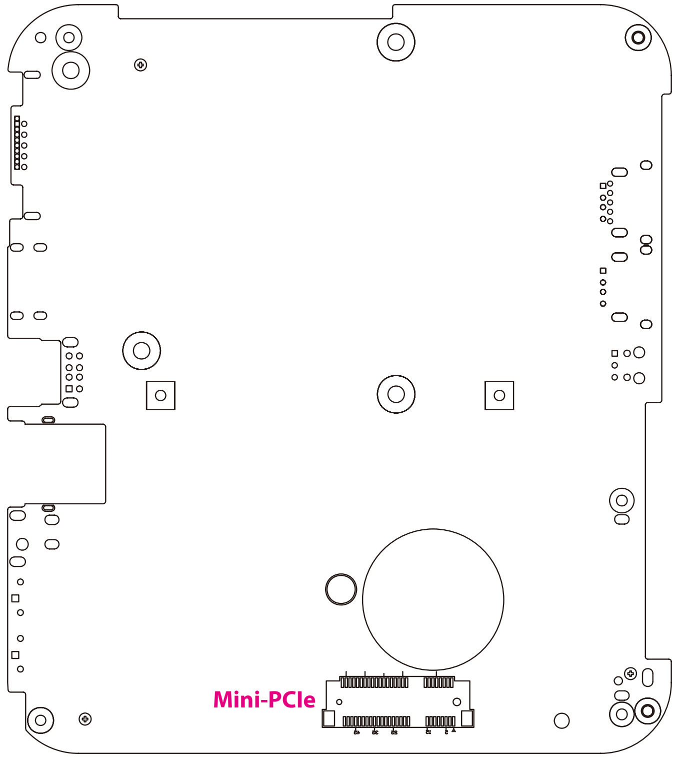
NDiB B324

The figure below is the top and bottom view of NDiB B324, which is the mainboard used in NDiS B324. It shows the locations of the connectors.

Top View



Bottom View

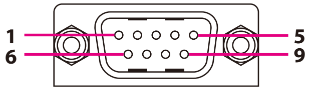


Connector Pin Definitions

External I/O Interfaces - Front Panel

COM Port

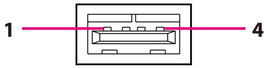
Connector type: DB-9 port, Male



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

USB 2.0 Port

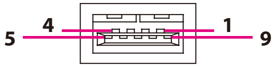
Connector type: USB 2.0 port
Connector location: USB2



Pin	Definition	Pin	Definition
1	VCC	2	D-
3	D+	4	GND

USB 3.0 Port

Connector type: USB 3.0 port
Connector location: USB3

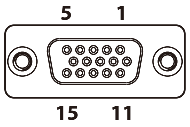


Pin	Definition	Pin	Definition
1	VCC	2	D-
3	D+	4	GND
5	StdA_SSRX-	6	StdA_SSRX+
7	GND_DRAIN	8	StdA_SSTX-
9	StdA_SSTX+		

External I/O Interfaces - Rear Panel

VGA

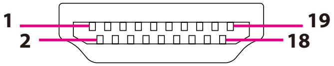
Connector type: DB15, Female
Connector location: VGA



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

HDMI

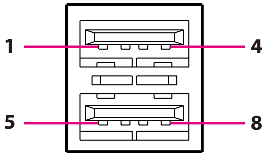
Connector type: HDMI port
Connector location: HDMI



Pin	Definition	Pin	Definition
1	HDMI_D2+	2	GND
3	HDMI_D2-	4	HDMI_D1+
5	GND	6	HDMI_D1-
7	HDMI_D0+	8	GND
9	HDMI_D0-	10	HDMI_CLK+
11	GND	12	HDMI_CLK-
13	NC	14	NC
15	HDMI_DDC_SCL	16	HDMI_DDC_SDA
17	GND	18	VCC5
19	HDMI_HPD		

USB 2.0 Ports

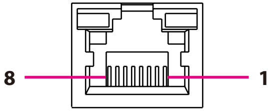
Connector type: Dual USB 2.0 ports
Connector location: USB1



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

LAN Port

Connector type: RJ45 port with LEDs
Connector location: LAN



Pin	Definition	Pin	Definition
1	BI_DA+	2	BI_DA-
3	BI_DB+	4	BI_DC+
5	BI_DC-	6	BI_DB-
7	BI_DD+	8	BI_DD-

