AXIOMTEK

NA345 series

Network Appliance

User's Manual

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Safety Approvals

- CE Marking
- FCC Class B
- FCC Compliance

This equipment has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
Shielded interface cables must be used in order to comply with emission limits.

Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
2. Disconnect the power cords from the **NA345** before making any installation. Be sure both the system and the external devices are turned OFF. A sudden surge of power could ruin sensitive components. Make sure the **NA345** is properly grounded.
3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

    - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity in your body.
    - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the NA345 network appliance server. Chapter 1 contains the following sections:

- **General Description**
- **Features**
- **Specifications**
- **Dimensions and Outlines**
- **I/O Outlets**

1.1 General Description

The NA345 is a compact desktop network security hardware platform for VPN, firewall and other network security applications, which can support Intel® Apollo Lake processor. This platform supports one DDR3L-1866 SO-DIMM slot with maximum of up to 8GB memory. In the meantime, the platform also can support up to six gigabit Ethernet ports which can provide the best throughput. For storage, it also provides one mSATA and 2.5" SATA hard disk drive. This platform can be easily enabled through application programs to make a user-friendly appliance for customers, and provide the highest ever performance of encryption and decryption.

1.2 Features

Low power and high performance for network security field applications. NA345 series supports Intel® Apollo Lake

- **Intel® Apollo Lake Processor**
- **Supports up to 8GB DDR3L-1600 SO-DIMM system memory**
- **Supports six 10/100/1000 Mbps Ethernet ports**
- **Supports wireless/3G/LTE through PCI Express Mini Card**
- **Supports BIOS redirection to COM port**
- **Supports Win 10 and Linux operating systems**

1.3 Specifications

1.3.1 System

- **CPU**
  - NA345: Intel® Apollo Lake processor (Atom™ x5-E3930 Processor/Celeron® Processor N3350 as default)
  - NA345R: Intel® Apollo Lake processor (Atom™ x5-E3940 Processor as default)
- **BIOS**
  - AMI 128Mbit PnP Flash BIOS with function of BIOS redirected to COM port
- **Memory**
  - One DDR3L-1866 SO-DIMM, up to 8GB memory
- **Storage**
  - One 2.5" SATA3 HDD
  - One mSATA
- **Network Interface**
  - NA345: Four 10/100/1000 Mbps Ethernet (Intel® i211, optional 6 ports by request)

    LAN Bypass function through latch relay (2 pairs) for optional
  - NA345R: Six 10/100/1000 Mbps Ethernet (Intel® i211)

    LAN Bypass function through a latch relay (2 pairs)
- **USB**
  - Two USB 3.0 ports in the rear side
- **Console**
  - NA345: One RS-232 console port in the front side (RJ-type)
    NA345R: One RS-232 console port in the back side (RJ-type)
- **Watchdog Timer**
  - One for LAN Bypass: 7 levels, 1-64 seconds for optional
  - One for system reset: 255 levels, 1-255 sec
- **Power**
  - NA345: 1 x 12V/5A power adapter
  - NA345R: AC to DC 65W open frame
- **OS Compatibility**
  - Linux kernel 4.8 or above, Yocto 2.2 or above, Win 10

1.3.2 Mechanical / Environmental

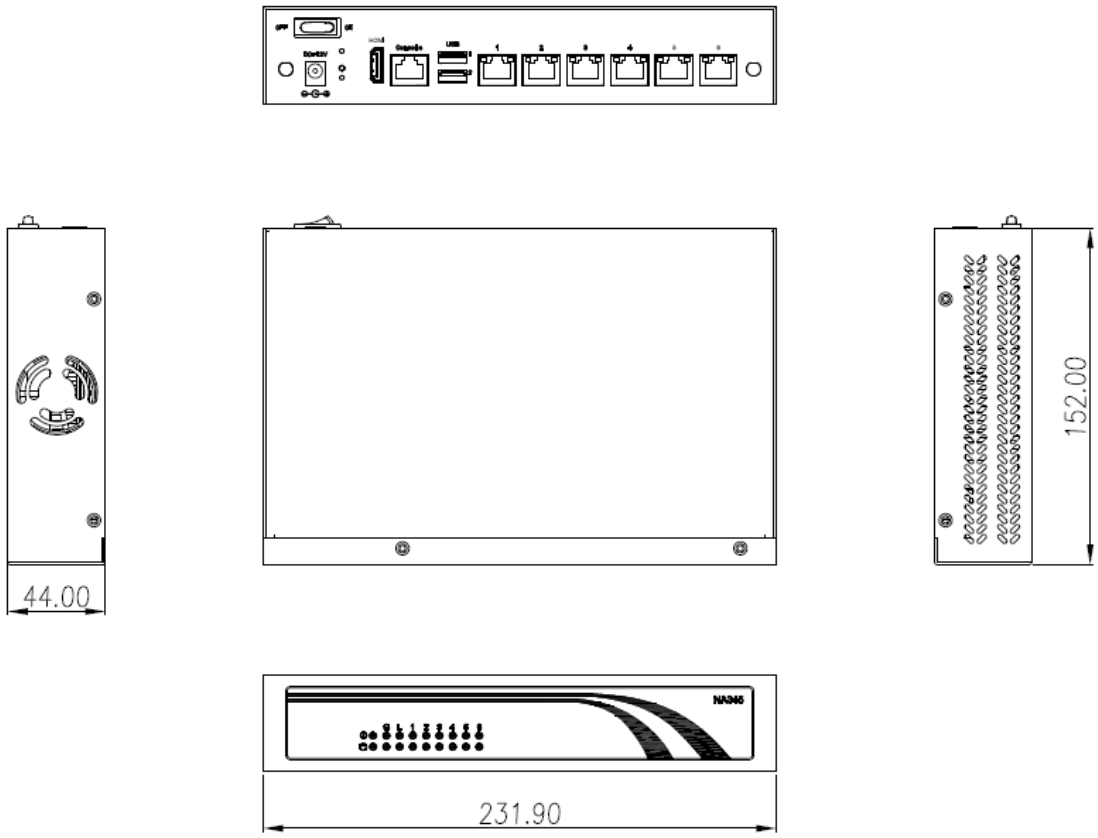
- **Form Factor**
  - NA345: 1U desktop
  - NA345R: 1U rackmount
- **LED**
  - Power, HDD, Link/Act with transfer rate
  - LAN Bypass and GPIO programmable
- **Operating Temperature**
  - NA345: 0℃ ~ 40℃ (32℉ ~ 104℉)
  - NA345R: 0℃ ~ 45℃ (32℉ ~ 113℉)
- **Humidity**
  - 10% - 95% RH, non-condensing
- **Chassis Material**
  - Steel
- **Dimensions**
  - NA345: 44 mm (1.73") (H) x 231.9 mm (9.00") (W) x 152 mm (5.98") (D)
  - NA345R: 44 mm(1.73")(H) x 430 mm (16.93") (W) x 250 mm (9.84") (D)
- **Weight (Net/ Gross)**
  - NA345: 1.2 kg/ 2.2 kg
  - NA345R: 3.2 kg/ 4.2 kg

NOTE: ***All specifications and images are subject to change without notice.***

1.4 Dimensions and Outlines

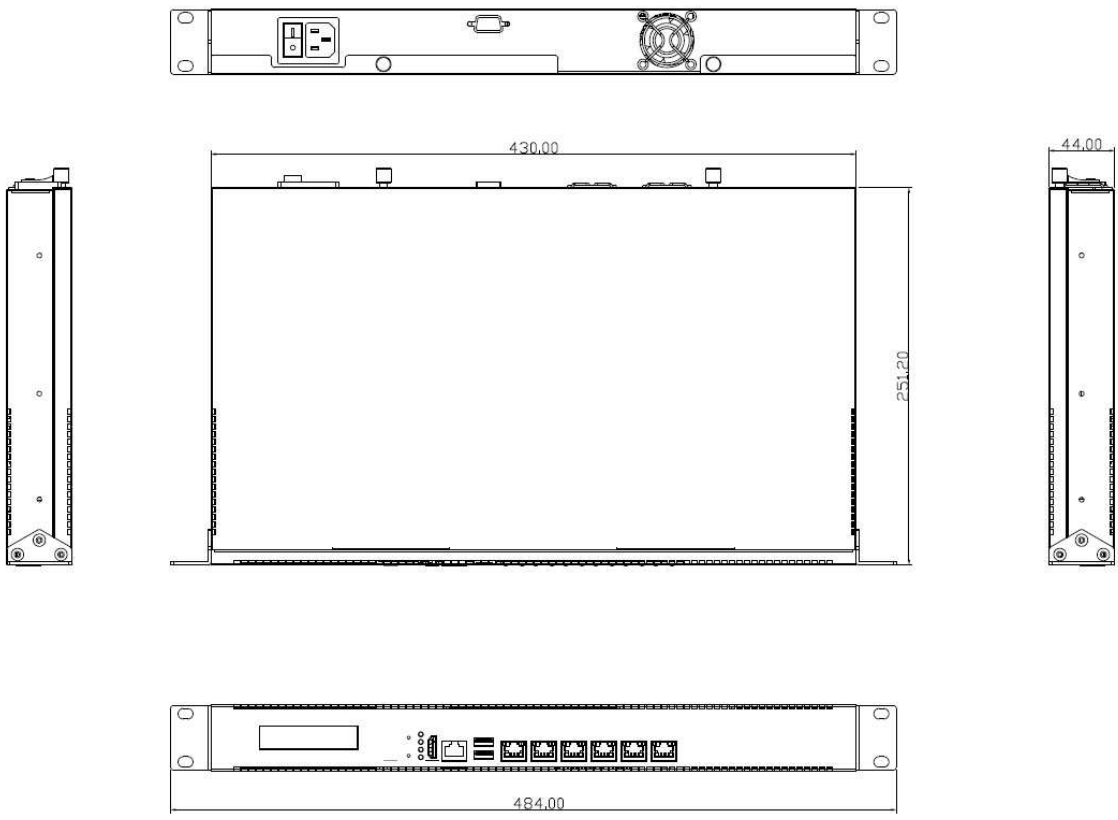
Mechanical dimensions of NA345

Unit: mm



Mechanical dimensions of NA345R

Unit: mm



1.5 I/O Outlets

Locate the front panel I/O outlets on the **NA345 Series** server to connect serial and Ethernet interface devices.