Chapter 3: System Setup

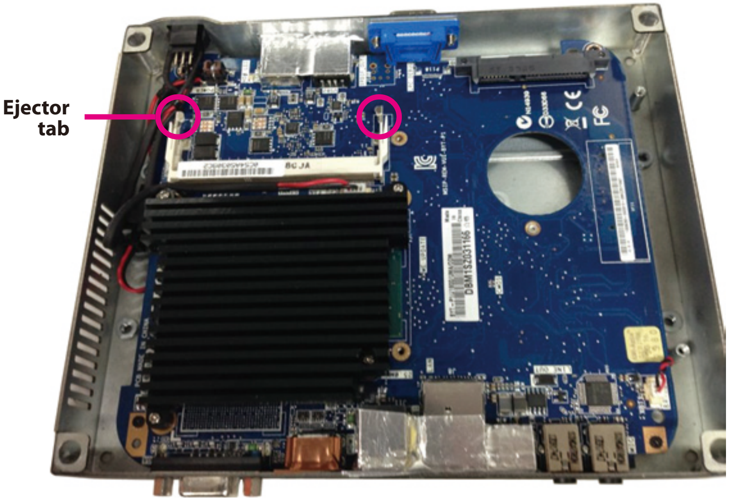
Installing a DIMM

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. With the top cover removed, locate the SO-DIMM socket on the board.

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



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

   Insert the module into the socket at an approximately 30 degrees angle. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

Installing a SATA Hard Drive

CAUTION!

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

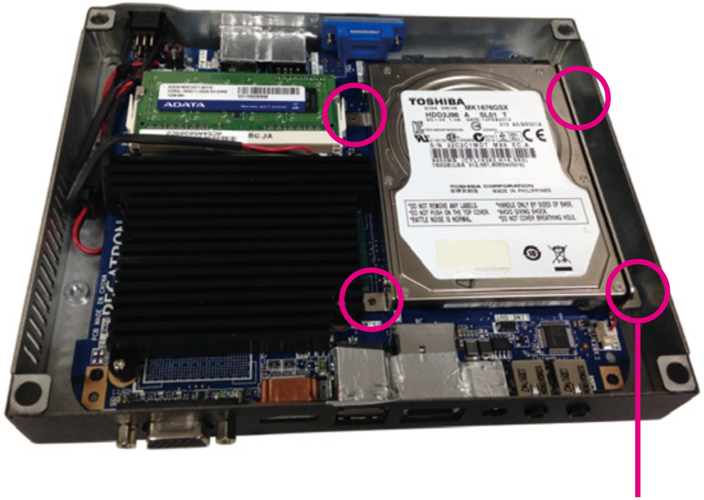
1. The drive bracket included in the package is used to hold a SATA hard drive.

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

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

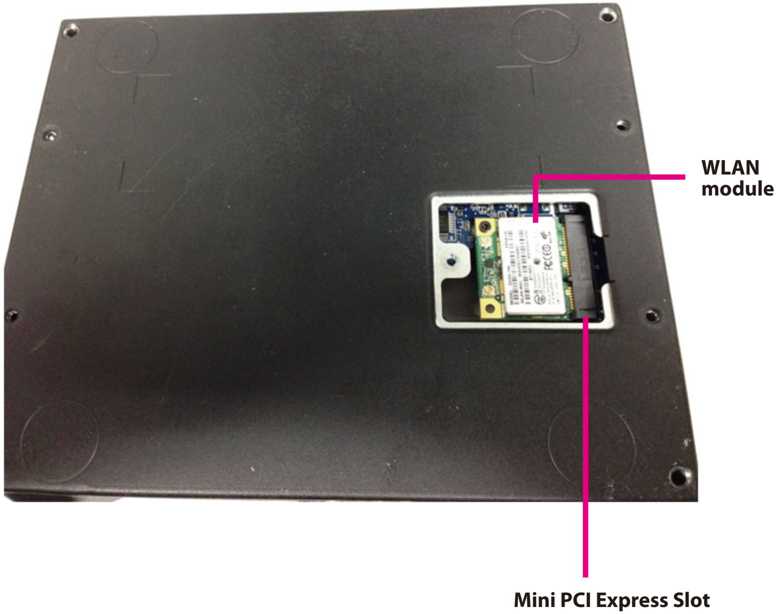
4. Align the mounting holes on the drive bracket with the mounting studs on the board.

5. Use the provided mounting screws to secure the hard drive in place.



Installing a Wireless LAN Module

1. On the bottom of the chassis, remove the cover of the Mini PCI Express slot. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



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

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NDiS B324. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM Web site at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

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

When to Configure the BIOS

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

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

Default Configuration

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

Entering Setup

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

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

Powering on the computer and immediately pressing <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.
F7	Discards changes.
F9	Load optimized default values.
F10	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 Enter to accept or enter the submenu.

Main

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

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

System Overview

AMIEFI BIOS 1100
Version 11/14/2013
Build Date:

System Memory Size 2048 MB (DDR3L)

System Time [14:46:01]
System Date [Mon 01/06/2014]
MAC Address 0C-54-A5-03-09-C2
Halt On [No Errors]

Set the Time. Use Tab to switch between Time elements.

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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.

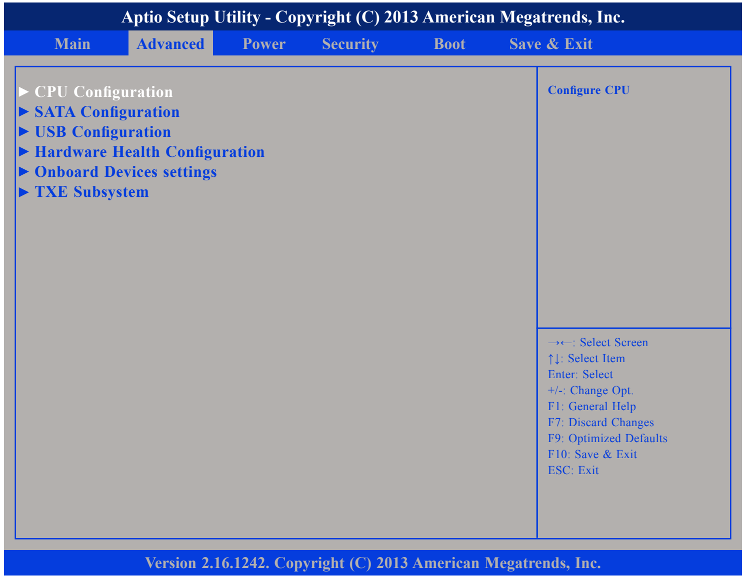
Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

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.



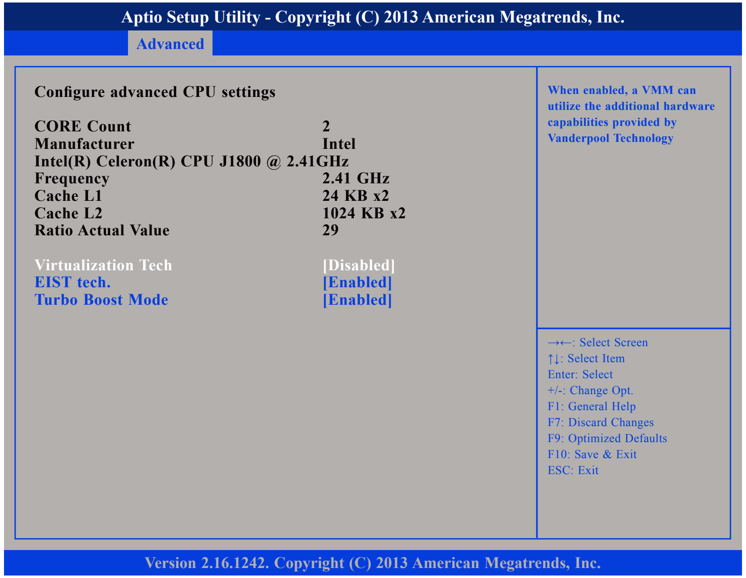
▶ CPU Configuration
▶ SATA Configuration
▶ USB Configuration
▶ Hardware Health Configuration
▶ Onboard Devices settings
▶ TXE Subsystem

Configure CPU

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

CPU Configuration

This section is used to configure the CPU.



Configure advanced CPU settings

CORE Count	2
Manufacturer	Intel
Intel(R) Celeron(R) CPU J1800 @ 2.41GHz	
Frequency	2.41 GHz
Cache L1	24 KB x2
Cache L2	1024 KB x2
Ratio Actual Value	29
Virtualization Tech	[Disabled]
EIST tech.	[Enabled]
Turbo Boost Mode	[Enabled]

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

Virtualization Tech

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

EIST tech.