1.5.1 Front Panel

NA345

- **Power LED**

  It will be lighting when the server is powered on to perform diagnostic tests and check a proper operation.

- **HDD LED**

  The LED flashes when transmitting or receiving any signals.

- **Programmable LED (G)**

  A sample code will be provided that allow users to define their own function.

***NOTE**: If you need sample codes, please contact our FAE directly, and they are for reference purposes only.*

- **LAN Bypass LED (L1, L2)**

  While running the LAN Bypass function, the LED always lights up.

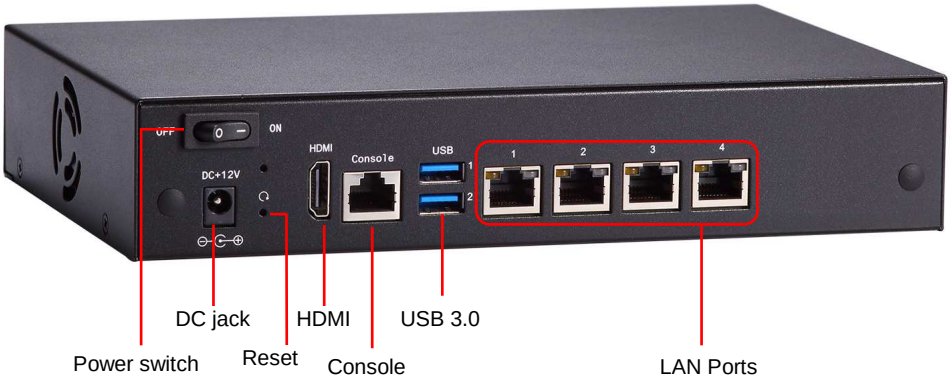
- **LAN Link LED**

  It will be lighting when a twisted pair is connected to another Ethernet device on the port. It shows the network transfer rate while making a connection.

- **LAN Activity LED**

  It will be lighting when the server is transmitting or receiving a packet through the twisted pair ports.

1.5.2 Rear Panel



- **Reset**

  It is for reset the system to reboot your computer instead of turning off the power switch. It is a better way to reboot your system for a longer life of the system's power supply.

- **Default Switch**

  The sample code will be provided that allows users to define their own function. For example, when the system has any problems, this switch can support to reset it to the customer's OS default settings if our customer's OS supports this application.

NOTE: ***If you need sample codes, please contact our FAE directly, and they are for reference purposes only.***

- **Console**

  RS-232 Console port is for the command of line interface and of diagnostic support by P.O.S.T (Power on Self Test).

- **Active LED (Single color) for LAN port #1, port#2, port#3, port#4**

  1. The orange LED is on when the LAN port connection is working.
  2. The LED flashes when transmitting or receiving any signals to or from the appliance.
  3. The LED is dark when the appliance is off.

- **Link LED for LAN port #1, port#2, port#3, port#4**

  1. The double-color LED light indicates 10/100/1000Mbps transfer rate.
  2. When the amber-color LED light is radiating, it should be 1000Mbps transfer rate at this moment.
  3. When the green-color LED light is radiating, it should be 100Mbps transfer rate at this moment
  4. If the LED is dark and Link/Active LED is light on or flashing, it should be 10Mbps transfer rate.
  5. When this LED and Link/Active LED both are dark. No networking devices are attached

Transfer Rate	LED Light Color
10Mbps	Dark
100Mbps	Green
1000Mbps	Amber

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CHAPTER 2
HARDWARE DESCRIPTION

The NA345 Series are convenient for your various hardware configurations. The chapter 2 will help you get familiar with the hardware.

2.1 Checklist

The package bundled with your NA345 Series should contain the following items

- **1 x DC Power Adapter (only NA345)**
- **1 x Power cord**
- **Mounting screws for disk drive**
- **1 x SATA cable, 1 x SATA power cable**
- **Plastic stand for the stack–up x 4**

If you cannot find this package or any items are missing, please contact AXIOMTEK distributors immediately. If you order any optional components, the package might contain those additional hardware or documents accordingly.

2.2 Memory Module (SO-DIMM)

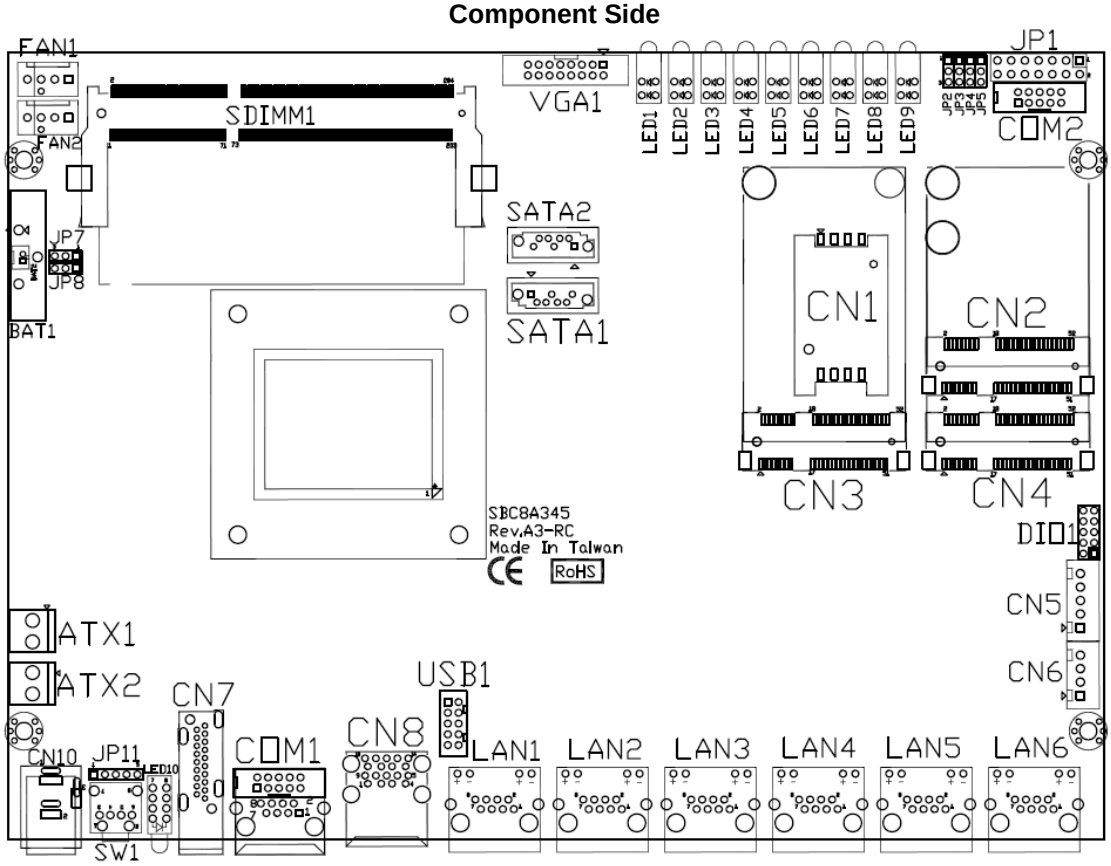
The main board supports one DDR3L-1866 SO-DIMM slot with maximum of up to 8GB non-ECC memory.

The following steps show you how to install the memory modules:

1. Push down each side of the SO-DIMM slot.
2. Align the memory module with the slot that the notches of memory module must match the slot keys for a correct installation.
3. Install the memory module into the slot and push it firmly down until it is fully seated. The slot latches are levered upwards and clipped onto the edges of the DIMM.
4. Install any remaining SO-DIMM modules.

2.3 Board Layout

Component Side

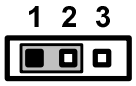
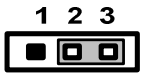


2.4 Jumper Settings

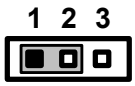
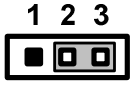
This section provides the information about jumpers and connectors of NA345 Series. Proper jumper settings configure the main board in this appliance to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

Jumper	Definition	Jumper Settings	Function
JP2	Auto Power Button Mode Selection	Short (1-2)	Auto Power On (Default)
		Short (2-3)	Power on By Power button
JP7 JP8	RTC Well Reset & Restore BIOS optional defaults	Short (1-2)	Normal (Default)
		Short (2-3)	RTC Well Reset & Restore BIOS optional defaults
JP3 JP4 JP5	LAN By-Pass Trigger when Power On	JP3 Short (1-2) JP4 Short (1-2) JP5 Short (1-2)	LAN Bypass same as Power Off status
		JP3 Short (2-3) JP4 Short (1-2) JP5 Short (1-2)	LAN Bypass Disable(Default)
		JP3 Short (2-3) JP4 Short (2-3) JP5 Short (1-2)	LAN Bypass Enable
JP11	TACT SW1 Lower Button Function Selection	Short (1-2)	Power On/Off
		Short (2-3)	Reset (Default)
		Short (4-5)	GPI

2.4.1 Auto Power Button Mode Selection (JP2)

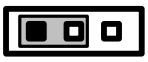
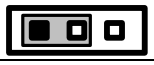
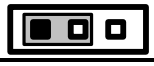
Description	Function	Jumper Setting
Auto Power Button Mode Selection	Auto Power On (Default)	
	Power on By Power button	

2.4.2 RTC Well Rest Selection& Restore BIOS Optimal Defaults Jumper (JP7, JP8)

Description	Function	Jumper Setting
RTC Well Rest Selection	Normal (Default)	
	RTC Well Rest& Restore BIOS defaults	

2.4.3 LAN Bypass Control Jumper (JP3, JP4, JP5)

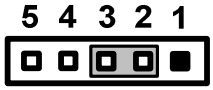
Use these jumpers to select the LAN Bypass Function.

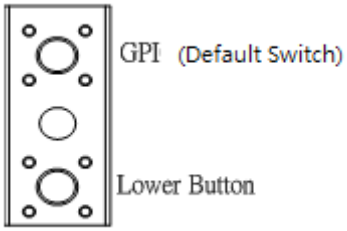
Description	Function	Jumper Setting
LAN Bypass Trigger When Power On	LAN Bypass as same as Power Off status	JP3 1 2 3 JP4 1 2 3  JP5 1 2 3 
	LAN Bypass Disable (Default)	JP3 1 2 3 JP4 1 2 3 JP5 1 2 3
	LAN Bypass Enable	JP3 1 2 3 JP4 1 2 3 JP5 1 2 3 

NOTE: ***When the system is turned on, you can select the LAN bypass function by jumper and BIOS when power on state, when enter the OS, you can select LAN Bypass function at power on/ off state by software, the detail information please refer to the appendix A.***

2.4.4 TACT SW1 Selection (JP11)

Use this jumper to select the TACT SW1 Function.

Description	Function	Jumper Setting
TACT SW1 Lower Button Function Selection	Power On/Off	
	Reset (Default)	
	GPI	



***NOTE**: If you need GPI sample codes, please contact our FAE directly, and they are for reference purposes only.*

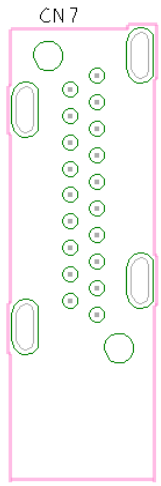
2.5 Connectors

Connectors connect the board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Here is a summary table shows you all connectors on the main board.

Connectors	Label
HDMI Connector	**CN7**
Rear IO USB3.0 Port	**CN8**
SIM Card	**CN1**
MINI PCIe Half	**CN2**
MINI PCIe Full	**CN3**
MINI PCIe Full	**CN4**
LCM Connector	**CN5**
SATA Power connector	**CN6**
DC Power Jack	**CN10**
Internal USB2.0 box	**USB1**
FAN connector	**FAN1**
FAN connector	**FAN2**
VGA Connector	**VGA1**
Front panel	**JP1**
SATA port	**SATA1**
SATA port	**SATA2**
COM Port	**COM1**
COM Port	**COM2**
Digital IO	**DIO1**
LAN port	**LAN1~6**
DC power switch	**ATX2**
DC power in	**ATX1**

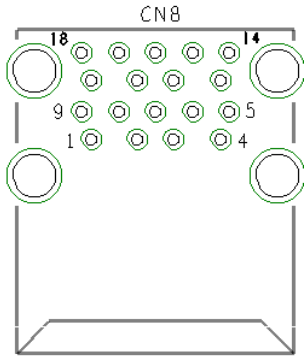
2.5.1 HDMI Connector (CN7)

Pin	Signal	Pin	Signal
1	HDMI_DATA2+	2	GND
3	HDMI_DATA2-	4	HDMI_DATA1+
5	GND	6	HDMI_DATA1-
7	HDMI_DATA0+	8	GND
9	HDMI_DATA0-	10	HDMI_CLK+
11	GND	12	HDMI_CLK-
13	NC	14	NC
15	HDMI_SPC	16	HDMI_SPD
17	GND	18	+5V
19	HDMI_HTPLG		



2.5.2 Rear IO USB 3.0 Port (CN8)

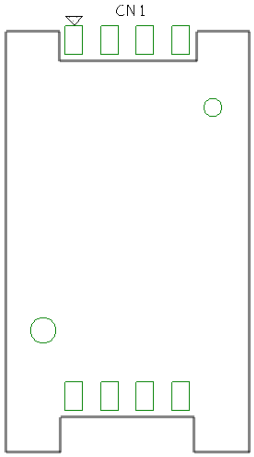
Pin	Signal	Pin	Signal
1	+VBUS	2	USBD0-
3	USBD0+	4	GND
5	SSRX0-	6	SSRX0+
7	GND	8	SSTX0-
9	SSTX0+	10	+VBUS
11	USBD1-	12	USBD1+
13	GND	14	SSRX1-
15	SSRX1+	16	GND
17	SSTX1-	18	SSTX1+



2.5.3 SIM Card (CN1)

In order to work properly, the SIM card must be used together with Mini Card (CN4) which is inserted to socket CN1 It is mainly used in 3G wireless network application.

Pin	Signal
1	SIM_PWR
2	SIM_REST
3	SIM_CLK
4	SIM_C4
5	GND
6	SIM_VPP
7	SIM_DATA
8	SIM_C8

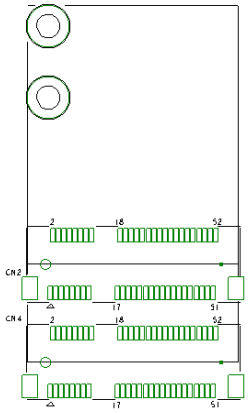


2.5.4 MINI PCIe Full & Half (CN2, CN4)

The CN2 is mini PCIe half, it supports USB2.0 single only and PCIe for optional.

The CN4 is mini PCIe full, it supports USB2.0 single only and PCIe for optional, with SIM slot CN1.

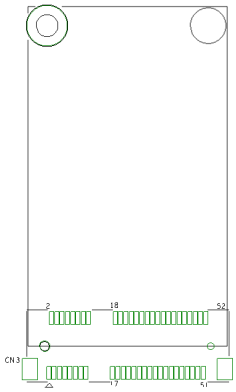
Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	GND	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	GND	16	No use
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	PE_RXN3	24	+3.3VSB
25	PE_RXP3	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN	32	SMB_DATA
33	PE_TXP	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB



2.5.5 MINI PCIe Full (CN3)

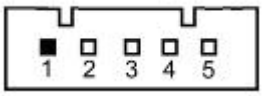
The CN3 supports m-SATA and USB 2.0 interface only.

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	GND	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	GND	16	No use
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	SATA_RXP	24	+3.3VSB
25	SATA_RXN	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	SATA_TXN	32	SMB_DATA
33	SATA_TXP	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB



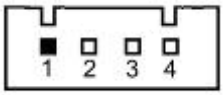
2.5.6 LCM Connector (CN5)

Pin	Signal
1	+5V
2	NRXD
3	NC
4	NTXD
5	GND



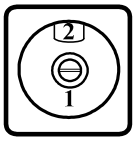
2.5.7 SATA Power Connector (CN6)

Pin	Signal
1	+5V
2	GND
3	GND
4	+12V



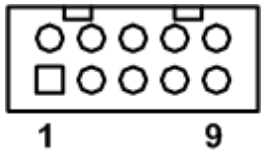
2.5.8 DC Power Jack (CN10)

Pin	Signal
1	+12V
2	Ground (GND)



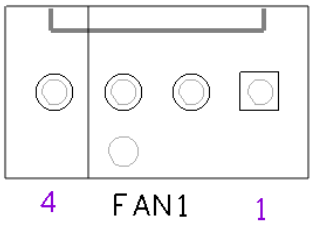
2.5.9 Internal USB2.0 box (USB1)

Pin	Signal	Pin	Signal
1	VBUS0	2	VBUS1
3	USB6-	4	USB2-
5	USB6+	6	USB2+
7	GND	8	GND
9	GND	10	GND

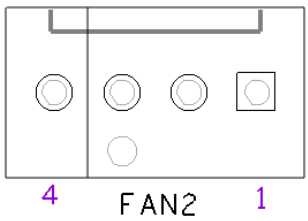


2.5.10 Fan Connectors (FAN1, FAN2)

Pin	Signal
1	GND
2	+12V level
3	Sensor
4	PWM

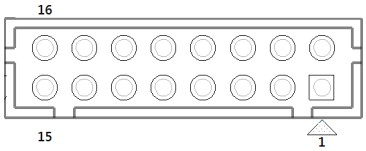


Pin	Signal
1	GND
2	+12V level
3	Sensor
4	PWM



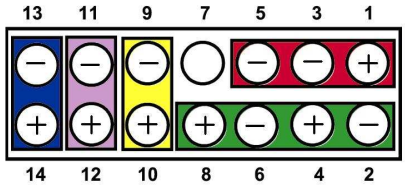
2.5.11 VGA Connector (VGA1)

Pin	Signal	Pin	Signal
1	RED	2	GND
3	GREEN	4	N.C.
5	BLUE	6	GND
7	CRT_VCC	8	DDC DATA
9	GND	10	GND
11	GND	12	HSYNC
13	GND	14	VSYNC
15	DDC CLK	16	N.C.



2.5.12 Front Panel (JP1)

Pin	Signal	Pin	Signal
1	PWRLED+	2	EXT SPEAKER-
3	GND	4	Buzzer
5	PWRLED-	6	N.C.
7	N.C.	8	EXT SPK+
9	PWRSW-	10	PWRSW+
11	HW RST-	12	HW RST+
13	HDDLED-	14	HDDLED+

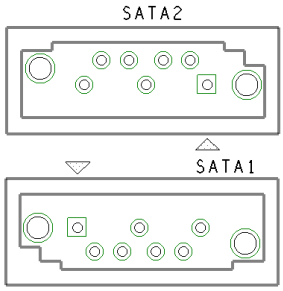


2.5.13 SATA Connector (SATA1, SATA2)

These Serial Advanced Technology Attachment (Serial ATA or SATA) connectors are for high-speed SATA interface ports.

SATA2 is co-lay with m-SATA (CN3). Default is m-SATA.