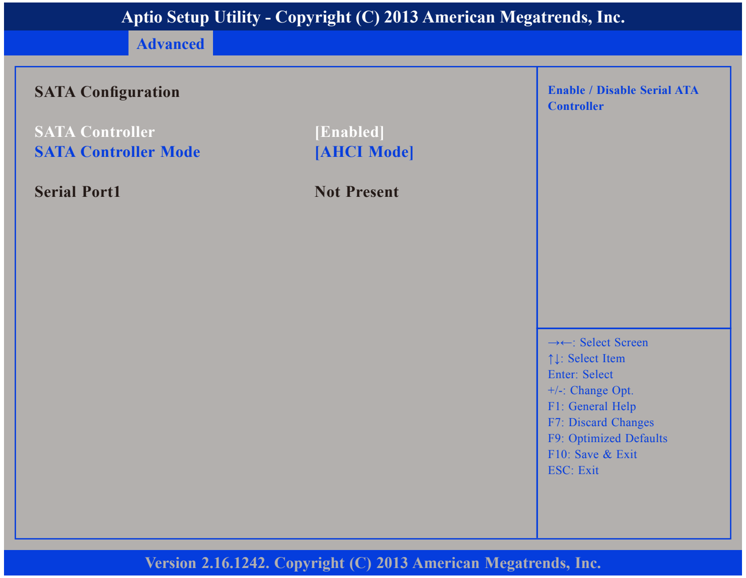
Enables or disables Intel® SpeedStep.

Turbo Boost Mode

Use this item to enable or disable Intel Turbo Boost Mode Technology. Turbo Boost Mode allows processor cores to run faster than marked frequency in specific conditions.

SATA Configuration

This section is used to configure the SATA drives.



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SATA Configuration

SATA Controller [Enabled]
SATA Controller Mode [AHCI Mode]

Serial Port1 Not Present

Enable / Disable Serial ATA Controller

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

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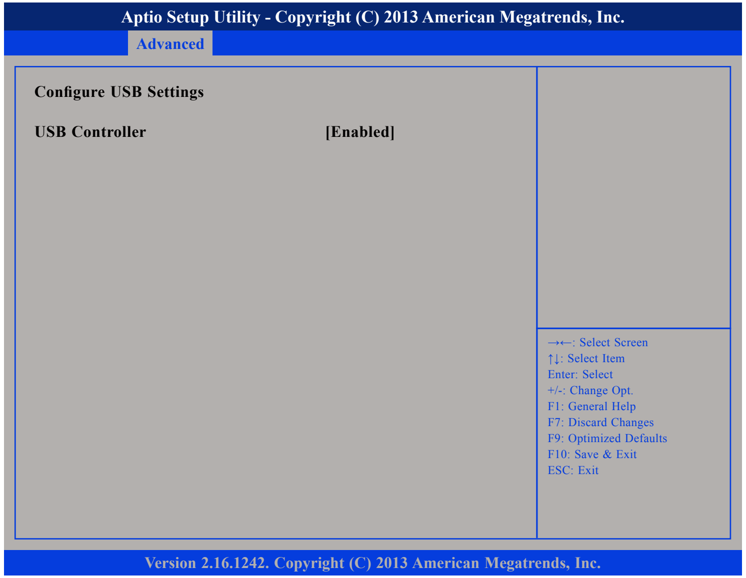
SATA Controller
Enables or disables the SATA controller.

SATA Mode Selection
Configures the SATA as IDE or AHCI mode.

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

USB Configuration

This section displays USB information.



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Configure USB Settings

USB Controller [Enabled]

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

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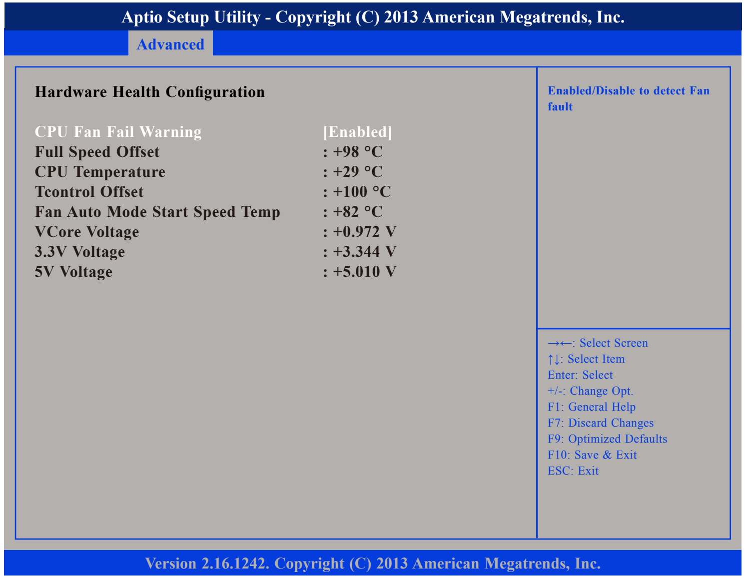
USB Controller
This field displays USB controller information, the controller is enabled by default.