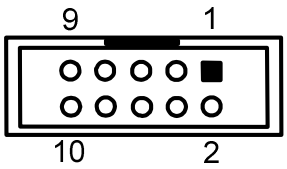
Pin	Signal
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



2.5.14 COM2 Port (COM2)

The COM2 Port connector is an RJ-type connector

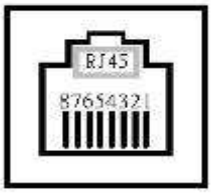
Pin	Signal	Pin	Signal
1	DCD2	2	DSR2
3	RXD2	4	RTS2
5	TXD2	6	CTS2
7	DTR2	8	NRI2
9	GND	10	NC



2.5.15 COM1 Port (COM1)

The COM1 Port connector is an RJ-type connector

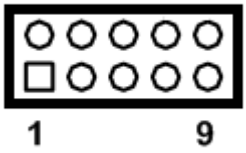
Pin	Signal	Pin	Signal
1	RTS1	2	DTR1
3	TXD1	4	GND
5	GND	6	RXD1
7	DSR1	8	CTS1



2.5.16 Digital IO (DIO1)

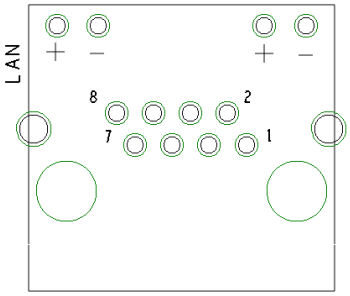
The board is equipped with an 8-channel (4 inputs and 4 outputs) digital I/O connector that meets requirements for a system customary automation control. The digital I/O can be configured to control cash drawers and sense warning signals from an Uninterrupted Power System (UPS), or perform store security control. You may use software programming to control these digital signals.

Pin	Signal	Pin	Signal
1	GND	2	GND
3	GPO3	4	GPI3
5	GPO2	6	GPI2
7	GPO1	8	GPI1
9	GPO0	10	GPI0



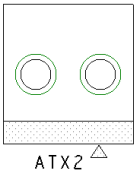
2.5.17 LAN Port (LAN1-LAN6)

Pin	Signal	Pin	Signal
1	MDI0+	2	MDI0-
3	MDI1+	4	MDI1-
5	MDI2+	6	MDI2-
7	MDI3+	8	MDI3-
9	Green LED+	10	Green LED-
11	Amber-	12	Amber+



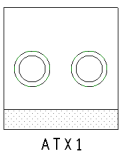
2.5.18 DC1 Power Switch (ATX2)

Pin	Signal
1	+12V
2	+12V_SYS



2.5.19 DC1 Power In (ATX1)

Pin	Signal
1	GND
2	+12V



CHAPTER 3
AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMI Aptio setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:
1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

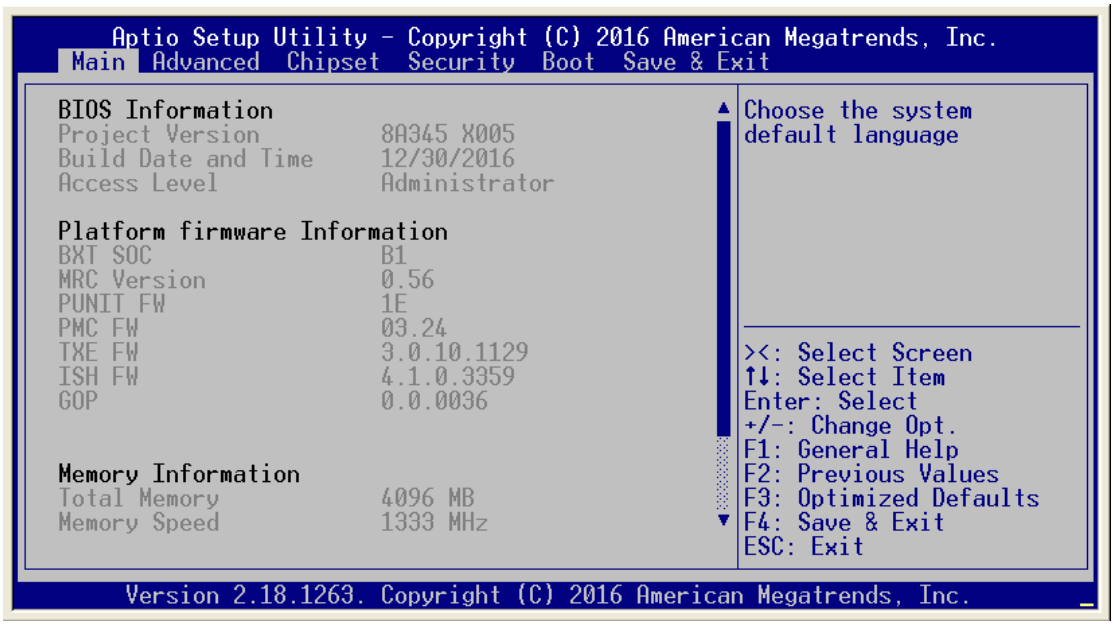
These keys include <F1>, <F4>, <Enter>, <ESC>, <Arrow> keys, and so on.

NOTE: Some of navigation keys differ from one screen to another.

><Left/Right	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to display the previous values.
F3	The <F3> key allows you to restore the optimized defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.

3.3 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



System Time/Date

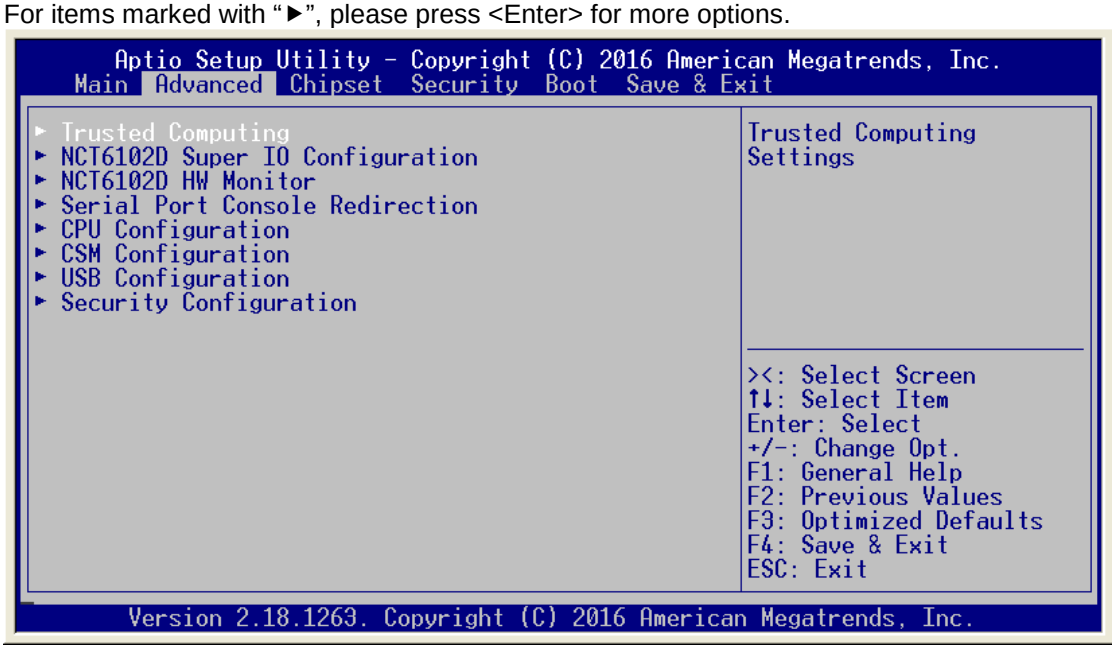
Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

3.4 Advanced Menu

The Advanced menu allows users to set the configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

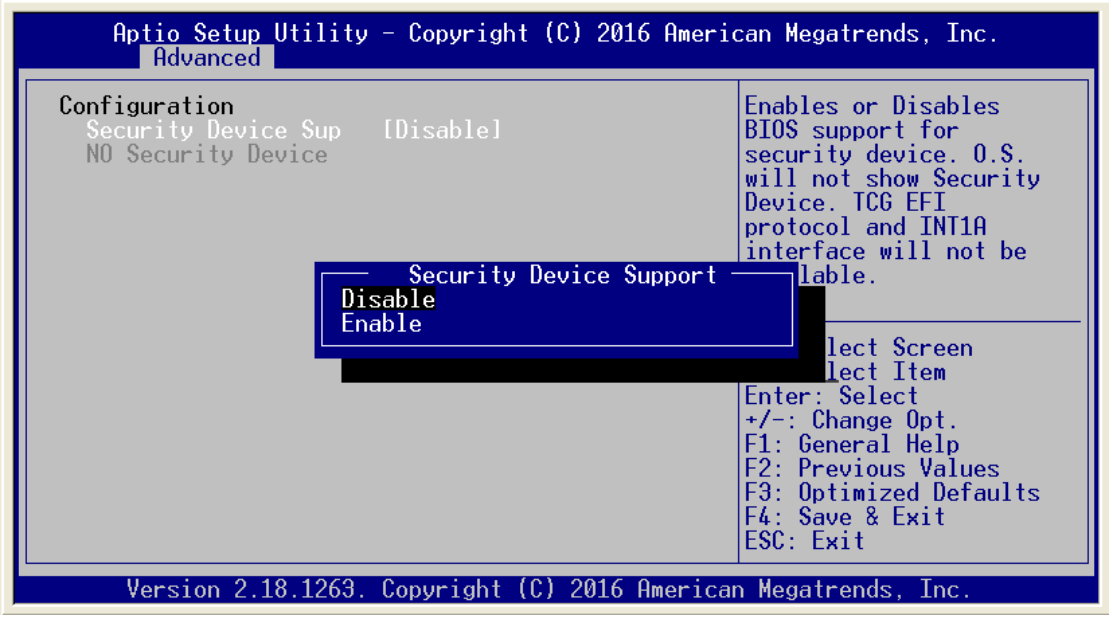
- ► **Trusted Computing**
- ► **NCT6102D Super IO Configuration**
- ► **NCT6102D HW Monitor**
- ► **Serial Port Console Redirection**
- ► **CPU Configuration**
- ► **CSM Configuration**
- ► **USB Configuration**
- ► **Security Configuration**

For items marked with "►", please press <Enter> for more options.