Hardware Health Configuration

This section is used to monitor hardware health and adjust CPU fan settings.



```
Hardware Health Configuration

CPU Fan Fail Warning             [Enabled]
Full Speed Offset                : +98 °C
CPU Temperature                  : +29 °C
Tcontrol Offset                  : +100 °C
Fan Auto Mode Start Speed Temp   : +82 °C
VCore Voltage                    : +0.972 V
3.3V Voltage                     : +3.344 V
5V Voltage                       : +5.010 V
```

Enabled/Disable to detect Fan fault

CPU Fan Fail Warning

Enables or disables detection of fan failure.

Full Speed Offset

Displays the full speed offset value.

CPU Temperature

Detects and displays the current CPU temperature.

Tcontrol Offset

Displays the Tcontrol offset temperature.

Fan Auto Mode Start Speed Temp

Displays the temperature that the fan will automatically start.

VCore Voltage

Detects and displays the Vcore CPU voltage.

3.3V Voltage

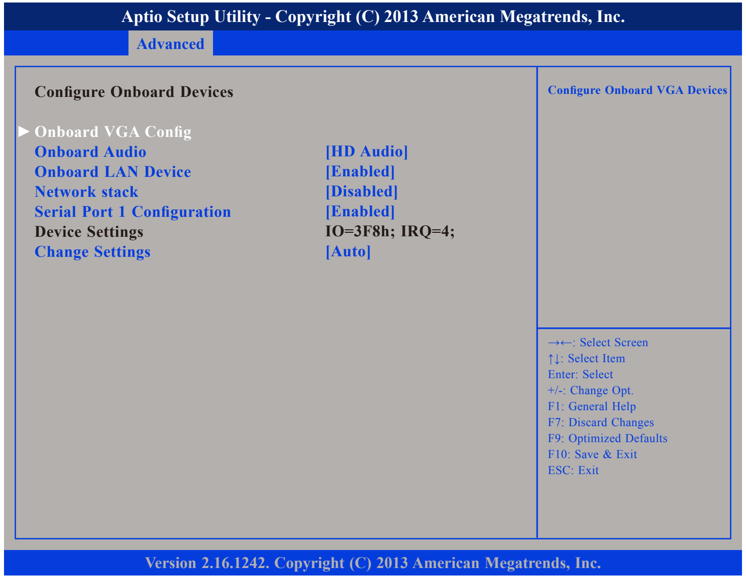
Detects and displays 3.3V voltage.

5V Voltage

Detects and displays 5V voltage.

Configure Onboard Devices

This section is used to configure the onboard devices.



```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
            Advanced

Configure Onboard Devices                                   Configure Onboard VGA Devices

► Onboard VGA Config
  Onboard Audio                    [HD Audio]
  Onboard LAN Device               [Enabled]
  Network stack                    [Disabled]
  Serial Port 1 Configuration      [Enabled]
  Device Settings                  IO=3F8h; IRQ=4;
  Change Settings                  [Auto]

                                                            →←: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F7: Discard Changes
                                                            F9: Optimized Defaults
                                                            F10: Save & Exit
                                                            ESC: Exit

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Onboard VGA Config

Configuration for onboard VGA devices.

Onboard Audio

Enables or disables onboard audio.

Onboard LAN Device

Enables or disables onboard LAN.

Network Stack

Enables or disables the network stack.

Serial Port 1 Configuration

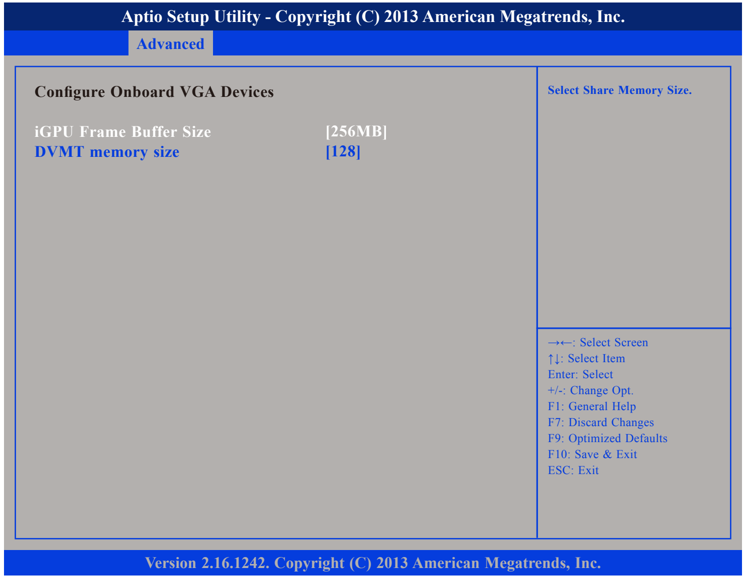
Enables or disables serial port 1.

Change Settings

Selects an optimal setting for the Super IO device.

Onboard VGA Config

This section is used to configure onboard VGA devices.



Configure Onboard VGA Devices

iGPU Frame Buffer Size [256MB]
DVMT memory size [128]

Select Share Memory Size.

iGPU Frame Buffer Size

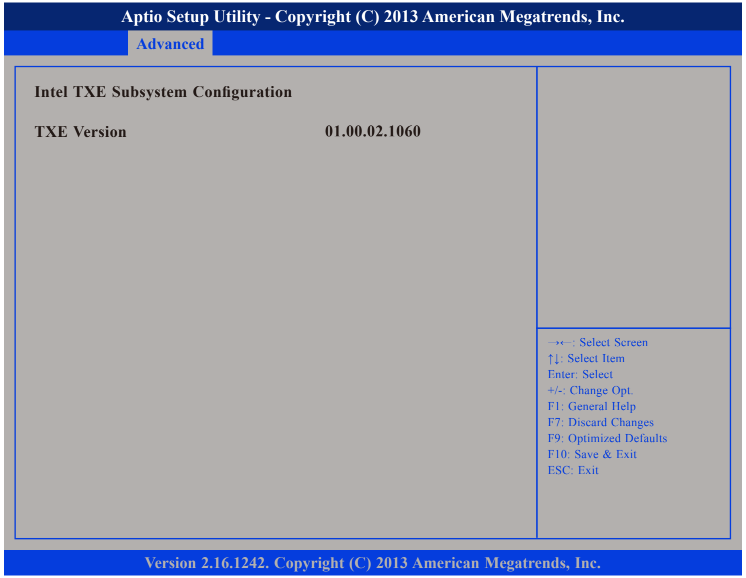
Selects the amount of system memory used by the internal graphics device.

DVMT Memory Size

Selects the graphics memory size used by the DVMT.

TXE Subsystem

This section displays the TXE version.

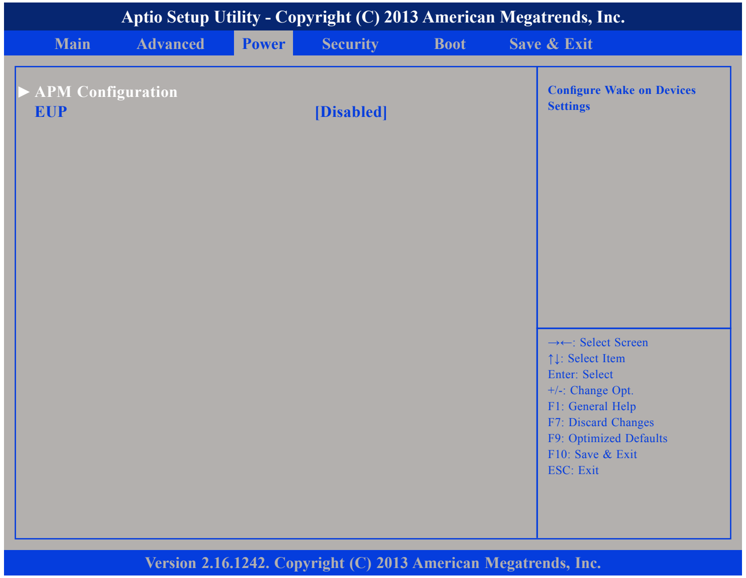


Intel TXE Subsystem Configuration

TXE Version 01.00.02.1060

Power

This section is used to configure the power management features.



▶ APM Configuration
EUP [Disabled]

Configure Wake on Devices Settings

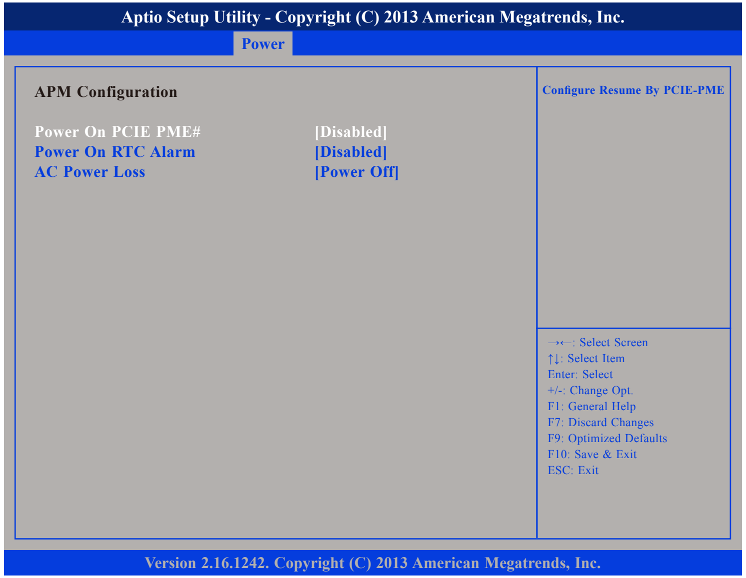
APM Configuration

Configuration for Advanced Power Management.

EUP

Enables the system to shut down to the lowest possible power state by removing all power to the system board. The wake up function will be lost if EUP is enabled.

APM Configuration



APM Configuration

Power On PCIE PME# [Disabled]
Power On RTC Alarm [Disabled]
AC Power Loss [Power Off]

Configure Resume By PCIE-PME

Power On PCIE PME#

Enables the system to wake up on PCIE PME (Power Management Event) signal from PCIE devices.

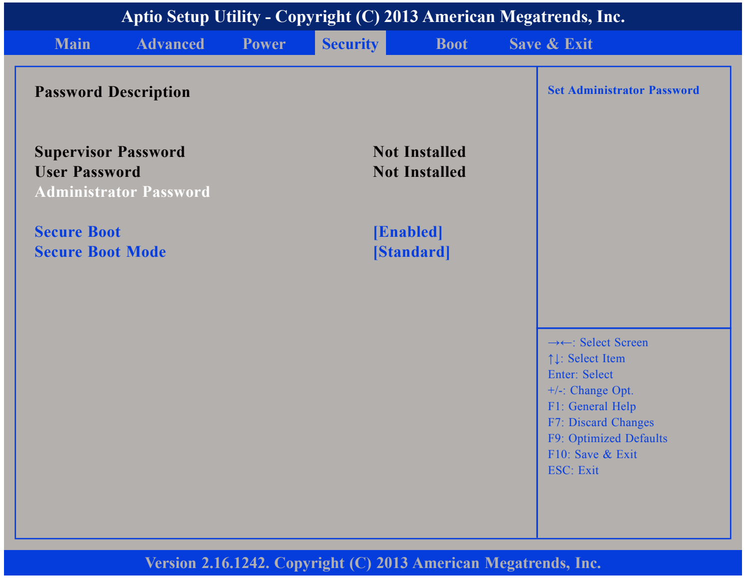
Power On RTC Alarm

Enables the system to wake up on RTC alarm.

AC Power Loss

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

Security