Trusted Computing

This screen provides the function for specifying the TPM settings.



Configuration

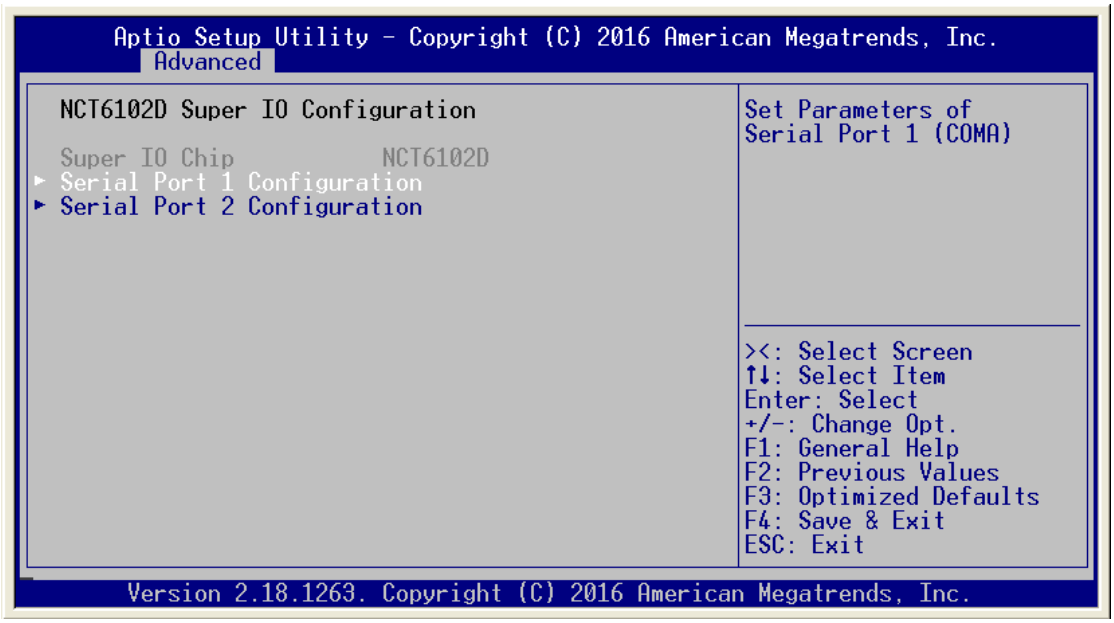
Use this item to enable or disable control TPM function

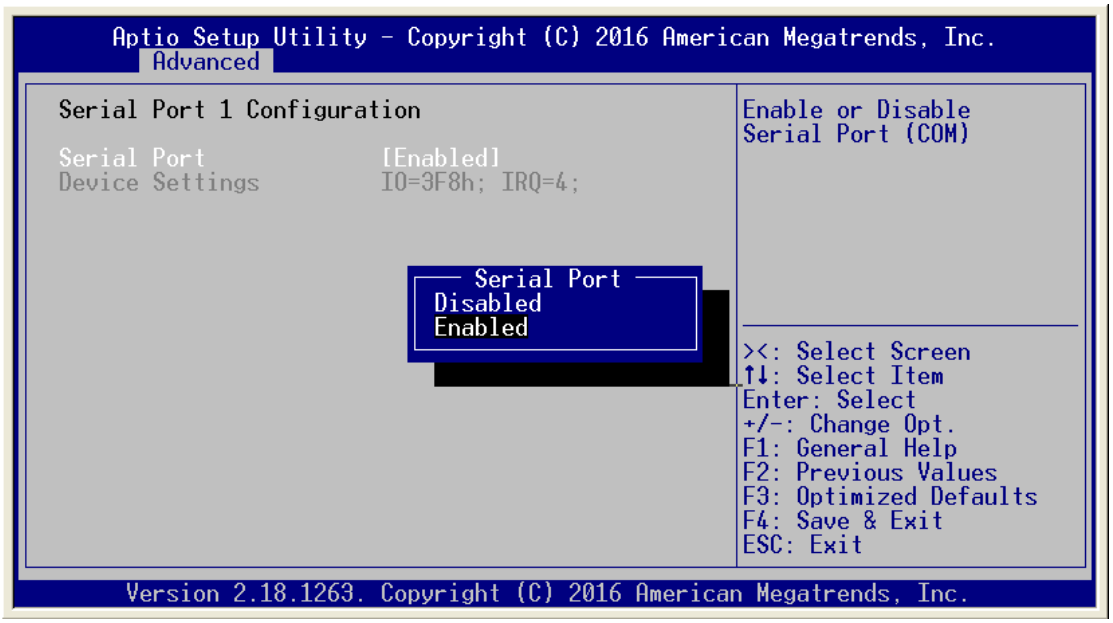
Current State Information

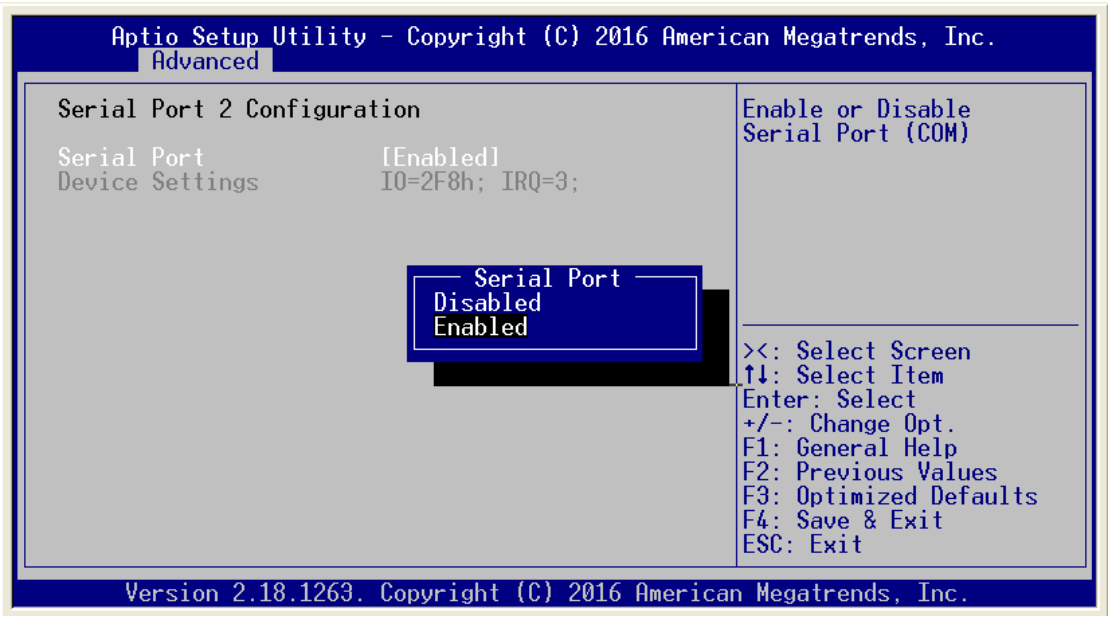
Display current TPM status information

Super IO Configuration

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.







Serial Port1 Address

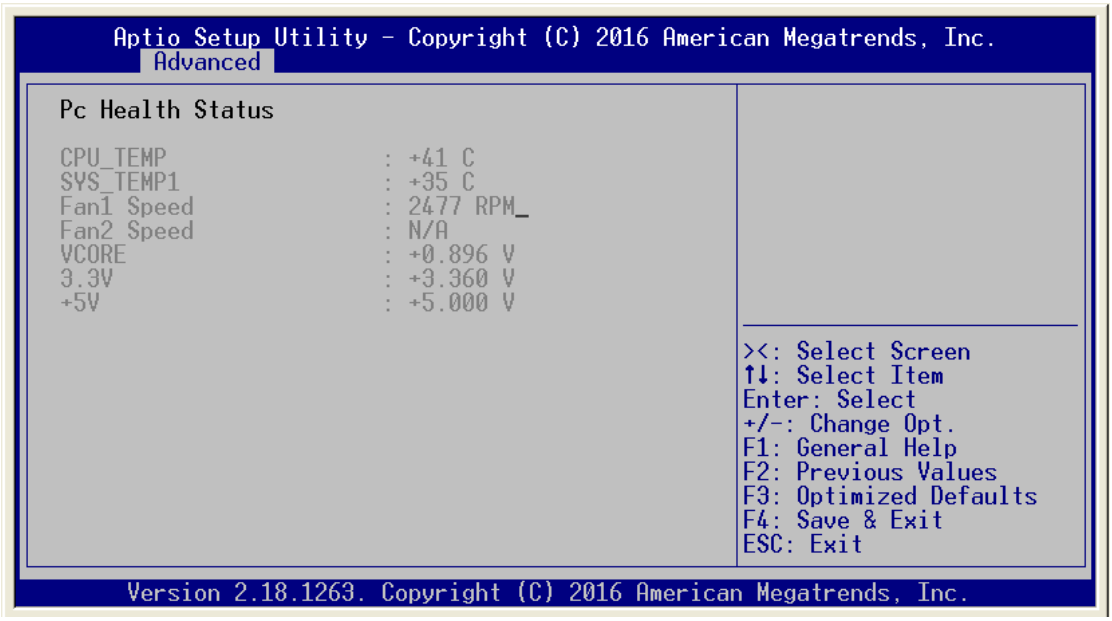
This option specifies the base I/O port address and Default setting is 3F8.
Here are the options for your selection, Disabled.

Serial Port2 Address

This option specifies the base I/O port address and Default setting is 2F8.
Here are the options for your selection, Disabled.

HW Monitor

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen



System Temperature

Show you the current system temperature.

CPU Temperature

These read-only fields show the functions of the hardware thermal sensor by CPU thermal diode that monitors the chip blocks to ensure a stable system.

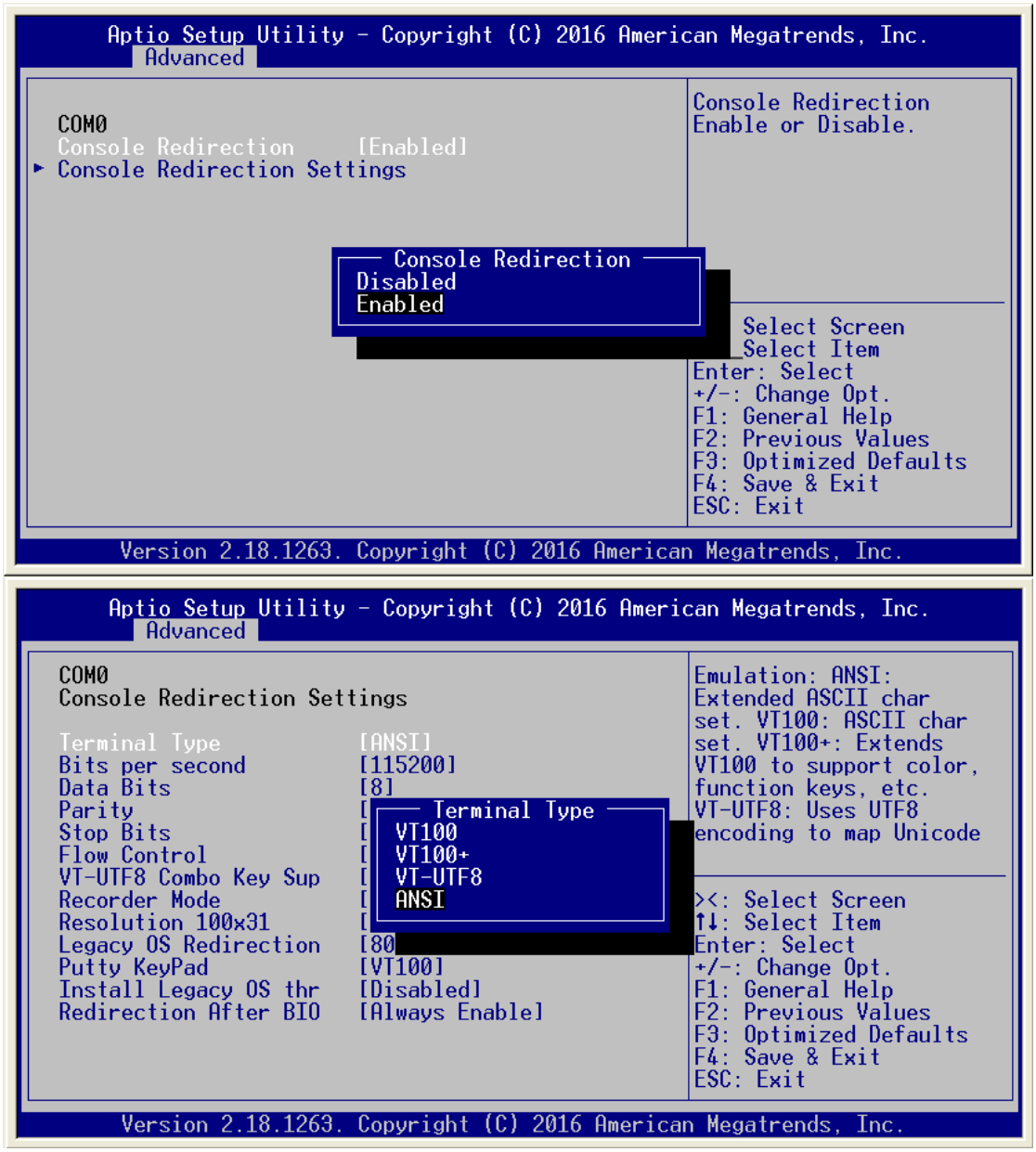
Fan Speed

NA345 equip 1pcs fan and it shows cooling fan speed in RPM. If the fan Speed is N/A , it means no fan available.

Vcore 5V / 3.3V

Show you the voltage of 5V / 3.3V and etc.

Serial Port Console Redirection



Terminal Type

This item allows you to select the target terminal type. Configuration options: ANSI, VT100 and VT-UTF8.

Bits per second

This item allows you to setup the data transfer rate for the console port. The default value is 115200. Available options are "*9600*", "*19200*", "*38400*", "*57600*" and "*115200*".

Data Bits

This item allows you to select the data bits. The configuration options: 7 and 8.

Parity

This item allows you to select flow control for console redirection. The configuration options: None, Even, Odd, Mark and Space.

Stop Bits

This item allows you to select the data bits. The configuration options: 1 and 2.

Flow Control

This item allows you to select flow control for console redirection. The configuration options: None, Hardware and Software.

VT-UTF8 Combo Key Support

Use this item to "Enabled" or "Disabled" VT-UTF8 combination key supports for ANSI / VT100 terminals.

Recorder Mode

This item allows you to select the recorder mode. The configuration options: Enabled and Disabled.

Redirection Legacy OS

This item allows you to select the legacy OS redirection. The configuration options: 80x24 and 80x25.

Putty KeyPad

This item allows you to select the putty keypad. The configuration options: VT100, LINUX, XTERMR6, SCO, ESCN and VT400.

Install Legacy OS through Remote

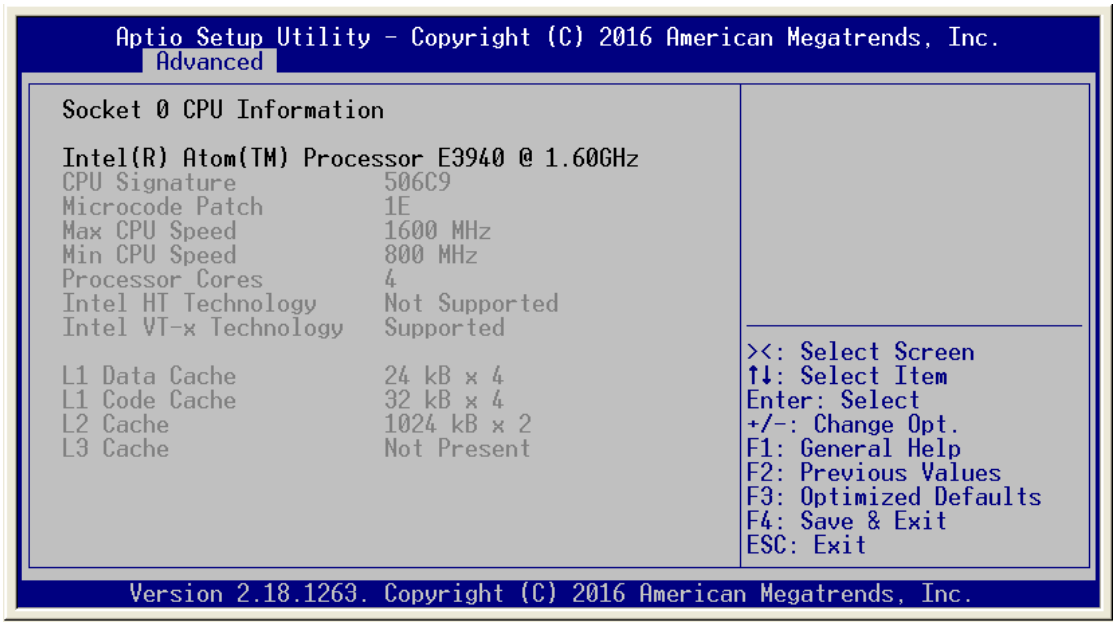
This item allows you to select the install legacy OS through remote. The configuration options: "Enabled" or "Disabled".

Redirection After BIOS POST

Use this item to enable or disable the function of Console Redirection, which allows you maintain a system from a remote location. The default setting is *Always*.

CPU Configuration

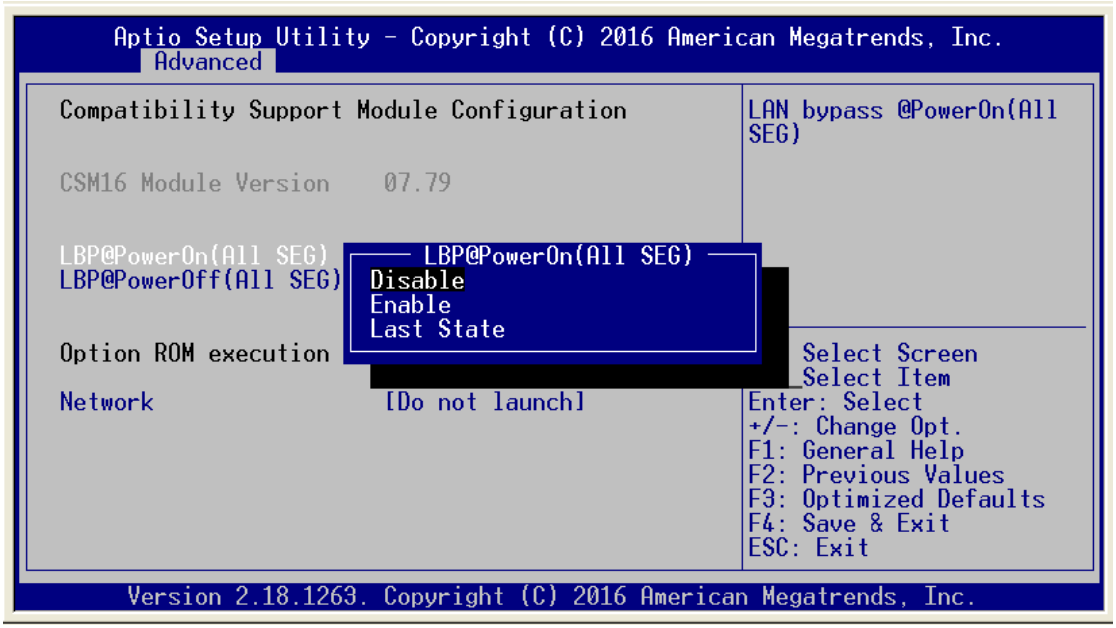
This screen shows the CPU Configuration, and you can change the value of the selected option.