```
Password Description

Supervisor Password          Not Installed
User Password                Not Installed
Administrator Password

Secure Boot                  [Enabled]
Secure Boot Mode             [Standard]
```

Set Administrator Password

Administrator Password

Select this to reconfigure the administrator’s password.

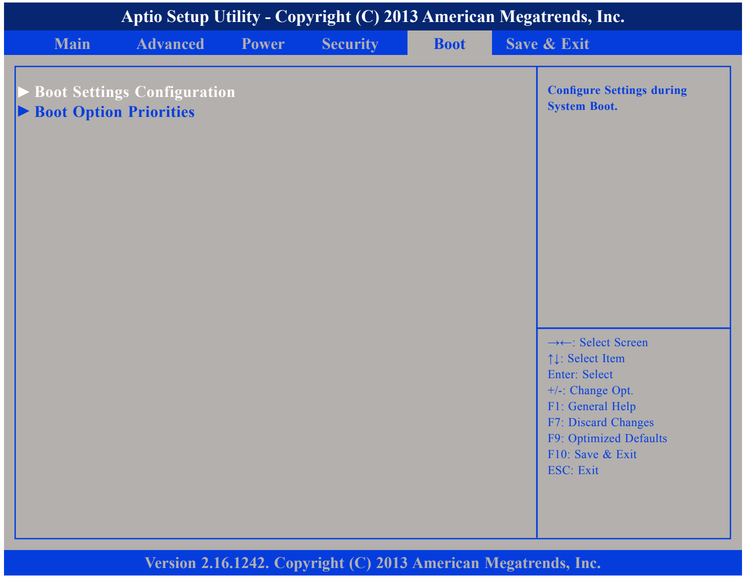
Secure Boot

Select this to enable or disable Secure Boot.

Secure Boot Mode

Select this to configure the Secure Boot mode.

Boot