SATA Configuration

You can use this screen to select options for the SATA Configuration, and change the mode of the selected option.

LAN Bypass Model Configuration



LBP@power on

Use LBP @Power On item to configure Power On LAN Bypass to "Disabled" ,"Enabled" or " Last State" for LAN Bypass .

LBP@power off

Power off LAN Bypass setting, use LBP @Power Off item to "Disabled" ,"Enabled" or " Last State" for LAN Bypass

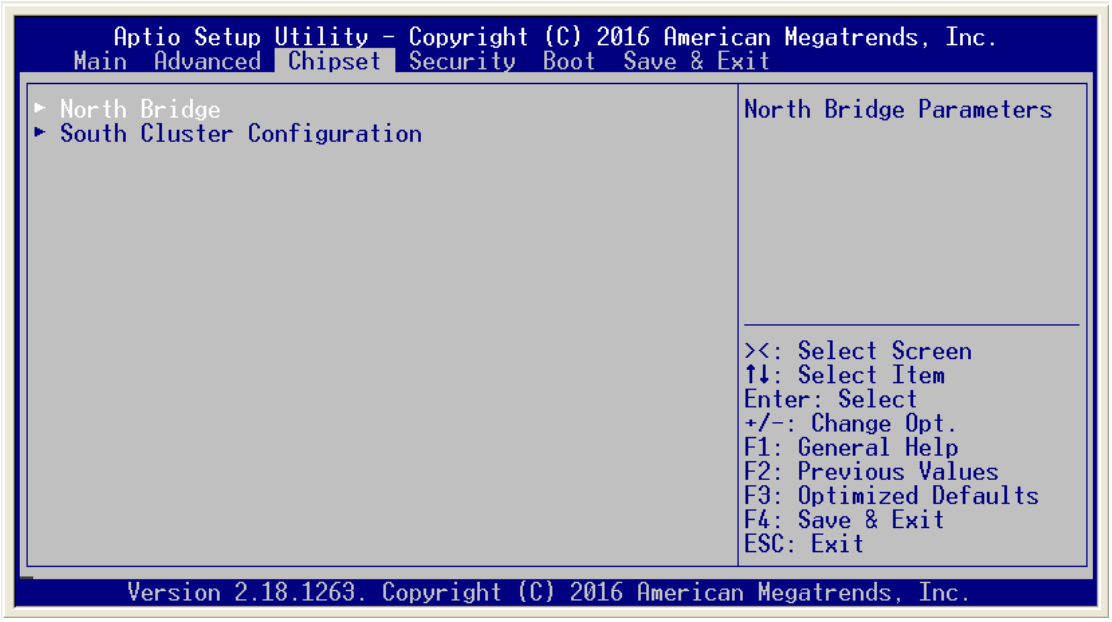
Launch PXE OpROM

This item can enable or disable boot option for legacy mass storage devices with option ROM.

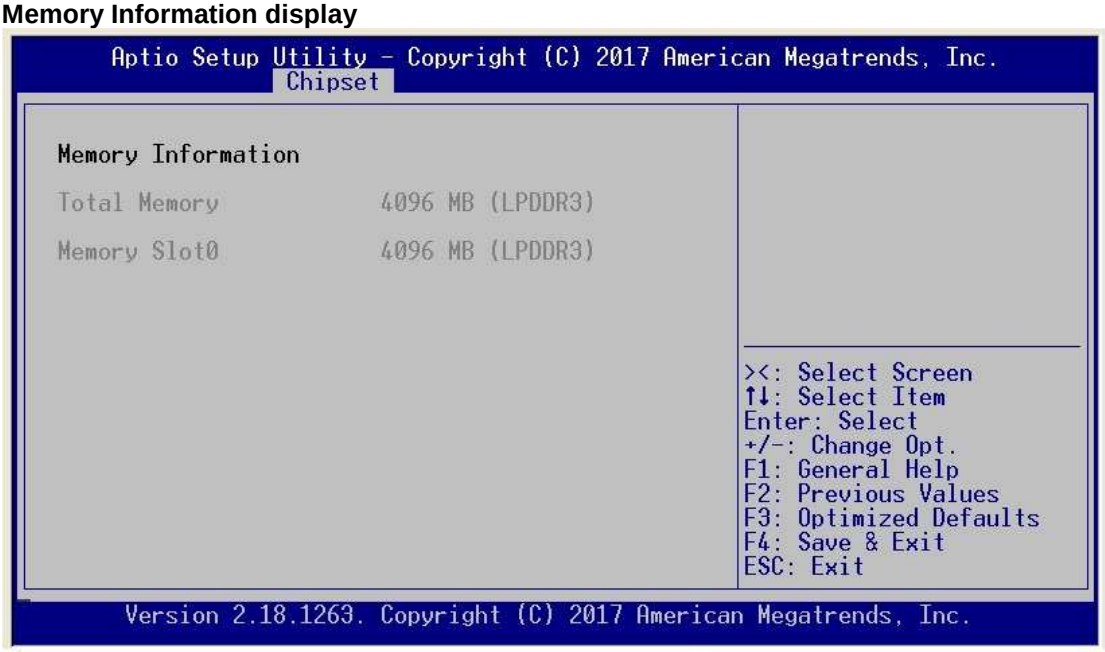
3.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

North Bridge

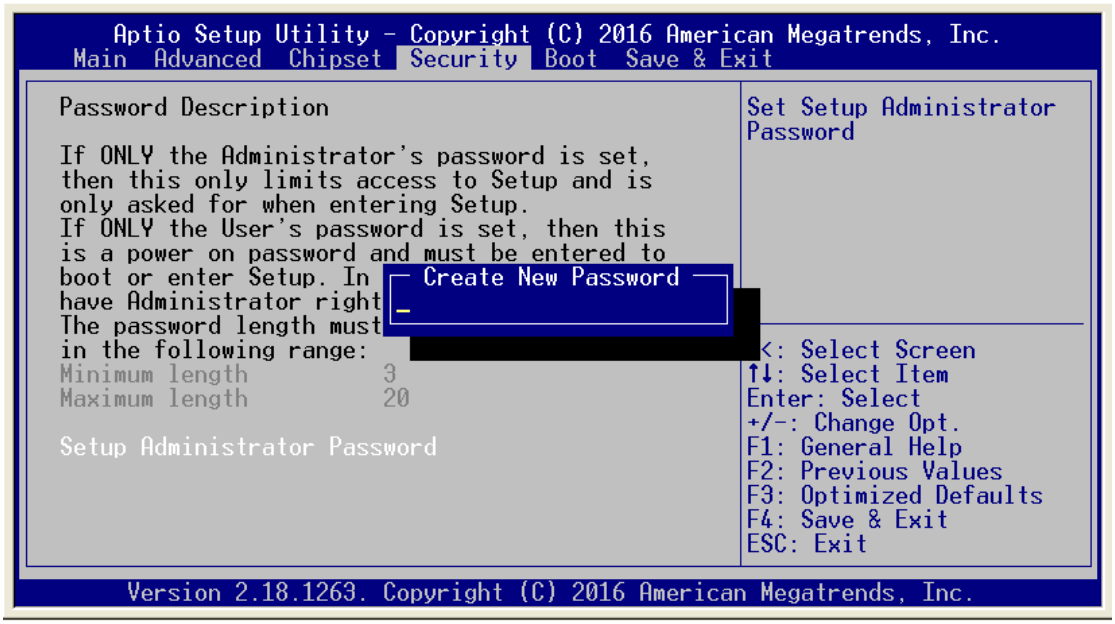


Memory Information display



3.6 Security Menu

The Security menu allows users to change the security settings for the system.



Administrator Password

This item indicates whether an administrator password has been set (installed or uninstalled).

User Password

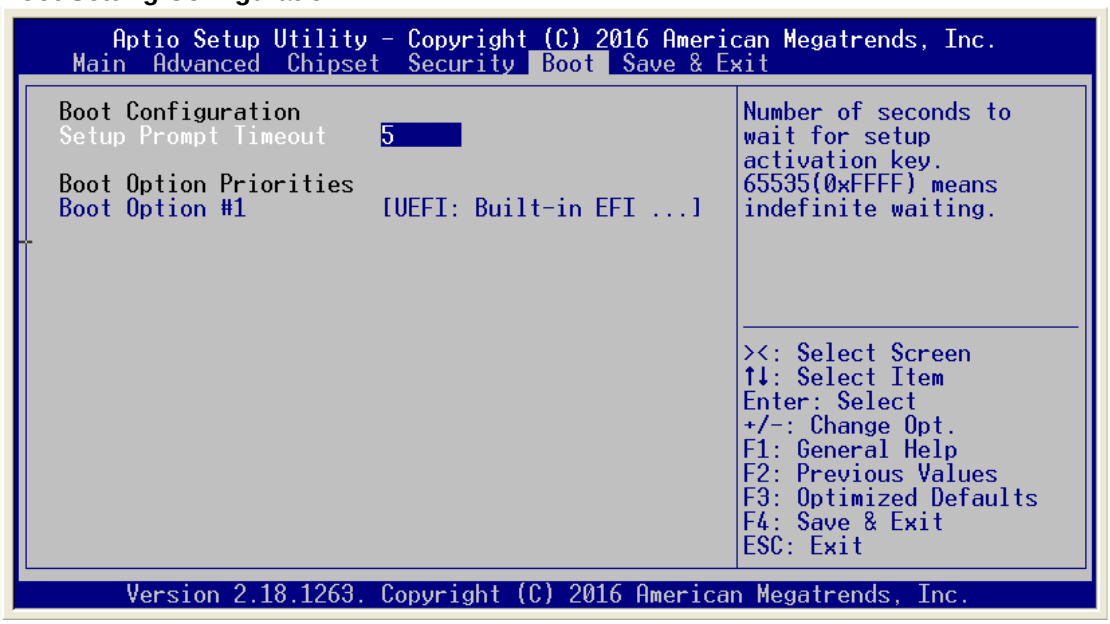
This item indicates whether a user password has been set (installed or uninstalled).

3.7 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

For items marked with "►", please press <Enter> for more options.

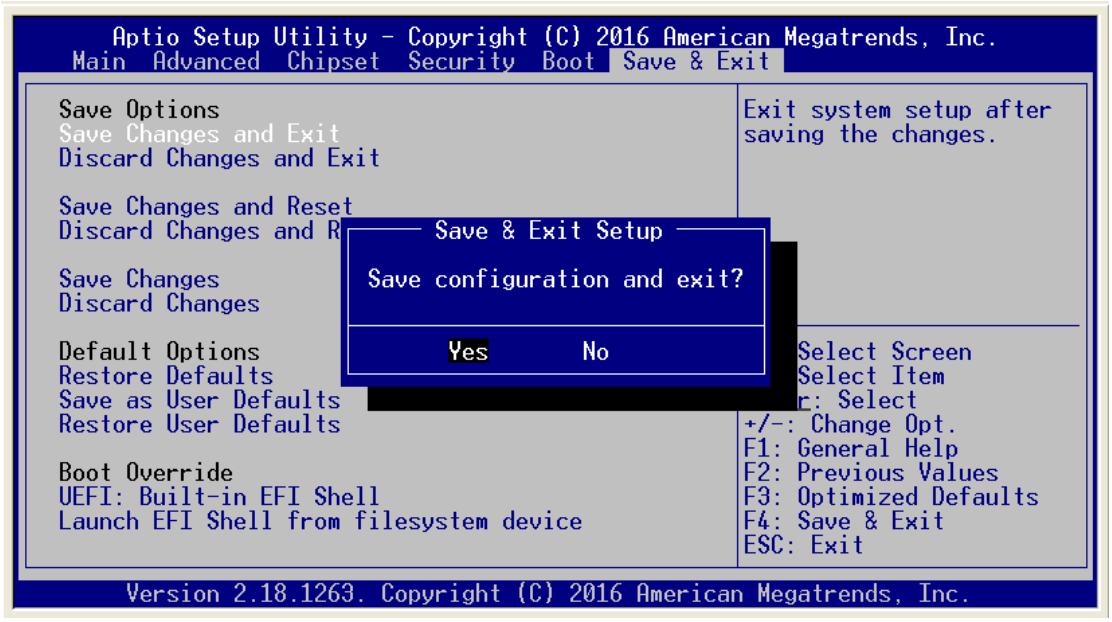
Boot Setting Configuration



Quiet Boot
Enable or disable quiet boot option.

3.8 Save & Exit Menu

The Exit menu allows users to load your system configuration with optimal or failsafe default values.



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>. Select Ok to save changes and exit.

Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes and Exit from the Exit menu and press <Enter>. Select Ok to discard changes and exit.

Discard Changes

Use this item to abandon all changes.

APPENDIX A
LAN BYPASS CONFIGURATION

About LAN Bypass

In network security application, it is very important to ensure that network traffic to continue passing through the device even if a hardware failure occurs or operating system crashes. LAN bypass gives us a solution for this problem.

The NA345 series LAN bypass function is very flexible. It can be selected at any time and any stage. You can enable LAN bypass for power on state by jumper, BIOS, or by software program when entering into the OS. Moreover, for power off state, you can set up LAN Bypass through BIOS, or use software program when entering into the OS. If you don't make any change, the state will keep the previous power off state.

The NA345 series has LAN bypass capability with the special designed latch relay circuitry. When a LAN bypass function is enabled, a relay closes to act as a bridge to route network data flow between LAN port 3 & 4 and LAN port 5 & 6. The bypass feature can be activated immediately or according to timer which is configurable from 1 up to 64 seconds. You can write a software program to control bypass operation behavior to fit your requirement.

NOTE: If you need sample codes, please contact our FAE directly, and they are for reference purposes only.

LAN Bypass Register Configuration

Power ON Bypass Control Register (0x8E0)

7	6	5	4	3	2	1	0
BYM1	**BYM0**	**X**	**X**	**X**	**X**	**SEGN2**	**SEGN1**
W	W	--	--	--	--	W	W

Default value: 00000000

Bit 7~6 BYM1~0

These bits are used to set bypass mode.

00 Not used.

01 Force bypass enable

The relay closes immediately to form LAN bypass on selected segment when power on.

10 Force bypass disable

LAN bypass is disabled immediately on selected segment when power on.

11 Timer enable

When power on, the selected segments are controlled by the setting of LAN bypass Timer Control register.

Bit 5~2 Not used

Bit 1~0 SEGN2~1

Select each segment by setting the corresponding bit to 1. When the bit is set to 0, no action happens upon the segment.

NOTE: ***NA345 series support SEGN1 for LAN3 and Lan4 and SEGN2 for LAN5 and Lan6.***

Data read back from this register is not defined and therefore must be ignored. Reading from this register makes no effect on LAN bypass function. All data in this register will be cleared when the system is turned off. If you still want to use the power on LAN bypass function, turn on the system and make sure to rewrite the register. Otherwise, if you don't rewrite the register, the status will be kept on last status.

Power OFF Bypass Control Register (0x8E1)

7	6	5	4	3	2	1	0
X	**X**	**X**	**X**	**X**	**X**	**SEGF2**	**SEGF1**
--	--	--	--	--	--	W	W

Default value: 00000000

Bit 2~7 Not used.

Bit 0~1 SEGF1~2

Use the corresponding bit to configure each segment. Setting the bit to 1 enables LAN bypass on the segment when power off. Clearing the bit to 0 disables LAN bypass on the segment when power off.

NOTE: ***NA345 series support SEGF1 for LAN3 and Lan4 and SEGF2 for LAN5 and Lan6.***

Data read back from this register is not defined and therefore must be ignored. Reading from this register makes no effect on LAN bypass function. When the system is turned off, last data written onto this register will be kept. If you want to make any change, turn on the system and make sure to reconfigure the register.

LAN Bypass Timer Control Register (0x8E2)

7	6	5	4	3	2	1	0
TEXP	**X**	**X**	**X**	**X**	**TVAL2**	**TVAL1**	**TVAL0**
R	--	--	--	--	W	W	W

Default value: 00000000

Bit 7 TEXP (Read Only)

This bit indicates the status of hardware timer.

0 Timer has not expired

1 Timer has expired

Bits 6~3 Not used.

Bits 2~0 TVAL2~0

These bits determine the amount of count value in second(s).

001 1 (sec)

010 2 (sec)

011 4 (sec)

100 8 (sec)

101 16 (sec)

110 32 (sec)

111 64 (sec)

000 Timer is not activated.

Writing a value to these bits will reset the hardware timer. The counting process begins again according to the new written value. Software must write count value periodically to ensure that timer will never expire. If timer timeout occurs, relay(s) automatically close to form LAN bypass on selected segment(s) based on the setting of Power On Bypass Control register (SEGN1~2).

NOTE: ***NA345 series support SEGN1 for LAN3 and Lan4 and SEGN2 for LAN5 and Lan6.***

Data (bits 6~0) read back from this register is not defined and therefore must be ignored. A read operation upon this register should not refresh the hardware timer.

LAN Bypass Status Register (0x8E3)

7	6	5	4	3	2	1	0
VER3	**VER2**	**VER1**	**VER0**	**BY4**	**BY3**	**BY2**	**BY1**
R	R	R	R	X	X	X	R

Bit 0 LAN Bypass Seg.1 status ➔ Disable=0; Enable=1

Bit 1-3 Not used

Bit 7~4 Firmware version

Without LAN Bypass function=1111

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APPENDIX B
WDT TIMER FOR SYSTEM RESET

WDT (Watchdog Timer)

The hardware supports the WDT (Watchdog Timer) function. While time-out happens after a defaulted period, the WDT will reset the system.

NOTE: ***If you need sample codes, please contact our FAE directly, and they are for reference purposes only.***

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APPENDIX C
WARNING

- This is a class B Product. In a domestic Environment this Product may cause radio interference in which case the user may be required to take adequate measures.

- It will be danger if battery is incorrectly replaced. Replacing only with the same or equivalent type is highly recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- **Warning for Hard Disk Drive Selection:**
  TUV approved Hard Disk Drive is preferred for TUV compliance Hard Disk drive-Optional, (NWGQ2), generic, Input Voltage rated 5V DC/1.0A, 12V DC/1.8A maximum. Minimum clearance from uninsulated live parts 4.0 mm.

- The equipment is to be installed in an environment with maximum ambient temperature must not exceed 45°C

- The openings on the enclosure are for air convection hence protected the equipment from overheating. DO NOT COVER THE OPENINGS.

- Lay this equipment on a reliable surface when install. A drop or fall could cause injury.

- The equipment shall be installed according to specification, as a nameplate. Make sure the voltage of the power source when connects the equipment to the power outlet.

- The current of load and output power of loads shall be not over the specification.

- This equipment must be connected to the reliable earthling before using.

Electric shock hazard inside the redundant power supply.

The exchange of modules shall be done by the service person.

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