```
▶ Boot Settings Configuration
▶ Boot Option Priorities
```

Configure Settings during System Boot.

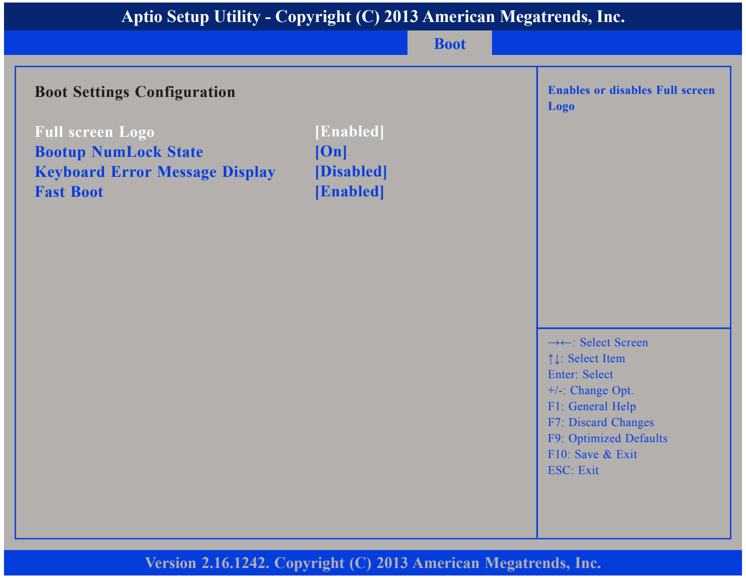
Boot Settings Configuration

Configuration for system boot.

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.

Boot Settings Configuration



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Boot

Boot Settings Configuration

Full screen Logo [Enabled]
Bootup NumLock State [On]
Keyboard Error Message Display [Disabled]
Fast Boot [Enabled]

Enables or disables Full screen Logo

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

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Full Screen Logo

Enables or disables full screen logo.

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.

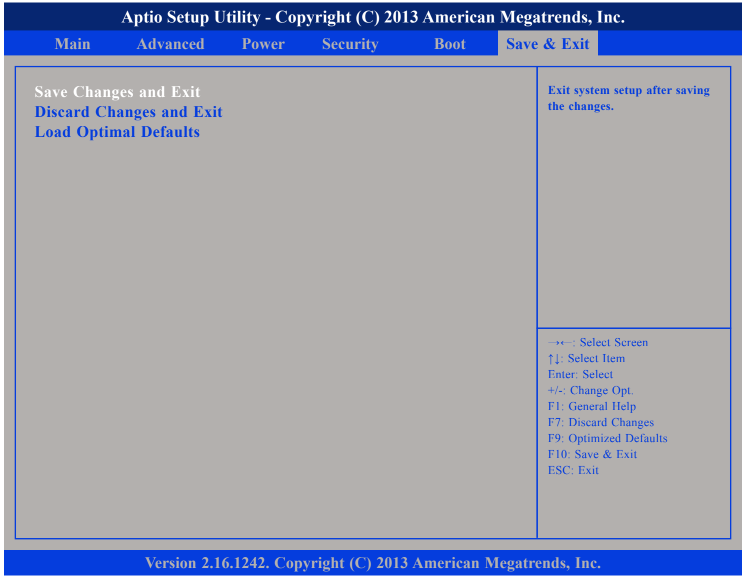
Keyboard Error Message Display

This item allows you to enable or disable the “Keyboard Error” message during bootup.

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



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Save Changes and Exit
Discard Changes and Exit
Load Optimal Defaults

Exit system setup after saving the changes.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F7: Discard Changes
F9: Optimized Defaults
F10: 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.

Load Optimal 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

Watchdog Timer Control Register (Index=71h, Default=00h)

Bit	**Description**
7	WDT is reset upon a CIR interrupt.
6	WDT is reset upon a KBC (mouse) interrupt.
5	WDT is reset upon a KBC (keyboard) interrupt.
4	WDT is reset upon a read or a write to the Game Port base address.
3-2	Reserved
1	Force Time-out. This bit is self-clearing.
	WDT Status
0	1: WDT value reaches 0.
	0: WDT value is not 0.

Watchdog Timer Configuration Register (Index=72h, Default=001s0000b)

Bit	Description
7	**WDT Time-out value select 1** 1: Second 0: Minute
6	**WDT output through KRST (pulse) Enable** 1: Enable 0: Disable
5	**WDT Time-Out Value Extra Select** 1: 64ms x WDT Timer-out value (default=4s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register)
4	**WDT Output through PWEGD Enable** 1: Enable 0: Disable During LRESET# this bit is selected by JP2 power-on strapping option.
3-0	**Interrupt level Select for WDT.**

Watchdog Timer Time-out value (LSB) Register (Index=73h, default=38h)

Bit	Description
7-0	**WDT Time-out value select 7-0**

Watchdog Timer Time-out value (MSB) Register (Index=74h, default=00h)

Bit	Description
7-0	**WDT Time-out value select 15-8**